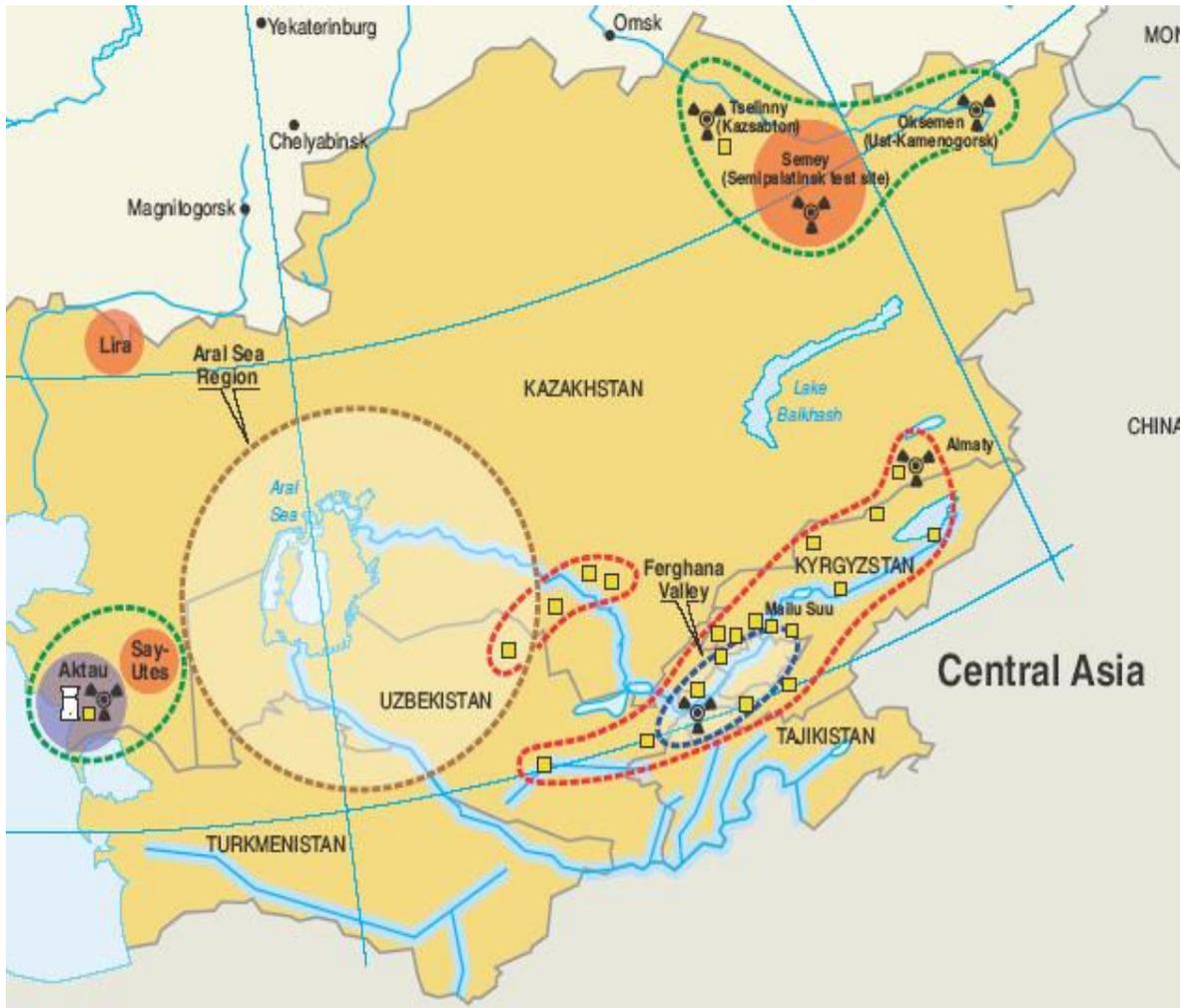


Environment and Security Initiative

CENTRAL ASIA: KAZAKHSTAN • KYRGYZSTAN • TAJIKISTAN • TURKMENISTAN • UZBEKISTAN



ENVIRONMENT AND SECURITY (ENVSEC) REGIONAL WORK PROGRAMME
2009-12

Draft March 2009

Overview

ENVSEC work in Central Asia started in 2002 with the identification of geographic hotspots and major linkages between environment and security issues. Since then ENVSEC partners have undertaken detailed participatory assessments of environment and security related issues in Ferghana Valley, Eastern Caspian Region and Amu Darya Basin and implemented a number of projects aiming at addressing some of the identified issues with the focus in Ferghana Valley. While the order of priority varies between sub-regions, key environmental issues threatening human security in the region are the growing demand for water coupled with increased pollution, changes in hydrological regimes, and legacy of past industrial and agricultural practices. At the same time the countries need to adapt to environmental changes, increase environmental cooperation and ensure cleaner production development.

