

Lessons Learned from ECORA

An integrated ecosystem management approach to conserve biodiversity
and minimise habitat fragmentation in the Russian Arctic



The Conservation of Arctic Flora and Fauna (CAFF) is a Working Group of the Arctic Council.

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- Environment Canada, Ottawa, Canada
- Faroese Museum of Natural History, Tórshavn, Faroe Islands (Kingdom of Denmark)
- Finnish Ministry of the Environment, Helsinki, Finland
- Icelandic Institute of Natural History, Reykjavik, Iceland
- The Ministry of Domestic Affairs, Nature and Environment, Greenland
- Russian Federation Ministry of Natural Resources, Moscow, Russia
- Swedish Environmental Protection Agency, Stockholm, Sweden
- United States Department of the Interior, Fish and Wildlife Service, Anchorage, Alaska

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- Aleut International Association (AIA)
- Arctic Athabaskan Council (AAC)
- Gwich'in Council International (GCI)
- Inuit Circumpolar Conference (ICC) – Greenland, Alaska and Canada
- Russian Indigenous Peoples of the North (RAIPON)
- Saami Council

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— CAFF Designated Area

Foreword

ECORA was a Global Environment Facility (GEF) project initiated by the Arctic Council Working Group the Conservation of Arctic Flora and Fauna (CAFF), UNEP/GRID-Arendal, and the Russian Federation that used an integrated ecosystem management (IEM) approach to conserve biodiversity and minimise habitat fragmentation in the Russian Arctic.

The main phase of the project was initiated in 2004 and the project was completed in 2009. It is anticipated that some work undertaken in ECORA will continue as the relevant administrations adopt and begin the full implementation of the IEM plans. As part of the sustainability strategy of the project, a number of activities are already planned to continue beyond the project period.

A preliminary report on ECORA was published as CAFF Technical Report No. 19 in April 2009. This report summarizes project results and achievements with a focus on lessons learned and recommendations for integrated ecosystem management in Russia.

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1. Introduction

Introduction

The Russian Arctic constitutes approximately 40% of the circumpolar Arctic, as defined by CAFF. The vast ecosystems and landscapes of Arctic Russia are still relatively undisturbed compared to more southern areas of the Russian Federation and are among the last remaining wilderness areas of the globe. They are large enough to allow ecological processes and wildlife populations to fluctuate and the biological diversity to evolve and adapt naturally. The Russian Arctic is furthermore well recognised as a major driver of global climate systems, atmospheric gas exchange, and ocean current systems. The contribution of the Russian Arctic to the stabilisation and proper functioning of these systems is, therefore, crucial.

Although the Russian Arctic is one of the least impacted areas on the globe by human activity, there are serious pressures threatening to disturb habitats, fragment ecosystems, and disrupt the ecological balance, especially in lowland tundra, forest tundra, and coastal and nearshore marine areas. The ultimate result may be irreversible habitat destruction and fragmentation that reduces the total area of Arctic wilderness from 75% today to less than 50% in 50 years.

To address the challenges facing this region, CAFF, UNEP/GRID-Arendal, and the Russian Federation initiated a GEF project in the Russian Arctic, *ECORA: An integrated ecosystem management approach to conserve biodiversity and minimise habitat fragmentation in three selected Model Areas of the Russian Arctic*. The project aimed to secure the integrity of some of the world's last remaining pristine areas and support the livelihoods of indigenous and local peoples. The development objective of the project was the conservation and sustainable use of biodiversity in the Russian Arctic. The immediate objective was the adoption and initial implementation of integrated ecosystem management strategies and action plans in three Model Areas representing different ecosystems and anthropogenic pressures: Kolguev Island in the Nenets Autonomous Okrug (NAO), Kolyma River Basin in Sakha Republic/Yakutia, and Beringovsky District in the Chukotka Autonomous Okrug (ChAO) (see table 1 and figure 1). By building on national policies and priorities, the project aimed to demonstrate how IEM can be used to achieve ecological, economic, and social goals for local and global benefits. It was also important to develop processes that allow stakeholders to participate in an open and meaningful way.

Project activities were structured around four main interventions:

1. Strengthening the enabling environment for IEM
2. Strengthening the knowledge base for planning, implementing and evaluating IEM plans
3. Development of IEM strategies and action plans in the Model Areas
4. Pilot Projects to test IEM implementation strategies

1. A more detailed description of the Model Areas can be found in CAFF Technical Report No. 19, April 2009.



Table 1: Summary of the Environmental and Socio-economic Conditions in the Model Areas.

Characteristics	Kolguev Island Model Area	Kolyma River Basin Model Area	Beringovsky District Model Area
Ecosystem features	Island ecosystem; lowland tundra	River basin ecosystem; mountain and lowland tundra interspersed with forested river valleys	Coastal ecosystem; tundra shelf and continental slope
Nature protected areas (ha, %)	0	2,961,996 ha (34%)	918,000 ha (24%)
Major biodiversity values	<ul style="list-style-type: none"> • Highest waterfowl density in the Barents region (geese, willow ptarmigan, tundra swan, ducks, divers) • Kolguev Island reindeer • Marine mammals 	<ul style="list-style-type: none"> • Undisturbed wilderness • High diversity of valuable freshwater fish species (mainly whitefish) • Habitat and nesting ground of numerous waterfowl, including rare and endangered species • Unique relic larch forests 	<ul style="list-style-type: none"> • High diversity of flora, bird, mammal and fish species • Largely undisturbed wilderness • Many rare and Red Book species. • Rookeries and calving areas of marine mammals • Large bird colonies.
Population number	450	8,147	2, 872
Population density	0.09 persons	0.09 persons	0.08 persons
Indigenous population	423 (Nenets)	1,166 (Evens, Chukchi, Yukagirs, Evenks)	1,115 (Chukchi, Kereks, Chuvants, Inuit)
Life expectancy	53 years for men and 68 for women	Not available	54 years for men and 68 for women
Unemployment rate	25%	3 %	5 % ³
Basic economic activities	<ul style="list-style-type: none"> • Traditional reindeer breeding • Subsistence hunting of waterfowl and fishing • Oil extraction 	<ul style="list-style-type: none"> • Traditional reindeer breeding • Freshwater fishing • Small-scale fish farming • Subsistence hunting • Small-scale mining 	<ul style="list-style-type: none"> • Traditional reindeer breeding • Fisheries and marine mammal hunting • Subsistence hunting, including poaching
Major environmental threats and related risks	<ul style="list-style-type: none"> • Habitat fragmentation and pollution associated with oil development • Demise of unique reindeer (Kolguev Island reindeer) 	<ul style="list-style-type: none"> • Logging of old-growth forests • Upstream hydroelectric power development • Uncontrolled hunting of wild reindeer • Habitat destruction related to mining 	<ul style="list-style-type: none"> • Potential destruction and pollution of important marine habitats and traditional hunting grounds associated with planned oil development • Poaching and egg collecting

¹ This is the official figure; it is suggested that it is much higher.





Figure 1: Location of EOCORA Model Areas: Kolguyev Island (Nenets Autonomous Okrug), Kolyma River Basin (Sakha Republic/Yakutia), and Beringovskiy District (Chukotka Autonomous Okrug)

1.1 Integrated Ecosystem Management (IEM) for implementation of the ecosystem approach

The stepping-stone for IEM is the ecosystem approach, which by the Convention of Biological Diversity (CBD) is defined as “a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.” The ecosystem approach recognizes the interactions between economic, ecological and social systems and the relationships between poverty reduction, natural resource management, and good governance. Sustainable development paths require that healthy ecosystems are maintained, but also that options are socially desirable and economically viable. Options must be technologically feasible and supported by sufficient institutional capacity. Decisions must be recognised as politically legitimate.

The fundamentals of the ecosystem approach were set forth at a Convention of Biological Diversity (CBD) workshop in Malawi in January 1998 with a set of twelve principles. The CBD Convention of the Parties (COP) 5 in December 2005 adopted the ecosystem approach as the primary framework for action. CBD COP 9 in 2009 noted that “The ecosystem approach remains a useful normative framework for bringing together social, economic, cultural and environmental values,” and that “Wider adoption of the ecosystem approach can contribute to the achievement of the Millennium Development Goals.” The United Nations Framework Convention on Climate Change (UNFCCC) COP 15 in 2009 noted the importance of the ecosystem approach “to tackling not just climate change mitigation and adaptation, but also poverty alleviation, disaster risk reduction, biodiversity loss and many other environmental issues.”

IEM is one of a number of terms for the implementation of the ecosystem approach. Other terms in common use include ecosystem-based management (EbM), integrated management (IM), integrated resource management (IRM), integrated conservation and development (ICD), integrated coastal zone management (ICZM), etc. Broadly, IEM can be defined as the management of human activities and relationships for the purpose of achieving specific conservation and development goals. More specifically, “it is a continuous and dynamic process through which decisions are made for the sustainable use, development and protection of land and living natural resources. IEM acknowledges the inter-relationships that exist among resource users and the environments they potentially affect. It is designed to overcome the fragmentation inherent in a sectoral management approach. IEM analyzes the implications of development, conflicting uses, and the interrelationships between physical processes and human activities. It promotes linkages and harmonization among sectoral activities” (adapted from Cicin-Sain, B. and Knecht, R., 1998).

IEM models represent viable alternatives in achieving sound and sustainable environmental protection compared with past approaches. IEM incorporates the Malawi principles stated above. IEM is, however, still a relatively new way of managing natural resources. By definition, it necessitates a fundamental shift away from traditional sectoral management toward one involving multiple stakeholders working together in an open and transparent environment. IEM is typically characterized by close contact and dialogue between individuals and institutions, mutual learning, and voluntary participation. It includes participatory planning, conflict resolution, co-management or community-based management, local institution building, stakeholder analysis, incentives for sustainable use and equitable sharing of natural resources, and so on. IEM usually requires a significant amount of capacity building, both individual and institutional, to create the necessary enabling environment. There is need for clear identification of issues, stakeholder involvement and public participation, institutional and community capacity, acknowledgement of and respect for cultural differences, open and effective communications, information sharing, and regular evaluations of progress. A key element for success anywhere is a recognition and appreciation for the time, complexity, and effort needed to design and establish an IEM program.

It must be recognised, however, that although good results can be achieved with IEM, there are also important constraints and pitfalls. Most participants in interdisciplinary ventures such as IEM have been trained in traditional disciplines. They must learn to appreciate differing perspectives and approaches and cross-cutting issues. There is often reluctance both in central government institutions to delegate power to local peoples’ institutions, as well as deep scepticism in local institutions towards national governments. Interest groups and stakeholders vary in capacity to influence power and decision-making. Finally many projects, which promote this synergy have been based on naïve assumptions, were over ambitious, or failed to become self-financing after the donor support ended.

1.2 Results of ECORA

Mid-term results of ECORA were published in the CAFF Technical Report No. 19 and the project underwent a mid-term evaluation by the GEF in 2007. The project formally closed in December 2009 with the completion of all planned activities. These activities are described in detail in CAFF Technical Report No. 19 and will not be repeated here. (See Appendix 1 for a full list of activities.)

At the time of writing, the Terminal Report evaluating ECORA project results is still under preparation by UNEP and is expected to be completed in spring 2011. The Terminal Report will examine the extent and magnitude of project impacts to date and determine the likelihood of future impacts. The evaluation will also assess project performance and the implementation of planned project activities and planned outputs against actual results. It will focus around three main questions:

1. Have IEM strategies and plans been operationalized in the three Model Areas (i.e., signed agreements, established funding mechanism, operational Model Area Implementation Units (MAIUs) and advisory bodies)?
2. Has biodiversity in the three Model Areas noticeably benefited from the project (i.e., low % of changes in areas of unfragmented habitats, positive trends in population sizes of threatened species, at least 30% reduction in illegal and unsustainable nature use)?
3. Are socio-economic benefits of IEMs evident in the three Model Areas? (e.g., Are there positive changes in basic economic indicators showing revival of traditional nature use activities?)

As previously stated, the objective of ECORA was the development, adoption, and initial implementation of an integrated ecosystem management strategy and action plan for each selected Model Area that would support the conservation and sustainable use of biodiversity in the Russian Arctic. All activities undertaken in the project were in support of these strategies and action plans. Each plan describes activities related to the conservation and management objectives for the Model Area, major tasks and expected results, executors for each action, and indicators for evaluation. The completed IEM strategies and action plans as prepared in the Model Areas, are attached in Appendices 3-5.

