



United Nations Environment Programme

Terminal Evaluation of the UNEP/GEF Project

**“Russian Federation – Support to the National
Programme of Action for the Protection of the Arctic
Marine Environment”**

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List of Acronyms

AEPS	Arctic Environmental Protection Strategy
ACAP	Arctic Council Plan of Action to Eliminate Pollution of the Arctic
AMAP	Arctic Monitoring and Assessment Program
AZRF	Arctic Zone of the Russian Federation
BASISS	Demonstration project: Environmental Remediation of Decommissioned Military Bases on Franz Josef Land Archipelago
BC	Black Carbon
DGEF	Division of GEF Coordination (UNEP)
EA	Executing Agency
ED	Executive Directorate
EPS	Environmental Protection System
FJL	Franz Josef Land archipelago
FSP	Full Size Project
FTOP	Federal Target Oriented Programme 'World Ocean'
GEF	Global Environment Facility
GOR	Government of Russia
GPA	UNEP Global Program of Action for the Protection of the Marine Environment from Land-based Activities
IA	Implementing Agency
IAWG	Interagency Work Group
IEP	Investment Ecological Projects
MNR	Ministry of Natural Resources and Ecology
MOED	Ministry of Economic Development
MOF	Ministry of Finance
M&E	Monitoring & Evaluation
MTR	Mid-Term Review
NGO	Non-Governmental Organization
NPA	National Plan of Action
NPAF	National Pollution Abatement Facility
OP	Operational Programme
PAME	Protection of Arctic Marine Environment
PD	Project Document
PDF	Project Development Facility
PINS	Pre-investment studies

PIR	Project Implementation Review
PO	Project Office
PSI	Project Support Instrument
RAIPON	Russian Association of Indigenous Peoples of the North
RF	The Russian Federation
SAP	Strategic Action Programme
SAO	Senior Arctic Officials
R&D	Research and Development
SMART	Specific, Measurable, Achievable, Relevant, Time bound (indicators)
SP	Strategic Priority
StC	Project Steering Committee
TER	Terminal Evaluation Report
TOR	Terms of Reference
TTPs	Territories of traditional nature management by Indigenous Peoples of the North
UNEP	United Nations Environment Programme
USD	United States Dollar
US-EPA	Environmental protection Agency of the USA
WB	World Bank

Project Identification Table

Table 1: The project background and rationale

GEF project ID:	1164	IMIS number:	GFL-2732-03-4694
Focal Area(s):	International Waters	GEF OP #:	OP 10: Contaminants
GEF Strategic Priority/Objective:	IW-3/SP-3: Balancing overuse and conflicting uses of water resources in surface and groundwater basins that are transboundary in nature – Monitoring improved water use efficiency in demonstrations;		
GEF approval date:	31 July 2003	UNEP approval date:	18 July 2005
Planned start date for phase I:	July 2005	Intended completion date for Phase I	June 2010
Actual start date:	1 September 2005	Actual or Expected completion date:	28 February 2011
Planned duration:	60 months		
Project Type:	Full Size Project (FSP)	Date of last Steering Committee meeting:	March 2011
GEF Allocation:	US\$ 5 885 000	Co-financing	US\$ 5 800 000
PDF GEF cost	US\$ 306 666	PDF co-financing	US\$ 474 000
Total Cost:	US\$ 12 465 000	First Disbursement:	31 August 2005
Mid-term review	March 2010	Terminal Evaluation	First half 2011
Project implementing agency:	UNEP	Country:	Russian Federation
Project executing agency:	Ministry of Economic Development of the Russian Federation		
Project partners:	NEFCO, USEPA, Government of Iceland		

Executive summary

1. The evaluated UNEP/GEF project “Russian Federation: Support of the National Programme of Action for the Protection of the Arctic Marine Environment” (NPA-Arctic) was designed during the period 1998 through 2000 to provide support for a National Programme of Action developed by the Russian Federation. The project’s global objective was to “*protect the global marine environment in which the Arctic plays an important role*”. The more specific objective of the project was to “*develop and establish a sustainable framework to reduce the environmental degradation of the Russian Arctic from land-based activities on a systematic basis by the development and endorsement of the SAP in favour of all Arctic States and the global community, and to comply with obligations of the Russian Federation under international conventions and agreements taking into account the decisions and programmes of the Arctic Council*”. As such, the project aimed to create conditions that would allow for capital investments to flow in the Russian Arctic in order to ensure long term protection of the coastal and marine environment of the Arctic, and to address the main root causes of trans-boundary pollution.
2. The project aims to overcome the existing environmental problems in the Russian Arctic, as well as to reduce possible risks of their occurrence, taking into account the influence of such threats and potential remedies on both the regional and global levels. This project was one of the initial set of the GEF-founded *Global Programme of Action for the Protection of the Marine Environment from Land-based Activities* (GPA/UNEP) demonstration projects, aiming to present an approach and methods to set up a national framework for action to address the identified issues relevant to the marine and coastal environment, *inter alia* of transboundary significance. The National Program of Action (NPA) is a mechanism for implementing the GPA at the national level.
3. The decades-long intensive economic and defence-related activities in the Russian Arctic have created numerous local ecological pollution “hot spots” where the levels of pollution greatly exceed national and international pollution limits. Other challenges the Arctic faces are related to ecosystem degradation, insufficient waste management, deteriorated public health and loss of biodiversity. Moreover, the further intensification of activities associated with exploitation of natural resources in the Russian Arctic are likely to generate new threats to the environment, which may take on a regional (circumpolar) and even a global scope if proper measures are not taken. All environmental problems in the Arctic region are closely associated with the environmental problems of the Russian Federation as a whole, mainly because the pollutants are easily dispersed long distances via air and rivers and the waste management system is insufficient, and in many cases non-existent.
4. The project *Russian Federation: Support of the National Programme of Action for the Protection of the Arctic Marine Environment* was successfully completed and the most important results are:
 - Strategic Action Programme (SAP) for Protection of the Environment in the Arctic Zone of the Russian Federation (SAP-Arctic) approved by the Maritime Board at the Government of the Russian Federation;
 - Diagnostic analysis of environmental problems of the Russian Arctic with an advanced summary published in Russian and English. Such comprehensive document was prepared for the first time in Russia;

- A set of priority investment projects to improve the ecological situation in the Russian Arctic resulting from pre-investment studies and supported by the regional and local authorities;
- Conceptual features of the draft federal law “On Special Regimes in the Natural Resources Management and Environmental Protection in the Russian Arctic”;
- 15 demonstration and pilot projects implemented. In addition to the three demonstration projects stipulated in the Project Document, 12 demonstration - and pilot projects were developed, approved by the Steering Committee and implemented. Results of these projects will serve as a basis for a wider application of approaches and methods for the restoration and prevention of damage to the environment within Russia and other states, as well as for the co-management of the environment by authorities, resource developing companies and indigenous peoples, and for the improvement of the indigenous population health protection system. A method of search, revealing and extraction of the lost radioisotope thermo-electric generator in permafrost conditions was successfully tested.

5. All Project tasks and proposed goals were successfully achieved; the Project outcomes set up solid grounds for the “Arctic Agenda 2020” Programme development. It will favour the improvement of the nature protection system in the Russian Arctic. The main critical problems of the Russian Arctic were identified; environmental risks at all levels were assessed. The project prepared proposals to the Russian Government to improve nature protection legislation and management; it contributed to the implementation of effective environmental legislation and prepared the fundamental strategic programme for the future protection and rational development of the North Russian territories.

The rating table:

Criteria	Summary Assessment	Rating
Attainment of objectives and planned results (overall rating)	Project was very complex, ambitious and progressive. All project goals and proposed outcomes were reached.	HS
Effectiveness	Project efficiency was high, the planned results were obtained and the objectives were achieved within a reasonable timeframe and with reasonable quality.	HS
Relevance	The project was significant in terms of contributing towards solving of the marine environmental problems in the Russian Arctic. Moreover, the achieved objectives corresponded with the tasks of GEF and UNEP	HS
Efficiency	Due to good project management, additional positive results were delivered (demonstration projects), that were not planned at the beginning. All planned outputs and activities were realized in a cost effective way.	HS
Sustainability of project outputs	Project will be sustainable at national and regional levels taking that special attention will be paid to effective and informal co-ordination and co-operation. The changes in Governmental approaches during the last ten years represent a solid base for this realization.	ML

Criteria	Summary Assessment	Rating
Financial	<p>The obtained results are financially sustainable due to engagement with a significant number of stakeholders, attracting co-financing, and because of good cooperation with federal authorities.</p> <p>The developed prior-investment projects have found investors. Prerequisites are created for further implementation of the tasks and objectives of the project.</p>	ML
Socio-political	Pollution of the Arctic is a considerable threat to the environment and the lives of local and indigenous people. The correctly set objectives found support among Arctic regions from the early stages of project implementation.	ML
Institutional framework and governance	A sustainable network was established to solve nature conservation problems in the Arctic during the project implementation. It can be used for next project implementation.	ML
Environmental	Unfortunately, a threat of future pollution in the Arctic is still valid. It is related to oil and gas excavations on the Arctic shelf and the beginning of active navigation on the Northern Sea Route. Even though the old problems are being solved, the task is still of current importance.	ML
Achievement of outputs and activities	All the planned activities were realized.	HS
Monitoring and evaluation (overall rating)		S
M&E design	The project had a well-developed M&E plan. Detailed reports for all meetings and for implementation of demo and pilot projects with all associated documentation have been distributed among all interested parties and uploaded on the official Project website.	S
M&E plan implementation (use for adaptive management)	Project progress reporting was done on six-monthly and annual basis. The monitoring was continued throughout the project implementation and was used to optimize activities and ensure effective use of financial resources.	S
Budgeting and funding for M&E activities	The budget for monitoring and evaluation was satisfactory.	S
Catalytic role	The project catalytic role is very significant in terms of improving environmental legislation as well as developing innovative approaches to liquidate the accumulated damage.	HS
Preparation and readiness	The project tasks were clear, practical, and achievable within the time and budget available and the project was managed according to the pre-defined tasks. However, the readiness was poor during the first part of the project and it caused delays in the project implementation.	MS

Criteria	Summary Assessment	Rating
Implementation approach	The project implementation approach is evaluated as satisfactory, regardless of the delays at the early stages due to lack of readiness.	S
Country ownership/drivenness	Project was developed to be in-line with the national sectoral and development priorities and plans, and was supported by the relevant country representatives from government and civil society. The national stakeholders were involved in the project from the beginning.	S
Stakeholder involvement	<p>One of the main project achievements was a successful involvement of stakeholders on different levels from the beginning of the project.</p> <p>The Project Executing Agency has established an Interagency Working Group for the Project (IAWG), comprising representatives from federal and regional authorities, Russian Academic of Sciences, RAIPON, private sector, and non-governmental organizations.</p>	S
Financial planning	<p>Project prepared all the necessary financial planning and reporting documents to the Executing Agency, UNEP/DGEF and other institutions in a timely manner.</p> <p>Project budget was thoroughly evaluated at the meetings of the Project Steering Committee. Members of the Steering Committee received also all financial reporting documents.</p>	S
UNEP supervision and backstopping	<p>Project Advisor to the EA provided regular revision of project financial and operational documents.</p> <p>Project enjoyed good support from UNEP staff in Bangkok, Nairobi and Moscow offices. UNEP staff participated in the PCS meetings providing technical and financial support, project monitoring and evaluation report preparation, as well as assist in cooperation with relevant ministries and departments of the Russian Federation. In addition, Moscow UNEP office employees participated in meetings with regional authorities in the Russian Arctic providing technical support to the project management.</p>	HS
Overall rating		S

1. Evaluation background

A. Context

6. The Arctic and its Seas is globally significant because of its influence on oceanic and atmospheric circulation, because of its unique biological diversity, and its important contribution to the global carbon balance and climate stability. Seasonal assemblages of marine mammals, especially whales and other cetaceans occur over large areas, and bird populations in the millions find nesting grounds and flyways in the area. The Arctic region also provides livelihoods for indigenous Northern peoples and thus preserves the ethnic and cultural diversity and supports traditional use of natural resources. The Russian Arctic holds about 20% of the world's energy resources, including about 30% of the world's undiscovered gas resources, and hydrocarbons and minerals are found in quantities of strategic importance on the global scale. In addition, the Arctic region has considerable fisheries resources and large areas for raising domestic reindeer.
7. The important role played by the Arctic in world ocean circulation, global biodiversity and planetary climate control is unquestionable. However, the adverse effects of previous and contemporary anthropogenic activities in the Russian Federation extend beyond the Arctic basin to the deep-water masses of the Arctic Ocean through the 'oceanic conveyor belt'.
8. For many decades, the intensive economic and defence-related activities, such as mining and metallurgical industries, energy production, defence facilities, fishing and navigation including shipping of hazardous wastes in the Russian Arctic have resulted in the emergence of numerous local pollution "hot spots" demonstrating levels of environmental pollution that greatly exceed national and international pollution limit values. Within the Russian Arctic there are over 100 hot spots, 30 of which are viewed as priority concerns. Zonal vegetation in the Arctic restores itself much more slowly than in more southerly regions and the alteration of domestic reindeer pastures, which cover more than 334.7 million ha in all, has now reached as high as 63 per cent. In general, degraded land accounts for 1-3 per cent of the total area of the mainland Arctic, but near the copper and nickel belts of Norilsk, Monchergorsk, and Pechenga, the soil is disturbed over dozens of kilometres and natural landscapes are noticeably transformed.
9. The main environmental problem of the Russian Arctic is pollution. Chemicals, radioactive substances and oil products are deteriorating the quality of the soil and both surface and ground water, and the entire Arctic ecosystem as a whole. The pollution affects the living standards and the conditions for traditional natural resource use by the indigenous peoples of the North. The environmental problems were not only caused by past activities in the region, but are intensified by a regular transfer of pollutants from other regions via atmospheric flows, river flows and sea currents. In addition, every year, the Russian Arctic sees up to 1 billion tons of tailings and solid waste. Vast sites of tailings and solid waste are concentrated in Murmansk Oblast, in the lower reaches of the Pechora River, Nenets AO, in the southern areas of Yamalo-Nenetsky Okrug, in Norilsk Industrial Area, in the northern areas of the Sakha Republic (Yakutia), and around the gold mining areas on the Chukotka Peninsular. Every year, rivers carry several hundred thousand tons of oil products into the Arctic Ocean.
10. Other problems are connected with degradation of ecosystem, violations of land management, insufficient waste management systems, loss of biodiversity and fish stocks, and disturbance of

utilities. The pollution is leading to deterioration of public health. In addition, further intensification of activities associated with the exploitation of natural resources including those on the continental shelf, will generate new threats to the environment, which may take on a regional (circumpolar) and even global scope if proper measures are not taken. All Arctic environmental problems are closely associated with the environmental problems of the Russian Federation as a whole.

11. Since the Arctic ecosystem is highly vulnerable and its capacity to recover is extremely low, conducting business in the Arctic requires specific approaches to address the environmental concerns in the context of economic expansion and global climate change.
12. The evaluated UNEP/GEF project “Russian Federation: Support of the National Programme of Action for the Protection of the Arctic Marine Environment” (NPA-Arctic) was designed during the period 1998 through 2000 to provide support for a National Programme of Action developed by the Russian Federation. The project’s overall global environment objective was to “*protect the global marine environment in which the Arctic plays an important role*”. The more specific objective of the Project was to “*develop and establish a sustainable framework to reduce the environmental degradation of the Russian Arctic from land-based activities on a systematic basis by the development and endorsement of the SAP in favour of all Arctic States and the global community, and to comply with obligations of the Russian Federation under international conventions and agreements taking into account the decisions and programmes of the Arctic Council*”. As such, the Project was expected create conditions that would allow for capital investments to flow in the Russian Arctic in order to ensure the long term protection of the coastal and marine environment of the Arctic, and to address the main root causes of trans-boundary pollution in the Russian Arctic.
13. The Project aimed to overcome the existing environmental problems in the Russian Arctic, as well as to reduce possible risks of their occurrence, taking into account the influence of such threats and potential remedies on both the regional and global levels. This project is a part of the *Global Programme of Action for the Protection of the Marine Environment from Land-based Activities* (GPA). The National Program of Action is the translation of the GPA at the national level.

B. The Project

14. The project consisted of the following **four major Components**:
15. **Component 1: Strategic Action Programme (SAP)** –involves the preparation and adoption of a formal SAP based on GEF International Waters best practice guidelines with the objective of providing a systematic plan and a program to address major sources of land-based and coastal area pollution affecting the Russian Arctic within the framework of the Russian Federation’s overall development plans for the Arctic region, the activities needed for the implementation of such development, and the country’s global environmental commitments. The SAP-Arctic was based on detailed diagnostic analysis of the current situation and forecasting of the potential environmental changes in the Russian Arctic, which were done by prominent Russian scientists and experts specialising in different aspects of the Arctic environment studies.
16. **Component 2: Pre-Investment Studies (PINS)** – addresses priority environmental problems in the Arctic. There is an abundance of evidence over a number of seriously degraded marine, freshwater and terrestrial areas within the Russian North that seriously threaten the health of

the Arctic population, its resources and amenities. An updated list of hot spots and estuarine and marine impact zones has been prepared within a special study carried out by the Project Office (PO).

17. The list was prepared on the basis of a revision of information obtained at the preparatory stage of the project (1999), analysis of hot spots obtained from the AMAP/NEFCO study (2003), state and regional reports on environmental protection for recent years (2000-2008), and consultations with regional authorities. This component covers the selection and completion of up to 15 PINS that were to address the most frequent and serious cases of land-based and coastal area pollution sources impacting the Arctic region. PINS were to result in an optimal set of proposals for investment in the Russian Arctic, where investment in their implementation will be most effective in the economic, ecological, social and political sense, as well as supporting business decision making and financing. The pre-investment component of the Project will allow the optimal set of environmental measures requiring significant investments to be established, and to design remediation actions that can be instituted by the Russian Federation and funding partners, especially those within the Arctic.
18. **Component 3: Environmental Protection System (EPS) Development** – covers the development and implementation of an Environmental Protection System (EPS) applicable to the Arctic environment and its sustainable development and protection, embodying legislative, administrative, institutional and technical capacity improvements consistent with the SAP; and
19. **Component 4: Demonstrations Projects** – aims at the implementation of on-the-ground pollution reduction innovative investment modalities for addressing the trans-boundary problems of the highest priority in the Russian Arctic, and conducting three on-the-ground demonstration and pilot projects addressing: (1) marine environmental clean-ups, utilizing technology developed in the country for marine water remediation using marine algae, (2) the environmental remediation of decommissioned military bases and their transfer to civilian control, and (3) the demonstration of new legislative and economic mechanisms balancing the interests of extracting companies and indigenous people in resolving economic and environmental problems in a sustainable way.
20. Both phases had clearly defined benchmarks that were defined for the completion of Phase I in the project document, and revised based on the suggestion of EA and reviewed by the members of the 3rd Meeting in Helsinki.

Table 2: Project benchmarks, which have been approved and adopted as major outcomes for the Project Phase I:

No.	Project part	Realization
1.	Project Management	Project implementation structures established, including Project Office, Project Steering Committee, Project Supervisory Council and Inter-Agency Working Group.
2.	Strategic Action Programme	Strategic Action Programme fully developed and endorsed by relevant stakeholders. Diagnostic analysis document were prepared and published in English and Russian.
3.	Pre-investment Studies	Hot spots list updated and finalised. Pre-investment studies successfully carried out and the interest of financial institutions preliminary confirmed.

4.	Improving Environment Protection System	Report on gap analysis of the environmental legislation applicable to the Russian Arctic, with recommendations on improvements prepared and implemented.
5.	Project Phase I Evaluation	Project results for all components evaluated by the Interagency Working Group. Independent evaluation of the project completed, confirming satisfactory preparation, and submitted to the Russian Government.
6.	Demo and Pilot Projects	Demonstration activities in accordance with the original Project Document fully implemented. New demonstration and pilot projects approved by the Steering Committee are implemented during Project Phase I.

21. The initial duration of Phase I was two years (24 months) from July 2005 to June 2007. However, due to delayed payment of funds, uncertainties with donor funds, and removal of Phase II of the project from the GEF portfolio, the first phase was extended several times by the Steering Committee in order to reach clear outcomes at the end. However, a point worth emphasizing is that in the end, the project produced much more 'very good' results than what was initially planned for the first phase or for the entire project.
22. The project was funded by GEF and co-financed by the Russian Federation and partners (Canada, Iceland, Italy, and USA). The total project budget was US\$ 5,885,000. The project had a PDF-B funded by GEF (USD\$ 306 000) with co-financing of US\$ 474 000.

