

Ukraine country chapter for ENVSEC¹

Introduction

Ukraine is one of Newly Independent States emerged after the breakdown of the Soviet Union in 1991. It has the second largest landmass in Europe and a population of about 48 million people. The country's administrative structure comprises 24 regions (oblasts) and one autonomous republic, Crimea, which became part of Soviet Ukraine in 1954. An estimated 68 percent of Ukrainians live in urban areas with Kyiv, the capital, the largest city with 3 million inhabitants. According to data sources like National Statistical Offices and WB office in Ukraine² the following data were valid for 2004:

Population: 48.4 million
Population per sq. km: 80.2
Population growth: -0.7%
Life expectancy: 68.2 years
Population below national poverty line (2003) : 17.9%
GNI per capita (Atlas method): US\$1.260
GDP: US\$64.8 billion
GDP Growth: 12.1%

Taking into account the hot issue of gas consumption the following data could help to describe the issue: consumption - around 1,5 mln cubic meters annually per capita (totally around 76 billion m³), population – around 34 billion m³, around 35 billion m³ consumed by industry (metallurgy and chemical); gas supply: around 20 billion m³ – Ukrainian production, the rest imported from Russia and Turkmenistan (it is unclear now what are the proportions between them as Russia buys all gas from Turkmenistan)³.

Policy analysis is not the subject of this study. So, just bullet points are provided to highlight the main issues of Ukrainian policy from the author's point of view:

- Policy: independence, nuclear weapons refusal,
- after orange revolution: full support to democracy, fight with corruption – “bandits to jail”, Ukraine is old part of Europe but not EU yet, plans/desire to join EU and NATO as soon as possible, proclaiming regional leadership (GUAM and Community of Democratic Choice), no Black Sea fleet after 2017, transition to pragmatic market relations with Russia
- main advantage - transit country between East and West (including gas transit)

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² <http://devdata.worldbank.org/external/CPProfile.asp?SelectedCountry=UKR&CCODE=UKR&CNAME=Ukraine&PTYPE=CP;>
<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/ECAEXT/UKRAINEEXTN/0,,menuPK:328543~pagePK:141132~piPK:141107~theSitePK:328533,00.html>

³ http://www.gasunion.org.ua/visnyk/visnyk_11_voronin.pdf; <http://www.zn.kiev.ua/nn/show/567/51452/>

- as far as environment is concerned – it is absent in almost all programs of key political parties (except of programs of some marginal parties, which are traditionally ecologically oriented) in 2006 elections, unlike elections in early 1990’s
- there are no “orange Government priorities” in environmental policy too. The latest document in this field was approved in 1998 by Parliament⁴ and is now a little bit out of date. But there are no new lists in any case as all attempts to develop new one or at least to estimate the progress in the implementation of the 1998 list failed.

So, the main areas of government environmental policy are:

1. *Guarantee of environmental safety of nuclear installations and antinuclear protection of population and environment, minimising of the harmful impact of the Chernobyl disaster.*
2. *Improve environmental status of river basins and drinking water quality.*
3. *Stabilise and improve of environmental situation in cities and industrial centers of Donetsk-Prydniprovskij region.*
4. *Build of new and reconstruct of operating sewage treatment infrastructures.*
5. *Prevent of the Black and Azov Seas from pollution and improve their environmental state.*
6. *Form of the balanced system of nature use and adequate re-building of economy production potential, ecologisation of industrial, energy, building, agriculture and transport sectors.*
7. *Protect biological and landscape diversity, develop nature reserves.*

The following tasks are envisaged (to be implemented by Ministry of Environment) to achieve priorities: *decreasing to minimum of radioactive contamination level; protecting air basin, especially in big cities and industrial zones; protection and conservation of land resources; protection and enlargement of natural landscape areas, nature reserves and recreation areas; forests; industrial and municipal wastes management; pollution prevention of sea and inland waters, decrease and halt untreated waste water discharges, protection of underground water from pollution; conservation and rehabilitation of small rivers, implementation of water management based on basin principles; state system of environmental monitoring including nature disasters; providing for environmental expertise of the military/industrial complex conversion; implementing environmental control on the national army activities; elaboration of mechanisms of nature use schemes; implementation of effective economic components to influence nature use system; maintaining environmental education, enlightenment and informing system.*

It should be noted from the very beginning that, largely, understanding of *environment-security* relationships is somewhat different in OSCE/UNEP and in Ukraine (as well as in the other parts of the former Soviet Union). As far as environment is concerned, most often the word *safety* rather than *security* is used here, which means that technogenic and natural risks rather than environmentally caused social conflicts are taken into account. Needless to say that identification of (potential) conflicts were treated just like threats but not as opportunities. Most recently, however, some changes in paradigm had happened and environmental threats were included in the list of threats to national security (see the Law of Ukraine “On Foundations of National Security of Ukraine, 19 June 2003, N 964-IV). In particular, environmental threats mentioned in the Law include:

- anthropogenic and technogenic pressure, growing risk of technogenic and natural emergencies

⁴ „Основні напрями державної політики у галузі охорони довкілля, використання природних ресурсів та забезпечення екологічної рівноваги” (постанова ВРУ від 5.03.98 р. № 188), Main Areas of Government Policy of Ukraine on Environmental Protection, Use of Natural Resources, and Environmental Balance, adopted in 1998 by the Parliament decision #188).

- non-rational, exhausting use of natural resources (both renewable and non-renewable)
- ongoing pressure of Chernobyl consequences
- worsening of environmental conditions of water basins, including transboundary pollution, deterioration of water infrastructure (particularly in the Dnipro basin)
- import of hazardous technologies and materials, pathogenic and transgenic organisms, use of GMO and technologies
- negative consequences of military activities
- technogenic, nuclear and biological terrorism
- inability to utilize toxic and hazardous waste
- absence of environmentally safe energy- and resource saving technologies
- negative influence of global environmental problems

National report⁵ of Ukraine to Kiev Environment for Europe Ministerial Conference (2003) defines the following peculiarities of Ukraine's environmental challenges:

- radiation contamination of significant territories as the result of Chernobyl disaster;
- contamination of significant territories with toxic, domestic and other waste resulting from their technogenic overload as well as lack of rational production structure economy management
- waste water polluting large and small rivers resulting from lack of rational economy management
- submerging/waterlogging of significant areas as the result of lack of rationale in hydrotechnical engineering and melioration
- regional floods caused by climate change and irrationality in land use;
- evolvement of exogenous geological processes (soil shifts, surface subsiding, etc.);
- soil fertility degradation as the result of deteriorating land treatment culture, excessive use of chemicals and mineral fertilizers, etc.;
- inadequate level of environmental awareness, education and culture.

Many of these consequences have been inherited from the Soviet Union times. Though Ukraine's surface area did not exceed 3% of the total area of the former Soviet Union, it possessed 25% of the USSR's industrial potential and, therefore, quarter of its industrial pollution. Manufacturing of one unit of GDP in Ukraine required at that time (as well as now) several times more raw materials and energy in comparison with developed countries. Power generation relied mainly on use of non-renewable natural resources. The share of arable lands constituted 80% of farmland and 57% of the total land area; amount of water used in technological processes at some enterprises was 5 to 10 times bigger than in the best available technologies. Under the centralised command and control system economic development strategy for Ukraine lacked proper assessment of ecological capacity of some regions. As a result, some regions of Ukraine (particularly, Pridneprovye-Donbass region, one of the most polluted hot spots in Europe) feature excessive density of industrial production facilities causing extremely high pressure on the environment and overuse of natural resources. Pollution in predominately agricultural regions is caused primarily by the collapse of the traditional husbandry and creation of major agro-industrial enterprises. Hypercentralisation and enlargement policy implemented in the agricultural sector resulted in problems similar to problems of industrial regions and big cities. Giant cattle-breeding and pig-breeding farms (containing up to 100 thousand animals each) became the largest sources of pollution.

