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STRATEGY PROCESS ENVIRONMENTAL ANNEX

REGIONAL MISSION FOR UKRAINE, MOLDOVA, AND BELARUS

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NOTE: This document provides a summary of the complete FAA 119-mandated Biodiversity Analyses that were conducted for Ukraine, Moldova, and Belarus by DevTech Systems, Inc. during the first quarter of Fiscal Year 2007. For a complete analysis of the status of biodiversity in each country, the threats to biodiversity, the actions necessary to conserve biodiversity, and the extent to which USAID's actions meet these needs, please refer to the full version of the respective FAA 119 Biodiversity Analyses.

DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS	ii
INTRODUCTION.....	1
ASSESSMENT OF BIODIVERSITY OF UKRAINE.....	2
A. Major Threats to Biodiversity.....	2
B. Sectoral Analysis of Threats	2
C. Commitment of Key Stakeholders in Protecting Biodiversity	3
D. Assessment of USAID Support and Opportunities	4
ASSESSMENT OF BIODIVERSITY OF MOLDOVA.....	6
A. Major Threats to Biodiversity.....	6
B. Sectoral Analysis of Threats	6
C. Commitment of Key Stakeholders in Protecting Biodiversity	7
D. Assessment of USAID Support and Opportunities	8
ASSESSMENT OF BIODIVERSITY OF BELARUS	10
A. Major Threats to Biodiversity.....	10
B. Sectoral Analysis of Threats	10
C. Commitment of Key Stakeholders in Protecting Biodiversity	11
D. Assessment of USAID Support and Opportunities	12
SUMMARY AND CONCLUSIONS	13

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ACRONYMS AND ABBREVIATIONS

AVP	Agribusiness Volunteer Program
CBD	Convention on Biological Diversity
DDT	Dichloro-diphenyl-trichloroethane
FAA	Foreign Assistance Act
GAP	Good Agricultural Practices
IBA	Important Bird Area
IEE	Initial Environmental Examination
NEAP	National Environmental Action Plan
NEN	National Ecological Network
NGO	Non-governmental organization
NSSD	National Strategy for Sustainable Development
SO	Strategic Objective
UNDP	United Nations Development Program
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Program
USAID	United States Agency for International Development

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INTRODUCTION

The Environmental Annex is a Strategic Planning (SP)-specific analysis that examines environmental threats and opportunities inherent to the Mission’s strategy and assesses the extent to which the Mission’s strategy incorporates or addresses biodiversity concerns. This assessment does not substitute for the Initial Environmental Examination (IEE). Each Technical Office is responsible for ensuring that an IEE or a Request for a Categorical Exclusion is conducted at the SO level for all activities funded by USAID.

The biodiversity updates for Ukraine, Moldova, and Belarus, on which this annex is based, were prepared in compliance with the Foreign Assistance Act (FAA) Section 119(d)(1) requirement to identify the actions necessary to conserve biodiversity in each host country. As their strategic planning process is not yet complete, the Regional Mission for Ukraine, Moldova, and Belarus will address FAA 119(d)(2), “the extent to which” once their programs are known.

Although many of the threats to biodiversity and actions necessary to conserve biological diversity are similar among countries in the region, USAID identifies strategic and operational plans by country. Therefore, to meet the Mission’s needs for a planning document that summarizes key issues for each country, the sections that follow summarize the status of biodiversity conservation efforts by governments, NGOs and donors and highlights overarching threats for Ukraine, Moldova, and Belarus. Each section concludes with opportunities identified for USAID to consider during the SP process.

Since 2001, USAID has not funded specific biodiversity conservation programs in any of the three countries, though it should not be forgotten that long-term investment in governance, civil society, rule of law, and sustainable economic growth can have beneficial systemic impacts.

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ASSESSMENT OF BIODIVERSITY OF UKRAINE

In the past five years, there has been modest success in reversing dramatic trends of biodiversity loss caused by unchecked development and exploitation of the natural resources in Ukraine. The Government of Ukraine has made positive steps in the development of its policy and legislative framework thanks in part to the assistance of international donors, while an active group of non-governmental organizations has begun to have a positive impact on biodiversity conservation. Unfortunately, the implementation of the new government policies has not been effective in mitigating 60 years of damage and degradation.