C. Evaluation objectives, scope and methodology

C. 1 Objective and Scope of the Evaluation

23. The terminal evaluation of the project "Russian Federation – Support to the National Programme of Action for the Protection of the Arctic Marine Environment" was prepared using the UNEP Evaluation Policy, the UNEP Evaluation Manual, and the Guidelines for GEF Agencies in Conducting Terminal Evaluations. The evaluation entailed assessment of project performance (in terms of relevance, effectiveness and efficiency), and determined the outcomes and impacts (actual and potential) stemming from the project and their sustainability.
24. The evaluation had two primary purposes: (i) to provide evidence of results to meet accountability requirements, (ii) and to promote learning, feedback, and knowledge sharing through the results and lessons learned among UNEP, the GEF, and their partners. The evaluation was to come out with lessons of operational relevance for potential future project in this area.

C. 2 Overall Approach and Methods

25. The terminal evaluation was conducted by independent consultants (Prof. Ivan Holoubek, the Czech Republic, Mr. Oleg Sutkaitis, RF) under the overall responsibility and management of the UNEP Evaluation Office (Nairobi), in consultation with the UNEP GEF Coordination Office (Nairobi), UNEP Moscow Office, and UNEP ROAP (Bangkok).

26. The evaluation was prepared using a participatory approach, whereby key stakeholders were kept informed and consulted throughout the evaluation process. Both quantitative and qualitative evaluation methods were used to determine project achievements against the expected outputs, outcomes and impacts.
27. The findings of the evaluation are based on a desk review of project documents, including relevant background documentation, project design documents, project reports such as progress and financial reports, mid-term Review Report, documentation related to project outputs and additional information concerning environmental problems in the Russian Arctic outside the project (Polar Programme, scientific literature, meetings with scientists in the locality, IPEN documents) (see Annex 5). Project evaluation was prepared with the use of the Mid-Term Report and reports from the 4th and 5th Meetings of the Steering Committee. The list of persons who were interviewed face-to face in Moscow, Murmans and Archngelsk and via e-mails or phone is presented in Annex 5.
28. The evaluation team visited the project management office in Moscow and selected a demonstration project site – the decommissioned military facility, Nera Pokrovskoye settlement, Onega Municipality, Arkhangelsk Region (02/11/2011). It was planned to visit also one site in Murmansk region. One pilot project called "Remediation of the Environment through the use of Brown Algae" was implemented in Murmansk Oblast. After the accomplishment and obtaining positive results the experimental station located next to Murmansk was uninstalled. Now a similar station works in the Vitino Sea Port, Kandalaksha bay of the White Sea. However, the port is not a part of the project and therefore has no obligations to the project. Since the lead evaluator was not a citizen of the Russian Federation, an approval from the Russian Special Services (Federal Security Service, FSS) would have been required to access the Vitino Port active station, and the approval would have been possible only with the help of the Vitino port administration. Due to lack of assistance from the Vitino and the need to acquire a permit from the FSS, the site was not visited for the evaluation.

C. 3. Limitations and Constraints

29. The findings presented in this report are based on a desk review of project documents and approximately 28 face-to-face interviews with federal level authorities in Moscow, and regional and municipality authorities of the Arctic regions (Murmansk, Arkhangelsk). Additional information was sought through email correspondence and phone conversations with key informants from the Project Steering Committee (SC) and other parties affected by the Project including Project Task Manager and Project Fund Management Officer. Attempts to contact several persons in Russia did not yield results.
30. The project has produced a very broad set of documents, meeting reports and other knowledge and information products relating to pilot and demonstration activities. Due to the insufficient time for the evaluation, the evaluators could not conduct a thorough and in-depth review of all project documents in order to assess potential impacts of the project implementation including problems and risks associated with the project sustainability. However, through a thorough review of the project reports and based on all meetings and correspondence recorded/reported by the Project Management Office, the evaluators were fully confident that there has been sufficient information available, including identification of main lessons learned and best practices obtained during the period of project implementation to terminal evaluation.

2. Project performance and impact

A. Attainment of objectives and planned results

A.1 Achievement of outputs and activities

31. The Project comprises of **four principal components**:

- Preparation and adoption of a Strategic Action Programme (SAP);
- Completion of a set of Pre-Investment Studies (PINS);
- Development and implementation of Environmental Protection System (EPS), embodying legislative, administrative, institutional and technical capacity improvements consistent with SAP; and
- Three demonstration projects regarding:
 - a. Indigenous Environmental Co-management;
 - b. Remediation of the Environment through the use of Brown Algae; and
 - c. Environmental Remediation of two Decommissioned Military Bases

Table 3: Generic results chain:

Inputs	Activities	Outputs	Outcomes	Impacts
Strategic Action Programme (SAP)/Diagnostic Analysis (DA)				
State-of-the art information concerning the Arctic environmental problems	Support of RF Government in developing strategic guidelines and policy options on management of the Russian Arctic environmental issues.	A strategic framework document that sets the goals, tasks, principal activities and targets in the area of protecting Arctic environment for the period up to 2020.	Increased understanding of the Russian Arctic environmental problems; strategic framework and actions are negotiated among concerned partners and stakeholders; SAP document approved by the highest level and guides marine actions and accepted by the RF Governments at all levels	Contribution to the development of a new revision of the RPA and the ACAP. Contribution to the implementation of the AEPS and the UNEP/GPA as implemented in the Arctic Region through the RPA.
Pre-Investment Studies (PINS)				
Inventory of problems and hot spots	Development of project proposals, contract execution, discussion and	A list of hot spots 16 IEP were prepared	Comprehensive baseline studies and recommendations for the solution of	The project realization and potential financial support from governmental

	dissemination of study results.		hot spots and base for environmental investment initiatives; increased private sector involvement in Russian Arctic clean-up efforts.	level or private sector is under negotiation.
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Environmental Protection System (EPS)

State-of-the-Art environmental information concerning the legal backgrounds and analysis	Development of an Environmental Protection System applicable to the Arctic environment.	A draft of new federal law concerning protection of the Russian Arctic	Adoption and implementation of the Draft Law	Effective environmental regulation and management of Russian Arctic environmental problems
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Demonstration projects

Inventory of hot spots and Russian Arctic environmental problems	Identification, development and implementation of 15 demonstration projects	15 demonstration projects successfully executed, with detailed reports for each site/project.	Implementation of 15 demonstration projects Development of the pre-feasibility investment studies of 5 hot spots	Projects represent results of the work of Russian scientists, experts and companies. Projects represent a good base for the technical solution of environmental problems of Russian Arctic
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A.2 Relevance

2. The primary goal of the SAP-Arctic was to create the necessary conditions for taking action to prevent, reduce, and eliminate the negative consequences of human activities on the environment in the Russian Arctic arising from activities on land and the continental shelf, down to levels that will ensure sustainable development while at the same time taking into account the interests of the human population in the Arctic, including the indigenous people of the North.
3. The SAP-Arctic component involved the preparation and adoption of an official SAP based on GEF International Waters best practice guidelines, with the objective of providing a systematic plan and program to address major sources of land based and coastal area pollution affecting the Russian Arctic within the framework of Russia's overall development plans for the Arctic region, the activities that will be involved in the implementation of such development, and the country's global environmental commitments.

4. The detailed and comprehensive diagnostic analysis of the current situation and forecasting of the potential environmental changes in the Russian Arctic were developed and used to identify the following priority environmental issues in the region:
5. **Environmental pollution** (transboundary transport of pollutants by water and air, and oil, chemical, and radiation contamination including special attention to persistent organic pollutants) and the deterioration of the quality of surface and ground water in the coastal areas of the Russian Arctic;
 - Land degradation and irresponsible use of land;
 - Changes in biodiversity and depletion of biological resources;
 - Deterioration of living conditions and environment of the indigenous population of the Russian Arctic, and disruptions of traditional use of natural resources;
 - Negative consequences and threats from on-going global climate changes.
6. The long-term goal would be met by implementing a number of objectives, which are grouped into three main components:
 - Prevention and abatement of pollution of the coastal and marine environments in the Russian Arctic, including the transboundary transport of pollutants with aquatic and atmospheric flows oil, chemical, and radiation contamination;
 - Conservation and improvement of the quality of the environment, living conditions of the few indigenous peoples and conditions for traditional nature use by native small nations of the North;
 - Prevention and mitigation of the negative consequences of natural disasters and technological emergencies, as well as global climate change.
7. A key objective of the pre-investments studies component was to update, review and complete the view of the existing pollution hot spots in the Russian Arctic. Compared to other world regions and the highly populated areas of the Russian Federation, the Arctic remains relatively clean. However, intensive economic activity in the Russian Arctic has created the environmental “hot spots” - locations where environmental degradation has reached threatening levels and where levels of pollution are considerably higher than the maximum allowable. In the “hot spot” areas, the natural ecosystems are disturbed and often destroyed, resulting in substantial damage to the health of the local population and traditional lifestyles of the Arctic indigenous communities. Note that the destruction of fragile Arctic ecosystems may be irreversible. A list of 100 hot spots has been prepared and a prioritized short list of hot spots (30 hot spots) for the potential pre-investment studies (PINs) has been prepared and included in SAP-Arctic. PINs should result in an optimal set of proposals for investment in the Russian Arctic, where the investment for implementation will be most effective in the economic, ecological, social and political sense, and support business decision-making and financing.
8. The development and implementation of an **Environmental Protection System (EPS)** applicable to the Arctic environment represent a legal base for the sustainable development of the entire territory and its protection, embodying legislative, administrative, institutional and technical capacity improvements consistent with the SAP.
9. It is necessary to highlight, that the key aspect of the project success is connected with the relevant national legislative, regulatory and institutional and technical background in the Russian Federation (The final proposal on the draft federal law “On Special Regimes in the Natural Resources Management and Environmental Protection in the Russian Arctic”), especially concerning the protection of the Arctic marine environment in connection with the environmental strategy for the rest of the Russian Federation and the respect of all relevant

international conventions and agreements (marine protection, biodiversity, Stockholm Convention).

10. The pilot/demonstration component aimed at the implementation of on-the-ground pollution reduction innovative investment modalities for addressing trans-boundary problems of the highest priority in the Russian Arctic, and conducting three on-the-ground demonstration and pilot projects dealing with (1) marine environmental clean-up, utilizing developed in the country technology for marine water remediation using marine algae, (2) the environmental remediation of decommissioned military bases and their transfer to civilian control, and (3) the demonstration of new legislative and economic mechanisms balancing the interests of extracting companies and indigenous people in resolving economic and environmental problems in a sustainable way.
11. Effective environmental regulations in the RF have to connect closely with existing international conventions as well as national legislation. The Arctic territory is a unique part of the Russian Federation, but its protection and development is connected with other parts of the country and the globe via a long-range transport of pollutants by air, water and waste. Execution of the National Arctic Policy of the Russian Federation until 2020 and beyond requires improvements to the national legislation, including environmental legislation with considerations to national interests and to the specific nature of the region. To this end, the execution of the National Policy requires special regimes for the use of natural resources and the protection of the environment in the Russian Arctic, including monitoring the levels of pollution. The laws protecting the Arctic region must be closely connected with other acts concerning chemicals and their management, waste management, air, water, soil, nature and human protection.
12. Evaluation of the project relevance is **highly satisfactory** due to the very useful outputs forming the legal, institutional, scientific and practical base for the effective cleaning and protection of the Russian Arctic territory.

A. 3 Effectiveness

13. The SAP-Arctic was developed over the project period by a Task Team comprising of representatives from the best Russian academic, research and development institutions with high levels of knowledge about Arctic issues. SAP-Arctic was prepared based on a comprehensive diagnostic analysis, identification of priority environmental problems, and causal chain analyses.
14. The SAP-Arctic was approved by the Third and Fourth Meetings of the Interagency Working Group (IAWG) in Moscow and by the Third Meeting of the Project Steering Committee (SC). All final remarks and suggestions received from federal and regional authorities as well as from NGOs and businesses were thoroughly considered by the PO and SAP Task Team, and the SAP document was reworked and reformatted taking into account all the above remarks and suggestions. The SAP document was reworked in accordance with Russian standards applicable for such strategic documents. The final SAP document was submitted to the Russian Government and approved by the Maritime Board at the Government of the Russian Federation, the highest-level body of the government in charge of coordinated efforts of federal enforcement authorities in the field of maritime activities, investigation, and exploration of the World Ocean, the Arctic and Antarctic. The Maritime Board at the Government of the Russian Federation recommended the SAP-Arctic for further promotion to the relevant governmental bodies. Provisions of draft SAP were taken into account in "The World Ocean" for 2008-2012, and in other documents related to the Russian Arctic.

15. The following IEP were prepared and suggested for potential investors for implementation (the implementation was under negotiations during the period of the Terminal evaluation and therefore the results of these negotiations are unknown);
16. In the western Arctic: 1. Improved wastewater management in the Murmansk region; 2. Improved wastewater management in Severomorsk; 3. Improvement of solid domestic waste management; 4. Improvement of oil waste management system; 5. Automatic air quality monitoring system.
17. In the central Arctic: 1. Land remediation from oil products in the water protection zone of the Northern Dvina River of the White Sea basin near the settlement Krasnoe of Primorsky district of Arkhangelsk Region; 2. Construction of new sewage treatment facilities in Lesnaya Rechka dwelling district of Arkhangelsk; 3. Solid domestic waste disposal in Vorkuta, Komi Republic; 4. Modernization of sewage water treatment system in Vorkuta, Komi Republic, and: 5. Modernisation of Waste Water Treatment Facilities in Settlement Kachgort and Bondarka, Nenets Autonomus Okrug.
18. In the eastern Arctic: 1. Closure of the Kular Gold Tailings Based on Sound Environmental and Health & Safety Principles; 2. Mothballing of the Deputatsky Tin Ore Mining and Processing Plant Based on Sound Environmental and Health & Safety Principles; 3. Restoration of Commercially Important Fish Species in the Subarctic and Arctic River Basins in Yakutia; 4. Waste and Contamination Inventory and Clean Up of the Wrangel Island Reserve; 5. Search and Disposal of the RITEG installation Located at Rogers Bay, the Wrangel Island, and 6. Programme of Survey of Current and Historical Land-Based Contamination Sources of the Laptev Sea, East Siberian Sea and Chukchi Sea.
19. Full texts of all IEP documents are available and can be downloaded from the project website: http://npa-arctic.ru/html/pins_ind.html.
20. The project realization and potential financial support from governmental level or private sector was under negotiation during the TE mission.
21. **Demonstration projects (DEMOS) component**. Fifteen (15) demonstration and pilot projects were implemented under this component with the three projects mentioned in the Project document, and twelve additional projects developed and approved by the Project Steering Committee.
22. A complete database of the hot-spots identified and prioritized under the NPA Arctic Project is available on the project website: http://npa-arctic.ru/rus/hs/hs_list_ru.html (in Russian only). The new list of hot spots in the Russian Arctic was submitted to PAME (Arctic Council Working Group on the protection of the Arctic Marine Environment) and was included in the Arctic Council Regional Programme of Action for the Protection of the Arctic Marine Environment from Land-based Activities which was approved by the Arctic Council Ministerial Session (Tromsø Declaration of 29 April 2009).
23. A good strategic base for the solution of the Russian Arctic problems is the new federal law "On Special Regimes in the Natural Resources Management and Environmental Protection in the Russian Arctic". Another important aspect of project achievement includes actually preparation of the National Implementation Plan for the implementation of the Stockholm Convention on persistent organic pollutants in the RF.

24. In addition to the three demonstration projects stipulated in the Project Document, 12 demonstration - and pilot projects were developed, approved by the Steering Committee and implemented. Results of these projects will serve as a basis for a wider application of approaches and methods for the restoration and prevention of damage to the environment within Russia and other states, as well as for the co-management of the environment by authorities, resource developing companies and indigenous peoples and for the improvement of the indigenous population health protection system. For the first time in Russia a method of search, revealing and extraction of the lost radioisotope thermo-electric generator in permafrost conditions was successfully tested.
25. Evaluation of the project effectiveness is **highly satisfactory**, planned results were obtained and all project goals were achieved. These were of good quality and achieved on time.

A.4 Efficiency

26. Cost effectiveness was an important consideration in the design of the planned project targets. All project goals were realized in a cost effective manner, project achieved much more ambitious results than was initially planned for in its first phase.
27. In agreement with the MTR and project conclusions it is possible to say that project was very efficient and cost effective and all participants contributed effectively to the project results. It is necessary also to emphasize the importance of the Russian Prime Minister's pledge to earmark 740 million RUB for clean-ups on the Franz Josef Land Archipelago in 2011 and 2012.
28. With regards to timeliness, the envisaged duration of Phase I was initially two years (24 months) from July 2005 – June 2007. However, due to delayed payment of funds, uncertainties with donor funds and removal of Phase II from GEF portfolio, the project was several times prolonged by the Steering Committee in order to have clear outcomes at the end of the Phase I.
29. Evaluation of the project efficiency is **highly satisfactory** due to good project management, which led to the additional positive effects. All project goals were realized in a cost effective way.

A.5 Review of outcomes to impacts

30. The SAP-Arctic implementation was planned in three stages namely stage I: 2009-2012, stage II - 2013–2015 and stage III: 2016-2020. Clear targets and performance indicators were set for each stage of the SAP-Arctic implementation. One of the most important factors to ensure the financial sustainability of SAP-Arctic implementation is government support by using funds from the budget system of the Russian Federation including the federal budget, regional budgets and budgets of local (self) governments. For example, the clean-up efforts have been strengthened with the Russian Government's 740 million RUB (US\$ 25 million) earmarked for clean-ups on the Franz Josef Land Archipelago in 2011 and 2012 <<http://barentsobserver.com/enviro-cleanup-at-franz-josefs-land-started.4847811-16149.html>>.
31. Both, the Russian and English versions of the SAP-Arctic were uploaded on the Project website (<http://npa-arctic.ru/html/sap.html>) and were distributed among key national and international stakeholders in the circumpolar Arctic. In the framework of this component, diagnostic analysis of environmental problems of the Russian Arctic (DA) was prepared, and full text uploaded on the project website in Russian only. An Extended Resume of the DA is available in Russian and English and will be released in the form of e-book on CDs.

32. The project has contributed to the development of a new revision of the Regional Programme of Action for the Protection of the Arctic Marine Environment from Land-based Activities (RPA) and the Arctic Council Plan of Action to Eliminate Pollution of the Arctic (ACAP). Thus, the project contributed to the implementation of the two principal international agreements, the Arctic Environmental Protection Strategy (AEPS) and the UNEP Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (UNEP/GPA) as implemented in the Arctic Region through the RPA.
33. PINS and IEPs have served as a consolidated documents containing sufficient physical definition, technical and implementation risk evaluation, environmental and social assessments, financial and economic analysis, and business planning information that would allow a public or private sector developer or proponent of an investment project to make the necessary business or public policy decision to proceed with such an investment, and to present it for financing. The investment projects considered for PINS preparation are characteristically capital investments that will reduce or eliminate sources of land-based or coastal area pollution, either from past, present or potential development activities.
34. The PINS for the priority hot spots were completed in Western, Central and Eastern parts of the Russian Arctic, emphasizing the importance of addressing pollution of freshwater and marine environments. Several dozen investment project proposals have been reviewed with local authorities before a set of 16 investment ecological projects (IEP) for the three geographical sectors of the Russian Arctic on land - western including the Murmansk Region and Franz-Joseph Land, Central including the Arkhangelsk Region, and Eastern as well as marine "hot spots" were selected.
35. The analysis has showed that the applicable environmental legislation of the Russian Federation fails to take into account the natural, climatic, and other geographic conditions of the Russian Arctic that are unique to this region of Russia. It also ignores the massive environmental damage caused by the development of this region, and the associated potential environmental threats. Currently, natural resources management and environmental protection in the Russian Arctic is regulated by the provision of about 40 federal acts.
36. Adopting and implementing the Draft Law can demonstrate to the international community that Russia in serious and really intends to establish and ensure the required conditions for the sustainable development of the Russian Arctic, and the conservation of vulnerable Arctic ecosystems.
37. The adoption and implementation of the Draft Law will reduce negative impacts on the Arctic environment and promote restoration of the disturbed areas, including through clean-up of past environmental damage. Adopting the Draft Law will require amendments to some existing federal laws while for the Draft Law to be implemented it will be necessary to adopt a number of new regulations.
38. Acceptance of these documents, if accompanied with the changes in other relevant laws, can lead to a relevant impact on the optimization of economic life in the Russian Arctic and the mobilization of organizational and financial resources for keeping an adequate level of environmental remediation in the Arctic region.
39. The Concept Paper, which was presented to the Russian government, comprises blocks of environmental problems and critical environmental gaps, which approximate the findings of this TER. The following blocks of problems were mentioned:

- Development of environmental monitoring;
- Prevention of pollution of the Arctic Marine Environment;
- Prevention of river pollution;
- Prevention of oil and oil product environmental pollution;
- Safeguarding environmental safety of the Northern Sea Route;
- Arctic flora and fauna protection and biological diversity conservation;
- Norms and regulations determining demands for the elimination of past environmental degradation;
- Adaption to negative climate changes;
- The use of other Arctic countries' experience for the improvement of Russian environmental legislation for Arctic areas;
- Participation of the Russian Federation in relevant international treaties and the introduction of desirable changes in these treaties;
- Strengthening environmental protection in the areas of traditional placement of indigenous peoples of the North.