⁵ National Report of Ukraine on Harmonization of Society's Activity in Natural Environment, Special publication on the occasion of the 5th Pan-European Ministerial Conference "Environment for Europe", Kyiv, 2003

In regard to water supply, Ukraine is among the most deficient regions of Europe. Average specific provision of the population with local water resources in Ukraine is 1,0 thousand cubic meters per year. Transboundary rivers flow, canals and waterways effecting inter-basin water redistribution, partly make up for water deficiency. Building of major water-storage reservoirs along the Dnipro River, intended for electric power and water supply for industrial centres of Kryvorizhya and Donbas, as well as for watering of farmlands in the South of Ukraine and in Crimea, did not justify hopes and resulted in adverse environmental after-effects. Over 500,000 hectares of prolific soil were submerged and are now out of agricultural use; waterlogging now covers nearly 100,000 hectares of land adjoining storage reservoirs. Eutrophication, green algae and progradation of reservoir shorelines became very common. Ecological conditions of the Black Sea and Azov Sea is close to crisis due to pollution of the offshore water by industrial and sewage effluent from the «hot spots» on the shore and to polluted flow of such rivers as Danube, Dnipro, Dniester, Southern Buh, Seversky Donets.

Many species of flora and fauna in Ukraine are in grave jeopardy, especially in the areas of intensive economical activity. At the beginning of independence, in 1991, it was estimated that preservation of just 50% of species requires reserving 10% of land. At that time the area of all reserves in Ukraine was only 2.1% (1,211,000 hectares), declining to 0.5% in some regions.

Under the Soviet system the economy of Ukraine used 1.3 to 1.5 billion tons of raw materials every year. The major part of them returned into the environment as wastes. By 1991, 17 billion tons of wastes were accumulated in Ukraine on the surface area of 53,000 hectares. Most of them were accumulated in the hot spots of Dnipropetrovsk and Donetsk regions, the utilisation rate being very low. The problem of handling of hazardous and toxic wastes was not addressed; there were up to 9 million tons of such wastes accumulated in Donetsk, Dnipropetrovsk, Kirovogradska, and Mykolayivska oblasts only.

Fifteen years of Ukrainian independence could be divided into two stages of economic development of Ukraine:

- general economic and environmental crisis during 1992-1998 with simultaneous essential decrease in use of major natural resources (water, mineral raw materials⁶, partially land) as well as decrease (however much less) in pollution of air and water;
- relative stabilization and beginning of revival (since 1999) in industrial and agricultural production with growth in volume of wastewater and hazardous substance discharge in some regions.

In addition to the number of steps to reform the country's economy, Ukrainian Government has been reforming an overall policy, regulatory and institutional framework of the protection of the environment and the management of natural resources. New laws have been introduced and a number of regulations developed to facilitate the implementation of environmental policies and increase compliance with environmental requirements. However, these changes have not been always successful; they have also been slowed down by an unstable institutional framework for environmental management.

⁶ During 1992-2002 use of water resources decreased from 28.6 billion m³/year down to 21.2 billion m³/year while annual extraction of basic mineral raw materials decreased as follows: coal - from 180 to 78.5 mln t/year; iron ore - from 110 to 56.0 mln t/year; manganese ore - from 5.6 to 2.7 mln t/year; oil with condensate - from 5.8 to 4.1 mln t/year; gas - from 18.2 to 17.8 billion m³/year.

During the last five years the real GDP of Ukraine has grown by almost 60% (while still the real GDP in 2001 was less than half of the GDP in 1989). But in the absence of an effective environmental management system, and in the context of slower than anticipated structural reform and lack of modernization of technological processes, the economic expansion has brought back high levels of pollution (in some cases, such as air pollution, close to the levels of 1980s) and conserved consumptive approaches of the Soviet times in the use of energy and natural resources. Essential decrease in water use also did not result in expected improvement of water quality: majority of surface water objects still belong to «polluted» or «very much polluted» water. Prevailing impact of drinking and household water on public health condition (the cause for 70-80% of diseases) determined recently the development of ground waters use as the most environmentally sustainable and protected drinking water source. Hereto it is worth mentioning essential slow down in pollution of ground water at deep levels in the majority of ground water basins. This is mostly due to decrease in agrochemical and technogenic loads on the surface level. In the industrial regions, however, pollution of ground water areas is determined mainly by impact of mineralized waters of mines (in mining regions) in the process of terminating their operation as well as by impact of filtrating storages of industrial and waste waters.

As the economic growth is still the primary goal of the Government, environmental issues have frequently been considered as an obstacle to its achievement. This approach resulted in environmental policies and institutions being weakened by either stalling the development of more effective, efficient and transparent policy and regulations, by relaxing enforcement of environmental requirements or by frequent and unfinished institutional changes. All these factors contributed to lowering significantly the effectiveness of environmental regulatory framework, particularly in eliminating environmentally caused threats to the security and social stability/rest.

It is widely accepted that Ukraine is the less violent country of the former Soviet Union in terms of consequences of social conflicts. Really, Ukraine was the first to organize peaceful transfer of Presidential power in 1994. And even ten years later, when the next transfer was done in the form of “orange revolution”, this revolution had not broken any window or burnt any car and the conflict was finally resolved in the Supreme Court. This says, however, more about the national features of the consequences of social conflicts rather than about their root causes, which are, on the other hand, are rather typical. Ukraine is crossed by one of the Huntington’s lines of the conflict between civilizations but there are growing doubts now that “civilization” roots are the predominant roots of conflicts. Actually this is not the subject of this article, which is largely about looking for “environmental” roots of conflicts, i.e. conflicts over natural resources – water, land, energy resources etc. And the task is not only to identify and to “highlight” potential or existing conflict but to identify the way from the “potential conflict to cooperation potential” (see logo of UNESCO’s water programme)

Environment and security issues in Ukraine

Taking into account the above mentioned features as well as ENVSEC initial discussions in the country, the following issues could be included in the list of **Environment and security** issues in Ukraine. The list will be further researched, discussed and confirmed in the course of ENVSEC consultations and assessment in the course of 2006.

Hazardous and military activities(industrial and mining facilities, pesticides, radioactive contamination, etc.): Nuc. power and waste (chernobyl), obsolete pesticides and industrial pollution ‘hot-spots’ rocket fuel, military bases, haz. waste import

energy security, Multi-dimensional (social conflicts over natural resources): energy (and other - donbass pridnepriye area) resources security, crimea peninsula;

- **water management (including shared water resources, etc.):** Dniester black sea dnieper and Pripjat lower danube (bystroe canal) seversky donets, (clean) water scarcity

- **land, forest and biodiversity management** (land degradation, shared ecosystems and protected territories, etc.) polessye marshlands, carpathian mountains, border natural areas and corridors, natural hazards

Key:

*** – need and opportunity to act now (initiate / fundraise)

** – opportunity for tangible collaboration (develop)

* – room for synergies (investigate)

1. Consequences of the Chernobyl accident (*).

Traditionally and worldwide - both in the WEST and in the East, environmental awareness and perception of environmental (in)security were caused first of all by technogenic disasters like Love Channel, Seveso, Bhopal etc. Chernobyl disaster from 1986 became one of the most important events in this list. Ukraine was the strongest affected country and remains such twenty years after the disaster. And if there are still disputes over the real scale of direct environmental and health consequences of radioactive contamination (see discussion in⁷), social consequences are undoubtedly among the largest ever faced after environmental disaster⁸:

- more than 600,000 participated in emergency activities on the territories of radioactive contamination, in re-construction of the nuclear power plant itself and clean-up of the area ("liquidators" of the aftermath of the accident; more than 300,000 of them live in Ukraine);
- more than 350,000 were resettled from over 2,000 places situated in the contaminated zone, of them about 120,000 evacuated during the first period, including 49,360 inhabitants of the city of Pripjat on 27 April 1986;
- several millions live on contaminated lands since 1986;
- 5-7% of state budget is spent annually for the program to overcome Chernobyl social consequences.

Fortunately, it is not a scale of a major war, but it is a scale of a regional military conflict involving several countries... even if there are some disputes on total direct health impact.

A huge system for social protection of Chernobyl sufferers has been built in Ukraine during last 20 years. In principle it is a "soviet-type" paternalistic system, in which government officials take all decisions, and sufferers are "dependants". Major part of financial resources stays in hands of responsible government agencies. The figures of budget lines (after 1995 when the published state budget became more detailed) confirm this conclusion. The size of Chernobyl budget was still on the level of several percents of GDP (4.6 % in 1992, 1.9 % in 1993, 2.2% in

⁷ Nesterenko V.N., Yablokov A.V., Grodzinsky D.M. "Chernobyl Disaster for the Health of People Continues (Marginalia on the UN Report: The Human Consequences of the Chernobyl Nuclear Accident. A Strategy for Recovery. - A report commissioned by UNDP and UNICEF with the support of UN-OCHA and WHO. 6 February 2002), <http://www.atomsafe.ru/books/gumposl/chernobl.htm>

⁸ Solving the social problems caused by the Chernobyl catastrophe: 20 years is not enough, Volodymyr Tykhyi, Kyiv, 2006 (submitted for publication by Toyota Foundation project "Many-sided Approach to the Realities of the Chernobyl NPP Accident: Summing-up of the Consequences of the Accident Twenty Years After")

1994). Of course it constituted even higher share of the national budget. At the same time, the needs of Chernobyl programs were growing. For example, the state budget of Ukraine (expenditures) for the year 2000 was 33,946.5 million Hryvna, and Chernobyl needs were 5771.9 million Hryvna, that makes nearly 17 %. Provided funds amounted to 4.6 % of the state budget.