ENVSEC work in 2009-2012 will build upon priorities identified by countries during the development of ENVSEC assessment reports in Central Asia, results and lessons learnt of the implementation of the Ferghana Valley programme, comparative advantages of ENVSEC (including the availability of funds) and will address issues in four clusters outlined below.

Geographically the focus of ENVSEC work will still remain in the Ferghana Valley, Eastern Caspian Region and the Amu Darya Basin. However, ENVSEC activities will also be implemented in other areas where environment and security issues are manifested and require attention.

The concrete activities will be further refined based on the outcomes of periodic regional consultations and will be subject to governmental endorsements.

Priority/Cluster 1: Dialogue and cooperation on shared resources

Effective cooperation and equitable use of the region's shared resources are essential for sustainable development and human security of the region. Precious water resources of the region in the conditions of arid and continental climate are required for irrigated agriculture and production of hydro-energy. Uncoordinated and competing priorities for water use between upstream and downstream riparian states increase the level of tension and risk of conflict between countries and local communities. Similarly, the absence of effective cooperation leads to degradation of vital transboundary ecosystems (riparian and mountainous forests, dry grasslands, etc.). Therefore ENVSEC partners will support the countries in their efforts to further regional cooperation over the utilization of transboundary resources.

Purpose: to improve cooperation, dialogue and sustainable management of shared resources

Outcomes:

- Strengthened regional mechanisms for effective environmental management
- Improved capacity for water resources management

Priority/Cluster 2: Reduction of risks to security and stability from hazardous practices

The regions rich in natural resources have been industrially exploited and processed for decades, which has led to considerable environmental pollution through improper mining and industrial waste disposal. The uranium industry has left Central Asia with poorly maintained radioactive waste storage sites. The risk for human health deriving from these sites is increased by the high vulnerability to seismic activity of the southeastern area of Central

Asia, especially Kyrgyzstan and Tajikistan, where most of the water for the region originates. In case of a natural disaster causing the radioactive waste to be exposed, water streams can carry it far beyond national borders. As a result, besides the negative impact on health, the transboundary pollution deriving from industrial production can increase the risk of tensions between states. Therefore ENVSEC partners will support activities ranging from assessments to capacity building to prevent and minimize the risk from past, present and future activities which result in production of hazardous waste.

Purpose: To reduce the environmental and health risks posed by industrial activities and hazardous hotspots

Outcomes:

- Improved understanding and knowledge of sites with industrial and radioactive waste as a basis for development of remediation activities
- Improved capacity of governmental agencies to cooperate, prevent, and manage transboundary environmental risks from industrial activities and hazardous hotspots

Priority/Cluster 3: Increased resilience to security impacts of climate change

It is widely recognized now that climate change has an important security dimension due to its potential to affect livelihoods of people. In the case of Central Asia climate change will undoubtedly affect human security by changing patterns of extreme weather events and natural disasters, hydrological and vegetation cycles, and, as a consequence, food availability.

Purpose: To reduce risks due to emerging/incremental and sudden environmental changes

Outcomes:

- Increased national and regional capacity to address climate change risks

Priority/Cluster 4: Raising awareness and strengthening capacities and participatory mechanisms on environment and security issues

Successful cooperation and risk reduction requires that the efforts at the national and governmental level are underpinned by cooperation among communities, experts and practitioners. The potential of NGOs and mass media in spreading reliable and useful environmental information must be tapped and used to improve dialogue and awareness on transboundary issues to find effective collective solutions.

Purpose: To equip the stakeholders at national and regional levels with necessary information, capacities and tools to respond collectively and effectively to environment and security challenges

Outcomes:

- Enhanced dialogue and partnerships among central and local government agencies and civil society organisations on environment and security issues
- Increased access to and utilisation of information on environmental issues by civil society organisations and local and central government agencies