40. The report to the Russian Government also identified the most critical gaps in the Environmental Protection System of Russia that cause difficulties in achieving environmental safety in the Arctic zone of the Russian Federation. These are as follows;

- **Absence of integral environmental monitoring system** in the Russian Arctic able to present an objective and comprehensive information on impacts of economic activities on the environment necessary for decision-making at different management levels.
- **Lack of environmental norms for the Arctic Zone** in the Russian Federation for reasonable identification of possible maximal anthropogenic impacts and implementation of environmental control mechanisms.
- **Absence of a modern legal basis** facilitating adequate investments in the development and implementation of environmentally friendly technologies, including technologies for the liquidation of past environmental damage.
- **Need for modernization** of the methodological basis for regulating environmental security including environmental risk assessment, assessment of environmental damage, and implementation of the state control functions.
- **Need for methodology of ecosystem** approach to protection and use of marine and land-based biological resources.

41. Thus, the benchmark for this Component "Report on gap analysis of the environmental legislation applicable to the Russian Arctic with recommendations on improvements prepared and implemented" is fulfilled. It means that a lot of general and specific problems of environmental pollution are well known at governmental, regional and municipal levels, and also for academy and industry. This is a good basis for their effective solving, but it could not remain on the formal description of problem: a solution needs to be quicker and more comprehensive. Above mentioned environmental problems are of course also valid for other parts of the Russian Federation, it means that the solution of Arctic environmental problems is closely connected with the solution of environmental problems in other parts of the RF due to the connection of these regions by the long-range transport via air and water, but also waste products.

42. All three basic demonstration projects have been successfully implemented.

43. In addition to the above projects, an International Training Workshop on Environmentally Safe Management of Hazardous Wastes, including Occupational Health and Safety Issues was held by the Project Office in coordination with the US Environmental Protection Agency (USEPA) and with the assistance of MNRE of the Russia and ACAP Secretariat. Details of all the above demo activities in Russian and English including final reports, photo and video documentation can be found on the Project website: <http://npa-arctic.ru/html/demos.html>. Based on the final reports prepared on each demo and pilot projects, a summary was prepared for further publishing in Russian and English and uploading on the project website.
44. The full list of DEMOS pilot/demonstration projects implemented in the framework of the NPA-Arctic project is as follows;
- Environmental remediation of Decommissioned Military Bases on Franz-Josef Land Archipelago. Phase I;
 - Environmental remediation of Decommissioned Military Bases on Franz-Josef Land Archipelago. Phase II;
 - Remediation of the Environment through the use of Brown Algae;
 - Environmental co-management of extracting companies, authorities and indigenous peoples of the North;
 - Cleaning of hazardous substances from the bottom sediments of the Kola Fjord. Phase 1. Monitoring of hazardous substances in the bottom sediments of the Kola Fjord;
 - Designing of bioremediation technology for oil sludge and oil contaminated soil in Arctic conditions;
 - Removing of sunken wood and ship frames from the sea bottom in Tiksi Bay, Phase I;
 - Removing of sunken wood and ship frames from the sea bottom in Tiksi Bay, Phase II;
 - Remediation of Environment in Area of Decommissioned Military Basis near Pokrovskoe Settlement, Arkhangelsk Region;
 - Development of system for eliminating of out-dated and banned pesticides in the Russian Federation with innovative technique application;
 - Localisation and removal from a thermokarst crater of two radioisotope thermoelectric generators (RITEG) of GONG type at the Kondratiev navigation beacon site in Ust-Yanski Ulus of Republic of Sakha (Yakutia);
 - Design of production engineered and logistic solutions with the purpose of introduction of a system for the collection and elimination (utilisation) of PCB wastes and PCB containing equipment in the Russian Arctic region;
 - Inventory of pollution sources at the area of decommissioned military sites on New Siberian Islands;
 - Development of recommendations aimed at improvement of indigenous population health protection system in the Russian Arctic;
 - Review and introduction of system of reaction to emergency of oil spills and oil products in the Arctic conditions for the protection of especially sensitive to petroleum coastal areas (with examples from Barents Sea and White Sea).
45. Finally several results deserve to be highlighted:

- The UNEP/GEF National Programme of action “Arctic” began developing an integrated approach to governance in the Arctic through institutional, policy and legal support (many developed and some implemented so far);
- Developing and adoption of the Russian Arctic SAP at the Government level (Maritime Boards) as a blueprint for environmental protection in the Russian Arctic. The Programme created Russian regional and federal forums that reviewed and approved projects by NPA Arctic;
- Prioritisation – based on clear and agreed criteria – on the most pressing environmental concerns in the Russian Federation Arctic Zone (RFAZ) for the future support and optimal step-by-step solution;
- Involvement of international and national partners in design and implementation of demonstration projects at pilot sites due to increasing capacity building for optimal project realization and use in the other part of the Russian Arctic with the long-term target of the sustainability of Arctic territory care;
- Review and proposed amendments to Russian environmental legislation were initiated – key points of any effective environmental care;
- 15 model demonstration projects were prepared and implemented and they successfully demonstrated the potential solutions to the problems regarding the cleaning of the Arctic by using national scientific and technological capacities.
- Pre-feasibility investment studies for remediation of 5 hot spots were developed;
- Environmental awareness raising and building trust among Russian Regional Administrations is an important backbone for the sustainability of the protection of Arctic environment. Awareness raising can form a part of long term extensive information campaigns, which can lead to changes in environmental thinking and behaviour among decision makers, industry and all citizens.

46. Attainment of objectives and planned results is evaluated as **highly satisfactory** due to very complex, ambitious and progressive project proposal but which all outcomes were met.

Table 4: Results and ratings of Review of Outcome to Impact (ROtI)

Results rating of project entitled:		Russian Federation – Support to the National Programme of Action for the Protection of the Arctic Marine Environment					
		D – A)		Rating (D – A)		Rating (+)	Overall
Outputs	Outcomes	2.	Intermediary	3.	Impact (GEBs)	4.	5.

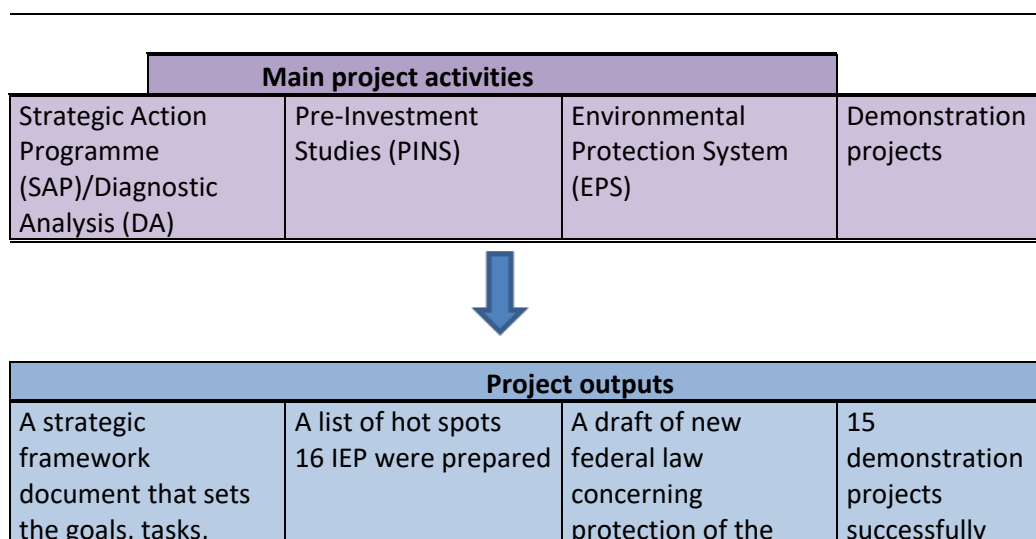
1. Strategic Action programme; A strategic framework document that sets the goals, tasks, principal activities and targets in the area of protecting Arctic environment for the period up to 2020.	Increased understanding of the Russian Arctic environmental problems; strategic framework and actions are negotiated among concerned partners and stakeholders; SAP document approved by the highest level and guides marine actions by the RF Governments at all levels.	A	Definition of the strategic goals; Sustainable process of the Arctic environment protection.	B	Improvement of the legal, political and technological conditions for the sustainable protection and care of the Arctic environment.		B
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2. Pre-investment Studies; A list of hot spots; 16 IEP were prepared.	Comprehensive baseline studies and recommendations for the solution of hot spots and bases for environmental investment initiatives; increased private sector involvement in Russian Arctic clean-up efforts.		The first step of real environmental inventory.				
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3. Environmental protection System; A draft of new federal law concerning protection of the Russian Arctic.	Adoption and implementation of the Draft Law.		Legal base for the solution of the Arctic environmental problems; Enhanced policy and improved the space for the investment				
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4. Demonstration projects; 15 demonstration projects successfully executed, with detailed reports for each site/project.	1. Implementation of the 15 demonstration projects sustained; 2. Development of the pre-feasibility investment studies of 5 hot spots.		Technological base for the solution of the Arctic pollution based on the results of the Russian institutions and experts.				
Overall rating	Rating justification: The A rating reflects that project outcomes were delivered, they represent a very good base for the continuing process, responsibilities after project funding are defined in the project strategic outcomes.	A	Rating justification: The rating B reflects that steps to move towards intermediate states have started and have produced very useful and promising results, but the future sustainability is not sufficiently ensured.	B	Rating justification: The rating AB corresponds highly likely results		AB

Theory of Change of the Russian Arctic project



principal activities and targets in the area of protecting Arctic environment for the period up to 2020		Russian Arctic	executed, with detailed reports for each site/project
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Main outcomes			
Increased understanding of the Russian Arctic environmental problems; strategic framework and actions are negotiated among concerned partners and stakeholders; SAP document approved by the highest level and guides marine actions by the RF Governments at all levels	Comprehensive baseline studies and recommendations for the solution of hot spots and bases for environmental investment initiatives; increased private sector involvement in Russian Arctic clean-up efforts	Adoption and implementation of the Draft Law	Implementation of the 15 demonstration projects SUSTAINED. Development of the pre-feasibility investment studies of 5 hot spots



Main risks for project realisation and implementation of project outputs and outcomes

Sustainability Lack of financing for environmental programmes Perfection of Russian environmental legislation Lack of interest from private business

Impacts
The contribution to the implementation of the AEPS and the UNEP/GPA as implemented in the Arctic Region through the new revision of the RPA The effective environmental regulation, technical solution and management of Russian Arctic environmental problems

B. Sustainability and catalytic role

B. 1 Sustainability

Socio-political sustainability

47. A key factor for the social and political sustainability of project results and their future use to protect the Arctic environment is the corresponding legal basis that forms the legislative environment in which the findings and results of the project can be used. Optimal and efficient use of the achieved results necessitates harmonization of environmental laws, and synchronization of activities and competences at the federal, provincial and local levels. However, the different competences among federal, regional and local authorities do not create a best legal and political environment for optimal processes and procedure to adopt the project results. The Arctic as such, belongs to the competence of the Federation Authorities, whereas sources of pollution lie in the jurisdiction of the Regional Governments and cities. The project achieved very significant results and contributed to the awareness raising concerning the protection of arctic environment, but the level of knowledge about the results outside of the concerned bodies is relatively low. The project results need to be used and reflected to the Russian National Implementation Plan for the implementation of the Stockholm Convention on persistent organic pollutants, which is now being prepared in the RF.
48. The evaluated project and the new proposal of the on-going project, which has been submitted to the GEF, started a discussion at the highest level of the Russian Federation concerning the state of the Arctic. It led to setting out the priorities and preparing political and financial decisions for solving the most pressing problems. Moreover, funds were released to address some of the hot spots. However, a question remains whether it will be enough to improve the waste management systems at national, regional and municipal levels, since their absence creates additional pollution sources to the Arctic environment.
49. The first necessary step to further solve the environmental pollution problems in the Arctic is to conduct a detailed inventory of the pollution sources and sinks, including legal and illegal dumping sites for all types of waste, emissions to air and water, and identification of contaminated sites. Inventory data is the starting point for any decision making process, and the absence of it is a serious obstacle to the development of conceptual and strategic decisions and financial considerations concerning the environment and areal development. The other notable obstacle to solving these problems, is the question of unresolved and outstanding competences between laws, ministries and different levels of management.
50. The project received full support and technical backstopping from the Executing Agency (Russian Ministry of Economic Development), which assures that project recommendations will be taken to the highest level possible and future interventions will be sustainable. Provisions of draft SAP are taken into account in the Federal Target Oriented Programme (FTOP) "The World Ocean" for 2008-2012 and in other documents related to the Russian Arctic, which are approved by the Russian Government. The SAP, a strategic framework document that sets the goals, tasks, principal activities and targets in the area of protecting the Arctic environment for the period up to 2020, was also recommended by the Government of Russia (GoR) for further promotion to the relevant governmental bodies.
51. Based on the project documents, the project was strongly supported by the Government of the Russian Federation at all levels, by stakeholders at both regional and national levels, by concerned NGOs and local communities, as well as by the private sector. The project served as a

catalyst for the strengthening and widening of collaboration between stakeholders at all levels. However, discussion with people during the evaluation mission recognized a relatively low awareness especially in the communities beyond the project team. Currently, the future of most Arctic projects is decided within ministries and government departments. To ensure future effective realization of project outputs, higher involvement of local and regional authorities and non-governmental organizations in the development of nature conservation programs and projects is absolutely necessary.

52. The potential for the socio-political sustainability of the project results was evaluated as **moderately likely** due to existing gaps in environmental legislation that will not allow for the realization of all the planned projects in full.

Financial sustainability

53. The main objectives and principal activities aimed at preventing, eliminating and reducing threats to the environment in the Russian Arctic were formulated in the SAP-Arctic. Highest risks for the SAP-Arctic realisation are lack of financing and existing shortfalls of environmental legislation. Companies involved in the extraction of Arctic resources should be as much as possible involved in the SAP-Arctic realisation in the case of approval of the Arctic Agenda 2020 Programme by the GEF Council. The present preparation of investments of the Russian Government to solve the problems concerning the Franz Joseph Land Islands and other parts of the Arctic territory as well as regional plans for a waste management strategy at regional and municipal levels are promising regarding the future of the Arctic environment.
54. The results of the demonstration projects, such as decontamination of oil spills, provide valuable contributions to solve the problems of arctic pollution, but the sustainability of the results is not currently financially secured. It requires an intensive involvement of the private sector, especially the oil and petrochemical industry, and negotiations for their participation through financial contributions to address the problems of pollution in the Arctic environment and the RF environment in general. Many of these problems are a result of previous bad environmental management practices.
55. Presently, the interest from the private business sector is low as long as the problems concerning the conservation of Arctic nature exists. There is, however, large potential for higher financial support in the future especially from the oil and petrochemical industries.
56. The potential for the financial sustainability of the project results was evaluated as **moderately likely** due to the decline in financial provisioning for environmental programmes aimed at cleaning the Arctic, inventory of sources of pollution, disposal sites, contaminated sites, all accumulated damage, and pollution monitoring as a result of the financial crisis (including drop in oil price).

Sustainability of institutional frameworks

57. Losing momentum to implement the several good initiatives identified and/or started under this programme can become a problem for follow up activities. Financial, economic and political situation and problems can also have very important consequences – for example, the unavailability of funds or losing focus if support from the Russian government and/or international community would decrease. The predominant approach to ensure future institutional sustainability needs to be focused on increasing national institutional and financial support to the sustainable management of the Russian environment. Prior to the recent

presidential elections a series of promising activities were undertaken, but the key question is whether the sustainability of these activities and continuous support for environmental issues will prevail.

58. Also follow-up of identified investments to eliminate pollution hot spots, lack of “drive” at national and regional governmental levels towards implementation and enforcement of proposed regulatory measures and/or reforms, represent other relevant risks.
59. Sustainability must be developed on the basis of corresponding legislation, consistency of legislation, and ensuring adequate control mechanisms. Transfer of the project conclusions to plans, conceptions and strategies of the federal, regional and municipal bodies, and the creation of implementation and control mechanisms, are all necessary conditions for sustainability. It has to be closely connected with the co-ordination and synchronisation of national legislation and harmonisation with international conventions.
60. Most important is the missing connection between laws concerning the Arctic and the rest of the country, as well as a cross connection among laws concerning chemical pollution, waste and waste management, air, water and soil pollution. The insufficient and ineffective Waste Act represents a strong environmental problem. For example, only 30% of the sewage from Murmansk is cleaned, the rest is dumped in the Kola Bay, and in the Barents Sea without any cleaning.
61. It will be also necessary to develop a new energy policy for Russian North and to implement and use alternative sources of power in the Arctic (e.g. wind power). This will assist in reducing the accumulation of the environmental damage (for example, as it is now work is on-going to remove oil barrels from the Arctic, but at the same time the fuel (petrol, kerosene) for North stations is still coming in oil barrels). Introduction of alternative power would reduce fuel demand in the North.
62. The potential for the institutional sustainability of the project results was evaluated as **moderately likely**.

Environmental sustainability

63. From a global environmental benefit point of view, the project is contributing through the detailed assessments of the current environmental problems of the Russian Arctic, and promoting and developing the capacity of local and national stakeholders.
64. With regards to the future flow of project benefits from the point of view of environmental sustainability, the most important aspect is the reduction or elimination of existing sources of contamination of the Arctic territory. This includes reducing the long range transport of pollutants via air and rivers from other parts of Russia (and from other parts of the World), and effective reduction of local legal and illegal dumping sites, and cleaning the former industrial and military facilities, and contaminated soils and sediments.
65. The project results can build a base for future environmental sustainability of the Arctic region. The new legislation and the demonstration projects are an essential base for the effective protection of the Arctic eliminating sources of contamination and reducing risks to the environment and human health. Arctic and the SAP and Diagnostic Analysis represent the political base defining the governmental strategy.

66. However, the efforts to protect the arctic environment are challenged by industrial activities, which have the potential to cause considerable levels of pollution. The damage continues to accumulate through imperfect system of housing and communal services, transboundary transfer of pollutants, etc. In general, absence of a technology that could fully liquidate the accumulated damage is a problem. Moreover, it should be kept in mind that the technologies developed for southern areas do not necessarily work in the Arctic conditions. More capacity, funds and time are needed to develop and extend the cleaning efforts.
67. The potential for the environmental sustainability of the project results was evaluated as **moderately likely** due to lack of detailed inventory of pollution sources, lack of waste and contaminated site management systems and lack of effective mechanisms to monitor the effectiveness of the project and other Arctic protection measures in general.

B. 2 Catalytic Role and Replication

Catalysed behavioural changes in terms of use and application by the relevant stakeholders:

68. The Project played an important catalytic role in the development of a national law on environmental protection in specific conditions of the Arctic zone of Russia, a number of regulations and procedures for environmental monitoring, risk assessment, analysis, preparation of investment studies and creation of private – public partnerships for preparation and implementation of investment projects directed to social and environmental remediation.
69. Within Environmental Protection System Improvements (EPS) component a few important draft documents have been prepared - Draft Report to the Government of the Russian Federation on improvement of Environmental Protection System in the Arctic Zone of the Russian Federation, Analytical materials to this Report, two concept versions of Draft Federal Law on special regimes on natural resources use and Environmental protection in the Arctic zone of the Russian Federation. A resume of the analytical materials was officially submitted to the Ministry of Natural Resources and Ecology of the Russian Federation. A final proposal on the draft federal law “On Special Regimes in the Natural Resources Management and Environmental Protection in the Russian Arctic” was submitted by the Ministry of Economic Development of the Russian Federation to the Council of Federation of the Russian Parliament and included in its Report on the Arctic to be submitted to leaders of the Russian Federation.

Provided incentives (social, economic, market based, competencies, etc.) to contribute to catalysing changes in stakeholder behaviour:

70. A considerable number of old military facilities, contaminated sites, and legal and illegal dumping sites are located in the Arctic region. Cleaning of the Arctic represents both, a big challenge and a great opportunity for businesses that are developing, producing and applying technologies to reduce and eliminate environmental contaminants, to dispose waste and to rehabilitate contaminated sites. The situation can be considered as an open market and especially the development of new techniques that are in line with the principles of BAT/BEP strategy is a very promising field of industry development.