A. Major Threats to Biodiversity

Ukraine's biodiversity is threatened primarily across five sectors, three of which are related to productive use of natural resources (agriculture, forestry, and water), and two institutional sectors (public awareness/socio-economic issues and governance). In the full Biodiversity Analysis, the DevTech Team identified 18 key threats from agriculture, the forestry sector, water and aquatic ecosystems, public awareness and socio-economic issues, and governance. Of these key threats, the Team identified the top three threats of utmost importance. These threats are:

- **Inadequate system of protected lands:** Ukraine's current system of protected areas is localized in the south and west, leaving critical biomes in the north and east unprotected.
- **Lack of viable wetland and riparian habitats:** Due in large part to land conversion for agricultural practices, and resulting high input farming methods, wetland and riparian habitats have been severely degraded.
- **Lack of public awareness and resulting weak public participation in the political process:** Though Ukraine has a burgeoning civil society that is increasingly interested in environmental issues, a recent survey indicates that a lack of public awareness and participation is a key limiting factor in biodiversity conservation efforts.

B. Sectoral Analysis of Threats

Ukraine's major threats to biodiversity cut across five sectors:

- **Agriculture.** The sharp increase in intensive agricultural production from 1950 to 1970 severely impacted the country's biodiversity. Post-transition private ownership of the land was accompanied by decreased use of chemicals and an increased use of biological plant protection. This reduced some of the pressure from intensive agricultural practices, though the legacy remains. The conversion of much of the steppe ecosystem's grasslands to agricultural lands without maintaining natural habitat has had a devastating affect on the populations of many plant and animal species, such as the endangered great bustard (*Otis tarda*) and the steppe eagle (*Aquila rapax*).
- **Forestry.** Following a dramatic drop in the forest cover in Ukraine due to heavy tree felling between 1920 and 1970, forest coverage has stabilized in recent years. Currently, nearly 16 percent of the country is forested. While trends are positive, the existing, largely fragmented forests lack the desirable qualities of viable forest ecosystems. Extending the acreage covered by forests, improving productivity and conserving biodiversity are important objectives outlined in various Government of Ukraine policy and legislative documents, most notably the State Programme "Forests of Ukraine" for 2002–2015. Ukraine's forest coverage provides valuable habitat for threatened species such as the lynx, the Eurasian badger (*Meles meles*), and the hermit beetle (*Osmoderma eremite*).
- **Water.** The reckless use of fertilizers and pesticides during the "Green Revolution" of the 1960s, coupled with the impact of polluting industries such as coal extraction and animal production have negatively impacted the health of Ukraine's waterways that continue today. In the past five years, the Government of Ukraine has taken steps to improve the protection and management of its aquatic

ecosystems. While the policies are in place, their effectiveness has been limited. The country's coastal areas are breeding grounds for a number of internationally endangered species, including the white-tailed eagle, the glossy ibis, the pygmy cormorant, and the squacco heron, while numerous endangered species are found in the country's inland waterways, including the Danube salmon (*Hucho bucho*), the European crayfish (*Astacus astacus*), and various species of sturgeon.

- **Public Awareness and Socio-economic Issues.** Several key environment-related non-governmental organizations (NGOs) support social action to conserve biodiversity. One of these, EcoPravo-Kyiv (an NGO which has received USAID funding) conducted a review of citizens' access to environmental information and participation in decision-making and justice in Ukraine. The review concluded that public access to information on environmental emergencies is limited; dissemination via the Internet is lacking; and environmental NGOs generally lack support from the government and as a result search out funding from international organizations.

Socio-economic issues continue to directly impact biodiversity in Ukraine. The 29 percent of the population that falls below the poverty line can adversely affect biodiversity, as evidenced by fish poaching in the rivers and the Black Sea, and illegal logging in the Carpathians. The concern of the poor for biodiversity likely does not override the need to feed one's family or have sufficient wood to keep the house warm. This highlights the role that USAID's economic growth program can play.

- **Governance.** The challenges of good governance and the lack of enforcement of policies and laws have been, and continue to be, obstacles to biodiversity conservation in Ukraine. The lack of effective leadership and oversight was most apparent when the World Bank funded-GEF terminated its coastal biodiversity conservation project within the Azov-Black Sea coastal corridor in 2006 due to delays in providing counterpart funds and the belief that host ministries were not providing sufficient leadership, lacked interagency coordination, and did not take governmental ownership for the project.

The Government of Ukraine has led a slow increase in the number of protected areas. While area-wise the level of protection has increased, the distribution of protected lands remains uneven, with most reserves concentrated in the west and south. This leaves many important biomes with inadequate protected reserves.