Summary of projects 2009-12

Projects	Implementation			
	Lead organisations	Countries of operation	Status of implementation	Funding status
Cluster 1: Dialogue and cooperation on shared resources				
Assessment of Environment and Security Linkages and Impact in the Amu Darya River Basin	UNEP UNDP	AF, TJ, TM, UZ	Ongoing	Fully funded
Dam safety in Central Asia: capacity building and sub-regional cooperation	UNECE	KZ, KG, TJ, TM, UZ	Ongoing	Fully funded
Enhancing Regional Exchange of Water Resource Information (CAREWIB II)	UNEP UNECE	KZ, KG, TJ, TM, UZ	Ongoing	Fully funded
Microbiological safety of drinking water	NATO	KG, UZ	Ongoing	Fully funded
Integrated Water Resources Management for Wetlands Restoration in the Aral Sea Basin (Northern part)	NATO	KZ, UZ	Completed	Fully funded
Transboundary cooperation of communities in the Fergana Valley in an effort of sustainable development (phase 4)	UNDP Tajikistan	KG, TJ	Ongoing	Fully funded
Water monitoring in a strategic sub-basin of the Amu Darya	UNDP	TBD	Planned	Unfunded
Geo-Environmental Security of the Toktogul Hydroelectric Power Station Region, Central Asia	NATO	KG, UZ	Planned	Fully funded
Cluster 2: Reduction of risks to security and stability from hazardous practices				
Legacy of Uranium Extraction and Environmental Security in the Central Asian Republics	NATO	KZ, KG, TJ, UZ	Completed	Fully funded
Transboundary risks on hazardous waste site of Kanibadam in Ferghana Valley	NATO UNEP UNDP	TJ	Planned	Unfunded
Study on Radioactive Waste Disposal Sites in Turkmenistan	NATO	TM	Ongoing	Fully funded
Radioactive waste management in transboundary context	UNDP	KZ, KG, TJ, UZ	Planned	Unfunded
Environmental Impact Assessment in a Transboundary Context: Pilot implementation project in Central Asia	OSCE UNECE	KZ, KG	Ongoing	Fully funded
Assistance to Central Asian countries to implement the convention on the transboundary effects of industrial accidents (implementation phase)	UNECE UNEP	KZ, KG, TJ, UZ	Pipeline	Unfunded
Cluster 3: Increased resilience to security impacts of climate change				
Risk reduction and climate change adaptation in Central Asia	UNDP UNEP	KZ, KG, TJ, TM, UZ	Planned	Unfunded
Cluster 4: Raising awareness and strengthening capacities and participatory mechanisms on environment and security issues				
Promoting the implementation of the Aarhus convention in Central Asia (follow-up)	OSCE	KZ, KG, TJ	Ongoing	Fully funded
Biotechnological Exploitation of Uzbek Saline Water Reserves Using Halotolerant Microalgae	NATO	UZ	Ongoing	Fully funded
Using Stable Isotopes, Passive Organic Samplers And Modelling to Assess Environmental Security in Khorezm, Uzbekistan	NATO	UZ	Ongoing	Fully funded

Project summaries

Cluster 1: Dialogue and cooperation on shared resources

Assessment of Environment and Security Linkages and Impact in the Amu Darya River Basin

Countries: Afghanistan, Tajikistan, Turkmenistan, Uzbekistan

Project status and duration: Ongoing, 1.5 years

Implementing agencies: UNEP, UNDP

Funding status: Fully funded

Local partners: Ministries of Foreign Affairs and Environment of participating countries, national experts

Project vision/ goals: The project is aimed to undertake a detailed assessment of environment and security links and impact on human security in the basin of the Amu-Darya river. The critical water management and water quality in the upper Amu-Darya river basin deserve a particular focus of the assessment. It is important to take into account the environment and security implications of projected developments as well as to identify opportunities to strengthen basin-wide cooperation around common issues. It is expected that the assessment shared by the Governments will result both in a clearer understanding of security aspects of water management and pollution issues in the basin, and in identification of follow-up interventions where some of the risks as well as cooperation opportunities can be addressed in a practical manner. The assessment will also directly help strengthen capacities of involved local and regional institutions and promote policy dialogue among the parties sharing the basin.

Project deliverables:

- In-depth assessment of environment and security issues and linkages in the upper Amu-Darya
- Analysis of conflicts or tensions among the Amu-Darya basin states over the issues of the water storage and management in the basin
- Complemented national and regional data on water quality/ pollution
- Training for local authorities, researchers and NGOs from the Amu-Darya basin countries on assessment of environment and security aspects of water management and pollution and in exchanging relevant information on water quality in management; and awareness raising on the priority issues/ hot spots among the general public and policy-makers
- Needs identified for further capacity building, support to policy development and other actions to address the environment and security concerns in the basin, and leverage resources for such actions wherever possible.

Capacity building for cooperation on dam safety in Central Asia

Countries: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan

Project status and duration: Ongoing, 3 years

Implementing agency: UNECE

Funding status: Fully funded

Local partners: Ministries of Environment and Emergency Situations

Project Vision/Goals: The project aims to prompt the countries concerned to set up or revise national dam safety regulatory frameworks in order to achieve their harmonization, and to promote sub-regional cooperation for information exchange and notification in case of accidents or emergency situations with dams. In Central Asia, concern over the safety of more than 100 large dams and other water control facilities, located mostly on transboundary rivers, has grown significantly in recent years.

Project Deliverables:

- Assessment of the needs to revise the existing legal provisions and to reform the established institutional modalities for dam safety;
- Technical support through advice and training; identify and technically support an institution in each participating county to serve as a national focal point to coordinate dam safety activities at the country level and represent that country in inter-regional cooperation activities;
- Facilitation of process of formulation of a concept of sub-regional cooperation for safe operation of dams and other hydraulic structures, especially those located on transboundary rivers, and support the development and start-up of a work programme.