Contributed to institutional changes:

71. The project results strongly supported the above-mentioned development of new actions concerning the Arctic as a legal base for the effective cleaning and future protection of the arctic environment. In addition, the project played an important catalytic role in leveraging additional

funds for demonstration and pilot projects. For example, the Ministry of Defence gave funds for FJL remediation project, the government of Arkhangelsk funded the remediation of a former military base, and the Murmansk administration allocated funds for cleaning of the Kola fjord.

Contributed to policy changes:

72. The project has a high catalytic potential for the development of legislation concerning Arctic area conservation. Based on the project outputs, the Government of the RF adopted new strategic documents (Arctic SAP, DA) and changed its approaches to solving the environmental problems. The change is visible compared to the time when the project was launched. Hopefully, the project will also catalyse more effective co-operation between institutions on the federal, regional and municipal levels.
73. Also the consequences of the international conventions to protect marine environment as well as other Arctic bilateral and multilateral agreements were assessed and concrete proposals were made to improve the environment protection system of RFAZ including learning from the experience of other Arctic states. However, generally, a long time still exists between the planning procedures to solve site-specific environmental problems and the actual realization of the plans. The process to reduce environmental pollution is slow and can be very risky. The main drawback of the environmental protection system in Russia is that it does not efficiently allow for the elimination of the negative impacts on nature from economic activities.

Contributed to sustained follow-on financing (catalytic financing) by the recipient country, from other Governments, the GEF or other donors:

74. In particular, Project results have been used for the preparation of the Regional Programme of Action for the Protection of the Arctic Marine Environment from Land-based Activities adopted by the Arctic Council in 2009.
75. The prepared prior investment decisions will help to attract additional funds to participate in solving nature conservation problems. When realizing the project, a sustainable network was built and good connections with stakeholders were established. These conditions might promote receiving additional funding. Also, a new follow-up GEF programmatic approach proposal for the Russian Arctic was prepared and approved. Furthermore, the Russian Government allocated funds to clean up the contaminated sites at Franz Josef Land, based on the project results.

Created opportunities for particular individuals or institutions ("champions") to catalyse change:

76. The technologies and approaches showcased by the demonstration projects are very useful for addressing the local and regional environmental problems of the Arctic, as well as solving similar problems in the whole of RF as well as internationally. The strategic plans and programs are good starting points but attention must be paid to their complementarity with existing legislation. The project is also a good starting point for building an inventory and monitoring system of environmental pollution and a starting point for the development and adoption of waste management system at local, regional and federal levels. The project would also be a good starting point for the on-going preparation of the National Implementation Plan of the Stockholm Convention on Persistent Organic Pollutants of the Russian Federation.
77. Most of the demonstration projects were aimed at developing technology to solve a wide array of nature conservation problems, for example, disposal of waste or remediation of contaminated sites. Valuable experience has been obtained from the demonstrations that can

be used and is, to some extent, already being used in practice, for example, the use of brown algae to clean up oil-contaminated water in the Kandalaksha bay of the White Sea.

Replication, in the context of GEF projects

78. The project results have a very strong replication potential through UNEP and GEF projects, but also through EU and national projects. The evaluated project provides a very good level of knowledge, expertise and experiences concerning a country where the effective solution of environmental problems has been politically unacceptable and unrealistic.
79. The catalytic role and replication of the project results was evaluated as **highly satisfactory** due to its very significant role in forming the legislation.

C. Process affecting attainment of project results

C. 1 Preparation and Readiness

80. A suitable basis for this project was the former UNEP GEF project “Persistent Toxic Substances (PTS), Food Security and Indigenous Peoples of the Russian North”, GF/4030-01-01” in which substantial amount of information concerning contamination of the environment and food resources of indigenous peoples was available. The project was not explicitly mentioned in the current project, but presumably the knowledge gained from the previous project was used during the preparatory phase.
81. Initially, the first phase of the project was anticipated to last two years (24 months; July 2005-June 2007) and to concentrate exclusively on preparatory work and planning of activities for the second, more substantive phase of the Project. However, Phase II of the project was removed from the GEF portfolio, and thus the initial scope of work planned for Phase I was considerably extended. Moreover, due to delayed payment of funds and uncertainties with donor funds, Phase I was extended several times by the Steering Committee in order to have clear outcomes at the end of the project. As a result, to date the Project has achieved much more ambitious results than initially planned for its first phase.
82. The project objectives, scope and design were quite well defined, realistic and reasonable within the time and budget available, as well as very useful and important. In some cases, such as the level and quality of the SAP, pre-investment studies, and some demo-projects, the delivered outputs exceeded the planned.
83. UNEP was the implementing agency of the project and the Ministry of Economic Development and Trade of the Russian Federation (Minekonomrazvitiya of Russia) acted as the Executing Agency. To ensure efficient implementation of the project, Executing Agency, in coordination with Implementing Agency, entrusted an existing independent non-profit organization to act as the Project Office in Moscow, comprising of the Project Manager, Deputy Project Manager, Financial Management Officer and Secretary.
84. The partnership arrangements were properly identified during the preparatory stage with clearly defined roles and responsibilities (several top-level meetings with participation of Executing Director of UNEP) were held prior to implementation of the project. ACOPS and NEFCO were designated as **Partner Agencies** with a mandate to receive funds from donors.

Partner Agencies were also mandated to establish Project Trust Funds to receive funds from bilateral and multilateral donors.

85. The project preparation and readiness is evaluated as **moderately satisfactory** due to lack of readiness during the first part of the project causing the project to be delayed.

C.2 Implementation Approach and Adaptive Management

86. During the project lifetime some activities and the project duration were changed several times by joint decisions of the Project Steering Committee. The duration of the Project Phase I was extended and simultaneously, the project scope was also significantly expanded. It resulted in attainment of both Phases - I and II during project's implementation.
87. An effective management and coordination framework was established. The Project Steering Committee as the project supreme governing body discussed and approved annual work plans and budgets for the project, oversaw their implementation and adopted corrective actions relating to further implementation of the project. In order to maintain the integrity of the project, especially under the condition that there were Executing Agency and two Partner Agencies, handling funds, the Project Steering Committee functioned as a forum to discuss and agree on the integrated work plan and review progress of the implementation of activities. The Committee had three categories of participation: full member, permanent participant and observer. Members of the Committee included the Executing Agency, Implementing Agency, USA, Canada, Italy, Iceland, GPA Secretariat, IOC and UNESCO. Partner Agencies and RAIPON were the permanent participants. NEFCO enjoyed a full member status when represented as a donor. EBRD and NDEP were invited as observers.
88. Also the Project Supervisory Council was established. It included representatives of the Executing Agency, Implementing Agency and Partner Agencies. The donors were represented at the Supervisory Council by their chosen Partner Agencies. In between the Steering Committee meetings the Supervisory Council acted as a working body in charge of supervising the project implementation in a coordinated manner according to the Project Work Plan approved by the Steering Committee. The Council met as a rule once every three months or as often as required, usually via teleconference. Its progress was reported to the Steering Committee in a timely manner. All SC decisions regarding project timetable and changes in the project scope were documented in the project SC meeting reports and are available on the project website.
89. The project realisation followed the project implementation plan and the adopted administrative arrangements were recommended by the Project Steering Committee to be replicated in the next phase of the programme. Based on the SC meeting reports, the SC function can be evaluated as effective in terms of project strategic management. Project management, from the top level to the national management was able to quickly and effectively react to problems and changing conditions. Furthermore, the project management accepted and followed the recommendations and findings of the MTR and finished the project successfully.
90. The Project Office prepared and circulated information on the main achievements of the project for the reporting period from the beginning of the project in July 2005 to the 5th Meeting of the Project Steering Committee held in March 2011. The Project Steering Committee approved the results of the Russian NPA-Arctic at its final meeting on March 24th -25th 2011. It was also emphasized that the NPA-Arctic project had established a very important and sustainable basis for the next step through the development of the Arctic Agenda 2020 Program. In addition,

successful implementation of the project was mentioned at the consultative meeting held in Moscow on March 23, 2011 with the participation of representatives from the GEF Secretariat, UNEP and other GEF Agencies. Evaluation of the implementation approach and adaptive management is moderately likely due to lack of readiness during the first part of the project causing the project to be delayed.

91. The project implementation approach is evaluated as **satisfactory** regardless of the lack of readiness during the first part of the project causing the project to be delayed.

C. 3 Stakeholder Participation and Public Awareness

92. The project objectives and proposed activities were strongly focused on the mobilization of national resources and gaining commitment from municipalities, local NGOs as well as businesses. The project managed to build a sustainable network to reduce environmental damage.
93. The main project partners and beneficiaries were mainly representatives of concerned federal and regional authorities, Russian Academy of Sciences, organisations of native inhabitants of the North, private businesses, NGOs and civil society. The project documents and reports state that the project received broad-based public support, including the support of indigenous communities. Closer cooperation with existing and planned programmes and projects in the Arctic region has been also established.
94. All interested parties were actively engaged in the work even at the planning stage. Special importance was given to the efficient working cooperation with the Arctic regions of Russian Federation. Close cooperation was also important during the negotiations with companies and organizations involved in the development of PINS, as well as implementation of the pilot projects. These companies and organizations have been spreading information about their achievements on PINS and the demonstration projects in the local media.
95. At the Federal level the Project enjoyed a full support of the Executing Agency, the Russian Ministry of Economic Development that ensured the acknowledgement of the project recommendations at a high level supporting sustainability of the project results. Compared to the situation in 2005 the political interest at federal and regional levels has increased.
96. The degree and effectiveness of collaboration and interaction between the various project partners and institutions during the implementation of the project and the degree and effectiveness of the various public awareness activities were generally good. The results achieved by the project are directly connected with continual support at federal and regional levels providing adequate self-sufficiency of the project with wide public support including indigenous people as well as close cooperation with the existing programs and projects in the Arctic region.
97. The strong stakeholder involvement led to some important results. For example, the sustainable political commitment at federal and regional levels ensured an adequate level of project ownership. Broad public involvement including organizations of indigenous people of the North was another positive result. Formal and informal communication mechanisms for exchange of information were developed and established. In addition, institutional procedures and structures have been established for long-term dialogue and for the continuous participation of multiple stakeholders. Creation and updating of the Project website <http://npa-arctic.ru> also helped to gain publicity. The website can and should become a forum for Arctic environmental

issues. It is desirable to maintain a project web site that would hold all similar information of all the projects, documents, minutes and the like. Now the web site is, however, managed through a personal initiative of Sergey Tambiev but it would be good for the web site to be sustainable and developed.

98. It seems that some institutions that were involved in the project, for example, representatives of federal bodies, regional and local authorities, as well as some civil society institutions and the scientific community outside the project implementation have only gained limited levels of knowledge and understanding concerning the project results. It would, thus, be very useful to continue the process of public information.
99. Project stakeholder involvement is evaluated as **satisfactory** due to significant involvement of stakeholders at different levels, but better publicity of project results and of their relevance is needed.

C. 4 Country Ownership and Drivenness

100. The project was developed based on national sectoral and development priorities and plans, and was supported by the relevant country representatives from the government and civil society. The project was implemented within the context of the Federal Target- Oriented Programme (FTOP) 'World Ocean', approved by the Government of the Russian Federation, with the NPA-Arctic incorporated into the "World Ocean" FTOP. The support and political commitment at federal and regional levels ensured a good country ownership of the project. Moreover, the strong public support, including support from indigenous communities was important for the project realisation. The Government representatives played a very active role especially in the field of co-ordination of project activities, guidance and supervision and implementation of MTR recommendations. The project results have been reflected in the legal and political frameworks and the Government of the RF has accepted and adopted the main project outputs especially related to the changes of legislation and adoption of the strategic documents.
101. Moreover, provisions of the SAP document were used in RF in the preparation of proposals for the PSI of the Arctic Council. They will be further passed on to the Ministry of Economic Development for inclusion into the Strategy of the Russian Federation Arctic Zone Development and Safeguarding the National Security to 2020, which is being elaborated in governmental institutions.
102. Project country ownerships and drivenness is evaluated as **satisfactory**.

C. 5 Financial Planning and Management

103. The uncertainty with donor fund transfer for project activities was specially mentioned in the MTR and in general confirmed during the Terminal Evaluation. At the earlier stage of project implementation, the uncertainty mainly concerned the problems of receiving donor funds that were being channelled via the Partner Agency – ACOPS. Apparently ACOPS attempted to initiate parallel activities and tried to channel funds to the account of a consulting company TETHYS Consultants, serving as ACOPS representative. When ACOPS withdrew, the project co-financing was secured and payments were received on time. However the project did not receive any formal information from ACOPS on how Italian funds (0.5 M\$) and most part of Canadian funds (0.8 M\$) were used. Some information regarding ACOPS activities can be found

in the Project Reports – 2nd Steering Committee Meeting Report (Agenda item 12, p. 9), 3rd Supervisory Council Meeting Report (Agenda item 5, p. 5) and 4th Supervisory Council Meeting Report (Agenda item 4, p. 5), but the final solution has not been available.

104. However, the project prepared, in a timely manner, all necessary financial planning and reporting documents that were fully up to standards and met the quality requirements of the Executing Agency and UNEP/DGEF. The financial documents were also thoroughly evaluated at the Steering Committee meetings. Moreover, a certified auditing company has duly audited all financial transactions. A breakdown of co-financing is given in Annex 3 to this report.
105. The project was executed within the framework of an Agency Agreement between the Ministry of Economic Development of the Russian Federation (Trustee) and the Legal Entity "Executive Directorate of the Russian National Pollution Abatement Facility". However, these institutions did not provide a Power of Attorney to the project management for procurement of goods and services, or for awarding of contracts with Russian and international consultants. Moreover, it raised additional requirements not specified in the Agreement. This sometimes resulted in delays in payments of consultant, among others.
106. Moreover, administrative problems with the Commission for Humanitarian and Technical Assistance under the Government of the Russian Federation also contributed to delays in sub-project funding. The administrative problems, mainly related to sharing of documents, were further reflected as delays in project implementation.
107. The project had the necessary resources for fulfilling all planned activities by the end of October 2010, for undertaking a few additional pre-investment studies and for the preparation of the project concept paper for the second phase of the project to be presented to the GEF. The financial reports were audited, no problems were found as per available project documents.
108. Financial planning and management is evaluated as **satisfactory**.

C. 6 UNEP Supervision and Backstopping

109. The project documents and discussions with project staff indicate that the project has received very good support from UNEP staff in the Moscow Office. UNEP provided quality support concerning the co-ordination of activities, and provided advice on the project modifications and restructures when needed. Supervision of the project was very effective, constructive and helpful, especially regarding the financial and administrative support and supervision of the quality of project documents as well as implementation of activities. Moreover, the project staff evaluated cooperation with UNEP as effective and constructive. Project Advisor to the EA provided regular revision of project financial and operational documents.
110. Project had good support from UNEP staff in Bangkok, Nairobi and Moscow offices. UNEP staff participated in the PCS meetings providing technical and financial support, project monitoring and evaluation report preparation, as well as assist in cooperation with relevant ministries and departments of the Russian Federation. In addition, Moscow UNEP office employees participated in meetings with regional authorities in the Russian Arctic giving technical and consulting support to the project management.
111. UNEP supervision and Backstopping is evaluated as **highly satisfactory**.

C. 7 Monitoring and Evaluation

Monitoring and Evaluation Design

112. The project M&E plan in the Project Document (Section 5 of the Project Document) followed UNEP and GEF requirements at the time of design. Project main outputs, risks and management and reporting systems were clearly defined and an adequate budget for M&E activities was made. The baseline analysis was adequate and formal. Results from previous activities and projects, including UNEP projects, were not mentioned, but it was adequate to be used as a support in the development of project outputs. The M&E plan did not include an analysis of possible sources of environmental problems in the territory.

113. Project monitoring and evaluation design is evaluated as **satisfactory**.

Monitoring and Evaluation Plan Implementation

114. All monitoring reports were sufficient and produced in a timely manner. These included the half-yearly Activity and Progress Reports developed by the Country Coordinators, the Fiscal Year Reports and the Mid-Term Review (MTR). The MTR was deemed useful in identifying the most important drawbacks and causes of delays and in planning of activities for the rest of the project.

115. All Project Reports, including Quarterly Financial Reports, were submitted to UNEP DGEF Nairobi in a timely manner. Project Advisor to the EA has been monitoring all project activities by means of regular revision of project financial and operational documents. An independent auditing company audited project annually.

116. Detailed reports of all meetings and reports of the implementation of the demonstration and pilot projects were distributed among all interested parties and uploaded on the official Project website. The website also has photos and videos of the demonstration projects. The PO scrutinised all technical reports prepared by the project consultants and LCOs. The quality of the reports was generally acceptable and consultants were requested to rewrite or update technical reports if they were below standards or needed to be more specific and detailed. Most of the technical reports were reviewed by the Executive Agency. On the other hand, all documentation issued by PO, such as half yearly and quarterly reports and financial documents were also under a quality control by both, the EA and the IA.

117. Project document did not initially include logical framework possibly because of the Project Document was resigned three times and as a result of introduced changes there were some gaps in design. It led to the logical structuring of the project, coupled with realistic planning and monitoring instruments. Project inputs could be built on the adequate baseline information drawn from Polar Programme and national projects connected with the Arctic environmental problems. But as was mentioned in the previous section, it is not clear if the results of previous UNEP program (Persistent Toxic Substances (PTS), Food Security and Indigenous Peoples of the Russian North) were used for the proposal preparation and project realisation. Project monitoring arrangements were progressive and responsibilities were adequately defined. Based on the available information, monitoring and evaluation was adequately budgeted for and was funded in a timely fashion.

118. Implementation of the project monitoring and evaluation plan is evaluated as **satisfactory**.

C. 8 Complementarities with UNEP strategies and programmes

119. Project proposal and all results are fully complementary with the UNEP environmental strategy and existing international conventions (protection of marine ecosystems, biodiversity and climate change) and will be very useful for on-going implementation of the Stockholm Convention.
120. The evaluated project was formulated prior to the completion of the UNEP Medium Term Strategy (MTS) 2010-2013 and related Programme of Work (PoW) for the period 2010-2011. Nevertheless, there are complementarities with the expected accomplishments outlined in the Strategy. The project is especially in line with the thematic priority Harmful Substances and Hazardous Waste.

Alignment with the Bali Strategic Plan

121. The project outputs can contribute to the implementation of assessments and dissemination of the methods may contribute in general terms to the Bali Strategic Plan for Technology Support and Capacity-building, including cross-cutting issues (vii) *Development of national research, monitoring and assessment capacity, including training in assessment and early warning*; and (viii) *Support to national and regional institutions in data collection, analysis and monitoring of environmental trends*.

Gender

122. Gender was not specifically mentioned in the project proposal. However, the importance of gender considerations is closely related to the project's aim of protection of vulnerable parts of population including woman and children. The recognition was a background for implementing the project outputs.

South – south cooperation

123. The project did not explicitly set out to promote South-South cooperation, which was not referred to either in the PIF or Project Document. Nevertheless, there has been some scope for South-South cooperation through the process of method development, notably through the work concerning the protection of the polar region and its marine ecosystems and biodiversity.

3. Conclusions and recommendations

A. Conclusions and ratings

124. All project tasks were successfully completed; the critical problems of the Russian Arctic were identified and a broad range of environmental risks were assessed. The project prepared proposals to the Russian Government for improvement of environmental policies and legislation and set up a solid ground for the Arctic Agenda 2020 programme development. The project is likely to contribute towards improvement of the nature protection system of the Russian Arctic.
125. The most remarkable achievement of the project was the Strategic Action Programme, approved by the concerned highest body of the Government – the Maritime Board of the Government of the Russian Federation. It addressed the environmental problems of the Russian

Arctic by taking advantage of the high political momentum in order to strengthen and sustain a platform for environmentally and socially sustainable development. The programme considered the interests of the Russian Federation and the neighbouring Arctic countries and its provisions are recommended to be used in the federal, departmental, regional and corporate programmes of production and other industrial processes. It can considerably assist in solving the environmental problems of the Russian Arctic, most of which are transboundary in nature. Moreover, the pilot and demonstration projects proposed new technologies for solving the most significant ecological problems of the Russian Arctic. The projects were chosen in close cooperation with regional authorities, municipalities and the civil society and are deemed important for the protection of the Arctic environment since introduction and promotion of appropriate technologies and practices are key aspects of future environmental management of the Arctic territory. The most important tool is the development and effective application of technologies for cleaning of contaminated sites and disposing of waste.