C. Commitment of Key Stakeholders in Protecting Biodiversity

The Government of Ukraine has created a solid base of policies, legislation and regulations to protect as well as enhance biological diversity. However, the Government has not been overly successful in taking the next step of effectively implementing these policies and enforcing these laws and regulations. The Government of Ukraine should be encouraged to apply and enforce these tools to the maximum extent possible in order to protect biodiversity for today's population as well for the future. Ukraine's Government should also meet the obligations accompanying international grants and loans involving biodiversity so as not to lose opportunities and reputation as a pro-biodiversity participant in the international arena.

Productive work is being conducted on biodiversity by institutes, academic institutions, NGOs and ministries in addition to the Ministry of Environmental Protection. There exists a need for effective individuals and organizations involved in these efforts to share their knowledge of biodiversity. To effectively and efficiently utilize the limited financial resources available for conservation, these individuals and organizations could be included in future programs.

Protected lands, wetlands and riparian habitats, and forest management can benefit from a more uniform role of the Government. Additional responsibility falls on society as a whole, and public awareness of the importance of biodiversity conservation is critical. Opening the permitting process to be more transparent and to allow for public opinion to be taken into consideration in reference to construction near or on protected lands and the use of riparian areas should assist in helping to mitigate these threats.

The private sector of Ukraine has a greater responsibility for the protection and conservation of biodiversity than ever before. The private sector must move towards sustainable production through certification schemes such as the International Standard Organization (ISO), Hazard Analysis Critical Control Points (HACCP), and European Retailer Producer's Good Agricultural Practices (EurepGAP). These certifications are critical for any enterprise competing regionally and globally while simultaneously mitigating many environmental risks of such economic growth. Along with the privatization of agricultural land and agricultural services comes the responsibility to manage the agricultural and livestock production process using GAP so as to mitigate negative impacts on biodiversity. Many private farmers are not properly educated concerning the correct handling, application, storage and disposal of agricultural chemicals, and mismanagement may impact biodiversity in the area around the point of use.

Many countries have positive interest in Ukraine's conservation efforts. Ukraine lies on European bird migratory paths and bird enthusiasts in many European countries have supported international government to government and NGO efforts to protect the wetlands of Ukraine in order to support the migration continued success. Future income based on ecotourism focused on bird migration has the possibility to increase and become a substantial source of income for Ukraine.

D. Assessment of USAID Support and Opportunities

Currently, USAID has no programs in place that are focused specifically on biodiversity conservation in Ukraine. However, programming in strategic areas can have positive impacts on biodiversity conservation in the country. For example, much of USAID's portfolio relating to Ruling Justly and Economic Freedom provides a solid foundation for biodiversity conservation. Although the Mission has no current plans to make substantial investments in biodiversity protection, there are some low-cost solutions through policy dialogue support, participatory training, use of volunteers and arrangements with professional associations. Furthermore, there are potential linkages in the current portfolio which would be good opportunities for interventions. Examples include:

- **Political Process Development.** A direct benefit from supporting democratic reforms is the creation of an effective **parliamentary system to address natural resource issues** on a rational and timely basis. This body would also be able to research and promote passage of legislation to address the long term concerns of biodiversity conservation.
- **Local Governance.** Activities in local and municipal government support are designed to enhance the active participation of citizens in local decision-making. One of the most important decisions citizens make concerns their quality of life, which includes the natural resource base. Knowledge of the return on investment in resource and biodiversity conservation would result in helping city governments to attract investors, promote business development and create jobs. Improved **local governance activities** can also increase capacity at local levels of protected area management.
- **Rule of Law.** Natural resources have long been the target of illicit acts such as poaching, illegal logging, and harvesting fish using illegal methods. Actions to strengthen the rule of law have direct application to the protection and conservation of biodiversity. USAID could focus **rule of law programs** on combating corruption and enforcing anti-poaching and illegal logging regulations.
- **Civil Society.** Civil society plays a crucial role in building awareness and appreciation of natural resources and biodiversity. USAID could provide **small grants to NGOs** in Ukraine with biodiversity advocacy goals.
- **Business Development.** Efforts to **support and promote ecotourism** would be well received in Ukraine. Ecotourism is a reality in Ukraine, though some neighboring countries are more advanced in developing their ecotourism industries. The USAID/Ukraine business development program objectives would fit well to ecotourism. It may be possible to incorporate information concerning biodiversity conservation into BIZPRO-related assistance to the tourism cluster in Crimea.

