**Technogenic-Environmental Safety issues**

**in Ukrainian part of EUSDR area**

Ukrainian part of EUSDR area is unique in comparison with other 13 countries of the Danube region, whereas it’s the single State, which unites <http://ec.europa.eu/regional_policy/archive/consultation/danube/doc/contrib/ua_ecoResource.pdf> - important part of the Danube delta in Odessa Oblast (Sulina) together with

- general Lower Danube water (and danger) sources – basins of its main tributaries: Tisa, Prut and Siret in Ukrainian Carpathians, which occupy 80% of Ukrainian area in the Danube basin.

Ukrainian & Moldavian participation in EUSDR also covers in fact practically all the right bank and the whole delta of the neighbour Dnister/Nistru river.

So the Danube-Carpathian space of EUSDR area in Ukraine consists of 2 (approx. equal) parts:

- upper Tisa basin in Transcarpathian Oblast, which bound with Hungary, Slovakia, Romania,

- upper basins of Prut and Siret in Chernivtsi and Ivano-Frankivsk Oblasts bordering with Romania and Moldova

+ in fact Dnister/Nistru river basin in Odessa, Chernivtsi and Ivano-Frankivsk Oblasts.

Technogenic-Environmental Safety in these Ukrainian Oblasts together with Carpathian regions of Romania, Hungary, Slovakia and Poland has common roots through joint territorial development in XVIII-XX centuries, mainly on the basis of Alpine experience.

Through last decades (both in former USSR and in the independent Ukraine) these regions are regularly stressed by Natural & men-making disasters, most tremendous of which were:

- terrible floods of “classic” - river bed (1969 & 2008) and “Stormwater” (2010) nature;

- horrible discharge into Dister/Nistru river of approx 4,5 – 6 Mio m3 of liquid sludge from Stebnik chemical plant (1983) and actual potential for similar catastrophic event in Kalush (Ivano-Frankivsk Oblast);

- Chornobyl radioactive pollution (1986);

- children mass alopecia in Chernivtsi (1987);

- regular landslides in urban and rural areas;

- permanent karsts growth and danger of water discharge between two large reservoir storages of Hydropower Systems on Dnister (Novodnestovsk) and Prut (Stanca - Costesti) etc.

Answering these Natural-Anthropogenic challenges, since the beginning of 1990-th it started the initiative of EcoEuroRegion (stimulated by Rio-92) <http://eu.prostir.ua/data?t=1&q=1395> P.115, as a model of transfrontier Regional Sustainable Socio-Economic and Spatial Development based on the Innovation-Target and Technogenic-Environmental Safety approach. Core role for these developments initiation and further providing plaid the former Chair of Environment Engineering and Resource Conservation in University of Chernivtsi (see <http://epl.org.ua/fileadmin/user_upload/publications/Plan_dij.pdf> P.70) and since 1994 - Centre "EcoResource" (State Scientific & Technical Centre for inter-sectorial & regional problems of the Environmental Safety and Resource Conservation) [http://www.veda-bg.eu/?page=download&resource=13\_10%PP2\_CER\_Zinoviy%20Broyde\_EcoResource%20Present.pdf](http://www.veda-bg.eu/?page=download&resource=13_10%25PP2_CER_Zinoviy%20Broyde_EcoResource%20Present.pdf). From the very beginning (and especially since the middle of 1990-th) these investigations were made in collaboration with International Structures, e.g. NATO, CoE & CEI, under support and appropriate interregional and sectorial EU projects with partners and/or national facilities from the EU countries of Alpine area (Austria, Germany, Italy, France) as well as Romania, Hungary, Slovakia, Poland, UK, Denmark etc

Being proposed as general approach for the Danube basin security <http://www.icpdr.org/main/sites/default/files/UA_NATIONAL_PLANNING_WORKSHOP.pdf>

<http://www.ogii.org/sites/default/files/file/update/update8u.pdf>

this EcoEuroRegion initiative’ve integrated into Ukrainian-Romanian- Moldavian Euroregion “Upper Prut”- <http://www.oda.cv.ua/UserFiles/File/2012/Decis8.pdf>