126. The project also managed to build a sustainable network of stakeholders to promote solving of the Arctic environmental problems. All the interested parties were actively engaged in the work even at planning stages, and stakeholders at different levels supported the project. Special emphasis was given to the efficient working cooperation with the Arctic regions of Russian Federation. The results achieved by the project can be partly contributed to the strong support at the federal and regional levels as well as the support gained from the local communities. For example, the Russian Ministry of the Economic Development ensured a high-level acknowledgement of the project recommendations. Also at the regional level, participation was not only limited to the approval and selection of the demonstration projects, but the regions contributed to the project with co-financing (see annex 2).
127. The results of the project are likely to be sustainable and some deliverables are already being used, to some extent to solve environmental problems of the Arctic. For example, SAP recommendations were included in several official documents and some of the pre-investment studies were realized. The project studies resulted in the adoption of a state programme to liquidate accumulated environmental damage in the Russian Arctic with considerable extra financial support.
128. The project was fully in line with the purpose and goals of the Arctic Council and its programmes. It is expected that the results will be used as a basis for the Project Support Instrument established by the Arctic Council to support investment projects aimed at the improvement of the environmental conditions in the Russian Arctic.
129. Within the project an effective management and coordination framework was established. This administrative experience can be recommended for replication in the future programme and other environmental programmes and projects.
130. The website allowing interactive communication and providing the basis for long-term dialogue and for on-going participation of regional stakeholders in the project was, and still is a useful tool for public project presentation.
131. Further work is needed to engage even more with the key stakeholders to increase their commitment and to obtain information on possible co-financers and on their involvement in the preparation of investment projects. Further work is also needed to ensure that project results are disseminated to all stakeholders. PO and PINS contractors established good working conditions with the different regions and industrial companies of all forms of ownership in western, central and eastern parts of the Russian Arctic.

132. Main risks for project sustainability are lack of financing for environmental programmes, the current state of environmental legislation and lack of interest from private businesses.

133. The project was implemented within a region that is very vulnerable and relatively polluted, where inventory of pollution sources is lacking, where there is no sufficient waste management system in place and where numerous pollution hot spots are located. The project approach and results can serve as useful examples for other countries facing similar environmental challenges of effective approaches for solving of severe environmental problems. The delivered outputs can also help in developing new approaches to tackle environmental problems, for example, to assist in the preparation of the Climate-Resilient Sustainable Development Programme for the Arctic.

Table 5: Final overview of original and supplementary project goals, objectives and outcomes from the project documents

Components	Component objectives	Evaluation Comment
<u>Component 1</u> Strategic Action Programme (SAP)	To formulate Russian Arctic SAP for addressing damage and threats associated with land-based activities. SAP is to be consistent with the provisions of the Russian FTOP “World Ocean” and the GPA and with initiatives and agreements within the Arctic Council.	The most remarkable achievement of the project is a Strategic Action Programme, the document that has no analogue. Its provisions are recommended for use in the federal, departmental, regional and corporate programs of production and other processes in the Russian Arctic zone.
<u>Component 2</u> Pre-investment Studies	Conduct 10 pre-investment studies to determine the optimum set of investment projects dealing with environmental damage and threats in the Arctic stemming from activities within the Russian Federation. During the PDF-B phase, 21 priority hot spots and impact zones, either anthropogenic sources or damaged environments were found to merit, from scientific perspectives, the highest priority for corrective intervention. The comparative technical assessments carried out in the PDF-B need to be extended into the social, economic and political domains as a means of obtaining a more holistic perspective on priorities.	Sixteen environmentally sound investment projects supported by regional and local authorities have been developed. A list of 100 hot spots has been prepared and a prioritized short list of hot spots (30 hot spots) for the potential pre-investment studies (PINs) has been prepared and included in SAP-Arctic. Pre-investment studies successfully carried out and interest of financial institutions preliminary confirmed” is fulfilled.
<u>Component 3</u> Environmental protection system	Initial steps in the implementation of the SAP for implementation of the NPA-Arctic to address the consequences of land-based activities.	Two Arctic nature protection bills were created. They became a basis for the final proposals to the federal bill “Of special nature use regimes and nature protection in the Russian Arctic”.

		<p>Main drawbacks of the Russian nature protection system that doesn't efficiently eliminate economic activity impact on nature and its results as in the whole country as in the Russian Arctic were analysed. Concrete proposals were made to improve nature protection system in the Russian Federation Arctic Zone (RFAZ) including experience of the other Arctic states. The component is fully and successfully fulfilled.</p>
<p>Component 3.1</p> <p>Environmental protection system improvements / legislative improvements. To draw up the legislative framework and legal regulations required to facilitate the implementation of the SAP.</p> <p>Component 3.2</p> <p>Environmental protection system improvements / Administrative improvements. Development of agreed proposals on distribution of responsibilities and clarification of the functions of the relevant ministries and authorities for the institutional implementation of the SAP.</p> <p>Component 3.3</p> <p>Environmental protection system improvements / Institutional and technical improvements. To assess the technical and human resource requirements for implementation of the SAP and specify what administrative structures, designation of responsibilities, information exchange and assessment procedures are required to fulfil appropriate monitoring and compliance functions.</p>		
<p><u>Component 4</u></p> <p>Demonstration projects</p>		<p>From the practical point of view the pilot and demonstration projects, which propose new technologies to solve the most significant ecological problems of the Russian Arctic have high importance for protection of the Arctic environment.</p> <p>All the pilot and demonstration projects are important for nature conservation. They were carefully reviewed and chosen by the PSC, with wide participation of the regional authorities, municipalities, non-governmental organizations, etc. during their implementation.</p>

<p><u>Component 4.1</u></p> <p>Indigenous Environmental co-management (demonstration project). Creation of conditions for co-management of the environment by the federal and regional executive authorities, resource development companies and indigenous communities of the North.</p> <p><u>Component 4.2</u></p> <p>Rehabilitation of the environment by the use of brown algae (demonstration project). Assessing the potential of the brown algae to act as a clean-up agent in arctic marine areas that could then be used for large-scale remediation in chemically contaminated coastal areas thereby lessening the impacts of Russian activities in Arctic international waters.</p> <p><u>Component 4.3</u></p> <p>Environmental remediation of two decommissioned military bases (demonstration project). Demonstration of environmental remediation of two decommissioned military bases thereby enabling them to be transferred to public use.</p>	
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Table 6: Overall Rating Table

Criteria	Summary Assessment	Rating
Attainment of objectives and planned results (overall rating)	Project was very complex, ambitious and progressive but all project goals and proposed outcomes were reached.	HS
Effectiveness	Project efficiency was high, the planned results were obtained and the objectives were achieved within a reasonable timeframe and with reasonable quality.	HS
Relevance	The project was significant in terms of contributing towards solving of the environmental problems in the Russian Arctic. Moreover, the achieved objectives corresponded with the tasks of GEF and UNEP.	HS
Efficiency	Due to good project management, additional positive results were delivered (demonstration projects), that were not planned at the beginning. All planned outputs and activities were realized in a cost effective way.	HS
Sustainability of project outputs	<p>Project will be sustainable at national and regional level taking that special attention will be paid to effective and informal co-ordination and co-operation.</p> <p>The changes in Governmental approaches during the last ten years represent a solid base for this realization.</p>	ML

Criteria	Summary Assessment	Rating
Financial	<p>The obtained results are financially sustainable due to engagement with a significant number of stakeholders, attracting co-financing, and because of good cooperation with federal authorities.</p> <p>The developed prior-investment projects have found investors. Prerequisites are created for further implementation of the tasks and objectives of the project.</p>	ML
Socio-political	Pollution of the Arctic is a considerable threat to the environment and the lives of local and indigenous people. The correctly set objectives found support among Arctic regions from the early stages of project implementation.	ML
Institutional framework and governance	A sustainable network was established to solve nature conservation problems in the Arctic during the project implementation. It can be used for next project implementation.	ML
Environmental	Unfortunately, a threat of future pollution in the Arctic is still valid. It is related to oil and gas excavations on the Arctic shelf and the beginning of active navigation on the Northern Sea Route. Even though the old problems are being solved, the task is still of current importance.	ML
Achievement of outputs and activities	All the planned activities were realized.	HS
Monitoring and evaluation (overall rating)		S
M&E design	The project had a well-developed M&E plan. Detailed reports for all meetings and for implementation of demo and pilot projects with all associated documentation have been distributed among all interested parties and uploaded on the official Project website.	S
M&E plan implementation (use for adaptive management)	Project progress reporting was done on six-monthly and annual basis. The monitoring was continued throughout the project implementation and was used to optimize activities and ensure effective use of financial resources.	S
Budgeting and funding for M&E activities	The budget for monitoring and evaluation was satisfactory.	S
Catalytic role	The project catalytic role is very significant in terms of improving environmental legislation as well as developing innovative approaches to liquidate the accumulated damage.	HS
Preparation and readiness	The project tasks were clear, practical, and achievable within the time and budget available and the project was managed according to the pre-defined tasks. However,	MS

Criteria	Summary Assessment	Rating
	the readiness was poor during the first part of the project and it caused delays in the project implementation.	
Implementation approach	The project implementation approach is evaluated as satisfactory due to lack of readiness during the first part of the project causing the project to be delayed.	S
Country ownership/driveness	Project was developed to be in-line with the national sectoral and development priorities and plans, and was supported by the relevant country representatives, from government and civil society. The national stakeholders were involved in the project from the beginning.	S
Stakeholder involvement	<p>One of the main project achievements was a successful involvement of stakeholders on different levels from the beginning of the project.</p> <p>The Project Executing Agency has established an Interagency Working Group for the Project (IAWG), comprising representatives from federal and regional authorities, Russian Academic of Sciences, RAIPON, private sector, and non-governmental organizations.</p>	S
Financial planning	<p>Project prepared all the necessary financial planning and reporting documents to the Executing Agency, UNEP/DGEF and other institutions in a timely manner.</p> <p>Project budget was thoroughly evaluated at the meetings of the Project Steering Committee. Members of the Steering Committee received also all financial reporting documents.</p>	S
UNEP supervision and backstopping	<p>Project Advisor to the EA provided regular revision of project financial and operational documents.</p> <p>Project had good support from UNEP staff in Bangkok, Nairobi and Moscow offices. UNEP staff participated in the PCS meetings providing technical and financial support, project monitoring and evaluation report preparation, as well as assist in cooperation with relevant ministries and departments of the Russian Federation. In addition, Moscow UNEP office employees participated in meetings with regional authorities in the Russian Arctic giving technical and consulting support to the project management.</p>	HS
Overall rating		S

B. Lessons learned

Lessons on project design and implementation

134. **Lesson 1.** NPA-Arctic illustrates the importance of a project's overall design in terms of setting realistic objectives and outcomes based on well-documented and comparable experience gained elsewhere. Where the objectives and scope were best defined, undertaken on a reasonable scale, and were linked to specific tasks (i.e. SAP, pre-investment studies, some demo-projects) better outputs were obtained. Conversely, where less attention was given to this, such as with the EPS component where broad objectives were set, it was more difficult to link outcomes and outputs with objectives. The lesson emphasises the importance of ensuring that objectives, outcomes and outputs are realistic and focused.
135. **Lesson 2.** The success of this type of a complex project depends partly on the management and administrative frameworks. The project established effective management and coordination structures through the Project Steering Committee and the Project Supervisory Council. However, regardless of well-functioning project management, problems related to fund distribution contributed to delays in project implementation. Distribution of finances was delayed at the beginning of the project. Also, two partner agencies, in addition to the Executing Agency, were handling the project funds, with which one of the original Partner Agencies apparently attempted to initiate parallel activities. For future projects special emphasis needs to be given to selection of partners, to defining clear procedures of project management mechanisms and administrative procedures as well as for development of transparent procedures for channelling funds to and from partners. Moreover, at the time of project initiation, funding needs to be secured for all project stage.

Lessons on stakeholder commitment

136. **Lesson 3.** The success achieved to date in the implementation of the project has been directly related to sustained political commitment at federal and regional levels. Broader stakeholder support at the high level is required for introduction of environmental policy changes and ensuring their sustainability. While a number of government stakeholders were participating in the project design and implementation, not all project activities reached those echelons of power where policy decisions are being made. More direct and early involvement of the relevant government bodies, such as regional development and financial ministries as well as national legislative bodies in the project design and its implementation could strengthen sustainability of the project and help to reach its policy objectives.
137. **Lesson 4.** The project has ensured an adequate level of project ownership, a broad-based public support, support of indigenous communities as well as close cooperation with existing and planned programmes and projects in the Arctic region. The maintenance of this support requires effective communication and accurate and up-to date dissemination of information about the objectives, achievements and challenges of the project. The broad support is critical for mobilization of national resources and for obtaining commitment from municipalities, local NGOs and companies. The overall lesson that can be drawn from this project is the importance of fully gaining stakeholder support and commitment, at government, civil society and community levels through more active and accurate communication and information dissemination. Without the commitment, the project sustainability can be jeopardized due to lack of ownership and funding.

C. Recommendations

138. **Recommendation 1.** The project has delivered a set of useful results valuable for future projects and concentrated on tackling the environmental problems of the Arctic region. To make the project results and the positive experiences gained from its implementation available, the project management needs to ensure that results are communicated to all stakeholders, decision makers, the scientific community and the broader public.
139. **Recommendation 2.** The project management should ensure, to the extent possible, that the project results, conclusions and recommendations are used in the development of the National Implementation Plan of the Stockholm Convention on Persistent Organic Pollutants for the Russian Federation.
140. **Recommendation 3.** The project management team needs to ensure that the suggestions provided in the terminal evaluation report of the Russian NPA-project are communicated to the relevant Government Ministries of the Russian Federation and the importance of implementing the suggestions is emphasized.

D. Suggestions for Future Action

Suggestion for UNEP/GEF

141. **Suggestion 1.** The initiatives started under the project were important steps on the way of improving the nature protection system of the Russian Arctic. However, one of the main risks for project sustainability is lack of funding. The recommendations and conclusions derived from the project can be, and will be, used if the initiatives start under this project or continue under a similar forum, such as the emerging UNEP/GEF program Arctic Agenda 2020. Continuation of initiatives would help to ensure that the positive progress is maintained.

Suggestions for the Arctic council

142. **Suggestion 2.** Information on the project was presented at the Arctic Council Ministerial Meeting as well as to Senior Arctic Officials and the Protection of the Arctic Marine Environment (PAME) Working Group. The Russian National Plan of Action (NPA) for the protection of the Arctic marine environment – project was noted in Salekhard Declaration, SAOs' Report to Ministers, Arctic Marine Strategic Plan and Arctic Council's Regional Program of Action for Protection of the Arctic Marine Environment from Land-Based Sources. Moreover, provisions of the Strategic Action Programme (SAP) were used in the preparation of Russian proposals for the Project Support Instrument (PSI) of the Arctic Council. Continuation of the close cooperation with the existing and planned programmes that address the environmental challenges of the Arctic environment would be important and very desirable. Moreover, work of several other Arctic Council Working Groups, especially ACAP, is also very pertinent to the NPA-Arctic and the Project Office should consider how these sources of expertise could be best incorporated to promote more long-term goals of protection of the Arctic marine and coastal environment.
143. **Suggestion 3.** The project results have potential to catalyse an increasing number of global activities. For example, there is potential to create a mechanism to link regional administration bodies and local communities with global environmental networks being implemented through UN agencies or International Banks. The development of the Arctic Environment Fund (AEF) for financing projects can serve as a useful tool to enhance sustainability of environmental protection activities within the Arctic region. The AEF will provide sustainable financing for priority environmental projects using international environmental finance instruments (e.g. soft

loans from International Financial Institutions and GEF grants, in combination with financing from the federal and local budgets as well as from Russian and international investments). It can form an effective basis for broader cooperation among Arctic countries on transboundary issues of concern, and develop a mechanism that catalyses investment in order to meet the set targets.

Suggestions for the Executing Agency: the Ministry of Economic Development of the Russian Federation

144. **Suggestion 4.** One of the important project outputs was the development of pilot projects to demonstrate new technologies to tackle the environmental problems of the Russian Arctic. The pilot projects have shown potential to attract investments for development of environmental technologies to reduce greenhouse gas emissions and chemical pollution. A mechanism should be developed to catalyse investments in order to meet the targets of the Arctic Strategic Action Program. The mechanism could be based on a programmatic approach where interlinked and replicable model demonstration projects could be executed for transboundary pollutant abatement, protection of large marine ecosystems, and development of network of protected areas as well as improvement of energy efficiency and renewable energy development. Another important approach could be the introduction of Integrated River Basin Management since the large rivers of the Russian Federation are major sources of pollution to the Arctic region.
145. **Suggestion 5.** The inventory of pollution hot spots in the Russian Arctic identified locations where environmental degradation has reached threatening levels, where levels of pollution are considerably higher than the maximum allowable, where the natural ecosystems are disturbed or destroyed and where human health is jeopardized. A nationwide inventory of the Russian Federation should be considered to be conducted applying similar inventory methods. The inventory could include pollution sources, legal and illegal waste disposal sites and contaminated sites. The inventory could be further used to develop an institutional and financial mechanism to address the environmental damage, for example, using the USA Superfund as a model.

Suggestions for the Ministry of Natural Resources and Environment in co-operation with the Ministry of Industry, the Ministry of Traffic, the Ministry of Defence and the Regional and municipal authorities of the Russian Federation

146. **Suggestion 6.** Based on the evaluation findings it becomes necessary to emphasize the importance to continue the work started in the framework of the NPA-Arctic programme. The Project represents a huge amount of very useful activities with excellent results and outcomes, which are applicable for the solution of other environmental problems within the Russian Federation and other countries. However, numerous obstacles and problems exist which need to be addressed in order to ensure protection of the Arctic ecosystems.

Short to medium term suggestions

147. **Suggestion 7.** It is necessary to continue the identification and inventory of all environmental pollution sources, including emission sources, release to water bodies, as well as legal and illegal waste dumping sites. It is also necessary to identify all contaminated sites in the Russian Arctic as well as to develop programmes for environmental clean-ups. The inventory needs to be closely connected with similar inventories in other parts of the Russian Federation and the on-going national inventory on persistent organic pollutants under the Stockholm Convention on POPs.

148. **Suggestion 8.** The increased volume of transportation and industrial activities along the North East Passage of the Arctic Sea, including transportation of oil, poses potential future risks on the fragile Arctic environment. It is therefore very important to ensure that adequate preparedness is established to respond to the possible oil spills in a best possible way. Adequate mechanisms to prevent oil spills and to clean up after oil spills (including the use of dispersants) need to be in place.

Suggestion 8.1 A vulnerability assessment of the Arctic seas to oil spills has to be prepared, as the existing maps do not comply with international rules and requirements.

Suggestion 8.2 Impacts of noise pollution caused by the transportation and industrial activities on marine mammals inhabiting areas close to the North East Passage needs to be assessed.

Suggestion 8.3 A method to remotely control the pollution in the Arctic (including satellite monitoring) could be an effective mechanism to control the possible oil spills and emission of pollutants and thus, needs to be developed.

149. **Suggestion 9.** An effective waste management system needs to be developed and adopted for all; federal, regional and municipal levels, since it forms the key condition for the protection of the Arctic and Russian environment.

150. **Suggestion 10.** The coordination of inter-ministerial activities is inefficient and hampers effective and efficient co-operation. The problems relating to departmentalism within the ministries need to be effectively solved.

151. **Suggestion 11.** It is necessary to define the legal base and find solutions to solve problems related to the potentially harmful activities of industrial companies functioning in the Arctic Region, including oil extraction.

152. **Suggestion 12.** The Russian legislation related to activities and environmental protection in the Arctic region should be synchronized with that of the other Arctic states. This would unify standards and requirements, which is another key issue of Arctic ecosystem protection.

153. **Suggestion 13.** Models are available to assess the present pollution levels, including the calculation of critical pollution levels, of the Arctic region (transboundary transfer). These models should be used to define the pollution flows to the Arctic, including their type and amount, as well as to identify the pollution sources. The information could be used to re-assess the allowable limits for emissions in Russia, since the current limits do not consider the impacts on natural environment.

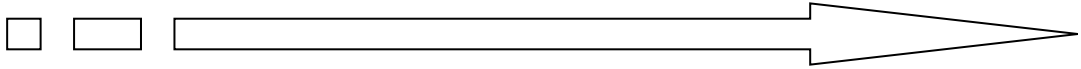
154. **Suggestion 14.** To ensure that all above mentioned approaches and suggestions are effectively implemented, it is necessary to establish an environmental monitoring system, especially for water bodies and long-range transport of pollutants.