The administrations of both the Nenets Autonomous Okrug and Sakha Republic/Yakutia formally approved the IEM strategies and action plans for Kolguev Island and the Kolyma River Basin Model Areas, respectively, in 2009. At the time of writing, the administration of Chukotka Autonomous Okrug has yet to formally approve the IEM strategy and action plan for Beringovsky District. ChAO proved to be a difficult region to work in for both technical and administrative reasons. This region lacked local expertise requiring experts to be brought in from other regions, at increased cost to the project. The remoteness of the region also meant that some of the originally planned activities had to be modified for budgetary reasons. On the administrative side, from the beginning of project implementation, the local administration was reluctant to support ECORA, even though they had signed a letter of support in the project proposal, and establishing a Model Area Implementation Unit was significantly delayed in this region. When the ChAO administration changed mid-way through the project, costly and time consuming negotiations were once again required to maintain their support for the project. In addition, there were three different Model Area Coordinators for Beringovsky District and two different Western Advisors during the project. This lack of continuity in the core team for the Model Area contributed to delays within this Model Area.

Although the IEM strategy and action plan for Beringovsky District were not formally approved by the Chukotka administration, many of the activities initiated under ECORA will continue to be implemented. In particular, environmental education programs have been established in the schools and will continue; efforts to restore traditional nature use are continuing; the Beringovsky portion of Beringia National Park will be established based on work undertaken in ECORA; thematic maps developed in ECORA are being used by the administration; and some field work initiated in the region will continue. Although this is not the outcome that the project aimed for, under the difficult conditions experienced in this region, this is perhaps the best result that could be expected.

1.2.1 Lessons learned and recommendations

ECORA represented the first time that a project of this magnitude focusing on IEM was attempted in Russia. As such, there are a number of valuable lessons to be gained from it for the benefit of ongoing implementation of ECORA results as well as for future projects. The following are some of the lessons learned in ECORA taken from a number of project reports to the GEF and from project meetings and workshops.

Appreciation of the ecosystem approach and IEM

A common understanding and appreciation of IEM must be established at the outset of a project. The ECORA project proposal submitted to the GEF in 2004 emphasized that, "... all forms of integrated ecosystem management (IEM) take time to develop and take root. IEM is still a relatively new way of managing natural resources. By definition, it necessitates a fundamental shift away from traditional sectoral management toward one involving multiple stakeholders working together in an open and transparent environment..." This statement is still valid. IEM and truly participatory natural resource management approaches are still emerging fields in the Russian Federation. Although some people involved with the project had a good grasp of the concept and requirements for its implementation, most ECORA staff, stakeholders, and partners had training and work experience from traditional sectoral disciplines such as ecology and other natural sciences. Their experience with cross-cutting issues as advocated by the ecosystem approach, however, was limited and few had an in-depth appreciation of the importance of the interactions between economic, ecological, and social systems as contributors to biodiversity conservation and the

sustainable use of natural resources. Given the changes being experienced in Russia today, it was unrealistic to expect to find the level of expertise required without providing more substantial training up front. The result was that the scientific studies were carried out well but that critical stakeholder consultations tended to be lacking. This additional training should have been built into the original project proposal and budget.

In a similar manner, it was also unrealistic to expect that the Western Advisors would be in an adequate position to provide the support required relating to IEM. They were not permanently based in the Russian Federation, communicated mostly by e-mail with their Russian counterparts, and funding allowed them to spend only a limited amount of time in the Model Areas for direct support. While their participation was valuable in realizing many aspects of the project, they also did not have the necessary depth of expertise with IEM that the project demanded.

Related to this issue, there was an over-optimistic belief on the part of the project team in what could be achieved in the 5-year period given that developing and implementing IEM strategies and action plans is challenging even in countries with the necessary resources and governance regimes.

Institutional arrangements, including project governance

Implementation is most effective when a local or regional administrative organization is engaged to manage project activities locally. A project on the scale of ECORA, spanning the Russian Arctic and focusing on remote communities, faces numerous institutional challenges. The three Model Areas had different environmental and socio-economic conditions requiring different approaches to IEM implementation. Selecting a local or regional management body that has the ability to coordinate with the central managing body can help overcome some of these difficulties and makes project implementation more effective.

Ideally, the Model Area Coordinator should be a representative of that organization with the best option being if that person is one of its leaders. This, however, requires that the regional administration appreciates the project and its objectives and can see that it will have positive socioeconomic and environmental consequences in the future. In ECORA, all three Model Area Implementation Units were situated within regional administrative bodies with the Coordinator being selected from its ranks.

Care is required in selecting qualified specialists both for Coordinator and expert positions. This needs to go hand in hand with relevant training in IEM and associated issues, not least because the ecosystem approach / IEM is still in its very early stages in Russia. Replacement of Coordinators in two Model Areas significantly delayed implementation of the project, especially in the Beringovsky District. This was further complicated by the fact that the project was often required to accept personnel put forward by the local administrative body regardless of qualifications.



When selecting Model Areas it is necessary to take into account all logistical costs, especially in relation to transportation. In ECORA, the lack of appropriate expertise in local communities meant that the Model Area management teams had to be located in regional capitals. The distance of the Model Areas from the regional capitals and the expense in getting there seriously limited the number of visits that could be made by project management. It also severely restricted the participation of local people in critical project activities such as some workshops. Finally, some activities in ECORA were limited due to prohibitively high transportation costs.

All administrative requirements of the host country must be made clear in the design phase so these can be properly planned for. In ECORA, additional requirements were placed on the project (e.g., need for an administrative body) that resulted in unanticipated financial burdens on the project and delayed the start of implementation.

To encourage project ownership, advisory bodies such as the Expert Task Team (ETT) should have a Russian chair with an international co-chair for professional backstopping, when necessary. In projects such as ECORA, national ownership is important for the long-term sustainability of a project. It is, however, critical for the chair to have extensive experience with IEM to guide project implementation. Where there is little in-country experience with IEM, an international co-chair can, based on his or her previous experience with projects of this nature, provide advice, particularly on challenging cross-cutting issues, and engage international interest and support for the project.



Stakeholder participation

ECORA aimed to support the livelihoods of indigenous and local peoples. Because the National Biodiversity Conservation Strategy (2001) proposes to adopt integrated approaches to nature management with full involvement of indigenous peoples, local and indigenous peoples contributed to the development of ECORA in the developmental phases, mainly via the main NGO for indigenous peoples' issues in the region, the Russian Association of Indigenous Peoples of the North (RAIPON.) Their involvement included participation in workshops and meetings, consultations during the fact-finding missions, and they were invited to participate on ECORA's Expert Task Team. Representatives from indigenous peoples groups were also invited as observers or advisors to ECORA's Steering Committee.

ECORA's design phase demonstrated that indigenous peoples can provide important advice and support on how alternative sources of livelihood could be developed and some of their ideas were incorporated into the project design. During the project's main phase, local and indigenous peoples actively participated in project activities in the Model Areas, particularly in training activities and the development and implementation of the pilot projects.

Measures must be taken to adequately engage the local population throughout the life of the project, from design phase through implementation. In ECORA, active on-the-ground involvement in the Model Areas tended to occur intermittently for a variety of reasons. Application for GEF funding is a lengthy process and almost three years passed between submission of the project proposal to the formal launch of the project in 2005. It is difficult to sustain community interest in a project while administrative details are being worked through. During the implementation of the project, it is critical to develop local competence and capacity, i.e., strengthening local institutions so that they may be given a voice in management of natural resources.

Electronic communications should be used to the fullest help keep local populations in remote communities engaged. The establishment of information centres in the Model Areas, which provide internet access and information about the project for local population, including its results on an on-going basis, would go some distance to keeping local people interested and engaged in the project. The experience of establishing an information centre on Kolguev Island demonstrated the benefits of using modern communication facilities and information exchange for wide involvement of local population/public in IEM issues.

Special efforts need to be made to engage the private sector in IEM. In ECORA, attempts were made to engage industry in the project, particularly the oil and gas sector, but these were not as successful as anticipated. The development of a code of conduct for industry proved problematic, likely as a result of different understandings of what this entails (i.e., voluntary vs. regulatory). Similarly, representatives of the oil and gas sector in Russia were invited to a workshop on IEM but there was better representation and participation from international companies. Ongoing discussions with relevant industry representatives throughout the project, as well as including them on advisory bodies such as the Regional Advisory Committees, may have improved the involvement of industry in the project. This, however, also requires greater capacity within both the central project Implementation Unit and the Model Area Implementation Units.

Change of ownership of private companies may result in changes in policy in the way they relate to the project. In the case of ECORA, there had been an agreement for a financial contribution from the Arcticneft. A change of ownership, however, meant that these funds were never realized, the new owners having no obligation to fulfil agreements of this nature made by the previous owners.

To properly engage all stakeholders, it is necessary to have solid outreach and communications strategies both at the regional and national levels. In ECORA, the development of outreach and communications strategies was substantially delayed. Preliminary communications and outreach strategy should be provided in the project preparation phase of future projects, based upon initial site visits. Designating funds to present project results at different national and international meetings would have improved the opportunities to disseminate the results to a broader audience.

Capacity building

When designing training programs, it is useful to include the full participation of project staff. In the case of ECORA, this means including Model Area staff and stakeholders, and Western Advisors, and ETT Chair. This ensures broad consultation regarding the needs of local communities, including local educational institutions in planning, drawing on international expertise, and avoiding duplication." All of the training programs received good support from participants and while some were only delivered once, others continue to be taught (e.g., environmental education programs).

Logistics of Arctic travel are a key consideration in setting training courses. Experience from the training seminars shows that participants are very interested in the content but that course duration cannot be more than 5 days. Moreover, the dates and venues of such seminars should coincide with some other events (e.g., meetings of representatives of communities, agricultural conferences, etc.) to allow for a greater number of interested people to participate in the training. Considering the high cost of

transportation in the Arctic, an additional benefit is saving funds on transportation.

Engaging youth is critical to the long-term success of IEM. Environmental education for schools was a very important aspect of ECORA. The lifestyle in the local areas may be a very difficult barrier to achieving sustainable development goals. Youth are, therefore, a very important group to support with relevant initiatives in education. Environmental education programs in ECORA were very successful in engaging the interest of students in the goals of ECORA.

Scientific and technological issues

Relevant internationally standardized methodologies (e.g., through research institutions and bodies such as CAFF, IUCN, UNEP, World Conservation Monitoring Centre, etc.) should be adopted in the implementation of project activities. There is no common approach to assessing the levels of unfragmented habitats, for example, resulting in different approaches being used in the three Model Areas. Similarly, it would have been useful to have a special approach on how to gather and interpret information on poaching, necessary for an accurate assessment on the use of biological resources.

The cost of data collection must be realistically evaluated in the design phase of the project. Working in remote regions such as the Russian Arctic, it is unlikely that all of the desired data can be collected due to financial reasons. Indicators may need to be modified or reduced in number to be realistic in terms of cost. In the case of ECORA, the cost of gathering all of the required data was underestimated. Similarly, there was a great volume of valuable scientific information gathered in ECORA but a lack of sufficient funds to translate it from Russian has made it difficult to disseminate this material to a broader audience. This information could be of interest to various national and international organizations, and could be included in the Circumpolar Biodiversity Monitoring Program (CBMP) of the Conservation of Arctic Flora and Fauna working group as a monitoring data from the Model Areas.

An assessment should be made of the availability of local expertise to implement project activities and whenever possible, local expertise should be used. In ECORA, there was a lack of qualified regional experts, especially in Chukotka and NAO. In NAO, the problem was solved by attraction of experts from St.Petersburg and Archangelsk. In Chukotka, experts from Moscow and St.Petersburg were recruited to the project. While this was an acceptable solution, using outside expertise can diminish feelings of project ownership locally so efforts should be made to ensure that all results and information collected be returned to the community. Using outside expertise also requires greater funds for travel.

To ensure better project oversight, allow for full participation of all project partners, and ease dissemination of project results to a broad audience, it is necessary to secure sufficient funds for translation. ECORA clearly required a larger translation budget than was originally forecast. It was anticipated that basic translation could be conducted within the Model Area Implementation Units but this was not possible as staff did not have the necessary language skills.

Factors that improve sustainability of project results

Strong support from local administrations is vital to the ultimate success of a project. Selection of Model Areas should be carried out in the development phases of a project, as it was for ECORA, but more care should be given to ensuring the support



of the regional authorities. Where solid support is lacking, it is better to reject a candidate area, even if it meets all other criteria. Sustainability of project results over the long term also requires the interest of regional authorities. This interest can be reached only through mainstreaming of local interests and coordination of IEM goals and tasks into social and economic development strategies and policies. It is important to involve the regional authorities early in project development and keep them engaged throughout implementation.