The huge social protection system that emerged probably gives people some feeling of safety, but it does not stimulate initiative. As sociological investigations show, an attitude of "dependant" became a common feature among Chernobyl sufferers. People do not take initiative in their hands, and often do not want to take such initiative. Social monitoring in contaminated territories and among sufferers is needed; it could have helped in finding solutions. Such monitoring was started in 1997, but after several years discontinued on the initiative of the Ministry of Ukraine on Emergencies.

The gap between the needs and provided funds shows that the national economy is unable to carry the burden of Chernobyl expenditures required by the law. How could it happen? One explanation is that several generations of Parliament members became legislators using in their election campaigns promises to improve the situation for Chernobyl sufferers. So these Parliament members lobbied interests of Chernobyl fund, and probably not only for the benefit of the sufferers, but also to satisfy requests of numerous lobbyist groups who were making good money on Chernobyl related contracts. So far, the Parliament has been unable or unwilling to make fundamental amendments to Chernobyl legislation, and there are indeed serious social reasons for this.

It is clear that the current system of social assistance to Chernobyl sufferers needs serious reforming, but this reform cannot be abrupt due to very big numbers of those which depend on this system and the fact that many people, excluding children, are not at all young - an average age of liquidator in 2004 was 52 years. UN Report⁹ proposed a ten-year Recovery Phase of initiatives:

"The new approach should focus on enabling the individuals and communities affected by the disaster to enter fully into society by taking control of their own lives and acquiring the means for self-sufficiency through economic and human development".

New and much more significant efforts are needed for careful investigation of the current situation and formulation of possible solutions. All this should be done in an open and transparent manner and with intensive public consultations. Only after this, the needed changes to the system could be made without creating additional psychological stress for sufferers and serious risk for the stability of the social situation.

Those who formulate the state policy of social protection of Chernobyl sufferers should not concentrate on struggle for higher budget allocations (which is probably impossible), but on finding ways of better use of available resources with the goal of creating the situation when sufferers and territories become economically and socially self-sufficient.

As far as additional conflict potential is concerned, establishment of huge Chernobyl Fund resulted in, probably unexpected from the very beginning, such consequences as:

- it created incentives to live on contaminated territories instead of cleaning the territories or relocating people from them;

⁹ The Human Consequences of the Chernobyl Nuclear Accident. A Strategy for Recovery. - A report commissioned by UNDP and UNICEF with the support of UN-OCHA and WHO. 6 February 2002.

- it seduced representatives of other, non-radioactively contaminated territories of Ukraine like industrial hot-spots (see more below), to pretend for the establishment of similar funds for their territories and for similar social benefits for their inhabitants.

As a result the whole mix of the proper application of “polluter pays principle” and/or “liability for past pollution” during privatization was created with substantial conflict potential between different parts of Ukrainian society. Some political parties put even this conflict in the front line of their Parliamentary election campaigns this year.

In addition to these consequences, Chornobyl zone provides some new, additional threats/risks:

- closure of Chornobyl Nuclear Power Plant under pressure and financial support from the West – there is growing concern whether support was used properly (building additional NPPs instead of investments in energy saving);
- construction of safe confinement “Shelter” – which is costly but leaves some doubts in its long-term safety;
- contamination of the Chornobyl zone – which could spread around in case of some natural disaster (like flood);
- usage of Chornobyl zone as the site for nuclear waste storage – many people are afraid that it will be used not only for spent fuel from Ukrainian NPPs (which is also unacceptable for some part of society – NIMBY case) but for imported waste too.

A large body of international assistance and research has focused on Chornobyl, there is need to continue looking at long-term environmental and health consequences as indicated in recent conclusions of UNDP-lead inter-agency Chornobyl forum. Ukraine expects ENVSEC to assess and consequently help address dimensions of the accident relevant to security, stability and cooperation; this is on the agenda of the on-going assessment.

2. Industrial pollution ‘hot-spots’

While Chornobyl consequences rightly (and unanimously) positioned in the first place of the list of importance, we put industrial pollution in the hot-spots in the second place, seemingly in full accordance with Government priorities as of 1998¹⁰. This priority setting is confirmed by recent health risk assessment studies: the least life expectancy is found in the cities with metallurgic and chemical industry (recently confirmed by studies in Zaporizhzhya with support from US Environmental Protection Agency). The same high priority to the industrial pollution in the hot-spots of Donetsk, Dnipropetrovsk, Zaporizhzhya and Lugansk oblasts one could find also in the new Country Assistance Strategy¹¹ (CAS) of the World Bank in Ukraine. Kiev Ministerial “Environment for Europe” Conference (2003) mentioned the following problems of industrial pollution in order to reduce the risks to human health:

- Urban air pollution, particularly from mobile sources, as a major impact on the human health
- Weakness of air quality control systems
- Excessively strict ambient air quality standards
- Weak technological capacity, resulting in higher emissions

¹⁰ We mean here the list of priorities in terms of perception of risk rather than risk itself. It is well known that perception of, for example, radioactive non-voluntary risk is much higher than real risk but when you are dealing with social conflict issues, better to keep using perception of risk approach

¹¹<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/ECAEXT/UKRAINEEXTN/0,,menuPK:328546~pagePK:141132~piPK:141105~theSitePK:328533,00.html>

- Lack of economic incentives for facilities to reduce their emission intensity per unit of output
- Inadequacies of regulation of road transport emissions.
- Low quality of drinking water presents a direct threat to human health
- Insufficient treatment of wastewater poses risks to the stability of ecosystems
- Significant amounts of water are wasted due to weak demand management, deteriorated infrastructure and leakage
- Insufficient funding for the operation and maintenance of water supply and sanitation sector, lack of investments and ineffective use of available funds led to a serious deterioration of urban water infrastructure
- In rural areas and small towns, there are significant portions of the population without access to safe water and sanitation

All these problems are rather familiar for the citizens of Ukraine, especially in the hot-spots. At the same time recent sociological studies¹² show substantial decrease in the interest to the issue of industrial pollution during last ten years, in particular the amount of people, which estimate the environmental situation in their cities as bad, has decreased from 40% to 32,3% during 2002-2005 (probably due to economic decline in the most industrial centres). It is interesting to note that sociologists think that due to the fact that environmental problems in industrial hot-spots are of technogenic origin, which require huge financial means to address, they are more potential social problems, which could be delayed, rather than real (urgent) ones to be addressed urgently on the state level. It should be noted that WB Country Assistance Strategy is also stating that the Government priority for industrial pollution is only moderate now and further negotiations are needed.

It is unclear whether this trend in public perception of industrial pollution risk will be reversed now, when economic growth returns. It is clear, however, that some political parties already propose to address this issue in purely social terms (instead of using long list of measures recommended by Kiev Ministerial Conference) deepening the conflict and creating so far much more tensions instead of smoothing them (see box on “Eco+25%”). It is clear that this approach has its roots in the conflict created by the establishment of huge Chornobyl fund which is being spent mainly on paying social payments (in cash) to sufferers (see Chornobyl issue for details).

Box on “Eco+25%”

One of the most expensive advertisement campaigns during the recent Parliamentarian elections was organised by the “new green” party under the logo “Eco+25%”. The idea was quite simple and well organized from political technologies point of view: party proposes and promises that all social payments in the hot-spots of industrial pollution will be increased by 25% (in case people elect this party to Parliament). This advertisement was so importunate that it produced the best reaction of civil society – the set of anecdotes, which show that people understand very well the populism of the campaign. The best anecdote was the following (see more on Eko+25% campaign anecdotes at www.anekdot.ru, www.censor.net.ua, or, for example, Anecdotes of the week, “Korrespondent”, 25 February 2006, page 11): «Телевизионный рекламный ролик. Эпизод №1. Заходит почтальон к пенсионеру: - Вот здесь распишитесь, и здесь тоже... - А что это за деньги? – Экологическая надбавка. Эпизод №2. Подходит рабочий к кассе получать зарплату: - А почему на четверть меньше, чем было? – Так ведь – экологический налог...»