155. **Suggestion 15.** For future disposal of waste and remediation of contaminated sites in the Arctic, it is necessary to establish a fund based on contributions from industry undertaking activities deemed to pose risks to the Arctic environment.

Long-term suggestions

156. **Suggestion 10.** Extraction and transportation of oil has led to severe environmental degradation of the Russian Arctic. There are still huge amounts of oil barrels in the Russian Arctic territory likely to cause future contamination. In order to decrease and eliminate future environmental damage in the territory of the Russian Arctic it is necessary to increasingly explore and adopt alternative energy sources such as wind power.
157. **Suggestion 11.** A useful strategy to reduce environmental impacts of oil industry could be to construct fuel oil tanks on the coast in order to reduce the environmental risks related to the transport of barrels. This should be accompanied with adoption of the very perspective technology for seawater remediation.
158. **Suggestion 12.** A strategic key point is also to consistently apply the Best Available Techniques/Best Environmental Practices (BAT/BEP) principles in all cases when new industrial development activities in the Arctic region are planned. The implementation of best practices to reduce short-lived pollutants such as black carbon particles (the second to CO₂ as the largest contributor to global warming and a pollutant responsible of a significant amount of Arctic warming) is a very good example of this strategic approach.
159. **Suggestion 13.** In order to decrease and to monitor the elimination of pollution inputs to the Arctic region a plan for construction of new landfills, disposal facilities, and municipal and industrial wastewater treatment plants needs to be developed and adopted. A rigorous Environmental Impact Assessment procedure needs to be applied.

Roadmap for the future

Identification of problems		Solution of the problems		
Project	Project evaluation	Short/medium term recommendations	Long-term recommendations	
2010	2012	2015	2020	2025
				
Connected and follow up activities				
	New GEF project proposal Development of the National implementation plan of the Stockholm Convention on POPs The Arctic clean-up activities of the Russian	Effective waste management system of the RF	Realisation of the SC measures concerning to PCBs and other POPs including new ones	

	Government			
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4. Annexes

Annex 1: Evaluation TORs

Annex 2: Project costs and co-financing tables

Annex 3: List of persons met and interviewed

Annex 4: List of documents reviewed

Annex 5: Extended summary of final report on environmental restoration within the decommissioned military facility near Pokrovskoye settlement, Onega municipality, Arkhangelsk region

Annex 6: Brief CVs of the consultant

Annex 1: Evaluation TORs

TERMS OF REFERENCE

Terminal Evaluation of the Project “Russian Federation – Support to the National Programme of Action for the Protection of the Arctic Marine Environment”

PROJECT BACKGROUND AND OVERVIEW

Project General Information

Table 1. Project summary¹

GEF project ID:	1164	IMIS number:	GFL-2732-03-4694
Focal Area(s):	International Waters	GEF OP #:	OP 10: Contaminants
GEF Strategic Priority/Objective:	IW-3/SP-3: Balancing overuse and conflicting uses of water resources in surface and groundwater basins that are transboundary in nature – Monitoring improved water use efficiency in demonstrations;		
GEF approval date:	31 July 2003	UNEP approval date:	18 July 2005
Planned start date for phase I:	July 2005	Intended completion date for Phase I	June 2010
Actual start date:	1 September 2005	Actual or Expected completion date:	28 February 2011
Planned duration:	60 months		
Project Type:	Full Size Project (FSP)	Date of last Steering Committee meeting:	March 2011
GEF Allocation:	US\$ 5 885 000	Co-financing	US\$ 5 800 000
PDF GEF cost	US\$ 306 66	PDF co-financing	US\$ 474 000
Total Cost:	US\$ 12 465 000	First Disbursement:	31 August 2005
Mid-term review	March 2010	Terminal Evaluation	First half 2011
Project implementing agency:	UNEP	Country:	Russian Federation

¹ Source: UNEP GEF Project Implementation Report (PIR) Fiscal Year 2010 (1 July 2009 to 30 June 2010)

Project executing agency:	Ministry of Economic Development of the Russian Federation
Project partners:	NEFCO, USEPA, Government of Iceland

Project Rationale²

The Arctic Ocean and its shelf is an area of global significance in terms of its unique biodiversity and its influence on global oceanic and atmospheric circulation. The Arctic is the major driving force for the deep circulation of the oceans with cold deep-water formation on the peripheries of the Arctic Ocean giving rise to the deep western boundary undercurrent. In terms of biodiversity, the Arctic marine environment is home to a wide range of unique species, the best known among them being polar bear, narwhal, walrus and beluga. Over 150 species of fish inhabit arctic and sub-arctic waters, some of which are of high economic importance. The Arctic region also hosts a wide variety of birds, some of which are unique to the region and some depend on the region for breeding sites.

The Arctic region is also a home to number of indigenous communities, including Lapps, Saami, Inuit, Aleut, Athabaskan, Eyak and Métis who are still continuing their traditional patterns of natural resource management and maintaining their cultural heritage.

The Arctic environment is, however, degrading due to human activities, the most significant being mining. The contamination levels of mining areas are considerable and are resulting in degraded and destroyed natural ecosystems. Mining in the Russian Federation is further gaining momentum and thus the degradation is likely to continue. Health of the local communities is being jeopardized and possibilities for a traditional way of life are decreasing. As consumers of local resources, the local communities are exposed to contamination, suffer from exploitation of natural resources, and are living under a threat of dislocations.

The Russian Federation is attempting to formulate a comprehensive approach to environmental protection, including that of the Arctic and its indigenous people. The project under evaluation was specifically focused to interventions within the Russian Federation to address the most seriously affected marine areas of the Arctic by anthropogenic activities.

Project objectives and components

The project's global environment objective was to *“protect the global marine environment in which the Arctic plays a pivotal role”*. The more specific objective of the project was *“to develop and establish a sustainable framework to reduce environmental degradation of the Russian Arctic from land based activities on a system basis by implementation of the SAP developed at the first stage of the project in favour of all Arctic States and global community and to comply with obligations of the Russian Federation under international conventions and agreements taking into account decisions and programmes of the Arctic Council”*.

The project comprised of four principal components; 1) Preparation and adoption of a Strategic Action Programme (SAP); 2) Completion of a set of Pre-Investment Studies (PINS); 3) Development and implementation of Environmental Protection System (EPS), embodying legislative, administrative, institutional and technical capacity improvements consistent with the SAP; and 4) three demonstration projects on (i) Indigenous Environmental co-management; (ii) Remediation of the Environment through the Use of Brown Algae; and (iii) Environmental

² Source: UNEP GEF Project Document

Remediation of two decommissioned military bases. Each component had its own component objectives

The project major outcomes were to include a nationally approved Strategic Action Programme to address damage and threats to the arctic environment from land-based activities in the Russian Federation; direct and related improvements to environmental protection (legislative, regulatory and institutional and technical capacity) with the Russian Federation; the completion of ten pre-investment studies to determine the highest priority and tractable interventions to correct or prevent transboundary impacts of land-based activities; and three categories of demonstration projects dealing respectively with marine environment clean up, the transfer of two decommissioned military bases to civilian control, and involving indigenous peoples in environmental and resource co-management.

Table 2: Project components and component objectives

Components	Component objectives
<u>Component 1</u> Strategic Action Programme (SAP)	To formulate Russian Arctic SAP for addressing damage and threats associated with land-based activities. SAP is to be consistent with the provisions of the Russian FTOP “World Ocean” and the GPA and with initiatives and agreements within the Arctic Council
<u>Component 2</u> Pre-investment Studies	Conduct 10 pre-investment studies to determine the optimum set of investment projects dealing with environmental damage and threats in the Arctic stemming from activities within the Russian Federation. During the PDF-B phase, 21 priority hot spots and impact zones, either anthropogenic sources or damaged environments were found to merit, from scientific perspectives, the highest priority for corrective intervention. The comparative technical assessments carried out in the PDF-B need to be extended into the social, economic and political domains as a means of obtaining a more holistic perspective on priorities.
<u>Component 3</u> Environmental protection system	Initial steps in the implementation of the SAP for implementation of the NPA-Arctic to address the consequences of land-based activities
Component 3.1 Environmental protection system improvements / legislative improvements	To draw up the legislative framework and legal regulations required to facilitate the implementation of the SAP
Component 3.2 Environmental protection system improvements / Administrative improvements	Development of agreed proposals on distribution of responsibility and clarification of the functions of the relevant ministries and authorities for the institutional implementation of the SAP
Component 3.2 Environmental protection	To assess the technical and human resource requirements for implementation of the SAP and specify what administrative structures, designation of responsibilities, information

system improvements / Institutional and technical improvements	exchange and assessment procedures are required to fulfill appropriate monitoring and compliance functions
<u>Component 4</u> Demonstration projects	
<u>Component 4.1</u> Indigenous Environmental co- management (demonstration project)	Creation of conditions for co-management of the environment by the federal and regional executive authorities, resource development companies and indigenous communities of the North
<u>Component 4.2</u> Rehabilitation of the environment by the use of brown algae (demonstration project)	Assessing the potential of the brown algae to act as a cleanup agent in arctic marine areas that could then be used for large- scale remediation in chemically contaminated coastal areas thereby lessening the impacts of Russian activities on arctic international waters
<u>Component 4.3</u> Environmental remediation of two decommissioned military bases (demonstration project)	Demonstration of environmental remediation of two decommissioned military bases thereby enabling them to be transferred to public use

Executing Arrangements

The project was implemented by UNEP with the overall responsibility of monitoring project performance to ensure conformity with project objectives and advising the Executing Agencies on implementation issues. The project executing agency was the Ministry of Economic Development of the Russian Federation and the project partner agencies were the Advisory Committee on Protection of the Sea (ACOPS), representing the interests of Canada, USA, Italy, IOC and other possible donors, which desire their funds to be channeled through the Trust Fund established by ACOPS, and the Nordic Environment Finance Corporation (NEFCO), subject to decision of the NEFCO Board of Directors. It is noted that ACOPS withdrew from the project partner status due to fund management issues discussed during the 2nd meeting of the Project Steering Committee held in Saint Petersburg from 25 to 26 April, 2007.

The executing agency, in coordination with the implementing agency, entrusted an independent non-profit organization (the Legal Entity "Executive Directorate of the Russian National Pollution Abatement Facility (NPAF ED)", registered by the Moscow Registration Chamber on June 25, 2002 (Registration Certificate 69467), founded in pursuance of the Decree of the Government of the Russian Federation #808 dated August 11, 1995) to fulfill the project execution functions as the Project Office. The Project Manager at the Project Office was responsible for the overall implementation of the project. The Executing Agency was responsible for supervising the Project Office and the Project Manager, ensuring appropriate reporting, and informing of co-financing partners, UNEP/DGEF, bodies of the Arctic Council and the Global Programme of Action (GPA) Secretariat on progress in project implementation.

The executing agency established an interagency working group (Working Group on Coordination of the Russian Participants of the Project) consisting of representatives of Russian organizations interested in the project implementation. Representatives of all concerned federal and regional authorities, Russian Academy of Sciences, organizations of indigenous communities of the North, companies of all forms of ownership, NGOs, and civil society were invited to participate in the working group to discuss the implementation of the project.

A Steering Committee was established to act as the project governing body and to discuss and approve annual work plans and budgets, oversee implementation and adopt corrective actions relating to the further implementation of the project. A project Supervisory Council was in charge of supervising the project implementation according to the project work plan approved by the steering committee and included representatives of Implementing and Executing agencies as well as the Partner Agencies.

Project Cost and Financing

Table 3 presents a summary of expected financing sources for the project as presented in the Project Document. GEF provided approximately 59 per cent of the funds, with the Russian Federation contributing most of the co-financing. The total project budget was nearly US \$18 million placing the project in the Full-size Project (FSP) category.

Table 3: Estimated project costs per component and financing source

Cost	Million US \$
<u>Cost to GEF</u>	
Project tranche I	5.885
Project tranche II (cancelled)	4.425
PDF-B	0.306
Subtotal GEF	10.616
<u>Co-financing</u>	
PDF-B (all sources)	0.474
Russian Federation (in cash & kind):	
Phase I	5.800
Phase II (cancelled)	4.350
Other	7.352
Subtotal Co-financing	17.976

Source: UNEP Project Document Approved – July 2005

Project Implementation Issues

The expected project duration was 5 years. Project execution started in September 2005 and was completed in May 2011. A Mid-term Review of the project was finalized in March 2010.

TERMS OF REFERENCE FOR THE EVALUATION

Objective and Scope of the Evaluation

In line with the UNEP Evaluation Policy³, the UNEP Evaluation Manual⁴ and the Guidelines for GEF Agencies in Conducting Terminal Evaluations⁵, the terminal evaluation of the Project “Russian Federation – Support to the National Programme of Action for the Protection of the Arctic Marine Environment” is undertaken at the end of the project to assess project performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability. The evaluation has two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote learning, feedback, and knowledge sharing through results and lessons learned among UNEP, the GEF and their partners. Therefore, the evaluation will identify lessons of operational relevance for future project formulation and implementation. It will focus on the following sets of **key questions**, based on the project’s intended outcomes, which may be expanded by the consultants as deemed appropriate:

- a. To what extent has the project resulted in direct or related improvements to environmental protection (legislative, regulatory and institutional and technical capacity) in the Russian Federation especially concerning the protection of the Arctic marine environment?
- b. How successful was the project in developing and establishing a sustainable framework to reduce environmental degradation of the Russian Arctic from land based activities?
- c. How successful was the preparation and adoption of the Strategic Action Programme (SAP)?
- d. Did the project succeed in identifying the highest priority interventions to correct or prevent transboundary impacts to the Arctic region of land-based activities?
- e. Was the selection of the demonstration projects relevant and successful?
- f. Did the project succeed in supporting the Russian Federation to comply with obligations under international conventions and agreements as well as decisions and programmes of the Arctic Council?
- g. Are there any lessons to be learned from this project with regard to the a) design and b) implementation of future initiatives in similar fields?

Overall Approach and Methods

The terminal evaluation of the Project “Russian Federation – Support to the National Programme of Action for the Protection of the Arctic Marine Environment” will be conducted by independent consultants under the overall responsibility and management of the UNEP Evaluation Office (Nairobi), in consultation with the UNEP GEF Coordination Office (Nairobi), UNEP Moscow Office, and UNEP ROAP (Bangkok).

It will be an in-depth evaluation using a participatory approach whereby key stakeholders are kept informed and consulted throughout the evaluation process. Both quantitative and qualitative

³ <http://www.unep.org/eou/StandardsPolicyandPractices/UNEPEvaluationPolicy/tabid/3050/language/en-US/Default.aspx>

⁴ <http://www.unep.org/eou/StandardsPolicyandPractices/UNEPEvaluationManual/tabid/2314/language/en-US/Default.aspx>

⁵ http://www.thegef.org/gef/sites/thegef.org/files/documents/TE_guidelines7-31.pdf

evaluation methods will be used to determine project achievements against the expected outputs, outcomes and impacts.

The findings of the evaluation will be based on the following:

A desk review of project documents⁶ including, but not limited to:

- Relevant background documentation, inter alia UNEP and GEF policies, strategies and programmes pertaining to international waters; Documentation on the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA); Regional Programme of Action for the Protection of the Arctic Marine Environment (RPA); Arctic Contaminants Action Program (ACAP) of the Arctic Council, etc.;
- Project design documents; project Diagnostic Analysis (DA) and Strategic Action Programme (SAP); Pre-Investment Studies (PINS); Environmental Protection System (EPS) Analytical Materials on Status of Environmental Regulation in the Context of the Russian Arctic, Annual Work Plans and Budgets or equivalent; revisions to the logical framework and project financing;
- Project reports such as progress and financial reports; Steering Committee and project supervisory Council meeting minutes; Half-Yearly Progress Reports, annual Project Implementation Review (PIR) reports and relevant correspondence;
- Mid-term Review report and Project Terminal Report (if a final draft is available);
- Documentation related to project outputs such as; the Strategic Action Programme; Pre-Investment Studies (PINS); documentation of the developed Environmental Protection System (EPS) including revisions and improvements in the legislative, administrative and technical sectors; documentation on the demonstration projects, etc.

Interviews⁷ with:

- Project management and execution support in Moscow and the project working group;
- UNEP Task Manager (Bangkok), Fund Management Officer (Nairobi), as well as relevant staffs (Nairobi);
- Lead execution partners (i.e., NEFCO) and other relevant partners/donors (e.g., Iceland United States, Canada, etc.);
- Representatives of the Project Steering Committee, Supervisory Council, and Working Group;
- Representatives of the participating local Arctic communities, including indigenous communities;
- Representatives of the Arctic Council;
- Relevant staff of GEF Secretariat; and,
- Representatives of relevant NGOs, other multilateral agencies and other relevant organisations.

Country visits to demonstration projects. The evaluation team will visit the project management office in Moscow and selected demonstration project sites.

Key Evaluation principles

⁶ Documents to be provided by UNEP are listed in Annex 5.

⁷ Face-to-face or through any other appropriate means of communication

Evaluation findings and judgements should be based on **sound evidence and analysis**, clearly documented in the evaluation report. Information will be triangulated (i.e. verified from different sources) to the extent possible, and when verification is not possible, the single source will be mentioned⁸. Analysis leading to evaluative judgements should always be clearly spelled out.

The evaluation will assess the project with respect to **a minimum set of evaluation criteria** grouped in four categories: (1) Attainment of objectives and planned results, which comprises the assessment of outputs achieved, relevance, effectiveness and efficiency and the review of outcomes towards impacts; (2) Sustainability and catalytic role, which focuses on financial, socio-political, institutional and ecological factors conditioning sustainability of project outcomes, and also assesses efforts and achievements in terms of replication and up-scaling of project lessons and good practices; (3) Processes affecting attainment of project results, which covers project preparation and readiness, implementation approach and management, stakeholder participation and public awareness, country ownership/driven, project finance, UNEP supervision and backstopping, and project monitoring and evaluation systems; and (4) Complementarity with UNEP strategies and programmes. The lead consultant can propose other evaluation criteria as deemed appropriate.

Ratings. All evaluation criteria will be rated on a six-point scale. However, complementarity of the project with UNEP strategies and programmes is not rated. Annex 2 provides detailed guidance on how the different criteria should be rated and how ratings should be aggregated for the different evaluation criterion categories.

In attempting to attribute any outcomes and impacts to the project, the evaluators should consider the difference between **what has happened with** and **what would have happened without** the project. This implies that there should be consideration of the baseline conditions and trends in relation to the intended project outcomes and impacts. This also means that there should be plausible evidence to attribute such outcomes and impacts to the actions of the project. Sometimes, adequate information on baseline conditions and trends is lacking. In such cases this should be clearly highlighted by the evaluators, along with any simplifying assumptions that were taken to enable the evaluator to make informed judgements about project performance.

As this is a terminal evaluation, particular attention should be given to learning from the experience. Therefore, the **“why?” question** should be at front of the consultants’ minds all through the evaluation exercise. This means that the consultants needs to go beyond the assessment of “what” the project performance was, and make a serious effort to provide a deeper understanding of “why” the performance was as it was, i.e. of processes affecting attainment of project results (criteria under category 3). This should provide the basis for the lessons that can be drawn from the project. In fact, the usefulness of the evaluation will be determined to a large extent by the capacity of the consultants to explain “why things happened” as they happened and are likely to evolve in this or that direction, which goes well beyond the mere assessment of “where things stand” today.

Evaluation criteria

Attainment of Objectives and Planned Results

The evaluation should assess the relevance of the project’s objectives and the extent to which these were effectively and efficiently achieved or are expected to be achieved.

⁸

Individuals should not be mentioned by name if anonymity needs to be preserved.

- *Achievement of Outputs and Activities:* Assess, for each component, the project's success in producing the programmed outputs, both in quantity and quality, as well as their usefulness and timeliness. Briefly explain the degree of success of the project in achieving its different outputs, cross-referencing as needed to more detailed explanations provided under Section 3 (which covers the processes affecting attainment of project objectives).
- *Relevance:* Assess, in retrospect, whether the project's objectives and implementation strategies were consistent with: i) Sub-regional environmental issues and needs related to the management of Arctic Regions; ii) UNEP mandates and policies at the time of design and implementation; and iii) the GEF International Waters focal area, strategic priorities and the relevant operational program(s).
- *Effectiveness:* Appreciate to what extent the project has achieved its main objective and its component objectives as presented in Table 2. To measure achievement, use as much as appropriate the indicators for achievement of the "Global Environmental Objective" adding other relevant indicators as appropriate. Briefly explain what factors affected the project's success in achieving its objectives, cross-referencing as needed to more detailed explanations provided under Section 3.
- *Efficiency:* Assess the cost-effectiveness and timeliness of project execution. Describe any cost- or time-saving measures put in place in attempting to bring the project to a successful conclusion within its programmed budget and time. Analyse how delays (if any) have affected project execution, costs and effectiveness. Wherever possible, compare the cost and time over results ratios of the project with that of other similar projects. Give special attention to efforts by the project teams to make use of / build upon pre-existing institutions, agreements and partnerships, data sources, synergies and complementarities with other initiatives, programmes and projects etc. to increase project efficiency.
- *Review of Outcomes to Impacts (ROtI):* Reconstruct the logical pathways from project outputs over achieved objectives towards impacts, taking into account performance and impact drivers, assumptions and the roles and capacities of key actors and stakeholders, using the methodology presented in the GEF Evaluation Office's ROtI Practitioner's Handbook⁹ (summarized in Annex 6 of the TORs). Appreciate to what extent the project has to date contributed, and is likely in the future to further contribute to changes in stakeholder behaviour.