IEM strategies and action plans must be brief, clear, and understandable and must be developed in a format used by relevant governments. They should include a brief introductory textual part setting the stage for applying IEM approach (reference to the ecosystem approach as defined by the CBD, background environmental information, socio-economic problems, regional priorities, etc.) and Action Plan in table format. IEM strategies and action plans should include not only activities implemented within the ECORA project but also activities included into development programmes of regional administrations.

The format of IEM plans in each Model Area should be appropriate for the relevant regional authority, e.g., as a separate document, or by inclusion of items of the plan into existing programmes and plans of development of Model Area. Flexibility is important to accommodate local circumstances.

Financial management and co-financing

Steps must be taken to guarantee in-country co-funding for project implementation. Realization of Russian co-funding (federal, regional, and industry) was weak. Co-funding that had been pledged at the federal level was not realized during implementation representing a considerable loss to the project, while some regional co-funding was in-kind rather than cash. This necessitated adjustments to the project budget and activities. Letters or memoranda of understanding may be required to accompany contribution letters to ensure that co-funding commitments are honoured in the implementation phase. Changes in Russian environmental governance structures that occurred during ECORA impeded fulfillment of co-financing obligations at the federal level. Decentralization of environmental protection to regions with very limited budgets also impacted co-financing performance.

There is a need to continuously seek co-funding. Taking into account that the economic situation can change quite quickly during project development, and that its subsequent approval and implementation may take several years, additional co-funding could either bolster project activities or compensate for any lapses in co-funding obligations.

All administrative arrangements for the transfer of funds must be clarified in the design phase of the project so these can be appropriately accounted for in both the budget and in administrative planning (e.g., need for alternate contract arrangements). In ECORA, transfer of GEF funds to Russia was complicated and it was necessary to use UNDP-Russia to aid the transfer of funds to Russia and into the regions, and additional contracts were required between regional agencies and GRID-Arendal to allow for the transfers. Because UNDP charges for this service, using them to help transfer funds into Russia meant additional burdens to the project. There was also an unanticipated requirement for medical insurance. The time to establish these arrangements led to unnecessary delays in the project and pre-empted some fieldwork in 2005 entirely.



Salaries for project staff must be set at realistic levels to attract qualified people. Salary levels for all positions in ECORA were established at the beginning of the project when the Russian economy was in a very different state. As the economy improved over the course of the project, these salaries became unrealistic to attract qualified staff. As it is not possible to apply for additional funds from the GEF to cover inflation, guidance is required from the GEF at the project development stage on how to accommodate such potential changes during a lengthy project.

1.3 Concluding remarks:

Being one of the first of its kind in Russia, ECORA experienced some of the same challenges as IEM initiatives elsewhere:

- ▶ The difficulty in changing traditional top-down management and delegating power to local peoples and their institutions.
- ▶ The skepticism of local institutions towards governments and bureaucracies.
- ▶ The varying capacity of interest groups and stakeholders to influence decision-making.

Projects such as ECORA are complicated and often over-ambitious, being driven by the aspirations of both interest groups and funders alike. In reality, five years is a short time to fully implement a project on the scale of ECORA. Similar projects from many other parts of the world show that 10-20 years is more realistic. This does not necessarily require donor funding for that period but it does demand a sincere commitment from local, regional, and national institutions. This underscores the need to approach IEM in an incremental fashion, with a number of intermediate objectives to demonstrate progress and keep all parties engaged. Ultimately, flexibility and adaptive planning are crucial.

Appendix 1.

Activities undertaken in ECORA in support of IEM strategies and action plans

Output 1: Strengthening the enabling environment for IEM*

- ▶ Activity 1: Analysis of the policy, legal, and regulatory frameworks for IEM in the Model Areas, including assessments of habitat protection mechanisms and species conservation activities and the requirements for establishing territories of traditional nature use
- ▶ Activity 2: Environmental policy and management for administrative personnel and decision-makers in the Model Areas
- ▶ Activity 3: Training to restore and support traditional nature use and management, including the development of small-scale economic activities that can support biodiversity conservation
- ▶ Activity 4: Training of conservation officers
- ▶ Activity 5: Environmental education for schools

Output 2: Strengthening the knowledge base for IEM

- ▶ Activity 1: Thematic maps and analyses for IEM planning
- ▶ Activity 2: Assessment of key indicator species
 - ▶ Activity 2.1 Assessment of waterfowl on Kolguev Island
 - ▶ Activity 2.2: Waterfowl Harvest Surveys (Kolyma River Basin)
 - ▶ Activity 2.3: Assessment of reindeer (Kolguev Island)
 - ▶ Activity 2.4: Assessment of reindeer (Kolyma River Basin)
 - ▶ Activity 2.5: Assessment of whitefish (Kolyma River Basin)
 - ▶ Activity 2.6: Marine mammals (Beringovsky)
 - ▶ Activity 2.7: Assessment of threatened bird populations (Beringovsky)
 - ▶ Activity 2.8: Assessment of seabirds (Beringovsky)
- ▶ Activity 3: Community monitoring

Output 3: Development of IEM strategies and action plans

- ▶ Activity 1: Clean water and waste management on Kolguev Island
- ▶ Activity 2: Waterfowl harvest regime in the Kolyma River Basin
- ▶ Activity 3: Sustainable reindeer breeding in the Kolyma River Basin
- ▶ Activity 4: Cluster-type protected areas in the Beringovsky District

*All activities are described in detail in CAFF Technical Report No. 19

Appendix 2.

IEM action plan for the Kolyma River Basin, Sahka Republic/Yakutia

- Vladimir Vasiliev, Kolyma River Basin Model Area Coordinator

Introduction

The Global Environment Facility project «An Integrated Ecosystem Management Approach to Conserve Biodiversity and Minimise Habitat Fragmentation in Three Selected Model Areas of the Russian Arctic (ECORA)» was aimed at the conservation and sustainable utilization of biological diversity in the Russian Arctic. In particular, it was proposed that strategies and plans of integrated management of the ecosystems in three model areas be developed and implemented:

- ▶ Kolguev Island», Nenets Autonomous Okrug
- ▶ The Lower Reaches of the Kolyma River, the Lower-Kolyma Ulus of the Republic of Sakha (Yakutia)
- ▶ Beringovsky District, Chukotka Autonomous Okrug.
- ▶ These model areas represent various types of ecosystems exposed to various anthropogenic pressures and anthropogenic hazards. The Project will demonstrate that implementation of the respective strategy of integrated management will concurrently provide economic and social benefits both at the local and global scale;
- ▶ Conservation and sustainable utilization of biological diversity to ensure some reliable means for the existence of the local population, including indigenous peoples;
- ▶ Mitigation of hazards to biodiversity, destruction and degradation of natural ecosystems and maintenance of considerable areas in natural condition.

The Project envisaged utilization of resources and capacities of all the stakeholders in order to use all the resources available at the ecosystem level on a sustainable basis within model areas. The approach concerned long-term work, comprising planning and inter-sectoral cooperation to control the hazards to intact regions of global significance in terms of biodiversity conservation. That approach will also ensure conservation and sharing of the benefits from the use of natural resources. The determination of ecosystem management mechanisms includes capacity building and coordination between the stakeholders, including administrative bodies at various levels, NGOs, local people associations, and various industries.

Principles for implementation of plans for IEM

Co-management models are a viable alternative to successfully attain the objectives of environmental protection compared with previous approaches. Normally, co-management is characterized by close contact and dialog between individuals and organizations, mutual study and voluntary contributions. It includes planning of contribution, settlement of conflicts, self-administration of local communities, development of local institutions, analysis of stakeholders, incentives for sustainable utilization and fair sharing of natural resources, etc. The above experience is ubiquitous, existing in Western Europe, North America and a number of developing countries, but this experience was rarely transmitted to the former Eastern Block countries. The recognition of interactions between ecological, social and economic systems and co-management is characterized as an «Integrated Approach to Ecosystem Management» or «Ecosystem Approach». The Fifth Conference of the Parties of the Convention on Biological Diversity adopted the ecosystem approach as a tool in the Convention activities. The ECORA Project will rely on an ecosystem approach to all the three selected model areas.

Another experience demonstrates that all the forms of «integrated ecosystem management approach» (IEM) call for some time for the development and implementation of IEM. IEM is still a fairly new method for the management of natural resources. By definition that requires some fundamental transfer from traditional industry management to a unified integrated management involving all the stakeholders. The above transition frequently requires building capacity both individually and institutionally to create the conditions required. The major factor for success is the recognition and assessment of the time, complexity and efforts required to develop and adopt IEM programs.

Regardless of where it is applied, implementation of the strategy of ecosystem integrated management follows a certain cycle:

1. Definition of the problem, the stakeholders and their interests, assessment of the major ecological and socio-economic problems.
2. Development of a plan for integrated ecosystem management, including the documents for the basic conditions, investigation of the main ecosystem components, raising of public awareness, individual and institutional capacity building, public consultations and testing of performance strategies via pilot projects;
3. Formal adoption of the plan for integrated ecosystem management, including acquisition of an official mandate

(instruction) for integrated ecosystem management, approval of the policy and plans by respective authorities and ensuring appropriate funding to implement the plans;

4. The implementation of the plan for integrated management of ecosystems, including conformity with the program policy, building of legal, institutional, and administrative potential, inter-agency cooperation, measures for conflict settlement, support of all the stakeholders, monitoring of progress and socio-economic and ecological trends;
5. Assessment, including the assessment of the impact in terms of management, adaptation of the program based on the experience of successful change in the ecological and socio-economic conditions and external assessment.

The model area -The Lower Reaches of the Kolyma River

Basic physiographical features.

The model area is situated in the northeast of the Republic of Sakha (Yakutia) within the Kolyma Lowland. The total area is 87000 km². From south to north it is crossed by the Kolyma, which is the biggest river of Yakutia. The climate is sharply continental. The mean air temperature in January is 34°C, and in July, 10°C. The mean precipitation is less than 150 mm.

The flora and fauna of the model area

The flora of the model area comprises more than 420 species of higher plants. The region is home to over 30 species of useful plants, out of which number, 10 species are actively used by local people as nutritional and medicinal raw materials. The flora comprises 32 species of rare plants listed in the Yakutia Red Data Book.

The wildlife of terrestrial mammals features tundra northern-boreal species as the tundra reindeer, the moose, polar fox, ermine, lemmings, voles and the weasel. Passing there are the main migration routes, the breeding and summer grounds of the Sundrunskaya wild reindeer population. Coastal and insular areas are home to the polar bear, beluga whale, narwhal, walrus, ringed seal, bearded seal, and also various marine and coastal birds, including eiders – the Siberian and spectacled and the Bewick's swan. The water bodies and streams of the model area provide habitat to over 40 fish species, the majority of which being commercially important.

The biological diversity of the model area is of global significance in terms of species diversity and habitats of freshwater species, and some endangered avian species. Of particular importance is the fact that the model area is large and virtually intact. Four protected areas were established there, the largest being the Tchaigurino resource reserve (23756 km²).

Population, demography.

The population of the model area «The Lower Reaches of the Kolyma river» is 8147 people, the majority being the Yakut, Russians and Ukrainians. Indigenous people live compactly in the villages of Andryushkino, Kolymskoye and Pokhodsk. The indigenous peoples are the Even, Evenk, Chukchi, Yukagir, their total number being 1100. The indigenous people are engaged in traditional subsistence practices as reindeer herding, fishing and hunting. In general, the agro-industrial complex is represented by two large fishery enterprises: The State Unitary Enterprise «Sovkhoz Pokhodsky» and CJSC «Kolymsky Fish Farm». Three clan communities, 20 small farms and 230 families are engaged in traditional subsistence (essentially, reindeer herding). The existing socio-economic problems include lack of transport and absence of markets, absence of means of communication and topographic maps, low wages and very few qualified specialists among reindeer herders. The only extracted mineral resource (on a small scale) in the Nizhnekolymsky Ulus is gold.

The main results of the ECORA Project

The first stage of the cycle was fulfilled in the course preparatory phase of the Project in 1998-2003, during which the theme of the project and the three model area from the 32 nominated were selected.

The second stage of the cycle (2004-2007) was marked with survey and exploratory work on the study of the main ecosystem components of the Lower-Kolyma Region: commercially important fish species in the lower reaches of the Kolyma River, the population status of waterfowl, determination of the composition of the flora of the region.