Microbiological safety of drinking water in Uzbekistan and Kyrgyz Republic

Countries: Kyrgyzstan, Uzbekistan

Project status and duration: ongoing, 3 years (August 2007 – November 2010)

Implementing agencies: NATO, Pasteur Institute of Lille, France

Funding status: Fully funded by NATO (with additional national contributions)

Local partners: Ministry of Health, Kyrgyz Republic, Academy of Sciences, Republic of Uzbekistan

Project Vision/Goals: The project seeks to enhance knowledge in Kyrgyz Republic and Uzbekistan about the quality assurance methodology for microbiological analysis of drinking water adopted in European Union. This knowledge will be extremely useful for managing and securing drinking water supply and recreational waters thereby increasing environmental security and water resources management of the region. Furthermore, the technology transfer achieved during this project will allow Kyrgyz and Uzbek professionals to apply state-of-art methods in other regions of these countries to enhance knowledge of practitioners in centres of sanitary and epidemiological surveillance.

Project Deliverables:

- Comparative study of Central Asia drinking water microbiological monitoring regulations with International ISO/WHO standards;
- Central laboratory training of reference laboratories on microbiological ISO standards for drinking water and ISO 17025 quality control accreditation requirements;
- Transfer and implementation of these international standards in the 2 national reference laboratories;
- Evaluation of performance through proficiency testing (interlaboratory trial) between 2 national reference laboratories;
- Final intercomparison study on natural (drinking) water samples using in parallel national and ISO standards.

Integrated Water Resources Management for Wetlands Restoration in the Aral Sea Basin (Northern part)

Countries: Kazakhstan, Uzbekistan

Project status and duration: Completed, 4.5 years (August 2004 - March 2009)

Implementing agency: NATO in cooperation with UNESCO-IHE, Delft, Netherlands

Funding status: Fully funded by NATO (with additional national contributions)

Local partners: SIC ICWC, Almaty, Kazakhstan

Project Vision/Goals: The overall objective of the project is to propose a system of models, GIS and engineering tools for civil infrastructure and a pre-feasibility study answering to the principal needs for integrated water resources management in the Syrdarya Delta. The results of the study will serve as a basis for internationally supported investment proposals. The participation of the local community and other stakeholders will add to the reality of the proposed measures and will support the creation of a "Committee for water resources management of the Syrdarya delta".

Project Deliverables

The investigators have examined the current management infrastructure, as well as historical and existing ecological conditions of the Syrdarya river delta and the Northern Aral Sea. They have also adapted an integrated mathematical model, which was developed under a previous NATO SfP project, to the conditions of the Syrdarya river delta. To date, hydrological, ecological, soil and socio-economic surveys have been conducted. Satellite images have been acquired, and preliminary design work on hydro structures to regulate the wetlands have been undertaken. Among the end-users of this project are the Committee for Water Resources of the Republic of Kazakhstan, the ARAL Construction Company and authorities in the Kyzylorda and Aralask municipalities in Kazakhstan.

Enhancing Regional Exchange of Water Resource Information CAREWIB II

Countries: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan

Project status and duration: Ongoing, 3 years

Implementing agency: UNECE, UNEP

Funding status: Fully funded

Local partners: Interstate Commission for Water Coordination

Project Vision/Goals The project will build upon the CAREWIB information service of the Interstate Commission for Water Coordination, and enhance the system through further development of its contents and full integration with other sources of regional water-related information, in order to facilitate a Central Asian water information exchange network for policy-makers and the general public.

Project Deliverables

- Fully accessible and updated web-based information database on water issues in Central Asia;
- Improved capacities of the Interstate Commission for Water Coordination.

Transboundary cooperation of communities in the Fergana Valley in an effort of sustainable development (phase 4)

Countries: Kyrgyzstan, Tajikistan
Implementing agency: UNDP Tajikistan
Local partners: communities, NGOs and local governments in Tajikistan (Chorku, Vorukh and Surkh jamoats of Isfara district) and Kyrgyzstan (Aksay, Aktatir, Samarkandek and Dostuk ayil Okmotu of Batken district)

Project status and duration: Ongoing, 1 year

Funding status: Fully funded

Project Vision/Goals: The main goals of the project are to collect and to disseminate information and analysis of potential conflicts arising from competition over natural resources or from potential natural hazards between communities of two states of Ferghana Valley (Tajikistan and Kyrgyzstan). It is also aimed at assessing the security environment more broadly and at placing environmental causes of conflict in the perspective of the wider security context. Such system of monitoring and early warning will produce substantial basis for adoption of responsible policies in maintaining secure environment. The international community would acquire an informed picture of the needs and priorities, and of capacity-building requirements which would be useful in planning practical interventions. Results and lessons learnt will also be communicated to relevant stakeholders in Uzbekistan. Efforts will also be made to ensure the participation of the communities from Uzbekistan in future endeavours in case of their interest.