Sustainability and catalytic role

Sustainability is understood as the probability of continued long-term project-derived results and impacts after the external project funding and assistance ends. The evaluation will identify and assess the key conditions or factors that are likely to undermine or contribute to the persistence of benefits. Some of these factors might be direct results of the project while others will include contextual circumstances or developments that are not under control of the project but that may condition sustainability of benefits. The evaluation should ascertain to what extent follow-up work has been initiated and how project results will be sustained and enhanced over time. Application of the ROtI method will assist in the evaluation of sustainability.

Four aspects of sustainability will be addressed:

⁹ http://www.thegef.org/gef/sites/thegef.org/files/documents/Impact_Eval-Review_of_Outcomes_to_Impacts-RotI_handbook.pdf

- *Socio-political sustainability.* Are there any social or political factors that may influence positively or negatively the sustainability of project results and progress towards impacts? Is the level of ownership by the main stakeholders sufficient to allow for the project results to be sustained? Are there sufficient government and stakeholder awareness, interest, commitment and incentives to execute, enforce and pursue the programmes, plans, agreements, monitoring systems etc. prepared and agreed upon under the project?
- *Financial resources.* To what extent are the continuation of project results and the eventual impact of the project dependent on continued financial support? What is the likelihood that adequate financial resources¹⁰ will be or will become available to continue to implement the programmes, plans, agreements, monitoring systems etc. prepared and agreed upon under the project? Are there any financial risks that may jeopardize sustainability and maintenance of project results and onward progress towards impact?
- *Institutional framework.* To what extent is the sustainability of the results and onward progress towards impact dependent on issues relating to institutional frameworks and governance? How robust are the institutional infrastructure such as governance structures and processes, policies, sub-regional agreements, legal and accountability frameworks etc. required to sustain project results and to lead those to impact on human behaviour and environmental gains/performance/improvement?
- *Environmental sustainability.* Are there any environmental factors, positive or negative, that can influence the future flow of project benefits? Are there any project outputs or higher level results that are likely to affect the environment, which, in turn, might affect sustainability of project benefits?

Catalytic Role and Replication. The *catalytic role* of GEF-funded interventions is embodied in their approach of supporting the creation of an enabling environment and of investing in pilot activities which are innovative and show how new approaches can work. UNEP and the GEF also aim to support activities that scale-up new approaches to a national, regional or global level, with a view to achieving sustainable global environmental benefits. The evaluation will assess the catalytic role played by this project, namely to what extent the project has:

- *catalyzed behavioural changes* in terms of use and application by the relevant stakeholders of: i) technologies and approaches show-cased by the demonstration projects; ii) strategic programmes and plans developed; and iii) assessment, monitoring and management systems established at a national and sub-regional level;
- provided *incentives* (social, economic, market based, competencies etc.) to contribute to catalyzing changes in stakeholder behaviour;
- contributed to *institutional changes*. An important aspect of the catalytic role of the project is its contribution to institutional uptake or mainstreaming of project-piloted approaches in regional and national demonstration projects;
- contributed to *policy changes* (on paper and in implementation of policy);
- contributed to sustained follow-on financing (*catalytic financing*) by the recipient country, from other Governments, the GEF or other donors;
- created opportunities for particular individuals or institutions (*“champions”*) to catalyze change (without which the project would not have achieved its results).

¹⁰ Those resources can be from multiple sources, such as the public and private sectors, income generating activities, other development projects, etc.

Replication, in the context of GEF projects, is defined as lessons and experiences coming out of the project that are replicated (experiences are repeated and lessons applied in different geographic areas) or scaled up (experiences are repeated and lessons applied in the same geographic area but on a much larger scale and funded by other sources). The evaluation will assess the approach adopted by the project to promote replication effects and appreciate to what extent actual replication has already occurred or is likely to occur in the near future, with special attention to the demonstration projects conducted. What are the factors that may influence replication and scaling up of project experiences and lessons? In this particular case, the evaluation will assess how the project has made sure that plans, agreements and management systems developed are going to be put to good use in the subsequent project(s).

Processes affecting attainment of project results

Preparation and Readiness. Were the project's objectives and components clear, practicable and feasible within its timeframe? Were the capacities of executing agencies properly considered when the project was designed? Was the project document clear and realistic to enable effective and efficient implementation? Were the partnership arrangements properly identified and the roles and responsibilities negotiated prior to project implementation? Were counterpart resources (funding, staff, and facilities) and enabling legislation assured? Were adequate project management arrangements in place? Were lessons from other relevant projects properly incorporated in the project design? Were lessons learned and recommendations from Steering Committee meetings adequately integrated in the project approach? What factors influenced the quality-at-entry of the project design, choice of partners, allocation of financial resources, etc.?

Implementation Approach and Adaptive Management. This includes an analysis of approaches used by the project, its management framework, the project's adaptation to changing conditions (adaptive management), the performance of the implementation arrangements and partnerships, relevance of changes in project design, and overall performance of project management. The evaluation will:

- Ascertain to what extent the project implementation mechanisms outlined in the project document have been followed and were effective in delivering project outputs and outcomes. Were pertinent adaptations made to the approaches originally proposed?
- Assess the role and performance of the units and committees established and the project execution arrangements at all levels;
- Evaluate the effectiveness and efficiency of project management and how well the management was able to adapt to changes during the life of the project;
- Assess the extent to which project management responded to direction and guidance provided by the Steering Committee and Implementing Agency supervision recommendations as well as the recommendations from the Mid-Term Review;
- Identify possible administrative, operational and/or technical problems and constraints that influenced the effective implementation of the project, and how the project partners overcame or tried to overcome these problems.

Stakeholder¹¹ Participation and Public Awareness. The term stakeholder should be considered in the broadest sense, encompassing project partners, government institutions, private interest groups, local communities etc. The assessment will look at three related and often

¹¹ Stakeholders are the individuals, groups, institutions, or other bodies that have an interest or stake in the outcome of the project. The term also applies to those potentially adversely affected by the project.

overlapping processes: (1) information dissemination between stakeholders, (2) consultation between stakeholders, and (3) active engagement of stakeholders in project decision making and activities. The evaluation will specifically assess:

- the approach(es) used to identify and engage stakeholders in project design and implementation. What were the strengths and weaknesses of these approaches with respect to the project's objectives and the stakeholders' motivations and capacities? What was the achieved degree and effectiveness of collaboration and interactions between the various project partners and stakeholders during the course of implementation of the project?
- the degree and effectiveness of any public awareness activities that were undertaken during the course of implementation of the project; or that were built into the assessment methods so that public awareness could be raised at the time the assessments were conducted;
- how the results of the project (strategic action programme, pre-investment studies, environmental protection system, and the demonstration projects) engaged the Government, mining industry, communities and their institutions in improved management and sustainable use of the natural resources of the Arctic Region.

The ROtI analysis should assist the consultants in identifying the key stakeholders and their respective roles, capabilities and motivations in each step of the causal pathway from activities to achievement of outputs and objectives to impact.

Country Ownership and Driven-ness. The evaluation will assess the performance of the Government of the Russian Federation, as well as regions and municipalities namely:

- how the Government has assumed responsibility for the project and provided adequate support to project execution, including the degree of cooperation received from the contact institutions and the timeliness of provision of counter-part funding to project activities;
- to what extent the political and institutional framework of the Russian Federation has been conducive to project performance. Look, in particular, at the extent of the political, legal, social commitment to enforce (sub-) regional agreements promoted under the project;
- to what extent the Government has promoted the participation of communities and non-governmental organisations in the project; and
- how responsive the Government was to UNEP coordination, guidance and supervision, and Mid-Term Review recommendations (if applicable).

Financial Planning and Management. Evaluation of financial planning requires assessment of the quality and effectiveness of financial planning and control of financial resources throughout the project's lifetime. The assessment will look at actual project costs by activities compared to budget (variances), financial management (including disbursement issues), and co-financing. The evaluation will:

- Verify the application of proper standards (clarity, transparency, audit etc.) and timeliness of financial planning, management and reporting to ensure that sufficient and timely financial resources were available to the project and its partners;
- Appreciate other administrative processes such as recruitment of staff, procurement of goods and services (including consultants, if applicable), preparation and negotiation of

cooperation agreements, etc. to the extent that these might have influenced project performance;

- Present to what extent co-financing has materialized, as expected, at project approval (see Table 1). Report country co-financing to the project overall, and to support project activities at the national level in particular. The evaluation will provide a breakdown of final actual costs and co-financing for the different project components.
- Describe the resources the project has leveraged since inception and indicate how these resources are contributing to the project's ultimate objective. Leveraged resources are additional resources—beyond those committed to the project itself at the time of approval—that are mobilized later as a direct result of the project. Leveraged resources can be financial or in-kind and they may be from other donors, NGO's, foundations, governments, communities or the private sector.

UNEP Supervision and Backstopping. The purpose of supervision is to verify the quality and timeliness of project execution in terms of finances, administration and achievement of outputs and outcomes, in order to identify and recommend ways to deal with problems which arise during project execution. Such problems may be related to project management but may also involve technical/institutional substantive issues in which UNEP has a major contribution to make. The evaluators should assess the effectiveness of supervision and administrative and financial support provided by UNEP including:

- The adequacy of project supervision plans, inputs and processes;
- The emphasis given to outcome monitoring (results-based project management);
- The realism and candour of project reporting and ratings (i.e. are PIR ratings an accurate reflection of the project realities and risks);
- The quality of documentation of project supervision activities; and
- Financial, administrative and other fiduciary aspects of project implementation supervision.

Monitoring and Evaluation. The evaluation will include an assessment of the quality, application and effectiveness of project monitoring and evaluation plans and tools, including an assessment of risk management based on the assumptions and risks identified in the project document. The evaluation will appreciate how information generated by the M&E system during project implementation was used to adapt and improve project execution, achievement of outcomes and ensure sustainability. M&E is assessed on three levels:

M&E Design. Projects should have sound M&E plans to monitor results and track progress towards achieving project objectives. An M&E plan should include a baseline (including data, methodology, etc.), SMART indicators and data analysis systems, and evaluation studies at specific times to assess results. (The time frame for various M&E activities and standards for outputs should have been specified). The evaluators should use the following questions to help assess the M&E design aspects:

- Quality of the project logframe as a planning and monitoring instrument;
- SMART-ness of indicators: Are there specific indicators in the logframe for each of the project objectives? Are the indicators measurable, attainable (realistic) and relevant to the objectives? Are the indicators time-bound?
- Adequacy of baseline information: To what extent has baseline information on performance indicators been collected and presented in a clear manner? Was the methodology for the baseline data collection explicit and reliable?

- Arrangements for monitoring: Have the responsibilities for M&E activities been clearly defined? Were the data sources and data collection instruments appropriate? Was the frequency of various monitoring activities specified and adequate? To what extent were project users involved in monitoring?
- Arrangements for evaluation: Have specific targets been specified for project outputs? Has the desired level of achievement been specified for all indicators of objectives and outcomes? Were there adequate provisions in the legal instruments binding project partners to fully collaborate in evaluations?
- Budgeting and funding for M&E activities: Determine whether support for M&E was budgeted adequately and was funded in a timely fashion during implementation.

M&E Plan Implementation. The evaluation will verify that:

- the M&E system was operational and facilitated timely tracking of results and progress towards projects objectives throughout the project implementation period;
- annual project reports and Progress Implementation Review (PIR) reports were complete, accurate and with well justified ratings;
- the information provided by the M&E system was used during the project to improve project performance and to adapt to changing needs;
- projects had an M&E system in place with proper training, instruments and resources for parties responsible for M&E.

Complementarities with the UNEP strategies and programmes

UNEP aims to undertake GEF funded projects that are aligned with its own strategies. The evaluation should present a brief narrative on the following issues:

Linkage to UNEP's Expected Accomplishments and POW 2010-2011. The UNEP MTS specifies desired results in six thematic focal areas. The desired results are termed Expected Accomplishments. Using the completed ROtI analysis, the evaluation should comment on whether the project makes a tangible contribution to any of the Expected Accomplishments specified in the UNEP MTS. The magnitude and extent of any contributions and the causal linkages should be fully described. Whilst it is recognised that UNEP GEF projects designed prior to the production of the UNEP Medium Term Strategy (MTS)¹²/ Programme of Work (POW) 2010/11 would not necessarily be aligned with the Expected Accomplishments articulated in those documents, complementarities may still exist.

*Alignment with the Bali Strategic Plan (BSP)*¹³. The outcomes and achievements of the project should be briefly discussed in relation to the objectives of the UNEP BSP.

Gender. Ascertain to what extent project design, implementation and monitoring have taken into consideration: (i) possible gender inequalities in access to and the control over natural resources; (ii) specific vulnerabilities of women and children to environmental degradation or disasters; and (iii) the role of women in mitigating or adapting to environmental changes and engaging in environmental protection and rehabilitation. Appreciate whether the intervention is likely to have any lasting differential impacts on gender equality and the relationship between women and the environment. To what extent do unresolved gender inequalities affect sustainability of project benefits?

¹² <http://www.unep.org/PDF/FinalMTSGCSS-X-8.pdf>

¹³ <http://www.unep.org/GC/GC23/documents/GC23-6-add-1.pdf>

South-South Cooperation. This is regarded as the exchange of resources, technology, and knowledge between developing countries. Briefly describe any aspects of the project that could be considered as examples of South-South Cooperation.

The Consultants' Team

A team of two independent consultants will be contracted for this evaluation; the evaluator should have the following expertise and experience:

The lead consultant should be an expert in ecosystem management with a Master's degree or higher in ecosystem management, ecology or relevant field. S/he should have the following qualifications: (i) expertise in ecology of Arctic regions (ii) Familiarity with transboundary impacts of land-based activities to Arctic marine environment and especially familiarity with environmental impacts caused by mining industry; (iii) knowledge and familiarity of regional and international programmes and conventions targeted in protecting the Arctic region and the Arctic marine environment; (iv) familiarity with Russian environmental governance is desirable (v) knowledge of Russian is an asset, experience in project evaluations and fluency in oral and written English is a must.

The lead consultant will be responsible for collecting and analysing project data, and drafting the evaluation report. The consultant will work under the overall responsibility of the UNEP Evaluation Office and (s)he will consult with the Evaluation Office on any procedural and methodological matter related to the evaluation. It is, however, the consultant's individual responsibility to obtain documentary evidence, arrange meetings with stakeholders, and any other logistical matters related to the assignment. (S)he will liaise with the UNEP Project Manager, who will provide full support on any logistical issues, allowing the consultant to conduct the evaluation as independently as possible.

The associate consultant should be an expert in ecosystem management with a Bachelor's degree or higher in ecosystem management, ecology or relevant field. S/he should have the following qualifications: (i) expertise in ecology of Arctic regions (ii) Familiarity with transboundary impacts of land-based activities to Arctic marine environment and especially familiarity with environmental impacts caused by mining industry; (iii) knowledge and familiarity of regional and international programmes and conventions targeted in protecting the Arctic region and the Arctic marine environment; (iv) familiarity with Russian environmental governance (v) experience in project evaluations is an asset, fluency in oral and written English and Russian is a must.

The associate consultant will be responsible of assisting the lead consultant in data collection and analysis, organizing visits to and interviews at the project sites, as well as drafting the evaluation report. The consultant will work under the overall responsibility of the UNEP Evaluation Office and (s)he will consult with the Evaluation Office and the lead consultant on any procedural and methodological matters related to the evaluation.

The consultants certify to the Evaluation Office that (s)he has not been associated with the design and implementation of the project in any way which may jeopardize his/her independence and impartiality towards project achievements and project partner performance. In addition, (s)he certifies that (s)he will not have any future interest in cooperating with the project's executing or implementing units within six months after the completion of his/her contract.

Evaluation Deliverables and Review Procedures

The main evaluation report should be brief (no longer than 35 pages – excluding the executive summary and annexes), to the point and written in plain English. The report will follow the annotated Table of Contents outlined in Annex 1. It must explain the purpose of the evaluation, exactly what was evaluated and the methods used (with their limitations). The report will present evidence-based and balanced findings, consequent conclusions, lessons and recommendations, which will be cross-referenced to each other. The report should be presented in a way that makes the information accessible and comprehensible. Any dissident views in response to evaluation findings will be appended in footnote or annex as appropriate.

Review of the draft evaluation report. The draft report shall be submitted to the Head of the Evaluation Office. The Evaluation Office will review the report for clarity and comprehensiveness. When found acceptable, the Head of Evaluation will share the report with the Project Manager and other relevant persons involved for initial review and consultation. The Project Manager will forward the draft to project stakeholders. Stakeholders may provide feedback on any errors of fact and may highlight the significance of such errors in any conclusions. Consultations will be held between the consultant, Evaluation Office staff, the Project Manager and key members of the project execution team. These consultations will seek feedback on the proposed recommendations and lessons. Comments would be expected within two weeks after the draft report has been shared. The Evaluation Office will then collate all review comments and provide them to the consultant for consideration in preparing the final version of the report. The consultant will prepare a response to any comments that contradict his/her own findings and could therefore not be accommodated in the final report. This response will be shared by the Evaluation Office with the interested stakeholders to ensure full transparency.

As per usual practice, the Evaluation Office will prepare a quality assessment of the final report, which is a tool for providing structured feedback to the evaluation consultants. The quality of the draft evaluation report will be assessed and rated against UNEP criteria as presented in Annex 4. The UNEP Evaluation Office will also prepare a commentary on the final evaluation report, which presents the EO ratings of the project based on a careful review of the evidence collated by the evaluation team and the internal consistency of the report. These ratings are the final ratings that the UNEP Evaluation Office will submit.

Submission of the final Terminal Evaluation report. The final report shall be submitted by Email to:

Segbedzi Norgbey, Head
UNEP Evaluation Office
P.O. Box 30552-00100
Nairobi, Kenya
Tel.: (+254-20) 762 3387
Email: segbedzi.norgbey@unep.org

The Head of Evaluation will share the report with the following persons:

Maryam Niamir-Fuller, Director
UNEP/GEF Coordination Office
P.O. Box 30552-00100
Nairobi, Kenya
Tel: (+254-20) 762 4686
Email: maryam.niamir-fuller@unep.org

Ampai Harakunarak, GEF Task Manager
UNEP/Regional Office for Asia and the Pacific
2nd Floor, Block B, UN Building
Rajdamnern Nok Avenue, Bangkok 10200 Thailand
Tel: +662 288 1977
Email: ampai.harakunarak@unep.org

Takehiro Nakamura
Head, Marine Ecosystem Branch
Division of Environmental Policy Implementation
UNEP, Nairobi
Tel: (+254-20) 762 3886
Email: takehiro.nakamura@unep.org

The final evaluation report will be published on the UNEP Evaluation Office web-site www.unep.org/eou and may be printed in hard copy. Subsequently, the report will be sent to the GEF Office of Evaluation for their review, appraisal and inclusion on the GEF website.

Resources and Schedule of the Evaluation

This terminal evaluation will be conducted as an in-depth evaluation by a team of two independent consultants contracted by the UNEP Evaluation Office.

The contract of the lead evaluator will begin on **26th of September 2011** and end on **15th December 2011**, including travel to Moscow and the Project Demonstration Sites in Murmansk and Arkhangelsk.

The lead evaluator will submit the first draft report by **21st November 2011** to the UNEP Evaluation Office. The Evaluation Office will share the report with the Project Manager and other relevant persons involved for review and consultation. The comments for the draft report will be submitted to EO within two weeks, and the EO will collate the comments and share them with the consultant. The evaluator will revise the draft following the comments and suggestions and submit the final report by **15th December 2011**.

The contract of the associate evaluator will begin on **26th September 2011** and end on **15th December 2011**, including travel to Moscow and the Project Demonstration Sites in Arkhangelsk and Murmansk.