¹² Амджадин Л. „Екологічна детермінанта соціальних ризиків у дзеркалі соціологічних досліджень” //Соціальні ризики. – Т.2 / Відп. ред.: Ю.І.Саєнко, Ю.О.Привалов. – К.: ПЦ „Фоліант”, 2004. -568 с.; Паніна Н.В. Українське суспільство 1994-2005: соціологічний моніторинг – К.: ТОВ „Видавництво Софія”, 2005.- 160 с.

3. Stocks of obsolete pesticides¹³ (**).

Kiev Ministerial “Environment for Europe” Conference (2003) defined the following problems in the Management of Waste and Chemicals:

- Accumulated stockpiles of hazardous waste and their poor inventories
- Insufficient control of transfers of hazardous waste (export, import and transit)
- Insufficient attention to preventive technological approaches, resource efficiency and lack of incentives for implementation of modern waste treatment technologies, modern waste prevention, treatment and neutralization technologies
- Ineffective management of industrial and household wastes, and chemical management
- Low rate of implementation of modern waste treatment and neutralisation technologies
- Lack of a market for supply of products generated by waste recycle operations
- Lack of incentives for waste reuse, recycling and recovery,

and recommended the following actions to address the problems:

- Development of inter-sector waste management action plans
- Introduction of principles of the Basel Conventions into national legislation
- National capacity building for the environmentally sound management of hazardous waste
- Implementation of integrated systems of monitoring of waste transfers
- Development of economic mechanisms to facilitate implementation of cleaner technologies and waste prevention and minimisation as well as governmental support for waste treatment facilities
- Development of efficient programs for waste management and management of chemical risks
- Introduction of a harmonized system for marking and categorisation of chemicals. Promotion of development of an integrated system for inventory of waste generation and accumulation (e.g. Protocol on Pollutant Release and Transfer Registers-PRTR)
- Implementation of the new harmonized system for the classification and labelling of chemicals
- Promotion of efforts to prevent international illegal trafficking of hazardous chemicals and hazardous wastes and to prevent damage resulting from the transboundary movement and disposal of hazardous wastes

Stocks of obsolete pesticides in Ukraine are also the legacy of the Soviet Union when pesticides were rather cheap and supplied in excessive quantities. For a number of years this problem was neglected by Ukrainian authorities but during last several years several attempts to create inventories by Ukrainian authorities and also within GEF/UNEP project on national action plan on POPs. Government inventory (2002 – 2003) estimated the total amount of obsolete pesticides as around 20,900 t, which were supplied to farmers but not used by them.

GEF/UNEP project (2003-2005) gave the following results (using Annexes A and B of Stockholm Convention): total amount of obsolete pesticides – 19,406 t, including 83,5% (16,204 t) of them are of unknown origin and specification; POPs – 2,044 t (or 10,5% of all pesticides), out of them DDT - 1769,5 t or 86,6% out of POPs and 9,1% out of all pesticides in stock. Main portion

¹³ Description is based on the materials of projects on Obsolete pesticides, http://www.mama-86.org.ua/files/pops_a5_web.pdf and on Policy and legislation on chemicals management in Ukraine, <http://www.mama-86.org.ua/files/investpol.pdf>

of pesticides are now stored in Sumy oblast (2,426.46 t), Kyiv oblast (1,932.86 t), Kirovograd oblast (1,310.076 t), Zaporizhzhya oblast (1,214 t) and Kharkiv oblast (1,111.66 t).

According to official data, which are confirmed by independent experts, there are more than 100 centralized storage places (special warehouses) of pesticides in Ukraine and around 5,000 small storage places on farms with different forms of property. In addition earlier some pesticides (which were later banned) were used also in other sectors like forestry, water management, transport, and by military forces. These obsolete and banned pesticides are stored at the warehouses in these sectors respectively and their amounts and conditions of storage require additional assessments.

Problems of pesticides storage are very much similar to the problems of mélange storage (see below, one should remember that many pesticides are actually very similar to chemical weapons): warehouses are not guarded; they are too close to human settlements and are rather dangerous for environment and human health; conditions of storage is going worse and worse; documentation is absent and it is unclear what is stored; one cannot exclude that due to the mixtures more dangerous pesticides can be formed.

There are two other related problems: substantial past pollution of soils with pesticides and very low awareness of local people (users) regarding proper rules of use and storage of pesticides. It is still rather often when pesticides (including those which are stolen from storage places of banned or obsolete pesticides) are used without any rules of safe usage which means that additional substantial pollution of soils, ground waters and finally human bodies with pesticides.

4. Hazardous waste import

The problem of illegal import of hazardous waste to Ukraine became very serious immediately after gaining independence in 1991. By that time, however, Ukraine has no legal experience in preventing this import and no instruments for it. But the problem got high political attention and therefore Ukraine quite quickly became a party of Basel Convention. This first period of the prevention of illegal import showed, however, that formal legal frameworks are not the main prerequisites of success – main successes were made due to the informal contacts with appropriate authorities in the countries of Central and Eastern Europe as the main flow of import was coming from these countries.

During last years (from the end of 90') the problem of illegal import is again getting more and more serious. This time however Basel Convention regulations are not preventing import. Below please find description of several cases using information provided by Ukrainian NGOs and site of Ministry of Environment and Natural Resources www.menr.gov.ua

During 1999-2005 private company “Ozon” imported industrial waste from Hungary according to the contract with Hungarian company “ELTEX” (Debrecen). This waste was mentioned in the contract as the raw material for rubber industry. Totally more than 4 thousand tons were imported and stored near the village in Zakarpatska oblast. After several years of storage (just in bags without any precautions) people in the village began falling sick and then the expertise of the stored waste was done which show that concentration of some elements was thousand times more than the maximum permissible levels. Criminal investigation was started (but no known results yet).

Another case happened in 2002 when with the permission of Ministry of Environment and Natural Resources, state enterprise “Spetservice” imported from Hungary 16902 tons of tar residues. Official purpose of this import was to test technologies of disposal of such wastes in

Ukraine. During all this time no disposal was done and all wastes were stored at the rented storage place (except of some wastes which were sold to the third companies). Special orders of Ministry of Environment and Natural Resources to safely dispose the wastes were ignored.

Similar situation with the participation of Osma-Oil Ltd from Lvivska oblast is described in the article of Eco-Pravo Lviv¹⁴ below.

As it turned out, the information on the Hungarian neutralized tar import into Ukraine, been imposed on the Lviv public for the long time, is not “precisely” correct. December 8, 2003

The public of Lviv oblast have being persuaded for the long time that the Hungarian hazardous waste in the amount of 3 000 ton are been imported to Ukraine with the aim of experimental incineration on the Dobrotvirska Thermal Power-station. In case the test is successful, the Hungarians will provide us with the tar neutralization technology, worth up to 2,5 million USA dollars.

On the request of EPL the Ministry of Environment and Natural Resources has send documents on the approval of hazardous wastes (“neutralized tar residues”) import to the territory of Ukraine. As it was discovered in these documents, the aim of the wastes import does not match the one, we were confirmed by the company “OSMA-Oil” and State Administration of Environment and Natural Resources in Lviv oblast.

As it turned out, there are no remarks in the contract of the conduct of any experiment, which is stated by the State Administration and the Lviv oblast Sanitary Epidemiological Station. Instead, the letter of the Station, by which the Hungarian tar import was approved, states another purpose of the import – “import of the products of the industrial purpose”. The original contract provides for the obligation of the implementing party to utilize the wastes. Besides, the code of the wastes, provided in the contract, corresponds to the acid tar according to European Wastes Catalogue (EWC 050107).

The received documents also doubt the amount of the imported wastes. The approximate amount of the imported wastes, as provided in the contract, is 60 000-70 000 ton, and only at the bottom it has the note, made by hand with the pencil, about the announced 3 000 ton. Therefore, the question raises – what is the legal effect of the information in the contract, that has been crossed out and written by hand?

As we know, about 17 000 ton of wastes have been imported to the Lviv region already. Besides, the import of the above mentioned tar residues, the Ministry has approved the import of another 4 000 ton of hazardous wastes – the maleic anhydride residues. In such way, soon Ukraine will utilize all Hungarian wastes, assisting Hungary in meeting the environmental requirements acceding European Union.