<http://www.oda.cv.ua/UserFiles/File/Protocol%20WGIII%20of%2021122010.pdf>

<http://ukros.ru/2013/12/13/%d0%bc%d0%b5%d1%85%d0%b0%d0%bd%d0%b8%d0%b7%d0%bc-%d1%82%d1%80%d0%b0%d0%bd%d1%81%d0%b3%d1%80%d0%b0%d0%bd%d0%b8%d1%87%d0%bd%d0%be%d0%b3%d0%be-%d1%81%d0%be%d1%82%d1%80%d1%83%d0%b4%d0%bd%d0%b8%d1%87%d0%b5/> and

<http://www.coe.int/t/dgap/localdemocracy/Areas_of_Work/Transfrontier_Cooperation/SWOT_Central_Europe_Final.pdf> .

After proclamation by the President of Ukraine <http://www.cdep.ro/pdfs/greenlight.summit/kuchma2.pdf> this approach was elucidated in the Declaration of the Bucharest Summit <http://www.carpates.org/sum_info1.html> , which became a common root both for Carpathian Convention (2003) and EU Strategy for the Danube Region (EUSDR) in 2010.

And for “**experimental elaboration of transfrontier co-operation mechanisms as the elements of the process of European integration and development of the regional policy**” this Euroregion was nominated as a pilot by the special Decision of the Government of Ukraine of 14/02/2002 Nr. 59-p <http://zakon4.rada.gov.ua/laws/show/59-2002-%D1%80> , which in a year was supported by Decision of the Moldavian Government of 11/03/2003 Nr. 264 <http://lex.justice.md/viewdoc.php?action=view&view=doc&id=300613&lang=2> .

Through the following years different aspects of this approach were developed and elucidated under support of Civil Society <http://www.crs.org.ua/data/danube_strategy/Public_Vision.pdf>

- for disasters prevention <http://www.coe.int/t/dg4/cultureheritage/heritage/landscape/Publications/ATEP-70_bil.pdf> P.121

- for common challenges of Europe of Regions <http://www.gosbook.ru/node/63830> and for Ukraine, Russia & Belarus <http://ukros.ru/wp-content/uploads/2013/12/Belgorod170903.rtf>

- for Regional Development Strategy <http://www.bucoda.cv.ua/document/3/41_1.html>

- for Carpathian Strategy development <http://www.carpathianconvention.org/eventdetailwg-spatial-planning/events/workshop-towards-a-eu-strategy-for-the-carpathian-region-148.html>

- for cooperation with EU on Waste Treatment in whole <http://waste.ua/cooperation/2005/theses/broyde1.html> <http://waste.ua/cooperation/2005/theses/broyde2.html> , as well as for local strategies <http://chernivtsy.eu/portal/f/mv/mvk2013004-133-d.doc> ,

and especially in the framework of EUSDR and its Carpathian-Alpine dimension

<http://epl.org.ua/uploads/media/EPL__8_48_2010.pdf>

<http://epl.org.ua/fileadmin/user_upload/publications/Plan_dij.pdf>

<http://www.crs.org.ua/data/danube_strategy/broyde_ds.pdf>

(see also Workshop “Shaping the Carpathian Region in the EU Strategy for the Danube Region” on III Annual Forum of EU Strategy for Danube Region (2014) <http://www.danubeforumvienna.eu/>

- for strategic planning in ENPI area <https://www.dropbox.com/sh/piity6o86xpcx1a/wVJVcotn1I>

- in context of Global Climate Change <http://www.carpathianconvention.org/eventdetailwg-124/events/third-meeting-of-the-carpathian-convention-working-group-on-adaptation-to-climate-change.html>

- for trans-European transport systems <http://www.carpathianconvention.org/eventdetailcop/events/cop4-fourth-meeting-of-the-conference-of-the-parties-to-the-carpathian-convention-copy.html>

- for mountain forestry management as a core answer to Global Climate change impact on the main Danube water sources <http://www.carpathianconvention.org/eventdetailwg-forests/events/fourth-meeting-of-the-wg-on-sustainable-forest-management.html>

