

EAST AVERT

FROM AGREED WATER MANAGEMENT THROUGH GREEN INFRASTRUCTURE TO SUSTAINABLE REGIONAL DEVELOPMENT IN TRANSFRONTIER RIVER BASINS



"Europe-INBO 2014"
12-15, November 2014, Bucharest (Romania)

Dr. Zinoviy BROYDE zinoviy.broyde@gmail.com +38-050-5128698

Viktor GVALESHKO itstrukt@Gmail.com +38-050-6758135

Vladimir ORLENKO orlenko49@mail.ru +38-050-8471945



BASINS STRATEGIES

Water as main Resource: Conservation, Protection & Sustainable Utilization (Directives 2000/60/EC and 2007/60/EC)

Inland waterways improvement & safe exploitation

Potential of Water Energy utilization & accumulation

Rivers, seas, lakes, water reservations utilization for touristic-recreational & cultural routes aims

Surface & underground waters monitoring, optimal consumption (off-take & cleaned sewage return), river beds preservation & hydrotechnical works performance and regular & accidental pollutions prevention

Flood Risk Management & Planning for floodplain, flashflood (Stormwater) & urban phenomena

Preservation of water rights (beds, marshes, strands), their flora (algae), fauna (fish, plankton) & ecosystems, as well as protection against ice-floods, hydrological drought, emergency occurred at hydro-technical constructions and accidental pollutions. Researches & education concerned water cycles, associated activities and ICT utilization for their monitoring, modeling, accounting and data exchange
Regulation activities concerned water resources treatment, utilization and conservation

Bringing-up mentality & special education for population, especially youth, in coastal zones
Basins Councils and common services/facility establishment

International Water Legislation enforcement.
Prevention & struggle against poaching, contamination and other crimes, concerned to waters

Conformity to Global, EU & CoE PAs

Synergy of bottom-up Green Growth approach on levels of local communities self-government, regional, national & international

Guiding principles for sustainable spatial development of the European continent
CoE — CEMAT

Improvement of mobility and Intermodality

To encourage more sustainable energy

To promote culture and tourism

Quality of waters restore and maintain

To manage environmental risks

To preserve biodiversity, landscapes and the quality of air and soils

To develop the Knowledge Society (research, education and ICT)

To support the competitiveness of enterprises

To invest in people and skills

To step up institutional capacity and cooperation

To work together to tackle security and organized crime

TERRITORIAL STRATEGIES



Sustainable Socio-Economic & Spatial Development (UN 17 Goals)

Multimodal cargo, passengers & energy flows development as core element of territorial upgrowth

Optimal utilization of interior & transit resources for energy sustainable production, distribution, utilization & conservation, answering also Climate Change
Touristic-recreational potential preservation & development, utilizing cultural & natural heritage and technogenic sphere regarding Climate Change

Sustainable fishing, hydrotechnical, water-canalization and wastewater systems reconstruction

Inundations, torrent, landslide, karstic & other hazards mapping, preliminary risks & disasters scenarios assessment, as well as prevention, in situ & consequences elimination planning & implementation, answering also Climate Change

Monitoring, population health & social sphere preservation, environmentally sound any human activity (e.g. agriculture, forestry, industry, municipal) for all kinds of flora, fauna, landscapes, waters, soils, air & bowels, eco-corridors establishment and waste flows minimization
Scientific, educational & ITC networking and synergic "platforming" answering common challenges, e.g. enable modern GIS, distributed data bases and statistic achievements

Transfrontier clustering promotion for innovation-investment activities and best available technique (BAT) & experience transfer, e.g. through pilot projects & for remote rural areas
Improving employment/labor markets, educational, professional skills/trainings & lifelong learning

Maximal utilization of international & bilateral European, regional & local structures (e.g. EGTC/ECG/Euroregions) and Civil Society tools

Acquis Communautaire implementation promotion, as well as rule of law & fight against corruption, terrorism threats; long-term cooperation between law enforcement actors; border infrastructure & control perfection