On our lawyer’s opinion, such an import of wastes to Ukraine and the corresponding documents violates not only the national legislation, but also the requirements of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

5. GMO

Ukrainians are, in general, rather suspicious regarding potential danger of GMO and share precautionary principles used by, for example, EU in this case. For the time being there is no comprehensive set of legislative and organizational norms in Ukraine regarding GMO related issues. There are only temporary rules regarding safe use of GMO introduced by the Government Resolution N 1304 dated August 17, 1998. This Resolution doesn’t cover such issues as scientific research and use of products, produced from GMO as raw material. But it stipulates for: import of GMO to Ukraine only by Minagroprom allowance; in each case Institute of nutrition of the Ministry of Health should conduct sanitary-hygienic expertise; Minagroprom should control import and use of experimental samples of GMO and conduct inventory of its producers. Ministry of environment and natural resources requires improvement of this Resolution in accordance with the EU legislation, particularly by introduction of compulsory EIA of GMO. Development of special Law on Government Policy in Genetic Engineering is in progress in accordance with Presidential Decree dated 4 February 1999. It is expected that this law will regulate all aspects of safe use of GMO. Parliament of Ukraine has approved (in the first

¹⁴ http://epl.org.ua/news_arch.htm

hearing) the Law on State System of biosafety in the production, testing, and practical use of GMO.

Problem of the absence of legislative base on GMO in Ukraine is mentioned in the Program of EU integration of Ukraine adopted by President of Ukraine on 14 September 2000. This program proposes some actions, in particular: further development of the legislative base; establishment of the data bases on biological features of GMO and its influence conservation and sustainable use of biodiversity; development of legislative norms and rules on state policy in genetic engineering, which should correspond to correspondent EU rules; development of criteria and standards regarding assessment of influence of GMO on biodiversity in accordance with respective EU rules.

Despite the absence of GMO legislative base, use of GMO is regulated by some other laws dealing with the right-to-know of consumers. Compulsory marking of GMO content in nutrition products is envisaged by the following Ukrainian laws: Law of Ukraine on the protection of consumers' right, 10 January 2002; Law of Ukraine on the quality and security of nutrition products, 24 November 2002. Compulsory marking is also mentioned in the State Program "The Health of Nation" for 2002-2011 adopted by Government on 10 January 2002.

Ukraine is active in special Black Sea association on biotechnology (International organization established in 2004 by Bulgaria, Romania, Russia, Turkey and Ukraine). This association is creating the set of laboratories on research and control of nutrition products, which contain GMO. This network of laboratories should become the part of the appropriate European network under the aegis of European Commission.

According to the media and NGO briefings there is a problem of unauthorized growing of GMO in Ukraine formally covered by research activities. In particular, Monsanto is blamed for such activities. There is also unauthorized appearance of GMO seeds on Ukrainian markets, particularly corn, potato, soy.

Quite new area of potential conflict associated with GMO is the conflict with emerging market of organic agriculture and green tourism in Ukraine. Due to the fact that there is no information on where there are the experimental fields with GMO and where the organic agriculture fields are, there is a threat of potential conflict between them as well as potential losses of profit in future. The real scale of the problem is, however, unknown and needs further studies.

6. Spent rocket fuel - melange¹⁵ ().**

Following the collapse of the Soviet Union, the Soviet Army left behind liquid rocket fuel component – thereafter referred to as melange – on the Ukrainian territory. Amounting to 16,764 tons, this melange as a highly toxic and hazardous substance is dangerous for the population and the environment. Due to the long storage time – beginning 1961 – the risks are increasing exponentially, as the storage facilities have become strongly corroded, and the melange passed its expiration date and is as such no longer safe for use. Ukraine does not possess sufficient capacity both financial and technical, to recycle or dispose of the melange in an appropriate and ecological sound manner. Due to that reason the Government of Ukraine asked the OSCE for assistance.

¹⁵ Description is based on *Scoping Study on the Elimination of Rocket Fuel Component Stocks in Ukraine - Phase I, OSCE Project Co-ordinator in Ukraine, 28th September 2005*

Environmental risks

Melange by itself is a highly complex chemical substance, whose components are extremely active, easily evaporating and highly toxic. It is not combustible, but reacts with water or steam to produce heat. Contact with combustible materials may increase the hazard of fire and lead to explosion. Direct personal contact with melange or inhalation of nitric acid fumes will result in severe cauterisation of skin, mucous membranes, the respiratory system (pulmonary oedema) and eyes. Due to the lengthy period of storage of Melange and its hygroscopic nature, the H₂O share has strongly increased and as a result of shrinkage and corrosion, the effectiveness of the inhibitors might have decreased, thus leading to the destabilization and active decomposition of the Melange itself that, in turn, could no longer be used as rocket fuel component. In the event of disaster it will prove hazardous to health and the environment, with negative consequences in both respects.

Environmental and Health Risk Analysis

The imminent public health risk results from a toxic cloud created in the rupture of one or various tanks and/or reaction with water and other incompatible materials. It is calculated that a tank containing 100 cubic meters of Melange will affect an area of 2 Km radius around the tank, and an area of 25 Km as a dangerous zone (see Figure 1). Moreover the wind could move the Melange cloud up to 80 Km away.

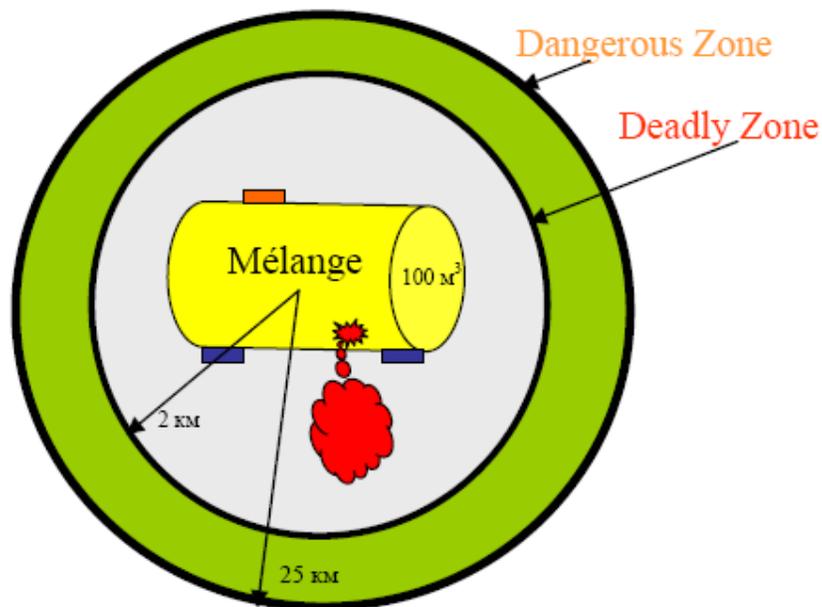


Figure 1 Affected areas of a Melange tank rupture

Long-term environmental damage is primarily associated with pollution of the groundwater by leaking or ruptured tanks. Large spills will render the groundwater unsafe for a long period of time. Clean-up of contaminated ground would be extremely costly and time consuming. No definitive data are available, but visual inspections show that soil and groundwater contamination is already occurring at many sites.

Melange in Ukraine

Ukrainian melange is stored in 8 depots located as shown on the map below. The overall situation of melange storage at sites is unsatisfactory but does not require immediate intervention. However, an increasing threat of ecological catastrophe leading to human losses is

evident and necessitates elimination of the melange as soon as possible, but not later than within 3-4 years.

Major remarks:

- The public tends to more frequently appeal to the authorities and people's deputies with a request to disband melange storage sites. This is due to the fact that evaporating gases (fumes) and leakages have had increasingly adverse effects on the environment and human health. Such appeals have been registered in all regions, which confirms the fact that social tensions are on the rise and that the public has a negative attitude towards melange storage sites.
- It has been observed that almost all melange facilities have had leaks through welded seams and leaks in the area of tank necks. This fact points to the fatigue of metal following the overdue storage dates. It should be noted that the number of unusable reservoirs has sharply increased, and, as a result, the risks of further long-term storage have also intensified.
- Potential serious consequences may be exacerbated by the fact that in close proximity to melange storage there are human settlements, underground and surface waters, railroads and motorways.