The associate evaluator will submit a draft report entailing her/his findings from the field fact finding mission by **15th November 2011** to the lead evaluator and UNEP Evaluation Office. The lead evaluator will use associate evaluator's draft report as an input when drafting the main report. The associate evaluator will assist the lead evaluator to revise the draft following the comments and suggestions submitted by EO until the EO has approved the final report.

Schedule of Payment

Fee-Only Option

The evaluator will receive an initial payment of 40% of the total amount due upon acceptance of the draft report. Final payment of 60% will be made upon acceptance and satisfactory completion

of work. The fee is payable under the individual SSAs of the evaluator and is **NOT** inclusive of all expenses such as travel, accommodation and incidental expenses. Ticket and DSA will be paid separately

In case the consultant is not able to provide the deliverables in accordance with this ToR, in line with the expected quality standards by the UNEP Evaluation Office, payment may be withheld at the discretion of the Head of the Evaluation Office until the consultants have improved the deliverables to meet UNEP's quality standards.

If the consultants fail to submit a satisfactory final product to UNEP in a timely manner, i.e. within one month after the end date of their contract, the Evaluation Office reserves the right to employ additional human resources to finalize the report, and to reduce the consultants' fees by an amount equal to the additional costs borne by the Evaluation Office to bring the report up to standard.

Annex 2: Project costs and co-financing tables

Project costs	Estimated cost at design	Actual Cost	Expenditure ratio
Component/sub- component			
Project	6 191 000 (PDF + Phase I)	6 134 054 (PDF + Phase I)	0,99

Co-financing

Co-financing	IA Own Financing (mil US\$)		Government (mill US\$)		Private Sector (mill US\$)		Other (mill US\$)		Total Financing	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grants							7,35	2,58	7,35	2,58
Loans										
Credits										
Equity investments										
in-kind support			5,8	8,6					5,8	8,6
Non-grant instrument										
Other type			0,19	0,48					0,19	0,48
Total			5,99	9,08			7,35	2,58	13,34	11,66

Annex 3: List of persons met and interviewed

- **Face-to-face in Moscow:** Project management and execution support in Moscow and the project working group – meeting with Mr. Evgeny Konygin (Project Manager, Project Office); Mr. Sergey Tambiev (Deputy Project Manager, Project Office); Dr. Andrey Peshkov (Ministry of Natural Resources and Ecology of the Russian Federation); Dr. Youry Sychev (Polar Fund); Ms. Liudmila Khorosheva (UNEP Moscow Office); Dr. Arkadiy Tishkov (Institute of Geography, Moscow); Prof. Valery Petrosyan (MGU, Moscow); Dr. Sergey Dutchak (EMEP MSC East, Moscow).
- **Face-to-face in Murmansk,** project participants and stakeholders - Mr. Aleksey Smirnov (Committee for industrial development, nature use and environment of Murmansk region); Mr. Phydor Shveytser (Committee for industrial development, nature use and environment of Murmansk region); Mr. Alexander Glazov (Ecocentre Group, Murmansk); Mr. Vladimir Khrutsky (Supervisory natural resources management service for Murmansk region); Mr. Anatoly Shavykin (Murmansk Marine Biological Institute of KSC RAS); Mr. Gregory Voskoboynikov (Murmansk Marine Biological Institute of KSC RAS); Mr. Dmitry Ishkulov (Murmansk Marine Biological Institute of KSC RAS); Ms. Olga Sarkova (RSA Group, Murmansk); Mr. Stanislav Fomin (WWF Russia, Barents office); Ms. Nina Aphanasyeva (Saami people association, Murmansk); Mr. Nikolay Dobrokhoto (Scientific Research Institute of Atmospheric Air Protection “SRI Atmosphere”, Murmansk); Mr. Andrey Zolotkov (NGO “Bellona-Murmansk”);
- **Face-to-face in Archangelsk** - Mr. Kirill Sinitskiy (Agency on Ecology of the Administration of the Arkhangelsk Region); Mr. Dmitry Dedkov (“Gorst” company, Arkhangelsk); Mr. Roman Ershov (National Park “Russkaya Arctic”, Arkhangelsk); Ms. Tatyana Kaletyuk (Agency on Ecology of the Administration of the Arkhangelsk Region); Mr. Aleksandr Chulkov (Regional state institution “Centre of nature use and Information”); Mr. Dmitry Dedkov (“Gorst” company, Arkhangelsk); Mr. Ivan Bolotov (Institute of Ecological Problems of the North of the Urals Branch of RAS); Mr. Vladimir Anufriev (Institute of Ecological Problems of the North of the Urals Branch of RAS); Mr. Anatoly Minyaev (Supervisory natural resources management service for Arkhangelsk region).
- **Email / Phone communication with** - Dr. Boris Morgunov (Assistant to the Minister of Economic Development of the Russian Federation); Mr. Boris Melnikov (Project Technical Advisor); Ms. Ampai Harakunarak (Task Manager, UNEP); Ms. Eleonora Barnes (US EPA); Dr. Henrik Forstrom (NEFCO), Mr. Ivan Zavadsky (GEF).
- **Contacted, asked for information and no answered** – Ms. Mariya Kalugina, Dr. Ivan Senchenya, Mr. Alexander Averchenkov, Ms. Galina Zaytseva, Ms. Pavel Sulandzga, Mr. Sergey Kurdjukov, Dr. Lev Neretin

Annex 4: List of documents reviewed

1. Project document
2. Working plans and budgets (2005 – 2010)
3. Project Implementation Reports (2007 – 2009) – UNEP\GEF PIR
4. Project Steering Committee reports (2005 – 2010)
5. IAWG reports (2006 – 2009)
6. Financial Reports (2005 – 2009)
7. Auditors reports (2005 – 2009)
8. Contracts:
 - a. Individual consultants
 - b. Companies
9. Reports:
 - a. Individual consultants
 - b. Companies
10. Strategic Action Program for Environmental Protection in the Arctic Zone of the Russian Federation (SAP)
11. Report on Pre- investment studies implementation in three Russian Arctic regions (PINS)
12. Progress Report on Environmental protection System Component Implementation (EPS)
13. Progress Report on demo and pilot projects implementation
 - a. PILOT-Bioremediation, PILOT- Tiksi, BASES-2 and TIKSI-2 projects
 - b. Demo-projects co-management, ONEGA-BASE
14. Diagnostic Analysis of State of the Environment in the Arctic zone of the Russian Federation
15. Co-financing reports

Annex 5: Extended Summary of Final Report on Environmental Restoration Within the Decommissioned Military Facility near Pokrovskoye Settlement, Onega Municipality, Arkhangelsk Region

The environmental restoration activities within the decommissioned military facility near the Pokrovskoye settlement, Onega Municipality, Arkhangelsk Region, were performed by "GORST" Ltd. in 2009-2010, as specified in Service Agreement №CS-NPA-Arctik-12/2009 dd. 2 October 2009 between "GORST" Ltd., the Executive Board of the Russian Program for Investment into Environment Enhancement (EB РПНН/ИД РПОИ) and the Committee on Environment of the Arkhangelsk Region.

The environmental restoration activities included three stages:

1. The first stage (2009):

- Preparatory work;
- Collection and loading of oil products from the storage reservoir into the container for temporary storage with the use of EK-18 backhoe;
- Heating of the collected oil products at the site up to 60°C by using tubular electric heaters with further pumpover by GAZ KO-503 and KAMAZ KO-505 vehicles, with the use of mesh filters, into KAMAZ and Scania bitumen carriers.

The amount of oil products that were extracted from the oil storage and loaded onto bitumen carriers has totaled 3,000 tons. The oil products were further transferred to the specialized company "Ecopromservice" Ltd. to be used as secondary material resource.

2. The second stage (2010):

- Removal of 1.5 m³ of polluted shrubs from the oil storage reservoir area for further decontamination at the "Forsage-1M" facility at the firing temperature of 1 000 °C;
- Extraction of 635 tons of off-test products from the storage reservoir inner surface areas by using EK-18 backhoe, to be temporarily stored (until deciding on decontamination procedure) at "GORST" Ltd.'s operations base in Onega, Arkhangelsk Region;
- Extraction of 560 m³ (560 m³ * 1.65 t/m³ = 924 tons) of oil-polluted soil from the 311.1 m³ area adjacent to the oil storage reservoir, by using EK-18 backhoe and decontamination thereof at "UZG-1M.1,2/6.7.12" facility at the firing temperature of 800-900 °C.
- Grading and leveling an area of 0.57 hectares with bulldozers and trenching tools;
- Planting 113.5 kg of grass and grass mixtures (meadow fescue, timothy grass, red fescue).

The collection, utilization, decontamination, transportation and disposal of the harmful waste has been undertaken by "GORST" Ltd. according to License No.OT-27-000301 (29) dd. 5.02.2009 issued by the Directorate for Technological and Ecological Supervision of Rostekhnadzor for the Arkhangelsk Region. The license is valid until 05.02.2014.

During the first and second stages of work, water and soil samples were tested for oil contamination and the composition of the identified oil products was examined. The laboratory tests have shown that the concentration of oil products in the soil varies between 19 and 174 mg/kg and does not exceed the maximum permissible level for soil (1 000 mg/kg). The concentration of oil products in the Pilnema River water also does not exceed the maximum permissible level established for sources of drinking and recreational water (0.3 mg/dm³).

2. The third stage:

The third stage of the environmental restoration activities performed by GORST Ltd. included the analysis of Russian and foreign (Scandinavian – Norway, Finland, Sweden and North America – Canada and USA) practices of the treatment of oil-polluted soil in the Arctic environment.

The essential methods used in the treatment of oil-polluted soil can be grouped into:

- Physicochemical (“MONTANA”, “DUPON” and “General Elektrik” using IASAGNA the technology based on the electrokinetic treatment of oil-polluted ground; the Dutch “RAIL-PRO,” German “LURGI AG”, Russian “Sharykz” using water flushing techniques). This oil-polluted ground treatment technique will appear rather costly to be used in the High North and the Arctic. In addition, the application of ultrahigh-frequency fields will result in fast and evenly distributed ground heating, which, in turn, will cause dehydration, disassociation of hydrocarbons, their oxidization and even melting. This method, therefore, is unsuitable to be used on grounds containing clay loams, as their structure will change.
- Chemical (“MEISSNER GRUNBAU”, “WEST ALPINE” relying on solidification of oil-containing wastes, lacquer varnishes, resins). This technique requires the use of chemical agents to treat liquid and solid oil-containing wastes. The method thus cannot be used on highly humid grounds, i.e. in the High North of Russia and the Arctic, as the threat of secondary pollution is evident.
- Biological (the preparations used in Russia include Devoroil, Bioprin, Soilex, Ruden). The method is based on various microbial strains’ potential to degrade and absorb, in their biomass, many organic pollutants. However, in the conditions of the Arctic and the High North of Russia, the method appears inefficient, as low temperatures will make the process extremely slow.
- Thermal (Danish AS 51 402, ASWI 402 incinerators; Norwegian GOLAROG 200, VESTA MAX 255 incinerators; Russian IN incinerators, “Vihr”, “UZG” turbo bubblers).

The “UZG” facility in 2009 was successfully used by GORST Ltd. to decontaminate 1,738 tons of oil-polluted soil in the area of the High North and near the Polar Circle. This facility is mobile and equipped with three-stage treatment for off-gases.

The experiences and results obtained by the GORST Ltd. enable to conclude that the thermal method suits best to restore the soils polluted with dark-oil products and oil slurry. This method is more efficient compared with the use of preparations.

When rehabilitating the oil storage reservoirs and polluted areas of the decommissioned military facilities in the Russian Arctic, the following should be taken into consideration:

- Rehabilitation of the facilities requires a tailored approach that includes considerations of the climatic and geographic factors;
- It is necessary to decide whether the use of oil slurry or off-test products as a resource of secondary material is expedient, and how to transport these products to the processing facilities;
- The thermal method is one of the functioning methods to be used in rehabilitating oil-polluted areas of the Russian Arctic;
- The optimum season for rehabilitation work in the Arctic and the High North of Russia is June-October.

The environmental restoration activities performed at the decommissioned military facility near the Pokrovskoye Settlement resulted to the area being cleaned of oil products. The restored area totals 0.57 hectares (5667 m²). The area can now be used for forestry purposes (plantations), for the construction of industrial premises and structures, or for any other designated purpose.

What remains necessary is to secure funding to decontaminate the remaining volumes of the off-test products extracted from the oil storage and that were temporarily stored at the GORST Ltd.'s operations base in Onega, Arkhangelsk Region.

Annex 6: Brief CV of the consultant

Prof. RNDr. Ivan HOLUBEK, CSc.

RECETOX

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Curriculum vitae

Date of birth: April 11, 1951

Private address: 24. Dubna 171, 664 43 Želešice, Czech Republic

Phone: + 420 602 753 138

Nationality: Czech

Civil status: divorced

Educational training:

1975 - Organic Chemistry, Purkyně University, Brno, CR

1977 - MSc. - Analytical Chemistry, Purkyně University, Brno, CR

1987 - PhD. - Ecology - Charles University, Praha, CR

1990 - Assoc. Prof. - Environmental Sciences, Charles University, Praha, CR

1998 - Prof. - Environmental Chemistry, Technical University Brno, CR

Employment:

1976 - Water Research Institute, Brno, technical assistant

1977 - Department of Organic Chemistry, Purkyně University, Brno, Assistant Professor

1983 - Department of Environmental Studies, Purkyně University (from 1990 Masaryk University)

1990 - Head of Department of Environmental Studies, Masaryk University, Brno (from 1995 – Department of Environmental Chemistry and Ecotoxicology)

From 1993 - Director of TOCOEN, s.r.o.

From 1994 - Director of RECETOX (Research Centre for Environmental Chemistry and Ecotoxicology, Masaryk University Brno, CR, from 2010 – The Research Centre for Toxic Compounds in the Environment)

1995 - Project Manager of EU PHARE Project EU/Air/21

1997 – 1998 - Expert for Risk Assessment, PHARE Programme „Air Pollution Monitoring of Slovakia“, EU/Air/22

1997 - Co-ordinator of Consortium RECETOX - TOCOEN & Associates

2001 - 2002 - Regional co-ordinator of UNEP Chemicals/GEF Project “Regionally-based Assessment of Persistent Toxic Substances - Region 3 – Europe

2002 - 2004 - National Co-ordinator of UNIDO/GEF Project “Enabling activities to facilitate early action in the implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs Convention) in Czech Republic“

2004 – until now – reviews for WB, GEF, UNEP

From 2006 – Director of the Czech National POPs Centre

From 2005 – Director of the Central and Eastern European Regional POPs Centre

Qualification:

Environmental Chemist

Language skills:

English, Russian

Educational topics:

Environmental Chemistry, Ecotoxicology, Chemical Ecotoxicology, Risk Analysis, Monitoring Systems, Environmental Impact Assessment

Research activities:

The fate of persistent organic pollutants in the environment, environmental impact assessment, risk analysis - ecological risk assessment

Areas of expertise:

Environmental chemistry, chemical ecotoxicology, human and ecological risk assessment, environmental impact assessment, environmental technologies – all with the special focus on persistent toxic substances; national implementation plans for the Stockholm Convention development and evaluation

Publication:

28 books or book chapters, 8 textbooks, over 900 scientific papers, conference contributions, research and technical reports

Grants 1993-2011:

USA (1), Canada (1), EC (3), Belgium (1), Ministry for Environment Czech Republic (15), Ministry for Education (15), Czech Grant Agency (6), UN (12), NATO (1)

The most relevant international project:

1994 – 1995 - EU PHARE Project EU/Air/21.
2001 – 2002 - Regionally Based Assessment of Persistent Toxic Substance - European Regional Report. UNEP Chemicals. Project GF/CP/4030-00-20, subproject: GF/XG/4030-00-86.
2002 – 2004 - Project GF/CEH/01/003: Enabling activities to facilitate early action in the implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs Convention) in Czech Republic.
2002 – 2005 - EC DG Research 5th Framework Programme - Centre of Excellence for Environmental Chemistry and Ecotoxicology.
2002 – 2005 - EC DG Research 5th Framework Programme – Project APOPSBAL - Assessment of the selected POPs (PCBs, PCDDs/Fs, OCPs) in the atmosphere and water ecosystems from the waste materials generated by warfare in former Yugoslavia.
2005 – 2008 - EC DG Research 6th Framework Programme – Project ECODIS - Dynamic Sensing of Chemical Pollution Disasters and Predictive Modelling of their Spread and Ecological Impact.
2001 – 2002 - Polar Programme Norway - Expedition Svalbard - The Photochemistry of PBT Compounds in Ice.
2007 – 2011 - Project Account No: SC/4030-06-01 - Measurements of POPs concentration in ambient air in two UN regions: Africa and Central and Eastern Europe.
2005 – until now – MONET - Monitoring of persistent organic pollutants in ambient air of the Czech Republic, Central and Eastern Europe, Central Asia, Africa and Pacific Islands.

Expertise:

UNEP/Stockholm Convention:

2001 - 2002 - Regional co-ordinator of UNEP Chemicals/GEF Project “Regionally-based assessment of Persistent Toxic Substances - Region 3 – Europe
2005 - 2014 – member of POPs Review Committee, SC

2005 - 2006 – member of BAT/BEP expert group, SC
2006 - 2007 – chair of Ad hoc Technical working group on the effectiveness evaluation of the SC on POPs
2007 – until now – Chair of Regional Organisation Group for the evaluation of the POPs monitoring in the Central and Eastern Europe and Central Asia and member of Global Co-ordination Group for the Global POPs monitoring
2012 - UNEP/SSC project Pilot testing of guidance documents for the review and updating of national implementation plans in Serbia

GEF:

2009 - Analysis of Scientific and Technical Aspects of the Stockholm Convention NIP Inventories

UN/ECE:

1991 – 1994 - Member of Task Force on Persistent Organic Pollutants
1993 - 1998 - Member of Task Force on Emission Inventories
1995 – 1997 - Member of Ad Hoc Preparatory Working Group on Persistent Organic Pollutants
2000 – until now - Member of Task Force on Measurement and Modeling
2006 – until now - Task Force on Hemispheric Modeling

UNIDO:

2002 - 2004 - National Co-ordinator of UNIDO/GEF Project “Enabling activities to facilitate early action in the implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs Convention) in Czech Republic“
2003 - 2005 - UNIDO/GEF Projects “Enabling activities to facilitate early action in the implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs Convention) in Armenia, Croatia, Egypt, Hungary, Macedonia, Oman, Serbia and Montenegro, Slovakia - training courses, development of NIP

UNDP:

2008 – Consultant of the project Preparation of Study on Establishment of an Efficient and Sustainable System for Pesticide Packaging Waste Management in the Prespa Region, Republic of Macedonia.
2011-12 – Expert of the project Transfer of the best Czech experience in the field of design and execution of PCB Management to Kyrgyz national and local experts
2011-12 - RFP 2011/18 – Transfer of best Czech experiences in the field of design and execution of a comprehensive PCB management plan for Kazakhstan

Other expert activities:

2002-2003 – head of governmental expert group for the evaluation of the contamination of Spolana Neratovice surroundings by polychlorinated dibenzo-p-dioxins, dibenzofurans and biphenyls after floods in 2002.
1997 – 1998 - Expert for Risk Assessment, PHARE Programme „Air Pollution Monitoring of Slovakia“, EU/Air/22
1995 - Project Manager of EU PHARE Project EU/Air/21
2005 – up to now – member of the Environmental Committee of the Presidium of Academy of Science, CR
2007 – up to now – member of National committee for environmental impact assessment
2009 – up to now - member of the Board for chemical safety CR
Person responsible for the environmental impact assessment based on the Czech Act No.244/1992

Scientific visits:

1988 – 2011 – more than 300 short time stays (5 days - 4 month)

Memberships in scientific organisation and institutions:

UN/ECE – member of the Task Force on Persistent Organic Pollutants, Task Force on Emission Inventory, Ad Hoc Preparatory Working Group on Persistent Organic Pollutants, Task Force on Measurements and Modelling

UNEP/Stockholm Convention – regional experts group, regional co-ordinator of UNEP/GEF Regionally Based Assessment of PTS Project, member of POPs Review Committee, member of BAT/BEP Expert Group, chair of the Ad hoc Technical Working Group on Effectiveness Evaluation of the Stockholm Convention on Persistent Organic Pollutants, co-ordinator of the Central and Eastern European Regional Organisation Group

Society for Risk Analysis, SETAC - Society of Environmental Chemistry and Toxicology, SECOTOX - Society of Ecotoxicology and Chemical Safety (member of CEEC regional committee)

Chairman of Czech Society for Environmental Chemistry and Ecotoxicology

Member of editorial board of Environmental Science and Pollution Research, Fresenius Environmental Bulletin, Acta Hydrobiologica et Hydrochimica, Chemosphere