INITIAL UKRAINIAN – AUSTRIAN COOPERATION

PROTOKOLL

Über das Zusammenkommen der bevollmächtigten Vertreter der Tscherniwzler staatlichen Gebietsadministration (Ukraine) und der Landesregierung Kärntens (Österreich) zur Schaffung des Ökologischen Zentrums für Verwaltung und Technologien der ECAT–Bukovina

Die Bevollmächtigten Vertreter der Landesregierung Kärntens Dr. E.Wagner, Dr. G.Warna, Dr. W.Hafner sowie auch DI. H.Stissen als Vertreter der "DRAU Consulting" einerseits und Vertreter der Tscherniwzler staatlichen Gebietsadministration: Leiter der Verwaltung A.Rotar, Leiter der Verwaltung " N.Fokna, Leiter der Verwaltung V.Sivak und Dr.Z.Broide unter Anteilnahme des Ministerberaters für Umweltschutz und nukleare Sicherheit der Ukraine V. Dowlsach andererseits,

die weiterhin Verhandlungsseite genannt, werden und gemäß Artikel 2 des Protokolls über regionale Zusammenarbeit in den Bereichen der Ökonomie, des Handels und der gesellschaftlichen Kultur in der Zeitspanne 1995–1998 vom Juni 9, 1995

führten bilaterale technische Beratungen zur Schaffung der Ökologischen Zentrums für Verwaltung und Technologien der ECAT–Bukovina auf Grundlage des Gebiets Tscherniwzi.

Im Laufe der Besprechungen haben die Verhandlungsseiten hervorgehoben:

- Fragen der Schaffung eines Pilotenprojekts des Ökologischen Zentrums für Verwaltung und Technologien der ECAT–Bukovina auf Grundlage des Gebiets Tscherniwzi wurden besprochen und vom Tscherniwzler Gebietsrat, dem Vorsitzenden des Tscherniwzler Gebietsadministration Herrn I. Gnatsychn, dem Landeshauptmann von Kärnten Dr. C. Zernatto und dem Ministeriums für Umweltschutz und nukleare Sicherheit der Ukraine unterstützt;
- Das Gebiets Tscherniwzi hat eine akute Notwendigkeit und nötigen Bedingungen zur Gründung und Bearbeitung von Projekten zu der Fragen der ökologischen Sicherheit der rationalen Naturkräftennutzung, technologisch-ökologischem Monitoring und des ökologischen Audits ökologischer-ausbeurer Produktion und Technologien sowie Erneuerung (Remediation) von Landschaftenräumen.

Die Verhandlungsseiten sehen als zweckmäßig:

1. Schaffung des Ökologischen Zentrums für Verwaltung und Technologien der ECAT–Bukovina auf Grundlage des Gebiets Tscherniwzi unter Teilnahme der untenstehenden Partneren:
 - Kommission der Europäischen Gemeinschaft;
 - Tscherniwzler staatlichen Gebietsadministration (Ukraine);
 - Landesregierung Kärntens (Österreich);
 - und andere Partner.
2. Des projekt ECAT–Bukovina nach folgenden Richtungen realisieren:
 - 2.1. Fragen der Triakwasserreinigung und der Wasserversorgung im Gebiets Tscherniwzi;
 - 2.2. Fragen der Erneuerung der Energie, Energieeinsparung und Energieversorgung des Regions

The image shows the cover of a report titled "Concept for the Water Supply in Chernovtsy" (Konцепция водоснабжения города Черновцы). The cover features a blue and white abstract design with a central circular motif. Logos for Tacis, Kärnten, Donau Chemie, Hawle, EcoResource, and BWT are visible. The text is in both German and Russian.