Project Deliverables

- Mechanisms for regular information collection and analysis established
- Conflicts mitigation processes enhanced through established working groups and supporting identified priorities by grants.
- Improved understanding of communities and proposals on institutionalizing cooperation and early warning frameworks in Ferghana Valley

Water monitoring in a strategic sub-basin of the Amu Darya

Countries: To be defined – possibly Tajikistan, Turkmenistan and Uzbekistan
Implementing agencies: UNDP
Local partners: Ministries/authorities responsible for Water Management and Hydrometeorological agencies

Project status and duration: Planned, 2 years

Funding status: Unfunded (looking for donors)

Project vision/ goals:

The aim of this project is to support Tajikistan, Turkmenistan and Uzbekistan to establish a grid of automated hydro-meteorological stations in the Amu Darya river basin to facilitate and promote information collection and sharing.

Project deliverables:

- Water gauging stations on selected basins with real-time telemetry to relevant water management authorities in CA countries
- Guidelines on selection, procurement, installation and maintenance of water gauging stations
- Comprehensive, integrated water monitoring plan for Amu Darya Basin (including sustainability plan for this project's achievements)
- Curriculum and/or trainings on water monitoring data management

Geo-Environmental Security of the Toktogul Hydroelectric Power Station Region, Central Asia

Countries: Kyrgyzstan, Uzbekistan
Implementing agencies: NATO with School of Earth and Environmental Sciences at the

Project status and duration: Planned, (July 2008-end 2011)

Funding status: Fully funded by NATO (with additional national contributions)

University of Portsmouth, UK, and the Department of Geological Sciences and Geotechnologies at the University of Milan-Bicocca, Italy

Local partners: Institute of Communication and Information Technologies at Bishkek and Institute of Seismology at the National Academy of Sciences in Uzbekistan.

End-users: The Ministry of Emergency Situations Ruz of Uzbekistan in Tashkent; The Ministry of Emergency of Kyrgyz Republic in Bishkek; The Kyrgyz President's Administration at the Government House in Bishkek.

Project vision/ goals: This project aims to assess the geo-environmental security status of the region surrounding the Toktogul reservoir in Central Asia, which is of crucial importance to the cross-border political and economic stability in the region. The area is crossed by the Talas-Ferghana fault and is potentially vulnerable to a succession of geo-environmental disasters following an earthquake. Implementation of the project will include the formulation of potential threat scenarios and recommendations for mitigation, as well as dissemination of data to national agencies and scientists in the region.

Project deliverables:

- Assessment of seismic, landslide and other threats to environmental security in the studied area.
- Creation of an interactive GIS capable of storing project spatial and tabular data.
- Dissemination of the results

Cluster 2: Reduction of risks to security and stability from hazardous practices

Legacy of Uranium Extraction and Environmental Security in the Central Asian Republics

Countries: Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan

Project status and duration: Completed, 3 years (February 2006 – February 2009)

Implementing agency: NATO, Jozef Stefan Institute, Ljubljana, Slovenia

Funding status: Fully funded by NATO (with additional national contributions)

Local agencies: Kazatomprom, Almaty, Kazakhstan; Al-Farabi University, Almaty, Kazakhstan; Kara Balta Ore Combine, Kara Balta, Kyrgyzstan; Vostokredmet, Khudjand, Tajikistan; Institute of Nuclear Physics, Tashkent, Uzbekistan

Project Vision/Goals: The project aims to assess the radioactive pollution in areas such as Minkush and Kadji Sai in the Kyrgyz Republic and Chorkesar in Uzbekistan and to establish an effective management of the Uranium wastes with the overall goal to minimize the risk for the local population. The project is focusing in particular on drinking-water supplies used by the population living in the vicinity of uranium tailing and waste ore deposits. Recommendations will be developed for lowering exposure in general and for immediate actions to mitigate radiological hazards in areas identified as high risk.

Project Deliverables:

- Establishment (equipment) of environmental analytical laboratories in the Ferghana Valley;
- Training of personnel for radioactivity measurements;
- Assessment of the radiological situation caused by the legacy of Uranium mining, including the dose/risk assessment for the population from external gamma-radiation, radon isotopes and from ingested/inhaled radio-nuclides;
- Establishment of the necessary equipment, survey methods and protocols, radiological protection;
- Support the education of special expertise;
- Identification of immediate and urgent measures for emergency management.
- Comparison with international standards and recommendations for lowering exposure in general.

Radioactive waste management in transboundary context

Countries: Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan

Project status and duration: Planned, 1.5 years

Implementing agency: UNDP

Funding status: Unfunded

Local agencies: Ministry of Emergencies of the KR, Ministry of Health of the KR, State Agency for Environment Protection and Forestry under the Government of the KR, representatives of Tajikistan, Kazakhstan, Uzbekistan on security of radioactive waste issues.

Project Vision/Goals:

The issue of Uranium Tailings in Central Asia is one of the most difficult and enduring legacies of the Soviet Union in the region. All of the enterprises that created the tailings ceased operating before or at independence. Given that the planners of the USSR did not pay much attention to the issues of environmental sustainability, the operating conditions at the sites of the tailings do not meet safety standards and wastes are exposed to mud flows, landslides & under-flooding. The situation is exacerbated by the fact that most of the sites are located in earthquake prone zones and populated areas. There is an immediate hazard of contamination of underground water used for drinking and irrigation.