The impact of anthropogenic activity on the environment was studied, including its impact on some particular ecosystems. Some detailed data were gathered on the status of reindeer herding on all the farms of the region. A large number of consultations at the local, regional and federal levels were conducted to reveal the major ecological problems, conflicts and methods of their settlement, development of natural resources co-management mechanisms together with indigenous peoples. Analysis of the federal and regional legislation was conducted with regard to environmental protection, protection of the rights of indigenous peoples and maintenance of traditional subsistence.

Training workshops were conducted for the municipal administration employees, nature conservation inspection, and employees of environmental protection inspection schools, the College of the Peoples of the North, clan communities on

ecological policy and management, protection of the biological and landscape diversity, the issue of additional ecological education of school and university students.

Foundations were laid for a system of public monitoring of the environmental conditions. Electronic maps were developed, using GIS technologies. Work was conducted on two pilot projects «Sustainable Reindeer Herding» and «Regime of Harvest of Waterfowl». A public reindeer herding council was established with representatives of respective administrations, Ministry of Agriculture and all the clan communities, research organizations, and educational institutions. Model sites were set up for the monitoring of waterfowl populations by local people.

In order to improve the material base, various equipment has been purchased including the snowmobile «Buran», the outboard motor «Yamaha», GPS-navigators, PCs, photo and video equipment, audio equipment, winter, seasonal equipment, etc., tutorials, literatures, electron atlases, maps for the Lower-Kolyma Environmental Protection Inspection, protected areas, College of the Peoples of the North, clan communities and schools. The Lower-Kolyma Region is the venue of some other international projects as «The Snow Patrol» for the support of the activities of indigenous peoples of the North under climate change conditions. «The White Patrol» is the WWF project to monitor the polar bear populations.

Development of the Action Plan for ecosystem integrate management in the Lower-Kolyma Region

Workshop on a mid-term basis of the fulfillment of Ecora Project in Yakutsk and the Chersky village (November 5-9, 2007) revealed that the second phase has been virtually completed, and the next step is the development of the Action Plan for the integrated ecosystem management in the model area «The Kolyma River Lower Reaches». The government of the Republic of Sakha (Yakutia) has supported the ECORA activities and development of the ecosystem integrated management strategy. On January 28, 2008, Instruction №42-p by the Government of the Republic of Sakha (Yakutia) «On the Workshop on the Development of the Plan for Action on Integrated Ecosystem Management in the Lower-Kolyma Region of the Republic of Sakha (Yakutia) in 2008-2009 under the ECORA Project of UNEP /GEF was signed.

The Workshop prepared a draft Action Plan for the years 2008-09, reflecting the respective items from the state established programs «Environmental Protection of the Republic of Sakha (Yakutia) in 2007-11», «The Program of Rural Development» etc. and also a number of activities that require special funding sources for better conformity to the principle «Integrated Ecosystem Management».

The approval of the Action Plan was delayed on account of the global economic crisis, which led all the countries and regions of the world to revise the economic and finance policy. Since the autumn of 2008, the Republic of Sakha (Yakutia) has seen a reduction in the target programs and overall reduction in funding. The above trends remain when approving the regional budget for 2010. Due to that, the proposed ECORA Action Plan for Ecosystem Integrated Management calls for a different approach. At the present stage of the Region development it is impossible to determine the particular sources and scope of funding, and due to that the proposes Action Plan for integrated ecosystem management in the model area (The Lower Kolyma Region does not state any particular dates for replenishment of the funds.

The proposed activities under the Plan and the projects can become part of the activity of respective ministries, agencies and municipalities, organizations of indigenous peoples and other stakeholders in subsequent years, taking into account their implementation when searching for the needed funds.

Thus, the Action Plan for integrated ecosystem management is a recommendation but at the same time mandatory for all the ministries and agencies that are to perform the activities listed in the Action Plan. All the ministries, agencies and organizations are to envisage certain amendments to the Action Plan beginning 2011 and determine the sources and scope of funding.

Procedure for the approval of the Action Plan

The Project expert team under the guidance of the Sakha (Yakutia) coordinator has been developing the Action Plan. In accordance with the Instruction by the Government of the Sakha Republic (Yakutia) «On the Workshop for the Development of Action Plan on the Integrated Ecosystem Management in the Lower Kama Region of the Republic of Sakha (Yakutia) for the Years 2008-2009 under the Implementation of the ECORA UNEP/GEF Project (№42-p of January 28 2008) the Workshop is getting the Project approved by the ministries and agencies included in the Plan as responsible executives and has the plan approved. The approved Plan is to be distributed to all the participants to be implemented.

Assessment and control of the implementation of the Action Plan

All the responsible executors of the Action Plan include a special section on the implementation of the Plan in their annual

reports. In addition, some particular reports on the Action Plan items will be submitted to the Ministry of Nature Conservation of the Republic of Sakha (Yakutia), which will largely control the implementation of the Plan.

The administration of the municipality The Lower Kolyma Region of the Republic of Sakha (Yakutia) is to conduct annual seminars at the municipal level for the implementation of the Action Plan and to put forward proposals for amendments to the Action Plan to the Ministry of Nature Conservation of the Republic of Sakha (Yakutia). The Ministry of the Nature Conservation of the Republic of Sakha (Yakutia) jointly with the NP jointly with the Research and Industrial Enterprise «Academy of the Northern Forum», which is an administrator of the Project have been raising the awareness and implementing the major recommendations of the ECORA Project in other regions of the Republic.

LEGENDS

- ▶ UNEP – UN Environment Program
- ▶ GEF – Global Environment Facility
- ▶ RS(Ya) – Republic of Sakha (Yakutia)
- ▶ MNC RS(Ya) – Ministry of Nature Conservation of the Republic of Sakha (Yakuta)
- ▶ DBR MNC RS(Ya) – Department of Biological Resources of the Ministry of Nature Conservation of the Republic of Sakha (Yakutia)
- ▶ GMD, MNC RS (Ya) – The Game Management Department, Ministry of Nature Conservation, Republic of Sakha (Yakutia)
- ▶ DAR, MNC RS(Ya) – Department of Aquatic Relations, Ministry of Environmental Relations, Republic of Sakha (Yakutia)
- ▶ DABR, MNC RS (Ya) – The Department of Aquatic Biological Resources, Ministry of Nature Conservation of the Republic of Sakha (Yakutia)
- ▶ SI RIACEM – State Institution - Republican Information-Analytical Center for Ecological Monitoring
- ▶ MA(Ya) – Ministry of Agriculture of the Republic of Sakha (Yakutia)
- ▶ FM RS (Ya) – Foreign Ministry of the Republic of Sakha (Yakutia)
- ▶ MSPE – Ministry of Science and Professional Education, the Republic of Sakha, Yakutia
- ▶ IBPCLZ , SB RAS – Institute of Biological Problems of the Cryolith Zone, Siberian Branch, Russian Academy of Sciences
- ▶ YARIA – Yakutsk Research Institute of Agriculture
- ▶ YaSAA – Yakut State Agricultural Academy
- ▶ BGF YaSU – Biological-Geographical Faculty, Ammosov State University
- ▶ FSRI (IAPEN) - Federal State Research Institution «Institute of Applied Ecology of the North
- ▶ FSRI (IREN) - Federal State Research Institution «Institute of Regional Economy of the North
- ▶ LCCPN – Lower-Kolyma College of the Peoples of the North

№	Activities	Executors	Major tasks and expected results	Indices
1. REFINEMENT OF THE SYSTEM OF MANAGEMENT OF NATURAL RESOURCES				
1.1.	Development of the community environmental monitoring system	Comprehensive schools , Regional Administration, Lower-Kolyana Inspection of Nature Conservation, LKCNr, DBR MNC RS(Ya), DGM RS(Ya), SI RICEM	It is necessary to define the major executors in each school of the Region, clan communities, LKCPN, Department of Education, Inspection of Nature Conservations and organize environmental monitoring with subsequent handover of the completed forms, copies of nature records to the DBR, MNC, RS (Ya), DGM MNC, RS (Ya), DGM MNC RS (Ya) , which make primary processing, and, assisted by SI RIACEM, develop databases on plant and animal life, electronic atlases and other products to be used for management of natural resources	The network of main executors Number of questionnaires per year Number of materials released
1.2.	Development of co-management public boards for game management fishing, sustainable reindeer herding	Administration of the Region, clan communities «Turvaugin», «Nutendli», «Chaila», GMD MNC RS (Ya), DABR MNC RS (Ya), DBR MNC RS (Ya), MA RS (Ya) , YaRIA	Development of Public Boards with the Administration of the Lower-Kolyana Region will involve nature-users into solving social and economic problems of the Region, and ensure minimization of conflicts, involvement of the public and indigenous peoples in decision making on the issues of management of nature management, retaining biodiversity, etc. An example may be found in the public councils for co-management of the resources of the moose, migratory birds of Alaska (US). The Public Council at the municipal level including the respective committees is to be established by joint efforts of the Regional Administration and People's Deputies Regional Assembly. The Council is to include the representatives of all the stakeholders/	The effectiveness of the public councils will be tested by regular population surveys; Annual reports of the councils
1.3.	Elaboration of a program for sustainable development of domestic reindeer-herding in Lower reaches of the Kolyana River	Center of Reindeer Herding, YaRIA, MA RS (Ya) , Regional administration, Administration of Agriculture, clan communities	It is necessary to elaborate a program for sustainable development of domestic reindeer-herding until 2015 and subsequent years to provides jobs and socio-economic protection of reindeer-herding farms, management of rangelands, development of mechanisms for sustainable marketing of reindeer-herding products	A program for sustainable development of domestic reindeer herding
1.4.	Development of the Cadaster of the plant and animal life of the Region	LBR , SI RIACEM nature conservation inspection, Ulus administration, administration of protected areas, IBPCZ RAS, BGF YaGU	It is necessary to make an inventory of species of plants and animals, which will enable assessment of their present-day status, organize monitoring and determine the measures for the protection of rare and endangered species. Database will be developed on the current status of natural resources, and also electronic maps. At the initial stages (for 3-4 years), development of a Cadaster is recommended of plant and animal life of protected areas, with the assistance of students and post-graduates,	Development of a regularly updated Cadastre of plant and animal life protected areas and subsequently, of the Region will be developed.
1.5.	Publication «Rare and Endangered Plant and Animal Species of the Arctic Regions of Yakutia »	MNC RS (Ya), DBR, Inspection of Nature Conservation, Institute of Biological Problems of the Cryolith Zone, Siberian Branch RAS	In addition to the already available Red Data Books it would be feasible to publish a popular book on rare plant and animal species with a more detailed description of species and well-illustrated. The publication is designed for inspectors and public at large, including schools students. Work should be done to find some extra-budget funds and sponsorship for the ready layout of the book.	Published book

1.6.	Establishment of an ecological information center on the basis of the Lower-Kolyma Nature Conservation Inspection, College of the Peoples of the North	SI RIACEM, BGF YaSU, Ulus Administration, Администрация улуса, MSPE RS(Ya), Inspection of Nature Conservation, Department of Education	It is necessary to provide PC equipment for Lower-Kolyma Nature Conservation Inspection, College of the Peoples of the North – 2 sets, license software – ArcGIS ArcView 9.2., GPS-navigators OziExplorer. Training of students and specialists will be conducted in the methods of database processing, development of databases. The establishment of the Center, gathering and processing the materials will involve school students of comprehensive schools of the model area, students of the Bio-Geographical Faculty, Yakut State University, with preparation of graduation papers in all the segments with regular presentation of the results under the program «A Step to the Future». Attention should be given to preparation of respective dissertations.	Active Information Center
2. CONSERVATION OF KEY HABITATS AND PROTECTION, MANAGEMENT OF BIOLOGICAL RESOURCES				
2.1. Biological resources, including:				
2.1.1.	Monitoring of the status of the Sunrunskaya population of the wild reindeer	Department of Game Management, MNC RS (Ya) DGM, MNC (Ya), IBPC SB RAS	Census data provide the basis for the management of the game resources in terms of regulation of their harvest and adoption of the necessary measures for protection. It is necessary to make an aircraft survey of the Sunrunskaya population of the reindeer.	Research report on the status of the Sunrunskaya population of the wild reindeer, recommendations on conservation and management.
2.1.2.	Feasibility report for maximal admissible harvest of the main commercially important fish species and introduction of cooperation of fishery farms	DABR MNC RS(Ya), MA RS (Ya), FSRI «IAPEN»	The Program is to involve examination of the main river and lake water bodies of the Republic at the sites of the most intensive fishing. At the public council at the Regional Administration hearing will be conducted on the problems of fishing, the stakeholders preparing the proposals for the Government of RS (Ya) to establish cooperatives, which will make it possible to solve the transport problem, the problem of fish export, creating jobs, storage and processing of the products	Recommendations, research reports
2.1.3.	Monitoring of polar bear populations	DBR MNC RS(Ya) Inspection of Nature Conservation, Protected areas	It is necessary to provide constant monitoring of the polar bear population in the resource reserves «Bear Islands» and «Kurdigino -Krestovaya». The monitoring of the polar bear population will also be conducted under the WWF Project «Bear Patrol»	Research report, recommendations on protection regime, organization of ecotourism for watching the polar bear
2.1.4.	Monitoring of rare and threatened avian species	DBR MNC RS (YA), IBPC RAS, Inspection for Nature Protected Area, College of the North, comprehensive schools, clan communities	Investigation of the status of the population of the Red Data Book species: the Asiatic white crane, Ross' gull, little curlew, Siberian and spectacle eiders, lesser white-fronted goose, gyrfalcon, white-billed loon, Bewick's swan. Monitoring of the birds would be included in the community monitoring programs. DBR MNC RS (YA) jointly with IBPC RAS are to develop tutorials for monitoring to be conducted on their own by school students, college students, inspection and clan communities	Survey reports on the populations of Red Data Book species, recommendations on the protection regimes, proposals for the agreements on migratory books, raising awareness publications