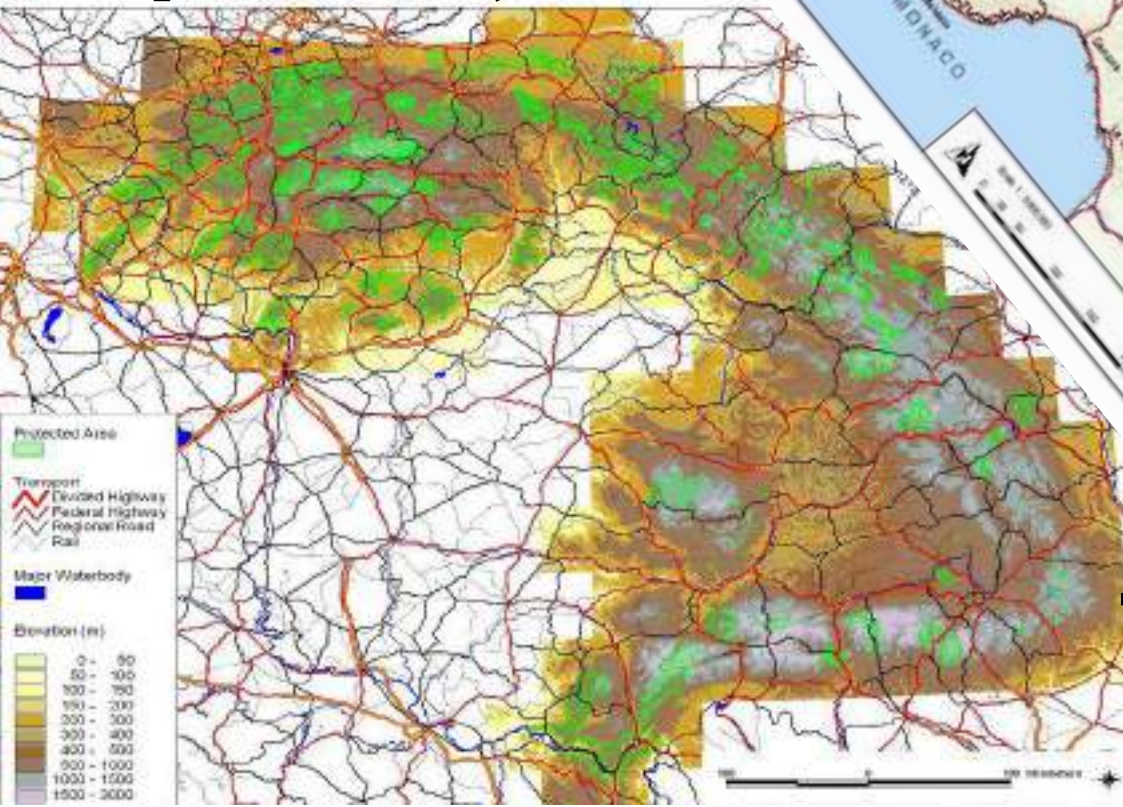
Tacis KÄRNTEN
Terra City
Training
Programme

Concept for the Water Supply in Chernovtsy
Концепция водоснабжения города Черновцы

DONAU CHEMIE **HAWLE** **EcoResource** Centre

WIRTSCHAFTSKAMMER **SW Umwelttechnik** **SEBA MESSTECHNIK** **BWT**
Stoiber & Wilschner AG

**Alpine historical experience
in water management,
transporting, forestry-
agricultural and
other sectors, being
implemented in
Carpathians,**



**became a ground of
Ukrainian initiatives
for joint Carpathian
Convention &
EUSDR embodiment**

INITIAL UKRAINIAN – ROMANIAN COLLABORATION

FROM : DEPT. OF INTERNATIONAL REL. PHONE NO. : 030000000000000000

МІНІСТЕРСТВО
ОХОРОНИ НАВКОЛИШНЬОГО
ПРИРОДНОГО СЕРЕДОВИЩА
ТА ЯДЕРНОЇ БЕЗПЕКИ УКРАЇНИ



MINISTRY
FOR ENVIRONMENTAL PROTECTION AND
NUCLEAR SAFETY OF UKRAINE

8 Khreschatykh str., 252001, Kyiv-1
E-mail Internet: mep@mep.FreeNet.Kiev.UA

Ministry of Waters, Forests and
Environmental Protection of
ROMANIA

No. 18 352 / 11
Date 01.08.1996

Ministry for Environmental Protection
and Nuclear Safety of Ukraine
Fax: 044 - 229-83