This project wants to move from assessments to identifying possibilities for actual clean-up action. As a follow-up to High level Forum on Uranium Tailings in Geneva on 29 June 2009, the Program Formulation and Coordination Unit will be created with the seat in Bishkek, Kyrgyzstan in order to a) create a coherent portfolio of projects aimed at mitigating various aspects of toxic waste; b) liaise with the Governments of Kyrgyzstan, Kazakhstan, Tajikistan and Uzbekistan to clarify their response actions; c) coordinate donor response.

Project Deliverables:

- a small team of specialists (Program Formulation and Coordination Unit) created
- a finalized portfolio of detailed project proposals prepared
- contribute to the creation of coordination mechanisms in order to enhance regional and in-country coordination in terms of prioritization and fund-raising for uranium waste management

Study on Radioactive Waste Disposal Sites in Turkmenistan

Countries: Turkmenistan

Project status and duration: Ongoing, 8 years (July 2001 – July 2009)

Implementing agency: NATO in cooperation with ALGADE, France

Funding status: Fully funded by NATO (with additional national contributions)

Local agencies: Turkmen authorities at the State Chemical Concern “Turkmendohunkimiya” in Ashgabat.

Project Vision/Goals: The project is assisting Turkmenistan in the safe handling of radioactive waste, a side-product from iodine and bromine production facilities near by the Caspian Sea. The project includes the implementation of a radiochemical laboratory in Ashgabat, the installation and operation of radioprotection equipment and the training of Turkmen teams. This will enable Turkmenistan in gaining scientific and technical autonomy in waste characterisation and radio protection. Analysis requires a close collaboration with the ALGADE Company located in France, since for some of the measurements the required instrumentation is only available in their laboratory.

Project Deliverables:

- Basic radioprotection equipment has been procured to the site of Khazar. It consists of individual dosimeters; site dosimeters for permanent as well as for point measurements and laboratory equipment to carry out the first readings and interpretations of measurements.
- Procurement of a modern gamma spectrometer to start a radiochemistry laboratory in Ashgabat and training of operators.
- Training of Turkmen personnel to run radioprotection campaigns with suitable procedures for long term monitoring.

To date, the studies carried out have highlighted two main factors.

The radioactivity doses to which personnel are subjected come from radon emitted by heavy nuclides initially contained in the water. For people working on the site or for the public outside the facility, the doses have remained under the internationally-recommended norms (maximum of 20 millisieverts in a period of five years for workers and of one millisievert per year for the public), ensuring that no damage to the health is to be expected as a result of the plant operations. However, the past measurements have only taken air inhalation

or external exposures into account, but not dust inhalation; which needs to be completed.

Part of the radioactivity on the site stems from places which should be kept safe from radioactive material (such as coffee rooms), calling for a much stronger control of the work place.

Further work is needed to make the Turkmen teams able to fully master the monitoring of radioactive doses connected with their activities. This implies developing the radiochemistry laboratory, which apart from bringing a general competence would make it possible to master the conception of future waste handling facilities with respect to international nuclear safety practices. To achieve this, a joint effort between the industry responsible for the waste handling and the scientific institutions in the country would have to be activated in Turkmenistan.

Transboundary risks on hazardous waste site of Kanibadam in Ferghana Valley

Countries: Kyrgyzstan, Tajikistan
Implementing agencies: UNDP, UNEP, ICARO/Italian Ministry of Environment, OSCE

Project status and duration: planned, 2 years
Funding status: Not funded (looking for funding)

Local partners: Ministries of Environment in Kyrgyzstan and Tajikistan

Project Vision/Goals: The results of the project on Rapid Environment and Health Risk Assessment (REHRA) highlighted presence of the significant risk for the environment and population in all three investigated sites. This conclusion was based on the data generated through application of a model for rapid assessment of both environmental and health risks related to industrial accidents and hazardous waste dumps and definition of mitigating measures. The project team recommended five main action lines to be taken into consideration for the way forward:

- To start immediate preventive/protective measures such as fencing, simple soil covers, signposts to restrict access by cattle and people;
- To review and where possible activate available safety and reclamation procedures on contaminated sites;
- To set up an efficient environmental monitoring system, including institutional set up, capacity building and training for personnel;
- To develop environmental and health baseline for the affected areas; and
- To enhance public awareness and participation in the overall conservation and clean up process.

Project Deliverables:

For each site, there will be developed a project with the following key components:

- Technical and financial feasibility, coupled with immediate preventive/protective measures and with the first actions for installing environmental monitoring, building up an information baseline, allowing public participation;
- Effective investments in removal or lowering of the risks;
- Common platform for dialogue among the countries of the region on management of transboundary industrial risks and reduction of possible conflicts chances; and
- Improved access to information on environment and security risks.