- **Agriculture.** At the present time, there is considerable interest in Ukraine to develop and implement an agricultural extension service. Privatization of agricultural lands without the appropriate technical support for the new, private farmers could have ramifications on biodiversity of Ukraine. Improper storage, handling, distribution, application, and disposal of pesticides and fertilizers has impacts on ground water, surface water, soils, and, eventually, human health. The **Farmer-to-Farmer program** is a logical mechanism to interface with the National Ecological Network and to provide expertise to farmers on GAP principles.
- **Energy Efficiency and Renewable Energy Development.** USAID/Ukraine recently initiated a program to assist Ukraine increase its **energy efficiency and energy independence**. Included in this program is support for the government to develop a Law on a Production Sharing Agreement for oil and gas exploration in the Black Sea. While exploration has obvious economic benefits and has the potential to reduce reliance on coal mining in Eastern Ukraine and a dependence on wood fuel in Western Ukraine and its corresponding destruction of Carpathian forests, it will be critical to include a thorough assessment of impacts that the exploration and development of oil fields will have on coastal and Black Sea ecosystems and biodiversity. This will be an opportunity to ‘do it right’ from the start, rather than adding to the legacy of prior industrialization activities.

ASSESSMENT OF BIODIVERSITY OF MOLDOVA

A country with a genetically rich landscape and an agricultural tradition, Moldova's natural resources and biodiversity were strongly impacted by the Soviet Union's strategy of developing large-scale agriculture operations based on pesticides, fertilizers and irrigation systems in the 1970s. When these systems collapsed, they left a legacy of residual pollution problems, a decaying infrastructure, and a socio-economic crisis that continues to the present.

A. Major Threats to Biodiversity

Moldova's biodiversity is most significantly impacted by six areas: three productive sectors (agriculture, forestry, and water), two institutional sectors (public awareness/socio-economic issues and governance), and invasive species. In the complete Biodiversity Analysis, the DevTech Team identified 18 key threats in these areas. Of these key threats, the Team identified the top four threats of utmost importance. They are:

- **Lack of viable habitat due to historical agricultural pressures, clearing forests, and/or the degradation of aquatic ecosystems:** The conversion of forests, steppe, and natural river and wetland systems for agriculture resulted in limited and fragmented habitat. This continues to pose a direct threat to species diversity as well as healthy ecosystem services such as water retention and filtration, soil fertility and stability.
- **Soil erosion:** Eroded landscapes become increasingly susceptible to further erosion, and create a cycle of increasingly degraded landscapes and waterways.
- **Limited Protected areas network:** Moldova's current protected areas network (less than two percent of total land area) is far short of the ten percent coverage generally accepted to be necessary to maintain its biological resources.
- **Conflict with Transneister:** The breakaway republic does not cooperate with Moldova on governance issues and continues to be a heavy polluter of Moldova's waterways.

B. Sectoral Analysis of Threats

The historical expansion of the agricultural sector and other previous economic development plans severely compromised natural habitats in forest, steppe, and aquatic areas. Agricultural expansion in southern Moldova alone destroyed over 90 percent of natural steppe grasslands, marshes, and meadows and led to the destruction of aquatic habitats in most rivers in the region. Natural rivers have been replaced by hydrological modifications that have dramatically reduced key aquatic habitats, while the loss of riparian and wetland habitats has destroyed essential ecosystem services (such as water retention and filtering) and nesting and feeding areas for birds and has disrupted migration corridors that extend through Central Europe to Africa.

- **Agriculture.** Agricultural ecosystems occupy about 75 percent of the total area of Moldova. Land conversion and agricultural practices have resulted in significant threats to biodiversity. For example, agricultural expansion and grazing in southern steppe regions has destroyed about 90 percent of the natural Pontic steppe of the northern Black Sea region, the remaining areas are strongly fragmented. Soil erosion due to poor farming practices and improper grazing is a considerable problem with both direct and indirect adverse impacts on biodiversity.
- **Forestry.** Moldovan forests were mostly cleared three times in the twentieth century and the majority of current stands are the result of plantations. The remaining natural forests are largely the result of stump or root sprouts and considered by officials to be of poor quality. Management efforts focus on encouraging natural regeneration, restoration of forest ecosystem services, and elimination of invasive species from the forests.