N 18-352
01.08.96

Mr. H.E. Aurel Constantin ILIE
Minister of Waters, Forests and
Environment Protection of
Romania

Dear Sir,

Our Department of Environmental Safety in Chernivtsi Region developed project of the Environmental Center for Administration and Technology (ECAT-BUKOVINA) which was supported by the Lands Government of Karnten (Austria) as a potential partner from the EU side.

European Commission 03.07.96 N DG1A/C1-KY/sccdl.doc announced about new TACIS/PHARE "Cross-Border-Cooperation Programme". Projects proposals concerning environmental projects should be submitted before 03.08.96.

In this occasion our Chernivtsi Regional Department handed on 25.07.96 to the Agencies of your Ministry in Suchava and Botoshany our proposal for joint project Environmental Center for Administration and Technology on the base of the Chernivtsi Region of Ukraine and the Suchava and Botoshany districts of Romania (ECAT-BUKOVINA).

We would like you to consider the possibilities for your corresponded structures in Suchava and Botoshany to take a part in this project and then, please, preliminary discussed us at your earliest convenience about your vision. Your support will be appreciated. I will be thankful to you if you take into account that deadline for submission of agreed application.

I am looking forward to continuing the dialogue with you in the future.

Sincerely,

Deputy Minister

Ya. Movchan

Dear Sir,

To you letter from 31.07.1996, no.18 352, we transmit you our agreement with this common project (ECAT - Bucovina) concerning the co-operation between the Environmental Center of the Chervtsi Region of Ukraine and Suchava and Botoshani districts of Romania.

For final programme we recommend you to in touch directly with Ministry's Agencies for Environmental Protection (APM) from these districts.

We ask you at the same time to send us other details concerning this programme.

Sincerely Yours,

Ioan JELEV
Secretary of State
Date 01.08.1996

Фонд Джона Д. и Катрин Т. Макартуров

Фонд общественных инициатив
г. Черновцы

ПОГРАНИЧНЫЕ РАЙОНЫ НА ПОСТСОВЕТСКОМ ПРОСТРАНСТВЕ: НЕТРАДИЦИОННЫЕ АСПЕКТЫ БЕЗОПАСНОСТИ

Зиновий Бройде (Черновцы, Украина)

Возможности оценки
техногенно-экологических аспектов
безопасности на уровне отраслей,
регионов и в межгосударственных отношениях

Совокупность получаемых таким образом данных техногенно-экологического мониторинга, которые будут обрабатываться с использованием современных геоинформационных систем (ГИС), позволит не только оценивать общую ситуацию в различных частях бассейнов рек, но и устанавливать приоритетность тех или иных мероприятий внутри предприятий и в окружающей среде для ее улучшения. В частности, создается механизм прогнозирования сценариев техногенных катастроф с наложением техногенных факторов на природные события (сезонные и ливневые паводки, землетрясения, атмосферные явления и т.п.).

ЕВРОПЕЙСКИЙ СОЮЗ ОХРАНЫ ПОБЕРЕЖИЙ - УКРАИНА
УКРАИНСКИЙ НАУЧНЫЙ ЦЕНТР ЭКОЛОГИИ МОРЯ
ОДЕССКИЙ ГОСУНИВЕРСИТЕТ им. И.И. МЕЧНИКОВА
ОДЕССКИЙ ФИЛИАЛ
ИНСТИТУТА БИОЛОГИИ ЮЖНЫХ МОРЕЙ АН УКРАИНЫ