2.1.5.	Inventory of the nesting grounds and migrations of the of the key avian areas and development of conservation activities	DBR MNC RS (YA), IBPC RAS	It is necessary to continue assessment of avian habitats an definition of the area to be listed in the register of the key avian areas of Russia According to the WWF Coordinator for Biodiversity Programs V. Krever, a number of key avian areas have been listed among the federal protected areas, due to which the respective work is feasible .	Proposals for the Register of Key Avian Areas of Russia
2.2. Development of a system of protected areas in the Lower-Kolyma Ulus, including:				
2.2.1.	Conducting land-use planning and control operations with registering in the State Land Cadastre of Republican Resource Reserves «Chaigurdino, «Kurdigino-Krestovaya» «Bear Islands »	MNC RAS, DBR MNC RS (YA), дирекции ООПТ	It is necessary to conduct the entire set of activities to determined the boundaries and the level of management; the protection of original environment, conservation and development of nature-saving traditional forms of subsistence of indigenous peoples of the North have been ensured.	Acts of land-use planning operations
2.2.2.	Making an eco-biological feasibility study and development of the flora and fauna cadastre of flora and fauna of the Republican Resource Reserves «Chaigurdino», «Kurdigino-Krestovaya», «Bear Islands»	MNC RAS, DBR MNC RS (YA), MSPE RS(YA), administration of the Protected Area, Protected Area, IBPC RAS	Planned is a feasibility study for the establishment of a reserve, development of recommendations for the confirmation of the protected area	Report to specify the species composition and status of the plants and animals on the reserve, recommendations for the conservation of biodiversity, ecological assessment of the conformity of the reserve to the status of the republican or federal protected area
2.2.3.	Development of the material and technical base for the republican resource reserves «Chaigurdino», «Kurdigino-Krestovaya», «Bear Islands»	MNC RAS, DBR MNC RS (YA), Nature conservation inspection	Planned is the acquisition of equipment and means of communication	Certificates of inventory and fixed assets
2.3. Restraining the processes of land degradation and fragmentation of the ecosystems				
2.3.1.	Definition of the type of ecosystems and the range of services and products (ecosystem services), provided for the support of the life of the people in the model area	MSPE RS(Ya), IBPC RAS, BGF YASU	Based on the Project data it would be feasible to compare an Atlas of the types of ecosystems of the model area with a list of the description of the set of the set of services provided (recommendations on management). Those activities should be in conformity with Para.1.6 of the present Action Plan, i.e., should be contributed to by students and post-graduates.	Atlas of types of ecosystems
2.3.2.	Distinguishing zones of defragmentation on the basis of satellite images and terrestrial studies on the basis of satellite images and terrestrial studies	IBPC RAS, SI RIACEMMNC RAS, BGF YASU	Acquisition of satellite images of medium resolution for spatial analysis, of the maps and distinguishing zones of ecosystem degradation. Specification of a number of parameters by terrestrial studies	Databank of satellite monitoring in the Ulus area
2.3.3.	Improvement of the material an technical base of the Lower-Kolyma specialized inspection of state ecological control and analysis	SI RIACEMMNC RAS	Resumption of operation activities will enable organization of the monitoring of the status of the aquatic ecosystems and soil, and monitor the level of environmental pollution	Acting inspection of the state environmental control and analysis a

<p>2.4. Construction and reconstruction of water treatment plants, including:</p>		<p>Improvement of the supply of the population with standard drinking water, rational utilization of the sources of drinking water, construction of water intakes, Expenses are reduced on domestic and technical water supply. It is necessary to do some work on the incorporation of data into the «Pure Water» Program draft</p>	<p>Constructed water intakes , reduction of costs on domestic and technical water supply Improvement of the quality of operational and sewage water</p>
<p>2.5. Construction of anti-landslide, bank-protection structures,</p>			
2.4.1.	<p>Reconstruction of water-treatment plants in the Chersky village and the Zeleny Mys District, Lower-Kolyma Uls</p>	<p>Ordering Party – The Ministry of Environmental Conservation of RS (Ya), some particular executors will be determined by a tender</p>	
2.5.1.	<p>Bank stabilization of the Kolyma River at the village of Kolymskoe</p>	<p>Ordering Party – Ministry of Nature Conservation RS(Ya), the particular executors will be defined later by tender results</p>	<p>The flooding of urban areas and pollution of the water bodies with domestic wastes is reduced</p>
2.5.2.	<p>Bank stabilization of the Kolyma River at the village of Pokhodsk</p>		
2.5.3	<p>Bank stabilization at the village of Andryushkino</p>		
<p>2.6. Wastes, including :</p>			
2.6.1.	<p>Certification and organization of dumps in the urban areas of the Lower-Kolyma Region</p>	<p>Administration of the municipality «Lower-Kolyma Region»</p>	<p>Certificates, acts of the construction of the dumps</p>
<p>3. RAISING THE AWARENESS AND ECOLOGICAL EDUCATION</p>			
3.1.	<p>Coverage environmental protection in the media</p>	<p>Ministry of Nature Conservation RS (Ya) Uls Administration. Nature conservation inspection</p>	<p>Current tele- and radiobroadcasts, media materials</p>
3.2.	<p>Contribution of school students of the Lower-Kolyma Region in the Republican and national on «Ecological Education »</p>	<p>Republican Center of Ecology, Tourism and Agrotechnical Education, Ministry of Education of the Republic of Sakha (Yakutia), Department of Education of the Lower-Kolyma Region and the Republican Center of Ecology and Tourism of the Lower-Kolyma Region</p>	<p>Statistical data of the contribution schoolchildren in various activities, a sample of the participant materials</p>

3.3.	Organization of the Republican and regional-study scientific expedition «Permafrost» with creation of monitoring grounds of the Cryolith Zone	Republican Center of Ecology, Tourism and Agrotechnological Education of the Republic of Sakha (Yakutia). Department of Education of the Lower-Kolyma Region of the Republic of Sakha (Yakutia), Department of Education of the Lower-Kolyma Region Department of Education of the Lower-Kolyma Region, IP Siberian Branch RAS , IBPC RAS, BGF YASU	Organization of research ecological expeditions of school students under the guidance of specialists of various research organizations of the Siberian Branch RAS (Ya), Yakut State University. Jointly with the Institute of Permafrost Research, RAS grounds will be established for long-term monitoring of the permafrost condition by school students	Reports of ecological expeditions of school students Annual reports
3.4.	Organization of a regular regional conference (workshops) on nature conservation	Ministry of Nature Conservation RS (Ya), Administration of the Region, Nature Conservation Inspection, Department of Education, Public Center of Ecological Education «Eige», Republican Center of Ecology, Tourism and Agrotechnological Education, Ministry of Education RS(Ya)	Annual local conferences involving all organizations and enterprises of the ulus, being attended by regional and federal authorities, research and public organizations and higher educational institutions, which would provide most complete information to prevent a a detrimental impact and violation of nature conservation legislation, and develop recommendations for executive and legislative authorities	Recommendations and decisions of the conferences and workshops
3.5.	Provision of the schools of the Lower-Kolyma Region with tutorials and equipment for ecological education	The Department of Education of the Lower-Kolyma Region, Ministry of Education, RS (Ya)	Extra equipment of the schools of the Region with various equipment for summer field work and laboratory studies planned	Certificates of handover of the equipment
3.6.	Publishing	Ministry of Nature Conservation RS(Ya), Administration of the Ulus , Nature conservation Department of Education, , Academy of the North Forum, the Public Center of Ecological Education «Eige»	Support of the publication of tutorials, reference literature and ecological periodicals	Publishing products
4. PROMOTION OF THE DEVELOPMENT OF ALTERNATIVE METHODS OF ECONOMY				
4.1.	Development Elaboration of the program for development of small business in the model area	Ministry for Entrepreneurship, Tourism and Occupation RS(Ya), FSRI «Institute of the Regional Economy of the North »	Demand will be studied for the development of some particular types of small business, and recommendations, workshops were conducted	«Development of Small Business» in the Program for socio-economic development of the Lower-Kolyma Ulus
4.2.	Promotion of small business entities in developing business plans for the utilization of the products of traditional economies and natural resources	Ministry for Business, Tourism and Occupation RS (Ya), FSRI «Institute of Regional Economy of the North»	Development of business plans on commissions by small business	An increase in the number of small business entities and monitoring of the status of the existing enterprises
4.3.	Publication of popular tutorials on the development of small business	FSRI «Institute of Regional Economy of the North»	Tutorials will be published adjusted to the requirements of the model area	Publications

Appendix 3. IEM action plan for Beringovsky District, Chukotka Autonomous Okrug

- Tatiana Demchenko, Beringovsky District Model Area Coordinator

Description	Time constraints	Approximate expenses	Sources of financing	Executive and co-executive agencies	Expected results	Indicators/mean of verification
Improvement of IEM normative-legal base with the purpose of more integrate, effective and environmentally sustainable use of ecosystem services						
Elaboration of additions in Chukotka Autonomous Region Law of 24.12.1998 № 41-03 "On the procedure of local especially protected natural areas establishment in Chukotka Autonomous Region"	2008-2009		ECORA project CAR Budget	CAR Government, CAR State Duma, ECORA project Association of indigenous and small peoples of North	Clarification of status of various EPNA types, including TNMA; improvement procedures for interests coordination during EPNA establishment, strengthening of nature protection regime support	Adoption of appropriate amendments to Regional Law by CAR State Duma
Elaboration of additions in Chukotka Autonomous Region Law of 29.06.2001 № 44-03 «On introduction of amendments in Chukotka Autonomous Region Law «On the procedure of use of subsoil resources, given for the construction and exploitation of underground installations of local importance, not related to minerals extraction, on the territory of Chukotka Autonomous Region»	2008-2009		ECORA project CAR Budget	CAR Government, CAR State Duma, ECORA project Association of indigenous and small peoples of North	Reduction of habitat fragmentation for economically valuable and protected animal and plant species; increase in environmental protection actions on construction territories	Adoption of appropriate amendments to Regional Law by CAR State Duma
Elaboration of additions in Chukotka Autonomous Region Law of 27.12.2004 № 77-03 «Law on state protection of culture heritage sites (historical and cultural memorials of regional and local importance in CAR) »	2008-2009		ECORA project CAR Budget	CAR Government, CAR State Duma, ECORA project, Association of indigenous and small peoples of North	Clarification of protected sites status, improvement of protection regime, improvement of responsibility for protected sites safety distribution mechanism	Adoption of appropriate amendments to Regional Law by CAR State Duma
Elaboration of additions in Chukotka Autonomous Region Law of 28.01.1997 № 31-03 «Law on use of subsoil resources during geological research, exploring and extraction of generally found minerals on the territory of Chukotka Autonomous Region»	2008-2009		ECORA project CAR Budget	CAR Government, CAR State Duma, ECORA project, Association of indigenous and small peoples of North	Improvement of deer husbandry system; increase in indigenous people employment in deer-raising; improvement of deer-raisers labor and life conditions; improvement of zootechnical activity;	Adoption of appropriate amendments to Regional Law by CAR State Duma