- **Water and Aquatic Ecosystems.** Wetlands and riparian areas in Moldova were long ago converted or altered for agricultural purposes. Soviet-era hydrological modifications significantly altered natural rivers and riparian habitats. These modifications include dams to create ponds or reservoirs for fish farming and agricultural irrigation. Of the 26,000 hectares of wetlands in 1960, approximately 5,000 hectares remain today. Recent water quality data in some areas has revealed high concentrations of heavy metals, evidence of persistent organic pollutants, and significant quantities of ammonia, nitrates, and nitrites, most likely from non-point sources. Many rivers lack or have seriously degraded riparian buffers (which are protected by law) that would capture many of these pollutants.
- **Public Awareness and Socio-economic Issues.** Current socio-economic conditions and public attitudes represent a threat to biodiversity, with half of Moldova's population living below the poverty line in one of Europe's most densely populated landscapes. These conditions result in adverse impacts in the forms of overgrazing and illegal harvesting of timber (for fuel wood), fish, and non-timber forest products. Moreover, poor farmers lack the resources to adopt good agricultural practices on their lands leading to diminishing productivity and worsening agro-ecological biodiversity conservation.

Almost all government officials and NGO representatives mentioned lack of public awareness as a significant threat to biodiversity. The annual National Reports on the Implementation of Biological Diversity consistently rank the lack of public awareness as one of the highest priority problems.

- **Governance.** Government ministries and NGOs lack the financial resources to adequately implement their programs and mandates. This stands out as the most important factor limiting conservation governance and threatening biodiversity.

Moldova officially has 310 protected areas covering 66,467 hectares, or about 1.96 percent of total land area. This area is too small to maintain biodiversity. The *Third National Report on the Implementation of the Convention on Biological Diversity* states for proper maintenance of biological resources in Moldova the quota for protected areas is 10 percent, which includes increasing the afforested surfaces, restoring steppe, meadows and wetlands.

The breakaway republic of Transneister presents a significant threat to regional conservation. The territory does not recognize their status within the Republic of Moldova and does not cooperate on many governance issues. Yet the region maintains much of the industrial capacity of the country operating heavily polluting Soviet-era equipment, which accounts for a large amount of pollution impacting the Dniester River. The State Forest Service expressed concern for the health of the forests located in Transneister and reported some minor conflicts regarding forest resources along the border.

- **Invasive Species.** The Ministry of Ecology and Natural Resources recognizes 150 invasive species, and institutes and academies, including the Botanical Garden and Zoological Institute, conduct research to identify alien plants and animals. Important invasive species include the Boxelder Maple, which displaces native species, the Raccoon Dog that destroys nesting bird species and the Sika Deer that compete with and interbreed with local species.

C. Commitment of Key Stakeholders in Protecting Biodiversity

There appears to be moderate commitment to protecting biodiversity in Moldova. Government and NGOs alike see the successful establishment of a National Ecological Network (NEN) as the most crucial step towards the preservation of biodiversity and restoration of ecosystem functions for Moldova. The network would connect a largely fragmented landscape and enable species migration, while protecting waterways and increasing available fuel wood for rural populations. A great amount of planning and coordination has taken place with respect to establishing the scientific basis, legal, policy, and financial elements behind the establishment of the NEN. The National Program on the Setting Up of the National Ecological Network for 2003-2010 establishes an environmental fund to support its development. However, local authorities will be expected to support specific projects with local budgets. Additional financial support can be received from NGOs, international donors, or other outside sources.

Non-governmental Organizations. The Republic of Moldova has a large network of environmental NGOs. There are no official statistics on NGOs, but about 430 environmental NGOs are estimated to be active in the country, 100 of which operate only in Chisinau. A majority are involved in environmental education. Some 50 environmental NGOs are considered very active in the country as they have launched many environmental initiatives on national and local levels and are actively implementing international projects. Bios, Biotica, Eco-Lex, Eco-Tiras, Environmental Movement of Moldova and INQUA-Moldova are among the most active NGOs. In general NGOs suffer from a lack of operational funds, and they are awarded no special tax breaks. Only in cases of intergovernmental agreements on technical assistance may the Ministry of Finance decide to waive some taxes.

International Donors. Most ecosystems have received attention in one form or another from international donors, typically as a component of major programs. Much of the needs of the country in terms of habitat restoration and conservation will be addressed if and when the NEN is fully implemented. There is a need for focused conservation efforts, particularly on steppe protection and restoration. Additional donor efforts are needed towards the establishment of National Parks and ensuring the successful development of the NEN to protect Moldova's critical ecosystems and habitats.