SINCE FIRST SUSTAINABLE DEVELOPMENT & SAFETY INVESTIGATIONS



УПРАВЛЕНИЕ И ОХРАНА
ПОБЕРЕЖИЙ
СЕВЕРО-ЗАПАДНОГО
ПРИЧЕРНОМОРЬЯ

ВОЗМОЖНОСТИ ОЦЕНКИ ТЕХНОГЕННО - ЭКОЛОГИЧЕСКОЙ
БЕЗОПАСНОСТИ В БАСЕЙНАХ РЕК ДЛЯ ОБЕСПЕЧЕНИЯ УСТОЙЧИВОГО
РАЗВИТИЯ СЕВЕРО-ЗАПАДНОЙ ЧАСТИ ЧЕРНОГО МОРЯ

З.С.БРОЙДЕ

ГНТЦ "Экоресурс", Украина, Черновцы

Е.Л.ГОРДА

Черновицкая облгосадминистрация, Украина, Черновцы

Предлагаемый подход позволит сконцентрировать усилия на наиболее опасных объектах с гибким маневрированием ограниченными ресурсами. Это требует более глубокой системной увязки традиционной оценки надежности систем с прогнозной оценкой (в том числе и экономической) экологических последствий того или иного отказа и, соответственно, затрат (в том числе и страховых) на его предотвращение и минимизацию возможных негативных последствий. Одновременно предполагается соответствующая подготовка и переподготовка кадров.



ОДЕССА - 1996

WERE SYSTEMIZED

ПРОБЛЕМИ

Security aspects of Regional Development

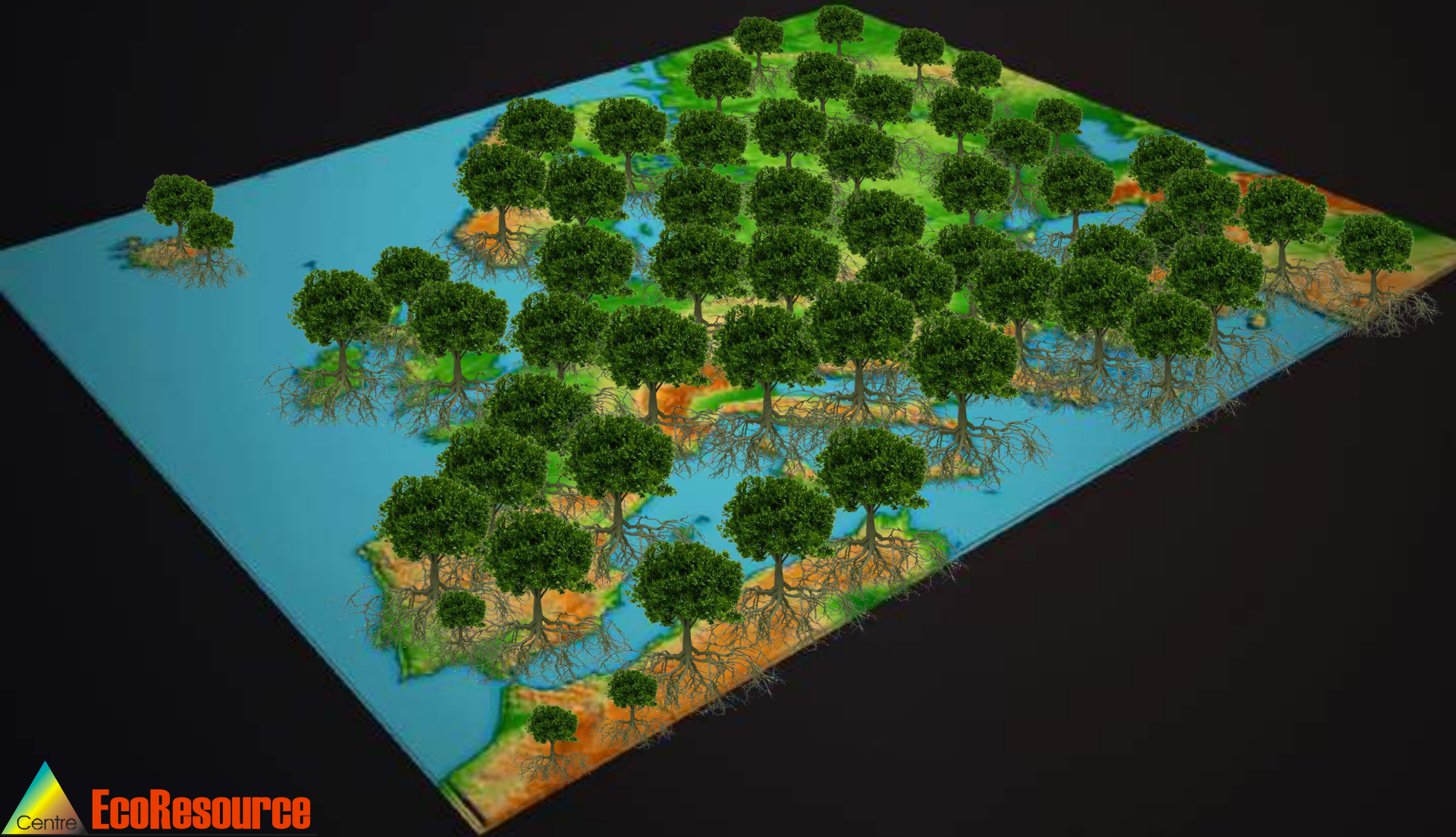
- sources of resources (human/intellectual, material, energy, financial etc.) and the efficacy of their utilisation \longleftrightarrow Economical Safety;
- procurement of energyware, the efficiency of the Energy transformations and use in the systems of vital activity, manufacturing and services \longleftrightarrow Energetic Safety;
- employment & protectability for population \longleftrightarrow Social Security;
- status of Data collection, unification & protection, level of the information technologies as well as of management maintenance, information distribution for population \longleftrightarrow Information Safety;
- technologies & equipment level & status in the spheres of transportation, communication, productions and services \longleftrightarrow Technical Safety;
- conformity of the natural objects status, changes in the Environment as well as of the liquid, solid & gaseous waste impacts to the statutory requirements for ecosystems functioning and population health \longleftrightarrow Environmental Safety;
- status of the technical & communal objects and the amount of wastes or other negative impact factors which aren't conform to the forecast risks of natural & anthropogenic disasters \longleftrightarrow Technogenic Safety;
- degree of harmonisation & steadiness in the interior inter-parties, inter-ethnic, inter-confession, inter-authorities and other inter-group inter-relations in Society against the background of inter-states and blocks interests, oppositions and agreements \longleftrightarrow Political Safety etc.