<p>Elaboration of additions in Chukotka Autonomous Region Law of 04.04.2000 № 25-03 «Law on state support of northern deer-raising development in Chukotka Autonomous Region»</p>	<p>2008-2009</p>		<p>ECORA project CAR Budget</p>	<p>CAR Government, CAR State Duma, ECORA project, Association of indigenous and small peoples of North</p>	<p>Improvement of deer-raising farming system; rise of indigenous people employment in deer-raising; improvement of deer-raisers labor and life conditions; improvement of zootechnical activity; support of family and community farms</p>	<p>Adoption of appropriate amendments to Regional Law by CAR State Duma</p>
<p>Introduction of environmental protection articles to Statutes of municipal areas</p>	<p>2008</p>		<p>ECORA project CAR Budget</p>	<p>ECORA project, CAR Government Committee on Environment Protection</p>	<p>New Statutes version taking into account IEM and international ecological life quality standards implementation</p>	<p>Preparation of proposals</p>
<p>Elaboration and affirmation on municipal level and by CAR Government of the «Decree on rookeries protection and regulation of economic activity in its surroundings».</p>	<p>2008</p>	<p>50 000 rubles</p>	<p>ECORA project CAR Budget</p>	<p>ECORA project, CAR Government Committee on Environment Protection, RBCU</p>	<p>Development and implementation of recommendations for regulation of economic activity in rookeries surroundings</p>	<p>Approval of appropriate documents; state of environment improvement in rookeries surroundings</p>
<p>Elaboration of proposals for hunting rules improvement on Beringovskiy district territory</p>	<p>2008-2009</p>	<p>50 000 rubles</p>	<p>ECORA project BMD Budget RAIPON</p>	<p>Committee on phytosanitary supervision and control, CAR Government Committee on Environment Protection, Beringovskiy district administration, WGG</p>	<p>Improvement of nature use management mechanism; increase in indigenous people traditional food self-sufficiency; improvement of the state of game animals populations</p>	<p>Approval of proposals introduced in new version of hunting rules</p>
<p>Participation in Chukotka AR Red Data Book (volumes «Animals» and «Plants») preparation and publication</p>	<p>2007-2008</p>	<p>3 750 000 rubles (CAR money)</p>	<p>ECORA project CAR Budget</p>	<p>ECORA project, CAR Government Committee on Environment Protection</p>	<p>Clarification of sites list, preparation of species outlines, elaboration of rare species protection measures</p>	<p>Publication of CAR Red Data Book</p>

EPNA SYSTEM DEVELOPMENT; ESTABLISHMENT OF CLUSTER BIOSPHERE PARK							
Establishment of EPNA register and Southern Chukotka EPNA map	2008	750 000 rubles	ECORA project CAR Budget	ECORA project CAR Government Committee on Environment Protection Association of indigenous and small peoples of North	Register and original model of Southern Chukotka EPNA map	Placing of mentioned data in the Internet	
Key Important Bird Areas (IBA) system revision and preparation of specified list of Southern Chukotka IBA	2008-2009	100 000 rubles per year	ECORA project RBCU	RBCU	Incorporation of newest ornithological research data will allow to optimize previously described IBA borders, and to define the new ones	Specified list and Southern Chukotka IBA map	
Designing of regional EPNA «Cluster biosphere park «Southern Chukotka»	2007-2009	1 500 000 rubles	ECORA project	ECORA project CAR Government Committee on Environment Protection	Preparation of integrated scientific basis and EPNA «Southern Chukotka» draft as practical implementation of IEM foundations on «Beringovskiy district» model area	Elaboration and approval of cluster EPNA establishment project	
Inventory of wetlands of international, national and local importance	2009-2011	500 000 rubles	ECORA project CAR Budget	ECORA project CAR Government Committee on Environment Protection	Elaborated wetlands classification and cadastre list	Prepared map of wetlands	
Raising the level of public awareness and environmental education							
Environmental education in schools for sustainable development of Beringovskiy district	2007-2009	100 000 rubles per year	ECORA project BMD Budget	ECORA project Division of municipal education of Beringovskiy municipal district	Increase in environmental competence and activity of local young people; stimulation and development of nature protection initiatives	Improvement of school competitions results, increase of number of graduates, entering environmental higher education institutes	

Elaboration and implementation of effective school educational course on district biodiversity protection issues with special attention to birds. Elaboration of ecological paths and visual aids for teachers.	2007-2011	500 000 rubles	ECORA project CAR Budget BMD Budget	ECORA project, Division of education and social protection of Beringovskiy municipal district	Increase in environmental education level of schoolchildren and their participation in nature protection monitoring and ecological activities	Elective course. Descriptions of ecological paths and its marking on locality. Practical ecological activities of schoolchildren in district villages
Preparation and printing of visual informational aids about rare and native bird species of surroundings of Beringovskiy district villages and town of Anadyr	2008	25 000 rubles	ECORA project	ECORA project	Increase in of people environmental competence level	Spreading of published booklets
Database of consultations on environmental management (Internet-site)	2007	25 000 rubles	ECORA project	ECORA project, Noncommercial Partnership «Chukotka environmental safety»	Establishment of free access Internet-site on environmental management, focused on CAR problems	Increase in number of site visitors number

DEVELOPMENT OF ENVIRONMENT MONITORING AS IEM INFORMATIONAL BASIS WITH INVOLVEMENT OF INDIGENOUS POPULATION

Establishment of data bank for the results of environmental monitoring of industrial (investment) enterprises and construction sites in Beringovskiy district	2008		ECORA project BMD Budget	ECORA project Beringovskiy district administration	Renewable data bank of environmental monitoring will be established and used by district environmental institutions	Availability of computer data base
Establishment of community system of biodiversity and climate change monitoring. Setting the program of long-term monitoring with local people involvement	2007-2011 and beyond	200 000 rubles per year	ECORA project CAR Budget WGG	ECORA project RAIPON CEERN WGG, RBCU	The observers network for regular observations according to elaborated schemes will be established in 5-6 stations in Southern Chukotka	Observers reports and analytical reviews
Establishment of integrated system of rookeries monitoring and control of economic activity in its surroundings in Beringovskiy district. Establishment of the network of community «keepers» of rookeries	2007-2010	200 000 rubles per year	ECORA project CAR Budget	ECORA project RAIPON RBCU	Increase in the state of environment control near rookeries, establishment of photographic monitoring system	Observers reports, photographic monitoring results
Organization of indicator bird species, included in CAR, RF and IUCN Red Data Books (spoon-billed sand piper, emperor goose, white-billed diver and others) key concentration monitoring	2007-2010	950 000 rubles per year	ECORA project CAR Budget WGG RBCU IEE RAS	ECORA project, RBCU, WGG, IEE RAS	Documenting of quantity changes and negative factors impact and elaboration of recommendations on conservation	Scientific reports on the dynamics of model species populations status

Monitoring of bird flu in order to prevent the epidemic rise	2007-09	300 000 rubles per year	ECORA project WGG	WGG	Collection and analysis of samples taken from birds along with water birds key concentrations monitoring. Notification in case of virus disclosure	Scientific reports
Assistance to development of environmentally balanced methods of management						
Elaboration of ecotourism programs in Beringovskiy district (Alkatvaam, Meynypilgyno)	2008-2011	500 000 rubles per year	ECORA project CAR Budget BMD Budget	CAR Committee on tourism, residents of Meynypilgyno and Alkatvaam villages, Chukotka Business centre	Elaboration business plan in Meynypilgyno village, elaboration of tourist trips along the district territory with involvement of indigenous people communities	Business plan and program of its implementation
Development of traditional marine mammal hunting in national villages of Beringovskiy district. Organization of trainings and master-classes on experience exchange with experts from Chukotka peninsula	2007-2008	3 500\$	ECORA project	ECORA project, Association of Traditional Marine Mammal Hunters of Chukotka (ATMMHT), Chukotka branch of Pacific Research Institute of fishery and oceanography (TINRO)	Increase in of hunting and marine mammals meat processing effectiveness. Implementation of progressive experience of traditional hunting experts from Chukotka district	Organization of trainings, consultations, preparation and dissemination of methodic recommendations
Development of farming lodges – factories network in traditional hunting places			CAR Budget BMD Budget	Communities, tribal farms with support of CAR Department of industry and agriculture		
Support of family and communal fishing farms			CAR Budget BMD Budget		Increase in communal farms profitability; increase of indigenous people employment level in traditional fields	Increase of workers number in communal farms, increase of production amount
Support of deer-raising in Hатырка			CAR Budget BMD Budget		Organization of sustainable and profitable in Hатырка deer-raising farm, increase in its profitability, increase in employed people number	Farm economic characteristics (deers livestock, production amount, meat output per 100 January deers)

Restoration and maintenance of deer-raising and farming lodge in Hатырка				CAR Budget BMD Budget		Improvement of deer-raisers labor and life conditions, increase in their labor efficiency	Increase in of deer-raising quality characteristics
Renovation of deers pastures organization system in Beringovskiy district with involvement of traditional knowledge of deer-raisers	2007-2010			ECORA project CAR Budget		Elaboration of deers pastures map and recommendations on its use in the surroundings of Hатырка and Meynypilgyno villages	Renewed map of deer pastures
Trainings on deer-raising				CAR Budget BMD Budget		Organization of master-classes for deer-raisers training for deer-raising restoration in Meynypilgyno	Number of trained deer-raisers
Analysis of possibilities to restore deer-raising in Meynypilgyno				ECORA project CAR Budget BMD Budget		Establishment of new deer-raising farm in Meynypilgyno	Organization of new herd, increase of deer livestock
Integration of traditional and non-traditional kinds of activity in national villages				CAR Budget BMD Budget		Improvement of employment opportunities for unemployed people in national villages by creation of new workplaces there	Reduction of unemployment level in national villages
Support of workshops on clothes sewing and making souvenirs from traditional materials (skin, bone, antler and other) and elaboration of business-plan for production sale	2008-2009			ECORA project CAR Budget BMD Budget	ECORA project, Communities, tribal farms, villages residents, RAIPON	Increase in indigenous peoples employment, traditions and cultural heritage conservation, opening of abilities and additional potential of young people	Workshops output
Increase in women employed in traditional fields				CAR Budget BMD Budget		Reduction of unemployment level in national villages	Increase in number of women employed in traditional fields
Spreading the traditional techniques on traditional food cooking among woman				CAR Budget BMD Budget		Increase of food self-sufficiency; conservation and restoration of national traditions; increase in craftswomen professional skills	Booklets, competitions, individual training with craftswomen

Assistance in draught dogs breeding restoration	2007-2011		CAR Budget RAIPON projects	RAIPON, «Kayur-Centre» community in Alkatvaam village Chukotka Business centre	Increase in the numbers of working dog's harnesses. Contribution in establishment of draught dogs nursery. Use of harnesses in tourist industry	Increase of use of traditional transport – dog's harnesses
LOCAL PUBLIC INVOLVEMENT IN ECOSYSTEM SERVICES MANAGEMENT AND ENVIRONMENTAL CONFLICTS PREVENTION						
Establishment of the helpline on environment protection legislation infringements - «Green phone» in village municipal administrations and in district newspaper «Beringovskiy vestnik» editorial office	2007	35 000 rubles	ECORA project BMD Budget	ECORA project, Beringovskiy district administration, Association of indigenous and small peoples of North of Beringovskiy district	Increase in the effectiveness of work in Beringovskiy district nature protection institutions	Reduction of number of environment protection legislation infringements. Participation of district indigenous people in state of environment control activity
Analysis of conflict as a result of coal production development on TNMA in Alkatvaam river basin			ECORA project CAR Budget BMD Budget	ECORA project	Establishment of sustainable system of traditional management for Alkatvaam village residents	Preparation of proposals to senior authorities

Accepted abbreviations:

RAIPON – Association of Indigenous and Small Peoples of North and Far East of Russia,
 BMD – Beringovskiy Municipal District,
 IEE RAS – Institute of Ecology and Evolution, Russian Academy of Science,
 IUCN – International Union for Conservation of Nature,
 WGG – Working Group on Geese of Northern Eurasia,
 RBCU – Russian Bird Conservation Union,
 TNMA – Traditional Nature Management Areas,
 CEERN – Centre of Ecological and Ethical Research of North,
 CAR – Chukotka Autonomous Region.