- It should be specifically pointed out that large ammunition and explosives depot is located in close proximity to the melange site 6, which constitutes a great danger. Some 12 km away is the city of Vinnitsa with a population of 350,000. In case of a heavy accident, it will be impossible to avoid an environmental disaster and human losses.
- In many cases the existing wind rose would make it possible for toxic fumes after an accident to drift towards the near-by human settlements.
- Some melange storage sites reported black-outs, which is inadmissible. This circumstance substantially decreases safety of storage of the highly toxic melange.

7. **Energy (actually energy and other resources) security (*).**

While technological disasters as the causes of acute threats to environmental security are largely well recognized in the Ukrainian society, causal roots of “chronic” threats are much less recognized, as oil crisis of 1970s didn’t influence Ukraine at all during 30 years after it. However, as has become clear through recent development in Russia-Ukraine relations, energy resources are one major variable that influences regional as well as national stability altogether. In addition, the situation with energy supply already impacts national energy balances with potential long-ranging consequences (increasing interest in ‘indigenous’ nuclear energy production, revival of Ukrainian coal industry and gas exploration on the Black Sea shelf). Energy efficiency is again declared now but this is not for the first time without any consequences.

Many people prefer to treat/explain (and to explore) this recent conflict in terms of ethnic Russian-Ukrainian conflict or at least as the West-East conflict within Ukraine (actually conflict between two parts of Ukraine divided by “Huntington” line). This approach became especially visible due to the election campaigns during last two years. But one can see a lot of purely political reasons in exploring the ethnic cause of conflict in this case. Recent “east-west” conflict is to large extent is a conflict over access to (cheap) energy resources provided by Russia mainly to eastern Ukrainian plants (which were build to be totally addicted to cheap energy supply and only in this case could be economically viable). Western and Central Ukraine, which are much less dependent on Russian gas, look much more ready to keep supporting independence while some eastern Ukrainians are ready even to separate from Ukraine in exchange of access to cheap resources (which they believe will be provided in case of loyalty to Russia).

This, hidden for the first view, conflict over resources as the main reason/cause of many traditionally treated as ethnic/national/religious conflicts, is described by some experts in other cases of explaining the principles of sustainable development (see, for example, Diamond, Jared, 2005. *Collapse: how societies choose to fail or succeed*. New York, Viking). Actually this is valid not only for energy resources dependence but for any resources dependence. In case of Ukraine it became clear when return of economic growth during last five years was accompanied by even more serious coupling with pressure on environment and resource use. As this type of assessment of growth/sustainability is not that much popular yet in Ukraine one can use recent publication (by European Environment Agency, <http://org.eea.eu.int/news/Ann1132753060>) of the data on the so called Ecological Footprint: A resource accounting framework for measuring human demand on the biosphere (www.footprintnetwork.org). Below is the excerpt from the main table where one can see that the main contribution to the Ecological Deficit in Ukraine is made by Energy Footprint (while water deficit provides substantial contribution as well).

ECOLOGICAL FOOTPRINT AND BIOCAPACITY

2002 data	Population (millions)	Total Ecological Footprint (global ha/person)	Total food, fiber, and timber Footprint (global ha/person)	Total energy Footprint (global ha/person)	Total Biocapacity (global ha/person)	Ecological Deficit or Reserve** (global ha/person)
WORLD	6,225.0	2.2	0.9	1.2	1.8	-0.4
High income countries	925.6	6.4	2.1	4.1	3.4	-3.0
Middle income countries	2,989.4	1.9	0.9	0.9	2.1	0.2
Low income countries	2,279.8	0.8	0.5	0.3	0.7	-0.1
Germany	82.4	4.4	1.4	2.8	1.8	-2.6
Netherlands	16.1	4.4	1.5	2.8	0.8	-3.7

Poland	38.6	3.3	1.4	1.9	2.0	-1.3
Slovakia	5.4	3.4	1.0	2.2	2.9	-0.4
Russia	144.1	4.4	1.4	2.9	7.0	2.6
Ukraine	48.9	2.9	1.2	1.7	2.0	-0.9
Uzbekistan	25.7	1.8	0.5	1.3	0.8	-1.0
Canada	31.3	7.5	2.8	4.6	15.1	7.6
USA	291.0	9.7	2.9	6.3	4.7	-4.9

** Negative numbers indicate an Ecological Deficit, positive numbers an Ecological Reserve

One can see that Ukraine is one of those countries whose development depends mostly on the balanced use of available natural resources, primarily those supporting life (land, water, mineral and raw materials). Research and analysis provide evidence to the fact that Ukraine has the national capacity to resolve the above issues in spite of inherited development problems. The first moves should be targeted at efficient use of all types of natural resources.

8. Shared river basins (**).

Shared water basins are the oldest area of conflicts, on the one hand, and cooperation, on the other hand, over access to and use of natural resources. There is a long history (several thousands years) of analysis and interventions in this area. All this knowledge and experience was summarized in the modern concept of Integrated Water Resources Management on the basin (hydrographic) level. After Johannesburg Summit all countries of the world are in the process of transfer to IWRM. Special case of transboundary water resources is regulated in Europe by UNECE Water Convention. Therefore the analysis of conflicts and cooperation in Ukrainian shared water basins is provided in the framework of these instruments (see table in the end of the document).

Kiev Ministerial “Environment for Europe” Conference (2003) defined the following problems in the management of water resources in a sustainable manner, particularly in transboundary river basins and regional seas:

- Poor water quality due to industrial, agriculture, household pollution; floods, torrents, and soil erosion; losses of aquatic biological resources. Conflicts and inefficiencies associated with distribution of water resources between different water users, including in the transboundary context. Lack of incentives for water conservation
- Severe degradation of marine, river and lake ecosystems, habitat destruction due to economic activities in coastal areas and chemical pollution of surface water bodies, introduction of alien species
- Disastrous loss of aquatic bioresource stocks due to overfishing and environmental deterioration
- Inadequate attention to conservation of natural ecosystems in the course of development of recreational areas,

and proposed the following actions:

- Development and implementation of integrated water management programmes, including priorities, objectives and timeframes, implementation evaluation and financing
- Development and implementation of bilateral and multilateral agreements, conventions and regional protocols on the river basin principles
- Promote transboundary agreements for river basins and regional seas and ensure efficiency of and compliance with existing agreements through regulatory action and institutional strengthening at the national level
- Establishment and strengthening of basin management bodies, including inter-state and regional ones

- Development of monitoring and early warning programs for river basins and coastal areas
- Inventory of objects/bodies of transboundary water management
- Inventory of transboundary pollution sources.

See also on transboundary issues:

Identify and Address Transboundary Problems and Strengthen Cooperation within the Framework of International Conventions

Problems

- Weak national institutional capacity for implementation of bilateral and multilateral cooperation.
- Inadequate financial resources and enforcement capacity for implementation of programs and projects to comply with international conventions and fulfil commitments under inter-state agreements.
- Underdeveloped mechanisms of cooperation between national agencies, local authorities and the general public for implementation of international conventions and agreements.
- Low priority of transboundary environmental problems in national strategies and action plans. The need to develop relevant procedures and mechanisms and to introduce them into national action plans.
- It is necessary to strengthen inter-governmental monitoring of implementation of international conventions/agreements in connection with specific transboundary problems (river basins, regional seas), to develop contacts between sub-regional organisations to avoid duplication of their efforts of. The following initiatives can serve as good examples: the Task Force for the Danube and the Black Sea region (DABLAS); the Baltic, Caspian and Aral Sea cooperation programs.
- Lack of mechanisms for assessment and compensation of transboundary damages.

Planned Actions

- Support and promote accession of countries to transboundary environmental conventions and support of development of new ones with involvement of all affected countries.
- Develop and implement recommendations for compliance and establish an responsibility mechanism.
- Regular identification and analysis of transboundary environmental problems Development of a regularly updated register.
- Develop sub-regional bi- and multilateral action programmes for addressing transboundary environmental problems, development of an agreed framework for addressing a problem by parties involved.
- Establish a task force of international experts for development of a mechanism for assessment and repay of transboundary damages.
- Develop national inter-agency procedures for implementation of bilateral agreements and treaties.
- Implement actions to ensure monitoring of implementation of international conventions and uniform systems for exchange of environmental information between sub-regional organisations.
- Develop recommendations for establishment of mechanisms of responsibility for compliance with international environmental commitments.