Key macroregional Development Zones through EU & NATO Enlargement along former dividing lines of Europe with Green Banana for EUSDR & 3SI area



WITH THEIR RIVER BASINS BACKGROUND

COMMON “MODUS VIVENDI” FOR EUROPE OF REGIONS





**Each Region
Potential & Role**

General Development Scheme

Spatial Territorial Planning

**Water
Natural
Resources**

Human capital

Traditions

**Geolandscape
Energy**

Environmental Management

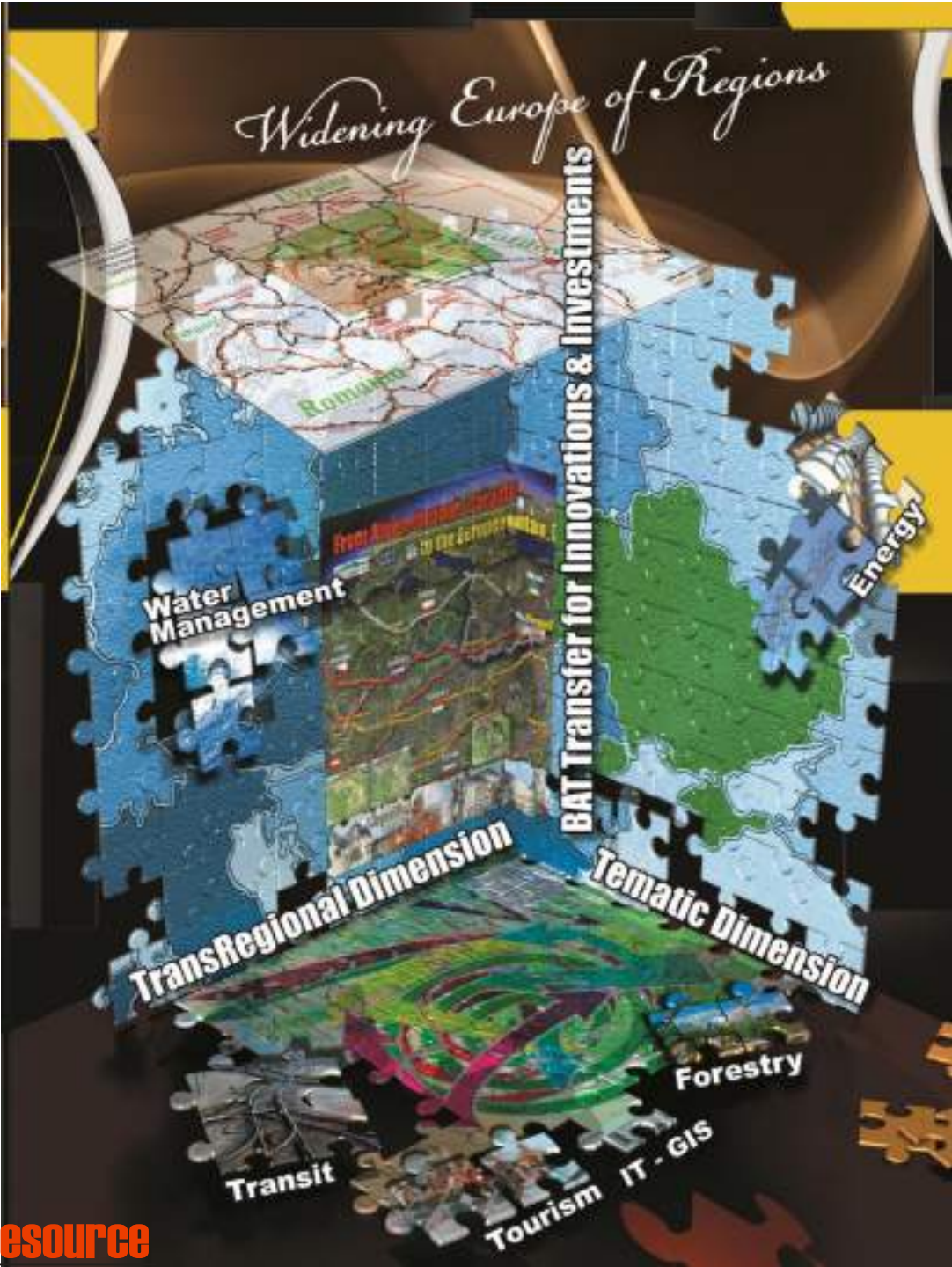
Управління станом довкілля



EcoResource

Multifunctional Green Infrastructure

is a facility for synchronization of the environmental capacity, available resources & technological means, aimed to boost each territory response to actual challenges, e.g. labor & demographic problems, climate change, transit needs etc. through appropriate Clusterization in Spatial and Socio-Economic spheres