- for Green Infrastructure implementation e.g. for rural areas <http://ru.calameo.com/read/001133349178f58a43e46> etc

The actual large scale project East Avert of the Joint Operational EU Program “RO-UA-MD” allows to develop common system for basinal water management and flood risks prevention <http://www.inbo-news.org/events/12-15-novembre-2014-bucarest/communications-comunicaciones/workshop-on-the-europe-region/?lang=en>

After successful Ukrainian-Hungarian-Slovakian experience in Tisa basin, absence of such agreed System for Water Resource Management and Monitoring, as well as of common Risk Assessment, Floods Prevention & Control and lack of coordinated Information Basis for Emergency Actions Planning against the Damage Effect of Waters have negative impact on the Environment, Economic & Social Sectors, as well as on the level of Technogenic-Environmental Safety in Ukrainian-Romanian-Moldavian upper parts of border Prut and Siret river basins. This issue has essential influence on this Region Sustainable Development, taking into account the official status of Romanian Northern-Eastern regions as the most backward in EU, which development should be accelerated accordingly to the EU Cohesion Strategy.

Therefore in parallel to EUSDR establishment, it was developed and approved Large Scale project East Avert. which should cover the last “gap” in the Danube Risks Prevention and Mitigation “umbrella” following developments of the Danube FloodRisk project. Implementation of East Avert foresees 2 general objectives for the Carpathian-Danube area:

- core technical – common System of Automatic Stations establishment & putting into operation through trilateral dispatching structure;

- and more prospective - development of GIS basis and distributed data bases for digital mapping of flood hazards and flood risk, showing the potential adverse consequences associated with different flood scenarios, including information on potential sources of environmental pollution, and modeling, planning, as well as interaction in the ordinary, emergency, disaster regimes and for consequence of floods elimination, as an essential element for territorial Spatial Planning and Sustainable Socio-Economic Development.

These developments reciprocal implementation and further operation under the common aegis of the joint priorities of EUSDR and Carpathian-Alpine Conventions collaboration are opening new “dimension” for EcoEuroRegion model, using Synergy of EU Regional and Neighbourhood policies proclaimed in the Bucharest Declaration of 14 Danube counties Summit of 08/11/2010 Being successful in East-Avert project this cooperation model for border river basin can be further applied in the neighbour Dnister/Nistru basin with further spreading in whole Black Sea area.

But, if for Romania these works’ve already became an “routine” activity of “Acquis Communautaire” fulfillment (e.g. EU Directives: Framework Water 2000/60/ЕС, 2007/60/EC on the assessment and management of flood risks, as well as of 2007/2/WE INSPIRE) – for Ukraine & RM this opportunity can crucially accelerate their association efforts under new Agreements with EU signed in June 2014.

In context of the proclaimed decentralization and regional policy development in Ukraine it’s also necessary to re-focus project implementation and flowing activity to “close cooperation and coherent action at local level, as well as on information, consultation and involvement of the public, including users” as it’s proclaimed by the Directive 2000/60/ЕС.

For this new reality in the Ukrainian project area (Prut & Siret basins), besides preliminary agreed involvement of the regional authorities, local institutions for emergency and other water management stakeholders – additional efforts were done with local communities. As well as it was successfully involved such social facility as local schools teachers and pupils.

Under this support, in the inundation zones (settlements & cities) agreed with East Avert GIS and modeling works providers, started precise data revealing on historical floods and concerned risks, using special surveying, digital photo & video information etc. with further GPS data fixation & mapping for “different types of floods occur, such as river floods, flash floods, urban floods” in conformity to requirements of EU Directive 2007/60/EC.

Such utilization of East Avert performance capabilities allows to realize further for common area of the EUSDR in 3 countries the actual principles of the Green Infrastructure <http://www.carpathianconvention.org/eventdetailcop/events/cop4-fourth-meeting-of-the-conference-of-the-parties-to-the-carpathian-convention-copy.html> , answering to the Global Climate Change challenges, both for river basin management and new Stormwater issues.

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