Main feature of this issue in Ukraine is the fact that Ukraine is one of the most deficient countries in Europe (with less than 1000m³ annually per capita) and, therefore, conflict over access to clean water resources for drinking is rather real. This is the main root cause of the potential conflicts in Ukraine over access to quality drinking water and basic sanitation. The most severe is this problem in Crimea where, in particular, citizens of some rural areas should use highly mineralized ground water or use water delivered in tanks (actually Dnipro water from

Northern Crimean canal). The cost of water in this case is approximately ten times higher than in the cities of Crimea which is additional cause of conflicts from the Tatar population. In many other settlements (not only in Crimea) water related problems are caused not only by natural reasons but by the very poor state of water supply and sanitation infrastructure and very low tariffs, which couldn't cover all expenses of water supply.

There is high risk of potential tensions due to waterlogging and related damage to the houses and buildings, other infrastructure in such areas as Kherson, Dnipropetrovsk, Dniprodzerzhinsk, Cherkasy, Odessa, Lugansk oblast etc.

Black Sea box. The problem of overborder pollution of the North-West shelf in the Black Sea by the flow of Danube and pollution of the Dnipro River from the territory of Russia and Belarus is still awaiting its resolution on international level. Water pollutants migrating from the area of Danube shelf owing to natural factors; bring 50% of actual pollution from Danube to the Ukrainian contiguous zone thus causing decrease in bioproductivity in the major places for commercial fishery of main types of food fish.

Taking into account the role of ground waters in Ukraine, transboundary cooperation is getting higher on the agenda which is shown by recent preparation of GEF project: PDFa: Sustainable Use of the Mesozoic Transboundary Aquifer-Belarus-Poland-Ukraine. A project is being formulated for GEF support, under which the countries will implement Sustainable Use of the Mesozoic Transboundary Aquifer System (SUMTAS) in the shared Bug region. At the recent Workshop held in Debe¹⁶, the Countries have reaffirmed that the proposed project is considered by all three to be a high national priority and an important input towards a future Bug Basin Joint Management Agency that is also being considered.

9. Crimea peninsula ().**

Short historical note: Crimea is a 'hot spot' of inter-ethnic tensions due mainly to the deportation of Tatars in 1944 to Central Asia and relocation back after 1991; after 1944 tatars' houses and land were used to settle large amounts of retired Soviet soldiers (mainly internal troops and KGB), after return of Tatars nobody was going to give them their houses and land back; in 1954 Crimea was moved from Russian Federation to Ukraine because, as was officially said, of close economic ties with Ukraine (first of all water supply from Dnipro); these ties are still very close and transboundary water conflicts are rather possible (even while boundaries are now administrative rather than state). As of 2000 - total water consumption in Crimea is about 2 cubic km and 1,5 - from the North-Crimean channel (i.e. about 75%), main water usage - irrigation 67%, drinking/sanitary 17%.

There are the following security related environment issues in the Crimea – as seen by Crimean citizens (based on materials of Crimean NGOs):

There are some issues rooted in environment/natural resources field that relate to current/potential social threats and conflicts in Crimea.

1. Land conflicts grow; there are two main types. First type is connected with Crimean Tatar aggressive taking land parcels (especially in coastal areas) that stimulates back reactions of local people to act against. Second type is illegal or formally legal taking

¹⁶ "Workshop on Transboundary Water Management at the Northeastern Border of the European Union": the complementary roles of the EU Water Framework Directive and the UNECE Water Convention (held in Debe, Poland, 18-19 October 2005), jointly organized by the Polish Ministry for Environment, UNECE and the European Commission.

- land areas (again mainly in coastal areas) by “VIPs” (deputies, authority people, businessmen) i.e. taking land from common use for private use. It causes protest actions of local communities and civil organizations.
2. Water quality remains the main water critical issue for some regions – high level of chlororganic substances in urban water supply system (such cities as Feodisia, Kertch) and high mineralization in water from underground wells in rural regions (Northern, Western Crimea). It stimulates social tensions. In some local rural places lack of water is a cause of social tension.
 3. In the past Crimea was a region overloaded by military objects. Some military bases and ranges remain in Crimea; usage of them often is a threat to people and environment (example – bringing down Russian aircraft by Ukrainian missile). A lot of bases and ranges were closed but soil pollution problems remain. Black Sea fleet is a source of pollution but mainly locally (of Sebastopol bays). A lot of mines and bombs remain in sea waters; it is a threat to shipping and swimming.
 4. Bird flu outbreak lighted threat of natural spot infections; Crimea is a region of spots of cholera, tularemia and some other; old cattle burial-ground remains potential source of anthrax. Active moving of birds and people through the region strengthens the threat. Economically bird flu threats poultry that is considerable sector of Crimean food industry.
 5. Possible point of international conflicts is fishing in the Black Sea as Turkish poachers constantly try to fish illegally in Ukrainian waters. As fishery convention was not concluded tensions remain and grow up to critical phase if fishermen are damaged physically.
 6. Developing gas/oil reserves on the sea shelf is a direct threat to environment and human health; potentially new side of inter-ethnic conflict could grow – if Crimean Tatar radical groups broaden their interests to control the resources.
 7. Usage of Crimea as a link in East-West transport corridor increase threat to environment and human health from transport load raise; also, we forecast easier infections penetrating – into the region, through and out the one. (BTW, this is valid not only for Crimea – Ukraine proclaims itself as a key transit country!)
 8. The Sea of Azov and Kertch strait status remains sharp theme in Ukrainian/Russian relations; Tuzla island case lighted it. Environmental concerns remain hidden and delayed, political and economical points are considered first.
 9. Huge load of sewages to sea waters threatens more and more the regional recreational development; it is direct threat to human and environment; increase of amount of infection cases in summer season reflects the threat.
 10. As penetrating threat we consider dis-integrated government management that is not appropriate to system tasks which stay against Ukrainian society. It results in losses of budget income, doubling expenses, violations of legislation, low efficiency of state services, contradictions between central, regional and local authorities, etc. And sustainable development is not understood – the main indicators remain ones of economics growth. Also, power is remained separate and independent of the main part of people as “privatized” by several dominant groups of people (it is actual for Crimea). It supports gap between authority and population.

10. Biodiversity conservation (*).

Biodiversity Conservation and Protection of Ecosystems

Problems

- Degradation of natural ecosystems, of genetic fund of animals and plants, destruction of migration routes for wild animals and birds.

- Inadequate integration of biodiversity aspects into national policies and economic/social development programmes.
- Lack of or inefficiency of existing economic, finance and other instruments for biodiversity assessment and conservation. Insufficient financing of activities related to protected territories
- Inadequate transboundary cooperation in the sphere of biodiversity conservation and international exchanges of ecosystem goods and services
- Inadequate public information on biodiversity problems

Planned Actions

- Incorporation of biodiversity conservation aspects into governmental programmes of socioeconomic development, material and finance support for protected territories.
- Setting adequate rates of charges for use of biologic resources
- Introduction of efficient mechanisms for assessment of biodiversity damages and relevant compensations at the national level for prevention of biodiversity losses.
- Introduction of mandatory accounting for impacts on biodiversity in the course of Environmental impact assessment (EIA)
- Approval and implementation of national biodiversity conservation strategies and action plans
- Establishment of relevant national biodiversity inter-agency commissions
- Extension of areas of specially protected natural territories, establishment of systemic funds for biodiversity conservation, including environmental networks.
- Attainment of key targets of the Kiev Resolution on Biodiversity.

During 15 years after independence the area of natural reserves was increased more than two times or more than 1,303,1 thousands hectares. Totally there is now 7 thousands objects reserved with total area of 2 757 427 hectares, which is 4,6 % of Ukrainian territory. Actually this is much less than in most European countries (with on average 15 % of reserved lands), Reserved lands per capita are 570 sq meters in Ukraine and 2,220 sq meters – in Europe. During last years there is negative trend in the development of reserved territories. It was planned to have 7% of reserved lands in 2006 (see details in National Report of Ukraine on Harmonization of Society's Activity in Natural Environment, Special publication on the occasion of the 5th Pan-European Ministerial Conference "Environment for Europe", Kyiv, 2003).

1. Volynsky BNC

Conservancy characteristics

Exemplary centre of flora and fauna diversity of Ukrainian Polissia. Water rights of Volynsky BNC form one of the largest systems of lakes in Europe. Contains wetlands of international importance (national park «Shatsky" and floodplain «Prypiat'_Stokhid"). The best known as a migration route for birds and a seat of specific post_glacial flora in the middle part of Europe.

Negative factors

Development of karst, floods; mosaic radioactive pollution of certain territories. Presence of extensive (the largest in Ukraine) hotbeds of multiple infections.