Environmental Impact Assessment in a Transboundary Context: Pilot implementation project in Central Asia

Countries: Kazakhstan, Kyrgyzstan
Implementing agency: OSCE, State Agency for Environmental Protection and Forestry in Kyrgyzstan, UNECE

Project status and duration: Ongoing, 1.5 years
Funding status: Fully funded

Local partners: Ministry of Environment in Kazakhstan and Central Asian Regional Environmental Centre

Project Vision/Goals: Transboundary environmental impact assessment is a very important principle for the development of water and environmental cooperation in Central Asia. This project will demonstrate the application of transboundary environmental impact assessment in Central Asia between the two countries Kyrgyzstan and Kazakhstan, both parties of the EIA Convention.

Project Deliverables:

- National implementation mechanisms for the EIA Convention, including national action plans to support the implementation of the EIA Convention in Kazakhstan and Kyrgyzstan;

- Updated Guidelines for implementation of the EIA Convention in Central Asia;
- Capacity building: Trained experts and officials, NGOs in Kazakhstan and Kyrgyzstan;
- Pilot assessment of a planned installation, which is included in the Appendix 1 of the Convention, according to the EIA Convention procedures;
- Dissemination of the results of the project to the other countries of Central Asia as a basis to the future application of the provisions of the Convention in these countries.

Assistance to Central Asian countries to implement the convention on the transboundary effects of industrial accidents (implementation phase)

Countries: Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan **Project status and duration:** Pipeline

Implementing agency: UNECE, UNEP **Funding status:** Unfunded

Local partners: Kazakhstan: Ministry of Emergency Situations and Ministry of Environment Protection, Kyrgyzstan: State Agency for Environmental Protection and Forestry and Ministry of Emergency Situations, Tajikistan: State Committee for Environmental Protection and Forestry and Ministry of Emergency Situations, Uzbekistan: State Committee for Nature Protection and Ministry of Emergency Situations

Project Vision/Goals: General objective – improving the industrial safety in transboundary context through strengthening the implementation of the Convention

Detailed objectives

First phase of the project: Analyze in detail the legal and institutional frameworks adopted in Central Asian countries for the implementation of the Convention, identify gaps and inconsistencies in the frameworks with regard to the Convention and develop a plan of action for each of the countries aimed at eliminating the inconsistencies and gaps.

Second phase of the project: Implementation of countries' plans of action.

Project Deliverables:

Phase I

- concrete plans of actions, containing detailed steps to address identified deficiencies

Phase II

- draft legal acts
- draft standards and procedures
- bilateral cooperation agreements

Cluster 3: Increased resilience to security impacts of climate change

Risk reduction and climate change adaptation in Central Asia

Countries: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan **Project status and duration:** Planned, 5 years

Implementing agency: UNDP, UNEP **Funding status:** Unfunded

Local partners: Relevant ministries and hydrometeorological services

Project Vision/Goals: The main objective of this umbrella initiative is to assist the countries of Central Asia in adjusting their national development processes to address climate change risks. The programme will address the main policy, institutional capacity and financial barriers to systematic adaptation in Central Asia with particular focus on water, land and food production systems. The proposed programme will be designed in a way to enable enhancing the adaptive capacity of Central Asian countries, promoting early adaptation action and laying the foundation for long-term investment to increase resilience to climate change across the region.

Project Deliverables:

- Policy and institutional frameworks to manage climate change risks in an integrated manner at the local and national levels established
- Financing options to meet national adaptation costs at the local community, national and sub-regional levels have been expanded.
- Knowledge on climate change adaptation practices in Central Asian Countries is being generated and shared across all levels

Cluster 4: Raising awareness and strengthening capacities and participatory mechanisms on environment and security issues

Promoting the implementation of the Aarhus Convention in Central Asia (follow-up)

Countries: Kazakhstan, Kyrgyzstan, Tajikistan **Project status and duration:** Ongoing, 1 year

Implementing agency: OSCE **Funding status:** Partly funded

Local partners: Ministries of Environment in Kazakhstan, Kyrgyzstan, Tajikistan; NGOs: Public organisation Youth Group on Protection of the Environment (YGPE, Khudjand) and Public fund Ecological Development (Osh)

The Aarhus Centres and the Public Environmental Information Centres (PEICs) serve as a link between the government and civil society in the sphere of environmental policy-making and implementation. They also provide the platforms for coalition-building and partnerships among non-governmental organizations in addressing environmental issues. Since 2002, ENVSEC partners have supported the establishment and functioning of Aarhus Centres/PEICs in Albania, Armenia, Azerbaijan, Belarus, Georgia, Kyrgyzstan and Tajikistan. These Centres focus primarily on “access to information” pillar followed by initiatives in support of “public participation” and to a lesser extent “access to justice” pillars. In Central Asia region, Aarhus Centres/PEICs have been instrumental in raising awareness on environment and security challenges, particularly those identified by the ENVSEC Assessment for Ferghana Valley and in promoting participatory approaches to respond to these challenges. In Kyrgyzstan, the Osh Aarhus Centre is operational since 2005. In Tajikistan, the first Aarhus Centre was opened in Dushanbe followed by the Aarhus Centre in Khujand in April 2005. This project will continue to support the Aarhus Centres in Osh and Khujand and will facilitate the transition of the Dushanbe Centre to a National Aarhus Centre. The project will also support establishment of Aarhus Centres in Kurghon Teppa (Tajikistan) and in Kazakhstan. The project also aims for further expansion of the initiative to other countries of the region and for initiating regional networking in close cooperation with the national and regional NGO networks, such as CARNET.