D. Assessment of USAID Support and Opportunities

The key focus of USAID actions in Moldova will be strengthening the private sector to facilitate job growth throughout the country. There are numerous cross-cutting linkages between biodiversity and environmental sectors and opportunities for future USAID programs; especially related to economic growth, democracy and governance, anti-corruption, poverty reduction, and civil society. Specific possibilities include:

- **Economic growth.** Economic Growth initiatives in all sectors should work towards **adoption of international certification schemes** to facilitate opening of Western markets and sustainable development. Implementation of the EU/Moldova Action Plan will significantly advance the approximation of Moldovan legislation, norms and standards to those of the European Union. In this context, it will build foundations for further economic integration based on economic and trade related rules and regulations with the potential to enhance trade, investment and growth (USAID SME Assessment, 2005). Lagging harmonization of environmental legislation will be a serious impediment to increased export to the EU.
- **Democracy and Governance.** The EU/Moldova Action Plan proposes a framework for Moldova's domestic institutions and foreign policy compatible with the standards of EU membership. USAID can assist Moldova by **building capacity in environmental institutions and individuals involved in the EU accession process** (USAID DG assessment). With respect to the environment, the EU has over 300 laws and regulations, which must be adopted and implemented. The sheer volume of required environmental reporting is a huge burden, and the Ministry of Ecology and Natural Resources would benefit from additional support.
- **Rule of Law.** There is ample opportunity for **capacity building of judges and lawyers** in the environment sector so that current and new environmental laws can be effectively implemented and the environment protected. Given the amount of new laws that will need to be passed and implemented as Moldova works towards EU harmonization, there is potential for the creation of a number of jobs and professions in the process.
- **Civil Society.** Environment has long been a neutral rallying point for citizens in transitional countries, and linkages to biodiversity conservation goals fit well with **civil society reform and strengthening**. USAID could consider a Community Based Natural Resource Management (CBNRM) project that will lead to reduction in poverty, corruption, and increase economic growth, as well as addressing needs of the protected areas network. CBNRM activities provide incentives for communities to monitor resource conditions and trends, widely share information, limit poaching,

invest in resource restoration, and promote economic development based on sustainable resource use. Communities historically tied to aquaculture are a nature choice for such a CBNRM project.

- **Agriculture and land management.** Through the APP project, USAID has the opportunity to assist in the updating of Land Code, which, if properly written and implemented has the potential to shift land use patterns towards a more sustainable path and strengthen the land market. USAID can utilize the APP and ADP projects to promote EUREPGAP® standards to integrate market-based incentives into agricultural policy. The standards incorporate proper land management techniques, conservation, and other environmental concerns creating a holistic approach to farming while simultaneously opening higher value markets to Moldovan farmers. USAID should continue efforts through ADP and AVP to facilitate landowner cooperation leading to **better landscape management** and good agricultural practices (GAP) including integrated pest management (IPM).
- **Public awareness.** Through the CPP and Eurasia Foundation, USAID may consider replication of the Green Media Campaign from Bulgaria. Through the creation of an informal mechanism of communication and cooperation among reporters, editors, and other environmental professionals a consistent effort to **educate the public regarding environmental issues** will have a marked improvement on the environment.

ASSESSMENT OF BIODIVERSITY OF BELARUS

Belarus is a flat, landlocked country north of Ukraine with widespread forests and extensive freshwater aquatic systems. The country provides important migration corridors for European, Mediterranean and Siberian endemic species. Though Belarus has no endemic species of its own, the country is rich in biodiversity with 467 vertebrate species and more than 30,000 invertebrate species. The vegetation of Belarus consists of about 11,700 species of plants, including 2,100 species of higher plants. Except for agricultural lands and forests Belarus is relatively poor in natural resources.

A. Major Threats to Biodiversity

The biodiversity of Belarus is threatened primarily across five sectors, three of which are related to productive use of natural resources (agriculture, forestry, and water), and two institutional sectors (public awareness/socio-economic issues and governance). In the FAA 119 Biodiversity Analysis for Belarus, the DevTech Team identified 14 key threats in these areas. Of these key threats, the Team identified the top three threats of utmost importance. These threats are:

- **Selective application of the rule of law.** Selective enforcement of laws regarding harvest of forest resources and laws on hunting and poaching allows for unchecked degradation of natural resources and biodiversity.
- **Lack of viable habitat.** Historical habitat loss both from the conversion of land for agriculture and/or livestock production and from the clearing of forests has resulted in a lack of viable habitat and compromised ecosystem services. Clearing of forests also impacts land drainage and natural erosion controls, which in turn negatively impacts water quality and aquatic habitats.
- **Potential re-release of radioactive contamination.** The contaminated forest areas around Chernobyl have become stores of radioactive material. A forest fire could potentially re-release this material with devastating impact on the country's biodiversity – including human beings.