Recommended activities

Development of recreational industry on the basis of national parks and other objects of the fund of nature reserves; development of environmentally sustainable fish industry and hunting.

Environmental requirements to economic activity

Environmentally sustainable forestry, restrictions on intensifying of farming, land improvement within scientific grounded limits, restoration of water wetland lands. Safe operation of the Rivnenska nuclear power plant.

3. Karpatsky BNC

Conservancy characteristics

Prominent not only in Ukraine, but in Europe, centre of accumulation of relic, endemic, and rare species, of biodiversity in general, of its latitudinal and longitudinal migration paths etc. Ukrainian Carpathians

contain the most developed in Ukraine network of territories belonging to the fund of nature reserves, including trilateral Polish-Slovak-Ukrainian biosphere reserve «Eastern Carpathians», Carpathian biosphere reserve, Carpathian national park, national park «Synevir" etc. The share of reserved territories here is the largest in Ukraine, reaching 12% in Zakarpatska oblast.

Negative factors

Floods, windfalls, mud-flows, landslides, soil erosion. Existence of two large hotbeds of multiple infections.

Recommended activities

Development of recreational nature management, spa, tourism, including eco-tourism on the basis of biosphere reserves and national parks, development of mountain sports.

Environmental requirements to economic activity

Environmentally sustainable forestry and farming; ecologically balanced design, construction and operation of railroads, highways, gas and oil pipelines

5. Dunaisky BNC

Conservancy characteristics

The core area of Dunaisky BNC covers Kilian delta of the Danube River and water reservoirs of the Lower Danube (Kartal, Kugurluy, Yalpug, Kytai etc.), as well as water reservoirs in the adjacent part of Romania. This territory is registered as the water wetland zone of international importance, being the place of water birds nesting. This is the newest naturally formed land in Europe. Both the plant kingdom and the wild life are amazingly rich and original. Over 50% of species of Ukrainian avifauna and all kinds of fishes registered in the European Red List can be found here, including spinous shark., Atlantic sturgeon, and Black Sea and Danube salmon. Dunaisky biosphere reserve occupies significant area within Dunaisky BNC.

Negative factors

Floods, silting and shallowing of rivers' arms and river_beds, ruin of river banks, existence of hotbeds of multiple infections.

Recommended activities

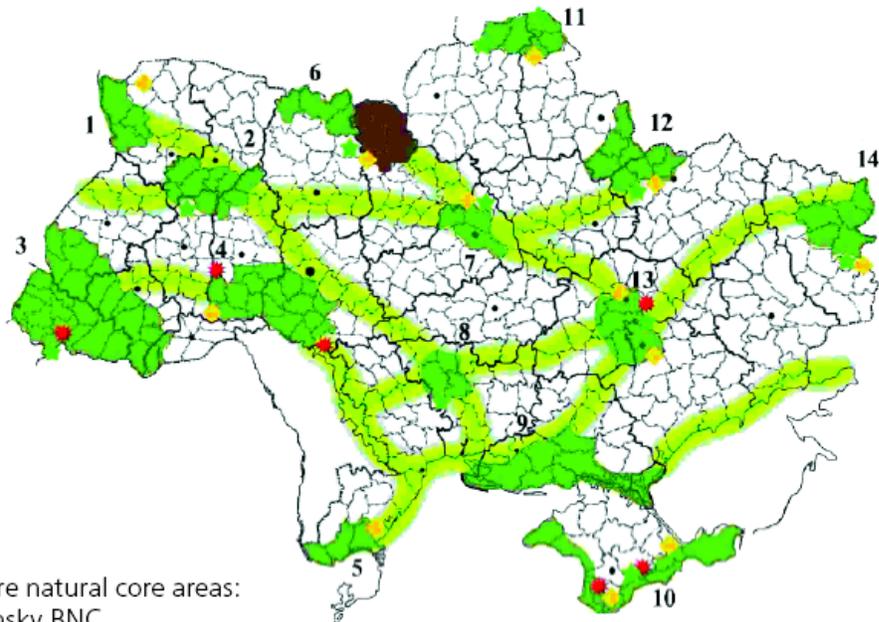
Fishery, traditional farming and cattle breeding, use of natural resources, in particular, of reed.

Development of recreational industry and tourism.

Environmental requirements to economic activity

Non_exhaustive natural resources management, observation of fishing quota, environmentally justified norms of cattle grazing, of hay mowing, reed stocking. Environmentally justified recreational industry.

Layout of biosphere natural core areas



- Biosphere natural core areas:
- 1 - Volynsky BNC
 - 2 - Malo-Polisky BNC
 - 3 - Karpatsky BNC
 - 4 - Podilsky BNC
 - 5 - Dunaisky BNC
 - 6 - Tsentral'no-Polisky BNC
 - 7 - Tsentral'no-Ukrainsky BNC
 - 8 - Booz'ko-stepovyi BNC
 - 9 - Dniprovsko-Sivashsky BNC
 - 10 - Girsko-Krymsky BNC
 - 11 - Desniansko-Starogutsky BNC
 - 12 - Slobozhansky BNC
 - 13 - Dniprovsko-stepovyi BNC
 - 14 - Skhidnoukrainsko-stepovyi BNC

Shared water basins in Ukraine: conflict issues and areas for cooperation

River basin	Parties	Potential conflict issues	Areas of cooperation	Title of the agreement between parties	Joint body	International support
Dnestr (Danube)	Moldova	Floods, pollution, water quality and supply	Qualitative and quantitative protection of water resources (surface waters and groundwaters), regulating, water supply, flood and other water management activities,	AGREEMENT Signed 23.11.1994 at Kishinev draft Convention	Meeting of Government Plenipotentiaries	UNECE/OSCE/NATO project www.dniester.org
Zapadnyi Bug	Poland	Water quality	Irrigation, regulating, water supply	AGREEMENT Signed 10.10.1996 in Kiev	Joint Commission	
Dnipro, Prypyat, Sozh	Belarus	Water quality, interbasin transfer	Water research, Inter-basin water transfer, protection surface waters and ground waters, regulating, navigation	AGREEMENT Signed 16.10.2001 at Kiev	Meeting of Government Plenipotentiaries	UNDP-GEF (Dnipro)

River basin	Parties	Potential conflict issues	Areas of cooperation	Title of the agreement between parties	Joint body	International support
Dnipro, Don, Desna, Seversky Donets	Russian Federation	Floods, water quality (upstream and downstream), water supply	Qualitative and quantitative protection of water resources (surface waters and groundwaters), regulating, water supply, flood and other water management	Agreement Signed 19.10.1992 at Kiev; Tripartite MoU on Dnipro (Belarus, Russia, Ukraine) 2003	Government Plenipotentiaries	UNDP-GEF (Dnipro) EuropeAid (Seversky Donets)
Tisza, Prut, Siret (Danube)	Romania	Floods, ice hazards, water quality	Protection of water resources; prevention, control of hazardous substances from point and non-point sources; flood control; control of ice hazards; construction and operation of hydrotechnical works, hydropower plants, etc; research and exchange of data and information	AGREEMENT Signed 30.09.1997 at Galati	Meeting of Government plenipotentiaries	
Tisza	Hungary	Floods, ice hazards, water quality	Water supply, regulating	AGREEMENT Signed 11.1.1997 at Budapesht	Meeting of Government plenipotentiaries	EuropeAid project

River basin	Parties	Potential conflict issues	Areas of cooperation	Title of the agreement between parties	Joint body	International support
Tisza including rivers Uzh and Latoritsa	Slovakia	Floods, Upstream pollution	Regulating, water supply WATER MANAGEMENT	AGREEMENT Signed 14.06.1994 in Bratislava	Joint Commission	EuropeAid project
Danube	Austria, Bulgaria, Croatia, Germany Hungary, Moldova, Romania, Slovakia, European Union	accident hazards; floods, commercial navigation (Bystroe channel!),	Sustainable and equitable water management Surface waters and groundwaters, including improvement and rational use of waters; reduction of accident hazards; regulating; floods; hydropower production; water transfer and withdrawal	Convention Signed 29.06.1994 at Sofia	International commission for the Protection of the Danube River	UNDP
Black Sea	Bulgaria, Georgia, Romania, Russia, Turkey	Water pollution, military activities (Russian fleet), overfishing	Protection of water resources, monitoring, ICZM, fishing	Convention, Bucharest, 1992	Joint Commission	UNDP, EuropAid