Project Vision/ Goals: The primary goal of this project is to support the implementation of the Aarhus Convention in Central Asia region through establishment and/or strengthening of Aarhus Centres in various countries in the region and through networking among the Aarhus Centres by capitalizing on the varying strengths of the countries and responding to their challenges in relation to the three pillars of the Convention.

Project deliverables:

National level

Output 1: *Access to information:* Improved access to environmental information that enables the public to request and receive environmental information from public authorities and supports a system under which public authorities collect environmental information and actively disseminate it to the public.

Output 2: *Public participation:* Improved mechanisms for public participation in decisions on activities with a possible significant environmental impact; in development of plans and programmes relating to the environment; and in the preparation of laws and rules with potential environmental impact.

Output 3: *Access to justice:* Improved mechanisms for providing citizens with access to review and challenge violations of domestic environmental law.

Regional level

Output 4: A regional network of Aarhus Centres in Central Asia is established and operational

Using Stable Isotopes, Passive Organic Samplers And Modelling to Assess Environmental Security in Khorezm, Uzbekistan

Countries: Uzbekistan

Project status and duration: Ongoing, 3 years (July 2006 – July 2009)

Implementing agency: NATO in cooperation with the University of Nevada-Reno (USA); United States Geological Survey and UNESCO-ZEF German-Uzbek Khorezm Project.

Funding status: Fully funded by NATO (with additional national contributions)

Local partners: Institute of Water Problems, Uzbekistan Academy of Sciences; Hydrometeorological Research Institute

End-Users: Urgench State University; State Committee for Nature Protection

Project Vision/Goals: The project aims to enhance knowledge about water resources in Uzbekistan for better management and control of water supplies in the region. The major objectives are to investigate the water quality and aquatic ecosystems of previously unstudied water resources (i.e., lakes impacted by irrigation runoff) in the Khorezm region of Uzbekistan; and to determine the potential utility of water resources in the region for aquaculture, water supplies, and water-related industries, such as fishing.

Project Deliverables:

Young Uzbek scientists have been trained at Urgench State University and the State Committee for Nature Protection in innovative technologies for monitoring, modeling, and investigating the anthropogenic impacts on important water resources. Since the start of the project, several comprehensive sampling studies have been carried out on 13 irrigation lakes and three sites on the Amu Darya River. In addition, monthly samples for water quality have been taken from many of the lakes and the river sites, and in the coming months this sampling will continue. The researchers are analyzing the samples for stable radioisotope content and organic contaminants. In implementing the project results, the end-users in Uzbekistan include the State University of Urgench, the Institute of Water Problems, the Hydrometeorological Research Institute and the Center for Environmental Research of the German-Uzbek Khorezm Project, as well as local landowners.

Biotechnological Exploitation of Uzbek Saline Water Reserves Using Halotolerant Microalgae

Countries: Uzbekistan

Project status and duration: Ongoing, 3 years (July 2006 – October 2009)

Implementing agency: NATO in cooperation with FORTH/ICE-HT, Heraklion, and University of Patras, Greece.

Funding status: Fully funded by NATO (with additional national contributions)

Local partners: SRISE, Tashkent, Uzbekistan and Scientific Consulting Centre "Ecoservice", Taskent, Uzbekistan

Project Vision/Goals: The Aral Sea and other major saline water reserves in the region will be assessed for their potential use in the production of the algae *Dunaliella salina*. This algae is a rich source for bioactive compounds and therefore a candidate for commercial production with application in agriculture and medicine. In the framework of the project a pilot plant will be developed and a technical-economical viability study will be performed.

Project Deliverables:

Since the beginning of the project, a special methodology for visualization of remotely sensed spatial data has been developed in GIS environment for the selection of potential water reserves and the assessment of their hydrological status. Using this methodology, specific sites in the Khorezm region were selected. A soil suitability analysis and the construction of GIS maps has been initiated and is ongoing. Several expeditions to the Aral Sea have been undertaken with the aim of collecting suitable samples from the water. The investigators have measured the growth of the microalgae *Dunaliella salina* and the production of added-value metabolites. Since the start of the project, the project participants have gathered data on potential water reserves and assessed the hydrological status of several saline lakes in the Khorezm region. An additional assessment of the hydrological status of selected water reservoirs has been performed, and different *Dunaliella* species characterized.

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