B. Sectoral Analysis of Threats

The threats to biodiversity in Belarus cut across the areas of impacts from agriculture, the forestry sector, water and aquatic ecosystems, public awareness and socio-economic issues, and governance.

- **Agriculture.** The most significant threats to the biodiversity of Belarus have come from the transformation of large natural territories for human use, particularly lands which have been converted for agriculture. One such example is the widespread draining of peat bogs for conversion into agricultural lands. The inappropriate application and storage of agricultural chemicals has been a continuous threat to the country's biodiversity since the sector became more developed following World War II. A new program in place to subsidize fertilizers has increased the quantity of fertilizers applied to farmland in Belarus. While this added fertilizer has increased agricultural production, there is potential for increased pollution of ground water and surface water.
- **Forestry.** The successful management of the nation's forests by the Ministry of Forestry's Forest Fund has allowed forest coverage to increase in recent years. In 2005, the timber stock stood at 1.43 billion cubic feet, or about 40 percent higher than 1997 volumes. During this same period forest acreage expanded to from 35.5 percent to 37.7 percent of the area of the country. Overall, the Ministry of Forestry deserves credit for its positive role in the management of the Belarusian forests. It has increased the amount of forests and is integrating biodiversity conservation into their management plans. However, illegal logging and hunting still take place in the country's forests. Unchecked, these illicit practices could have a negative impact on biodiversity.

Of major concern is the delicate situation of the 1.6 million hectares of forest contaminated by radioactivity from the Chernobyl Nuclear Power Plant disaster. It is estimated that a large-scale forest

fire in the most contaminated areas could have serious consequences as this fire could release radioactivity into the atmosphere. Contaminated areas are under increased forest fire surveillance and have been given extra resources for fire prevention and fire fighting.

- **Water and Aquatic Ecosystems.** The legacy of aggressive land drainage activities in the 1960s and 1970s that reduced bogs and wetland coverage in the country by half continues to have a significant impact on aquatic habitats, especially in the southern regions. Hydrological modifications introduced at the time included the establishment of a network of water reservoirs, artificial canals, and drainage ditches. These dramatic changes to the country's aquatic ecosystems have led to the measurable disappearance in recent years of high-value fish species such as brook trout and other salmonids.

Water quality is a major concern. Sewage and chemical discharges into the country's waterways enhance eutrophication of water ecosystems, which is followed by changes in species and community composition of aquatic flora and fauna. Industrial discharges of toxic materials such as heavy metals and persistent organic compounds can directly kill fish and birds, and they accumulate in organs and tissues to be transferred through the food chain and disrupt breeding and behavioral patterns in higher trophic levels.

- **Public Awareness and Socio-economic Issues.** Public perceptions, attitudes, and relationships with the natural world can be assets or threats to biodiversity. According to an opinion poll conducted in 2002, only 36 percent of the population is worried about environmental conditions. Moreover, only 10 percent of city dwellers considered that they had sufficient environmental information, and 90 percent of respondents did not know their rights to access environmental information. Clearly, more work needs to be done related to citizen access to information and participation in decision making.
- **Governance.** Governance issues in Belarus have drawn international attention in recent years. These concerns have been focused at the highest levels within the country. Good environmental governance often depends on good laws, strong and fair enforcement, transparent and accountable government agencies, public access to information, and active citizen participation in local environmental decision-making. The concentrated management of protected lands in the Office of the President of Belarus can have negative impacts on biodiversity. Some of the forest resources in the protected lands have been harvested for sale to earn foreign currency for Belarus. It is assumed that these timber harvests have been conducted without basic regard to the natural resource base and, consequently, detrimental to the biodiversity present in the protected lands.

C. Commitment of Key Stakeholders in Protecting Biodiversity

The government has delineated portions of its landscape as protected areas. In 2004, Belarus listed 16 million hectares, or about 7.6 percent of its landscape as protected. This is an increase over 1997 and includes some changes in status for several areas. Belarus plans to extend these areas to 9 percent by 2015. The country has a transboundary reserve with Poland on the World Heritage List (the Beloveskaya Puscha/Bialowieza Forest), and another planned Transboundary Biosphere Reserve (Zapadnoye Polesseye) will cover 200,000 hectares in Belarus, Poland, and Ukraine.