Appendix 4. IEM action plan for Kolguev Island, Nenets Autonomous Okrug

- Ruslan Bolshakov, Kolguev Island Model Area Coordinator"

№	Description	Deadlines	Financing	Executor/ co-executer	Result	Indicators of verification	Status
1	Legislation						
1.1	Developing a program of social-economic development in Bugrino as a part of the social-economic development program of the NAO.	2010	Budget of Bugrino	The Administration of Bugrino, experts of "ECORA" project	The program of social-economic development will be prepared for Bugrino. The program should be a part of program of social-economic development of the NAO.	Accomplishment of the program points.	A strategy of socio-economic development of the NAO should be elaborated and approved by the end of 2009 year. The program of social-economic development of Bugrino and Kolguev can be elaborated on its basis.
1.2	Developing regulation of waste collecting and utilization in Bugrino;	2009-2010	Budget of Bugrino, MR "Zapolyarny region", NEFCO	The Administration of Bugrino, experts of "ECORA" project, NEFCO	According to the population's authorities the rules of waste collecting and utilization in Bugrino and adjacent territory have been worked out. The observance of worked out rules by the population and the Administration of the settlement.	The legal basis regulating waste collecting and utilization in Bugrino are prepared and approved. The Administration and population of Bugrino should follow the approved regulation.	The regulation should be elaborated in the result of project with finance of NEFCO.
1.3	Development and approval of recommendations for regional hunting regulations (hunting deadlines)	2010-2011	Budget of the Nenets Autonomous Okrug	Department on Agricultural control of RF in the Nenets Autonomous Okrug, Department on natural resources of the NAO, Department of Agriculture of the NAO	Full and detailed data about organization and results of hunting. The hunting management on the island.	The hunting regulations observance on the island.	This needs to be discussed and should be considered as well as an organization of hunting industry on the island.
1.4	Development of territorial quality standards of environment in the NAO	2008-2010	Budget of the Nenets Autonomous Okrug, off-budget sources	Department on natural resources of the NAO, Ecottera, SUE NAO "NIAC"	Quality standards of environment for Kolguev have been worked out.	The nature users' observance and the control of the regional quality standards of environment by the nature protected authorities.	The results achieved during the work's accomplishment on a state contract need to be considered.

1.5	The preparation of the long-term agreement on cooperation between oil companies, the Administration of Bugrino and reindeer farming	2010-2011	"ECORA" project	Experts of "ECORA" project				The opinion of local population and the Administration of Kolguev rural council should be considered in conclusion a treaty with nature users including their participation in social-economic development of the NAO.
1.6	Development of legislative basis of public ecological control existence	2010-2011	"ECORA" project	Experts of "ECORA" project	Work out the project of legislative basis of public ecological control. The establishment of public inspectors' teams in association with the Administration of MR "Zapolyarny region" and the Administration of Bugrino. The carrying out of public control on the island.	The adoption of legislative basis regulating the activity of the public ecological control. The establishment of public inspectors' teams. The carrying out of the control activities.		The legislative conditions for accomplishment of this activity are ready.
2	Life conditions							
2.1	The organization of studies of drinking water quality	2009-2010	"ECORA" project, NEFCO, Budget of the Nenets Autonomous Okrug	Experts of "ECORA" project, SUE NAO "NIAC"	The report on modern status; variants of realization and project proposals of drinking water supply the population of Bugrino is drawn up.	An approved report		Should be elaborated as a result of project accomplishment with finance of NEFCO.
2.2	Development and implementation of project on improvement of drinking water quality	2010-2011	"ECORA" project, NEFCO, Budget of the Nenets Autonomous Okrug	Experts of "ECORA" project, SUE NAO "NIAC", contractors	The worked out project. The carrying out of the construction engineering works for water supply system.	A drinking water supply of the population in Bugrino		Should be elaborated as a result of project accomplishment with finance of NEFCO.

2.3	The organization of studies on waste utilization variants in the settlement and at a slaughter point of APK	2009-2010	"ECORA" project, NEFCO, Budget of the Nenets Autonomous Okrug	Experts of "ECORA" project, SUE NAO "NIAC"	The report on modern status, variants of waste utilization in Bugrino and slaughter point are drawn up.	An approved report	Should be elaborated as a result of project accomplishment with finance of NEFCO.
2.4	The working out and implementation of the project of waste utilization in the settlement and slaughter point of APK	2010-2011	"ECORA" project, NEFCO, budgets of different levels	Experts of "ECORA" project, SUE NAO "NIAC", contractors	The regulated system of waste utilization.	The reduction of existing and new wastes	Should be elaborated as a result of project accomplishment with finance of NEFCO.
2.5	The study of methods and working out of recommendations of carrying out of a construction with new technologies in conditions of Kolguev	2010-2011	Budgets of different levels, funds of international projects.				
2.6	The road construction in Bugrino		Budgets of different levels		The life quality improving in Bugrino.		
2.7	The construction of modern fixed centers for reindeer herders in the area of herding		Budget of the Nenets Autonomous Okrug, oil companies	Competition	Reindeer herders' life conditions improving, Reindeer herders' work prestige enhancing.	The built up bases of reindeer herders.	
3	The ecological status of Kolguev						

3.1	The modern status assessment of Kolguev	2008-2010	Budget of the Nenets Autonomous Okrug, Budget of MR "Zapolyarny region", "ECORA" project	Competition	The report on modern ecological status of Kolguev.	The works have been carried out within the task's accomplishment of ECORA project. The reports were handed over to all interested parties to consider and use. There are no revealed challenges for biodiversity. There is an increase of waterfowl populations and modification of their interspecific links.
3.2	The natural resource assessment of Kolguev	2007-2011	Budget of the Nenets Autonomous Okrug, Budget of MR "Zapolyarny region", "ECORA" project	Competition	The assessment of nature resource island potential in money terms. The implementation of carried out studies for assessment of damages caused by industrial activities. The projects of technical and biological reclamation of disturbed and polluted territories.	Adopted and approved on a regional and local levels standards of damages' reparation caused by the negative impact on the island territory.
3.3	The working out biological and technical reclamation of disturbed and polluted territories (stl. Severny, sites of old wells)		Budget of the Nenets Autonomous Okrug, Budget of MR "Zapolyarny region", "ECORA" project, holders of old holes	Competition	Approved projects of reclamation.	
3.4	The organization of works on technical and biological reclamation of fixed territories;		Budget of the Nenets Autonomous Okrug, Budget of MR "Zapolyarny region", "ECORA" project, holders of old holes	Competition	The realization of works on technical and biological reclamation of disturbed and polluted territories. The risk decrease of negative impact on natural components and traditional activities.	The areas of reclamation and recirculated territories.
3.5	The organization and realization of public monitoring of environmental status by local population in assistance with local authorities	2010-2011	Budget of the Nenets Autonomous Okrug, support of indigenous population.	the Administration of Bugrino, Department on natural resources of the NAO, "Yasavey", public organizations.	The responsibility of the population for the territory where they live. The responsibility of nature users for violations during the industrial activity realization. The enhancement of efficiency of nature protected measures.	The carried out measures of public monitoring.
						Backwardness and disinterestedness of people (not local government) in organization of public nature protected control and monitoring.

3.6	The study of the need to organize the nature protected territories of regional or local significance and hunting industries on the island	2009	budget of Arkhangelsk region, Budget of MR "Zapolyarny region"	Experts of "ECORA" project; executers, defined by competition	The project of organization of nature protected territories of regional significance on Kolguev should be drawn up	Should be organized by experts of ECORA within pilot projects realization. The result is planned to be at the end of December 2009.
3.7	The organization of hunting industry on the island		Private sources		The project of hunting industry's organization should be drawn up.	Should be organized by experts of ECORA within pilot projects realization. The result is planned to be at the end of December 2009
4	Reindeer herding					
4.1	The working out of the perspective plan of farm development by means of marketing researches.	2010-2011	APK "Kolguev", "ECORA" project	Department of Agriculture of the NAO, СПК "Konryev", experts of "ECORA" project	The development plan on medium-term perspective of APK "Kolguev" is worked out.	The reports and recommendations on these directions are elaborated within the tasks' accomplishment of ECORA project. Every report and recommendation is handed over to APK "Kolguev".
4.2	The organization of studies on capacity and methods of pasture recultivation after over pasture	2010-2011	APK "Kolguev"		The assessment of recirculated reindeer pasture areas	
4.3	Development of sustainable reindeer herding management system	On-going	Budget of the Nenets Autonomous Okrug, APK "Kolguev"	APK "Kolguev", experts of "ECORA" project	Organization and carrying out of regular zootechnical and pedigree works at APK "Kolguev"	The decrease of reindeers' morbidity and plague. An increase of herd's quality characteristic and other.

4.4	Ensuring a production discipline observance in APK teams and developing mechanisms of personnel concernment in work results	On-going	APK "Kolguev"						
4.5	The construction (modernization) of a slaughtering point	2008-2010	Budget of the Nenets Autonomous Okrug,	Competition	Acting slaughter point			Is realized within the regional task program.	
4.6	Preparation and implementation of measures on reindeer products processing	2008-2010	Budget of the Nenets Autonomous Okrug, APK "Kolguev", "ECORA" project, Sweden Agency on environmental protection	APK "Kolguev", experts of "ECORA" project "Yasavey"	The revelation of guidelines of reindeer meat processing on the island. The regulation of meat processing for consumption in Bugrino and Peschanoozerskoe oil field.	The meat production output		There were some efforts for realization within the subproject, financed by means of Sweden Agency on environmental protection.	
5	Small-scale enterprise								
5.1	Studies to define fishing zones in the costal line of Kolguev		Budget of the Nenets Autonomous Okrug, funds of international projects	"SevPINRO"	The receiving of biological basis for water biological resources catch in costal line of Kolguev	The receiving of quotas for water biological resources catch in costal line of Kolguev		There have been marked an encrease of marine fish for proper needs by the local population.	
5.2	Development of a business -plan for a farming or fishing cooperative			"SevPINRO", "Rybakkolkhozsouz"	The organization of fishing cooperative in Bugrino.	Fishing and its realization in the settlement.		The initiative is supported by the local population.	

5.3	Conducting a study on possibility of organization of ethnoecological and scientific tourism on the island	2009-2010	"ECORA" project	"Yasavey", "Istoki"	The report on possibility of organization of ethnoecological and scientific tourism on the island is drawn up. The business-plan of organization and rendering of services is worked out.	Conclusion of tourism's possibility on the island. An elaborated business-plan.	The question is currently being studied. The appropriate conditions in Bugrino including first of all the local initiative should be prepared .
5.4	The preparing and realization of initial measures on reindeer products processing (southern, smoking and other)	2007-2008	"ECORA" project	Department of Agriculture of the NAO, APK "Kolguev", experts of "ECORA" project "Yasavey", "The city of masters"	The variants of reindeer products processing are determined. The personnel for processing is ready. The realization of production for population in Bugrino and Naryan-Mar.	The processing forms are determined. The production issue is regulated.	There were efforts to organize the reindeer skin processing within the subproject financed by means of Sweden Agency on environmental protection.
5.5	Marketing research on the collection and production capacities of wild plants			the Administration of Bugrino, experts of "ECORA" project "Yasavey"	The wild plant's species that can be collected and realized by the population of Bugrino are determined. The markets and infrastructural schemes are determined.	The volume of collected and realized products.	The studies were not carried out.
6	Education and raising of qualification level						
6.1	The organization of qualification courses for personnel of local government	2008-2009	Budget of the Nenets Autonomous Okrug, budget of Bugrino, "ECORA" project	the Administration of Bugrino, the Administration of the Nenets Autonomous Okrug, educational institutions of Naryan-Mar	The raising of competence of personnel of local government.	The number of listeners, participated in courses	The educational courses were organized within the ECORA project, but the cover of the population was extremely low.