Currently, environmental policy in Belarus is developed through five-year "National Action Plans for the Rational Use of the Natural Resources and Environmental Protection (NEAPs)." Since 2001, two NEAPs have been developed and approved. The five-year action plans are based on the national priorities and follow the recommendations and principles of Agenda 21 as adopted at the Rio Conference in 1992. The priority measures set out for the plans are aimed at balancing solutions for environmental and social problems with the necessity of economic development. In May 2004, Belarus approved the "National Strategy for Sustainable Development (NSSD) through 2020" that outlines an overall strategy for environmental protection and biodiversity conservation along with other issues related to better living conditions and public health and greater environmental security.

Tourism and recreation activities have great potential for Belarus and the government has targeted this area for growth. This includes activities for bird watching, photo-safaris, trekking, canoe trips, bicycling, horseback riding, and visits to rural farms. The national parks, protected areas, and Important Bird Areas (IBAs) represent critical assets to this rural economic development strategy. Also, the rural agricultural community has developed a unique agro-ecology tourism concept that allows visitors to stay at local farms and participate in traditional Belarusian folk culture.

Non-governmental Organizations. According to the Ministry of Justice, there were 47 environmental NGOs registered in Belarus in 2005. The United Nations Economic Council of Europe (UNECE) considers this to be extremely low compared with most other UNECE countries. Most NGOs operate in Minsk and other big cities. They deal with environmental education or specific issues like bird habitat preservation. Most NGOs have little, if any, domestic funding.

According to law, citizens and NGOs have the right to address their complaints, applications and proposals to public authorities and legal persons, and to receive reasoned replies in a short time. In response, oblast and local bodies of the Ministry of Natural Resources and Environmental Protection can impose administrative sanctions, including damage compensation, on offenders. NGOs often use this right to conduct a public review, or ecological review, of a planned activity, such a land fill or dam construction. The NGO can send review results to the State Ecological Expertise for possible consideration.

International Donors. International donors have been primarily focused on issues of governance and rule of law in Belarus in recent years. Nonetheless, there has been some funding provided focusing on biodiversity conservation. UNDP has provided funding for the protection and management of wetlands and peat lands, and UNEP has been involved with providing the government with support to formulate a national biodiversity conservation strategy.

D. Assessment of USAID Support and Opportunities

Currently, the USAID program in Belarus has no activities in place that are focused specifically on biodiversity conservation. However, USAID programming in strategic areas can have positive impacts on biodiversity conservation in Belarus. Although the Mission has no current plans to make substantial investments in biodiversity protection, there are potential linkages in the current portfolio which would be good opportunities for interventions. Examples include:

- **Civil Society.** In Belarus, civil society plays a crucial role in building awareness and appreciation of natural resources and biodiversity. USAID could provide **small grants to NGOs** in Belarus with biodiversity advocacy goals.
- **Business Development.** Efforts to **support and promote ecotourism** could provide a boost to business development Belarus. The British have been active in promoting ecotourism in the country in an effort to build the industry to levels where it can compete with other countries in the region with more advanced ecotourism sectors. The USAID business development program objectives would fit well to ecotourism, especially with a focus on bird watching.

One specific program that could easily incorporate biodiversity conservation themes is the Agribusiness Volunteer Program (AVP). In Belarus, the program is currently focusing its efforts on improving the performance of privatized collective farms with the overall goal of increasing the incomes of their owners and employees and establishing models of successful private enterprise activity throughout the country. The program is a natural fit as a vehicle and mandate to promote increasing incomes by improving on productivity. The economic productivity of conservation and biodiversity actions leading to ecotourism would provide alternatives to owners and employees of privatized collective farms. With encouragement, this project could easily contribute to biodiversity conservation.

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SUMMARY AND CONCLUSIONS

Despite challenging conditions such as a lack of viable habitat and lack of strong protection policies and institutions, the levels of biodiversity in Ukraine, Moldova and Belarus remain high in a regional context. Scientists in Ukraine claim to have a level of biological diversity in Europe second only to France. In Moldova, many species are at their geographic boundaries. In Belarus, some species have been re-introduced and are surviving successfully due to the countries commitment to conservation. While some positive steps have been taken by the respective governments, civil society, the USAID Regional Mission for Ukraine, Moldova, and Belarus, and other donors, critical threats to biodiversity conservation remain in Ukraine, Moldova, and Belarus. USAID support in the areas of governance, civil society, rule of law, and sustainable economic growth can have beneficial secondary impacts on biodiversity and protect the region's valuable natural resources.

For a complete presentation of the status of biodiversity in each country, the threats to biodiversity, the actions necessary to conserve biodiversity, and the extent to which USAID's actions meet these needs, please refer to the full version of the respective FAA 119 Biodiversity Analyses.