6.2	Development and implementation of educational programs on knowledge improving of the population, ecological and sanitary regulations and requirement in its observance	2009-2011		the Administration of Bugrino, public organizations on nature protection		The working out and implementation of educational programs. The number of listeners.	Can be realized as a part of the project implemented by means of NEFCO.
6.3	Implementation of program for the revival and maintenance of traditional knowledge in environmental protection	2009-2011	Budget of the Nenets Autonomous Okrug, "ECORA" project, international and russian grants	the Administration of Bugrino, "Yasavey", public organizations	The revival of culture and traditional knowledge of local population	Elaborated and implemented programs.	Not realized.
6.4	The carrying out of qualification courses for reindeer herders		Budget of the Nenets Autonomous Okrug, "ECORA" project, international and russian grants	Department of Agriculture of the NAO, APK "Kolguev", "ECORA" project, Agricultural-economic technical school	The raising of competence of personnel of APK "Kolguev.	The number of listeners, participated in courses	
6.5	The support program of study on local lore in educational institutions of Bugrino and the Nenets boarding school	2008-2009	Budget of the Nenets Autonomous Okrug, budget of Bugrino, "ECORA" project	the Administration of Bugrino, Department of educational of the NAO, the Nenets boarding school	The strengthening of regional component in programs of study on local lore.	Elaborated and implemented programs.	Within the project the initiative of school supplies on local lore and ecology of teachers of the Nenets boarding school has been supported.
6.6	Development and implementation of the educational programs in PC technologies	2010-2011	Budgets of different levels, funds of international projects.	Educational institutions of Naryan-Mar	The raising of competence of local population in PC technologies and in expansion of communication possibilities.	The number of listeners, participated in courses	There are possibilities to organize education in Bugrino.
	Total	2007-2011					

Appendix 5: ECORA reports and publications

Reports: federal level

- V. Kryazhkov. Federal legislative base for promoting the development of IEM (in the context of harmonization of interests of the industry, indigenous people of the North and environmental protection). (Act. 1.1.1)
- V. Pererva. Assessment of habitat protection mechanisms and species conservation activities. (Act. 1.1.2)
- V. Bocharnikov, V.Vronsky. Capability of traditional nature use on ECORA Model Areas: Review of international experience, analysis of the situation in Russia, conceptual proposals. (Act. 1.1.3)
- M. Zhukov. The necessity of institutional reorganization to create conditions for the development of economic activity at the territories of indigenous northern minorities. (Act. 1.1.3)
- A. Martynov. Review of Russian and international experience in the development of environmental codes of conduct. (Act. 1.1.4)
- A. Martynov. Codes of conduct for industries. (Act. 1.1.4)
- A. Blagovidov. Financing of nature protection activities in the Russian Federation. (Act. 1.3)
- A. Smurov, I. Rhyzhov. Training programs in environmental policy and management: Environment Policy and Management (Report and Educational manual). (Act. 1.2.1)
- V. Bocharnikov. Traditional knowledge, experience and innovation of aboriginal peoples in economic market conditions. (Act. 1.2.2)
- V. Stepanitsky. Activity of state bodies for biodiversity and landscape protection in the Russian Arctic (Report and Educational manual for conservation officers). (Act. 1.2.4)
- K. Klokov. Socio-economic indicators. (Act. 2.3)
- E. Syroechkovsky. Approaches to the elaboration of community monitoring programs in the framework of the ECORA Project. (Act.2.4)
- K. Klokov, T. Krasovskaya. IEM plans and strategies (communications / public participation plan, stakeholder participation mechanism, conflict resolution mechanism). (Act. 3.1)
- S. Belikov. Analytical review of marine mammal population in Kolguev Island and Beringovsky region (ECORA project)
- K. Klokov. Results of community monitoring in Beringovsky MA. (Act. 2.4)

Reports: Kolguev Island Model Area (Nenets Autonomous Okrug)

- O. Petunina. Legal analysis and assessment of administrative reforms having an influence on the integrated ecosystem management of the Kolguev Island Model Area. Legal assessment of mechanism of habitats protection of flora and fauna in connection with reforms passed. (Acts.1.1.1-1.1.2)
- O. Berghdal. Training in high quality processing of reindeer meat and skins, three reports. (Act. 1.1.3)
- I. Lavrinenko, O. Lavrinenko. Monitoring of key indicators for integrated ecosystem management. (Act.2.1)
- V. Anufriev. Assessment of key indicator species: waterfowl, willow grouse and Arctic fox (in the creek of Peschanka River and Bugrino village) in the Kolguev Island Model Area. (Act. 2.1)
- T. Romanenko. Assessment of domesticated reindeer: Conservation and development of reindeer breeding in an isolated population on Kolguev Island. (Act. 2.1)
- A. Kondratyev. Monitoring of waterfowl populations of Kolguev Island with the aim of developing recommendations on sustainable nature use. (Act. 2.1)
- V. Anufriev. Investigations into spring migrations and the commercial use of wildfowl (geese, ducks, swans), breeding ecology of Arctic fox and willow grouse. (Act. 2.1)
- K. Labba. Report on reindeer on Kolguev Island. (Act. 2.1)
- A. Kondratyev. Waterfowl population monitoring on Kolguev Island for the development of recommendations for establishing of sustainable nature use. (Act. 2.1)
- A. Pustyntseva. Financial diagnosis and prognosis of activity of agriculture enterprise "Kolguev". (Act. 2.1)
- O. Mikhalev. Creation of thematic maps for the territory of Kolguev Island, Nenets Autonomous Okrug. (Act. 2.2)
- M. Kokorin. Sociological expertise of Bugrino village (Kolguev Island). (Act. 2.3)
- K. Klokov. Organization and implementation of community-based monitoring on Kolguev Island. (Act.2.4)
- G. Mikhailova. Development of conflict resolution mechanism. (Act. 3.1)
- A. Kondratyev. Development of eco-economic rationale for establishment of a Nature Protected Area on Kolguev Island. (Act. 3.1)
- V. Sopilov. Energy supply and energy effectiveness in Bugrino village, NAO. (Act. 3.1)
- A. Movsesyan. Water supply in Bugrino village, NAO. (Act. 3.1)
- A. Kalashnikov. Waste management in Bugrino village, NAO. (Act. 3.1)

Reports: Lower Kolyma River Model Area (Yakutia/Sakha Republic)

- L. Shmatkova. Analysis of modern social and economic conditions in Republic of Sakha (Yakutia) and the Kolyma River Basin Model Area. (Act. 1.1.1-1.1.2)
- A. Sleptsov. Legal basis for establishing territories of traditional nature use for indigenous people of the North and in Republic of Sakha (Yakutia). (Act. 1.1.3)
- N. Alexandrova. Review of the codes of conduct and social responsibilities of international enterprises in the Kolyma River Basin Model Area. (Act. 1.4.1)
- A. Isaev, M. Samsonov. Training in environmental management (Act. 1.2.2 and 1.2.4)
- A. Isaev. Environmental education in local schools. (Act.1.4.1)
- A. Degtyarev. Waterfowl: Bird species of the resource preserve "Chaigurgino". (Act. 2.1)
- D. Syrovatsky. Domesticated reindeer. (Act. 2.1)
- A. Popov. Status of the wild reindeer population in Lower Kolyma. (Act. 2.1)
- R. Desyatkin. Assessment of habitat fragmentation in the Kolyma River Basin Model Area. (Act. 2.1)
- D. Syrovatsky. Development of plans for domesticated reindeer breeding. (Act. 2.1)
- R. Tyaptirgyanov. Assessment of fish resources of the Kolyma River Basin. (Act. 2.1)
- R. Tyaptirgyanov. Development of work plans for commercial fish resources of the Lower Kolyma River. (Act. 2.1)

- D. Syrovatsky. Development of plans on domesticated reindeer breeding. (Act. 2.1)
- A. Degtyarev. Improvement of database for planning, implementation and assessment of IEM plans. (Act. 2.1)
- A. Isaev, A. Egorova. Status of biological resources in Kolyma Lower river (Nizhnekolymyskiy district). (Act. 2.1)
- L. Volkova. Thematic maps and analysis for IEM planning. (Act. 2.2)
- N. Tikhonov. Social and economic indicators. (Act. 2.3)
- A. Degtyarev. Bird harvest regime in the Kolyma River Basin. (Act. 2.4)
- A. Degtyarev. Community monitoring programmes: Development of bird harvest management. (Act. 2.4)
- A. Degtyarev. Development of bird harvest management plan in the framework of community monitoring programme. (Act. 2.4)
- V. Shadrin. Development of IEM strategies and action plans: Development of communication/public participation strategy and development of mechanism for stakeholder consultations. (Act. 3.1)
- T. Mustonen. Review of conflict situations and methods of its resolution in the Kolyma River Basin Model Area. (Act. 3.1)
- A. Degtyarev. Outline of implementation of the pilot project "Development of management plan of harvest of birds in 2007-2008". (Act. 3.1)
- D. Syrovatsky. Plan and schedule of implementation of the pilot project "Sustainable domesticated reindeer breeding in Nizhnekolymyskiy Ulus in 2007-2008. (Act. 3.1)
- D. Syrovatsky. Sustainable reindeer herding in Nizhnekolymyskiy ulus. (Act. 3.1)
- A. Degtyarev. Recommendations on the protection, monitoring and rational use of bird resources in Kolyma River Basin Model Area (Act. 3.1)
- G. Kulakovskiy. Development of small-scale businesses in the Kolyma River Basin Model Area. (Act. 4.1)

Reports: Beringovsky Model Area (Chukotka Autonomous Okrug)

- V. Scherbanosov. Analysis of regulatory and administrative reforms. (Act. 1.1.1)
- V. Scherbanosov. Assessment of habitat and species conservation mechanisms. (Act. 1.1.2)
- D. Litovka. Traditional nature use. (Act. 1.2.2)
- E. Lappo. Assessment of levels of unfragmented habitats in the Beringovsky Model Area. (Act. 2.1)
- E. Syroechkovskiy. Assessment of globally threatened species and widespread species which are economically important for indigenous peoples of the region. (Act. 2.1)
- E. Syroechkovskiy. Assessment of seabird populations and development of conservation plans for seabirds in the central part of the Beringovsky Model Area. (Act. 2.1)
- D. Litovka. Evaluation of the population status and development of a work plan on key indicators from amongst globally threatened species. (Act. 2.1)
- E. Syroechkovskiy. Assessment of population and development of work plans on key indicators related to global threatened species in the Beringovsky region. (Act. 2.1)
- E. Syroechkovskiy. Assessment of key indicators: threatened and common birds. (Act. 2.1)
- E. Syroechkovskiy. Assessment of population and recommendations on optimization of preservation of seabirds in Chukotka. (Act. 2.1)
- K. Klokov. Thematic maps and analysis for IEM planning. (Act. 2.2)
- O. Mikhalev. Creation of thematic maps for Beringovsky District, Chukotka Autonomous Okrug. (Act. 2.2)
- K. Klokov. Assessment of indigenous peoples interest to different types of traditional nature use. (Act. 2.3)
- K. Klokov. Social and economic indicators for the Beringovsky Model Area. (Act. 2.3)
- K. Klokov, E. Syroechkovskiy, O. Anisimova. Community monitoring:
 Sub-component 1: Assessment of the interest and possibility for the participation of indigenous peoples in the monitoring of bioresources in the Beringovsky Model Area.
 Sub-component 2: Survey on the use of game birds by different segments of the population. (Act. 2.4)
- E. Syroechkovskiy. Community monitoring. (Act. 2.4)
- D. Litovka. Community monitoring and socio-economic study of marine mammals harvest and whaling for indigenous peoples' lives. (Act. 2.4)
- K. Klokov, E. Syroechkovskiy. Development of community monitoring methods: Implementing a community monitoring programme" (Act. 2.4)
- K. Klokov, E. Syroechkovskiy. Theoretical and methodological background for community monitoring: Recommendations. (Act. 2.4)
- E. Syroechkovskiy. Ecological and economical background for establishing National Park "Beringia" in Chukotka Autonomous Okrug (Act. 3.1)

Publications

- Activity of state bodies for biodiversity and landscape protection in the Russian Arctic (Educational manual for conservation officers). Moscow, 2006. 242 pp. (Russian)
- Environmental policy and management. Moscow, 2007. 80 pp. (Russian)
- An integrated ecosystem approach to conserve biodiversity and minimize habitat fragmentation in three selected model areas in the Russian Arctic. Beringovsky Model Area, Anadyr. 2007. 4 pp. (Russian and English)
- An integrated ecosystem approach to conserve biodiversity and minimize habitat fragmentation in three selected model areas in the Russian Arctic. Kolyma River Basin Model Area, Yakutsk. 2007. 4 pp. (Russian)
- ECORA: An integrated ecosystem approach to conserve biodiversity and minimize habitat fragmentation in three selected model areas in the Russian Arctic. CAFF Technical Report No. 19, April 2009, 40 pp. (English)
- Birds of Chukotka. Introduction to bird lore (manual for senior secondary school). Kamensk-Uralskiy. 2009, 250 pp. (Russian)
- Kolguev Island: people, reindeer, birds. St-Petersburg. 2009, 56 pp. (Russian)
- Travels with Tundrovichok (manual for children and adults). Moscow, 2008-2010. 140 pp. (Russian and English)
- Life Within the Polar Circle. Moscow, 2010. 120 pp. (Russian)
- "2000 droplets". Learning pack (14 guidance brochures for incorporating ecology into nine subject areas for grades 7-9). Samara, 2010. 220 pp. (Russian)

Appendix 6: Participants in ECORA

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- Peter Prokosch, UNEP/GRID-Arendal
- Tessa Goverse, UNEP/DGEF Task Manager
- RAIPON (Steering Committee observers): Pavel Sylyandziga, Rodion Sulyandziga, Vlad Peskov, Mikhail Todyshev, Galina Platova

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