NATURAL-ANTHROPOGENIC ENVIRONMENT

**Natural Objects,
including Mankind**

RESOURCES

Classic Ecology

Productions
Services
Consumption

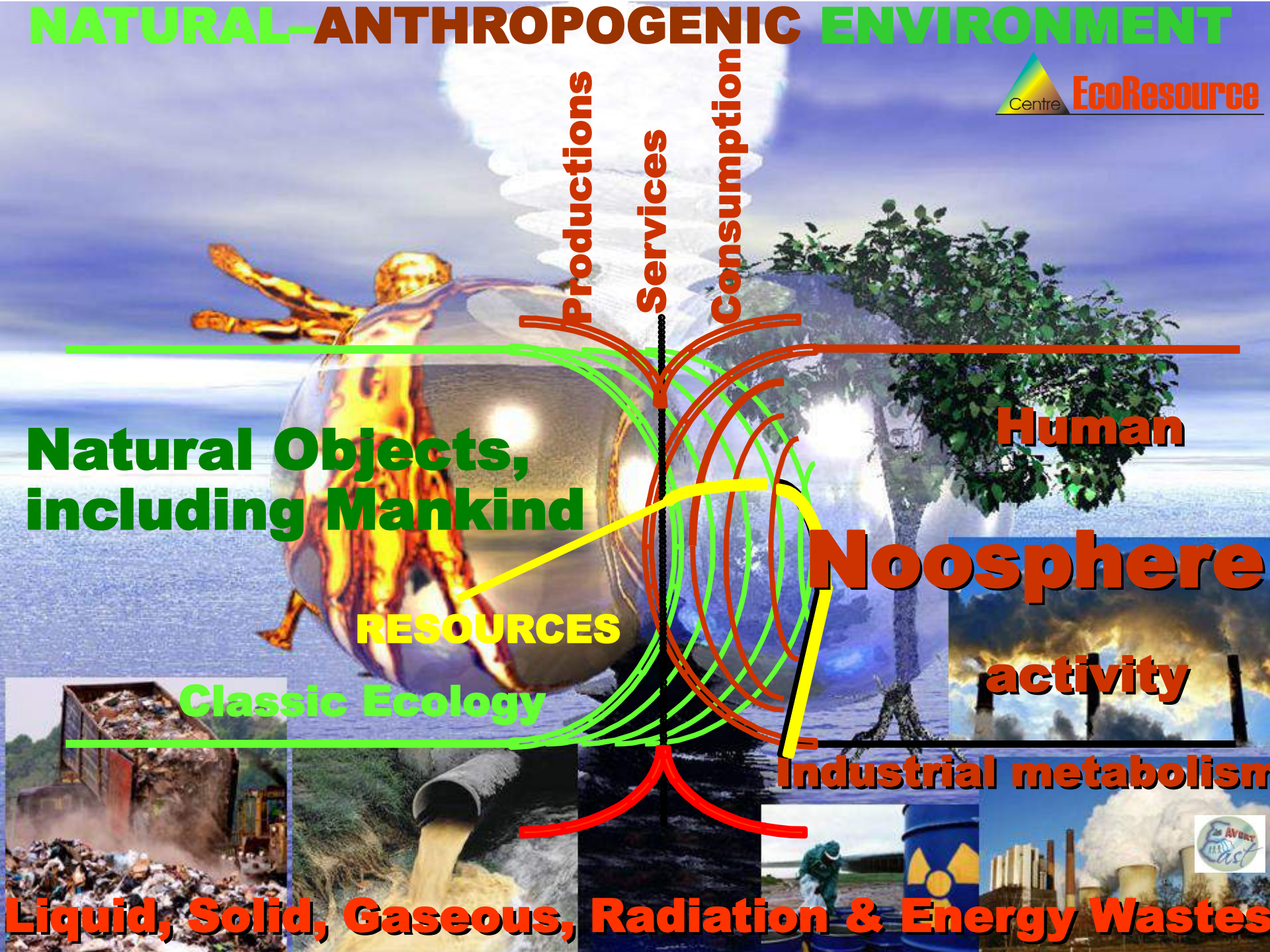
Human

Noosphere

activity

Industrial metabolism

Liquid, Solid, Gaseous, Radiation & Energy Wastes



TECHNOLOGY -

**any kind of Human Activity
in Natural-Anthropogenic
Environment directed to
transformation of Natural,
Human, Material, Energy &
Informational Resources for
concrete aim(s)**

Territorial coverage of the Danube region
for the Danube region strategy (EUSDR)

**Carpathian Euroregion
(Tisa, Prut & Siret basins)**

**Euroregion
"Dnister-
Nistru"**

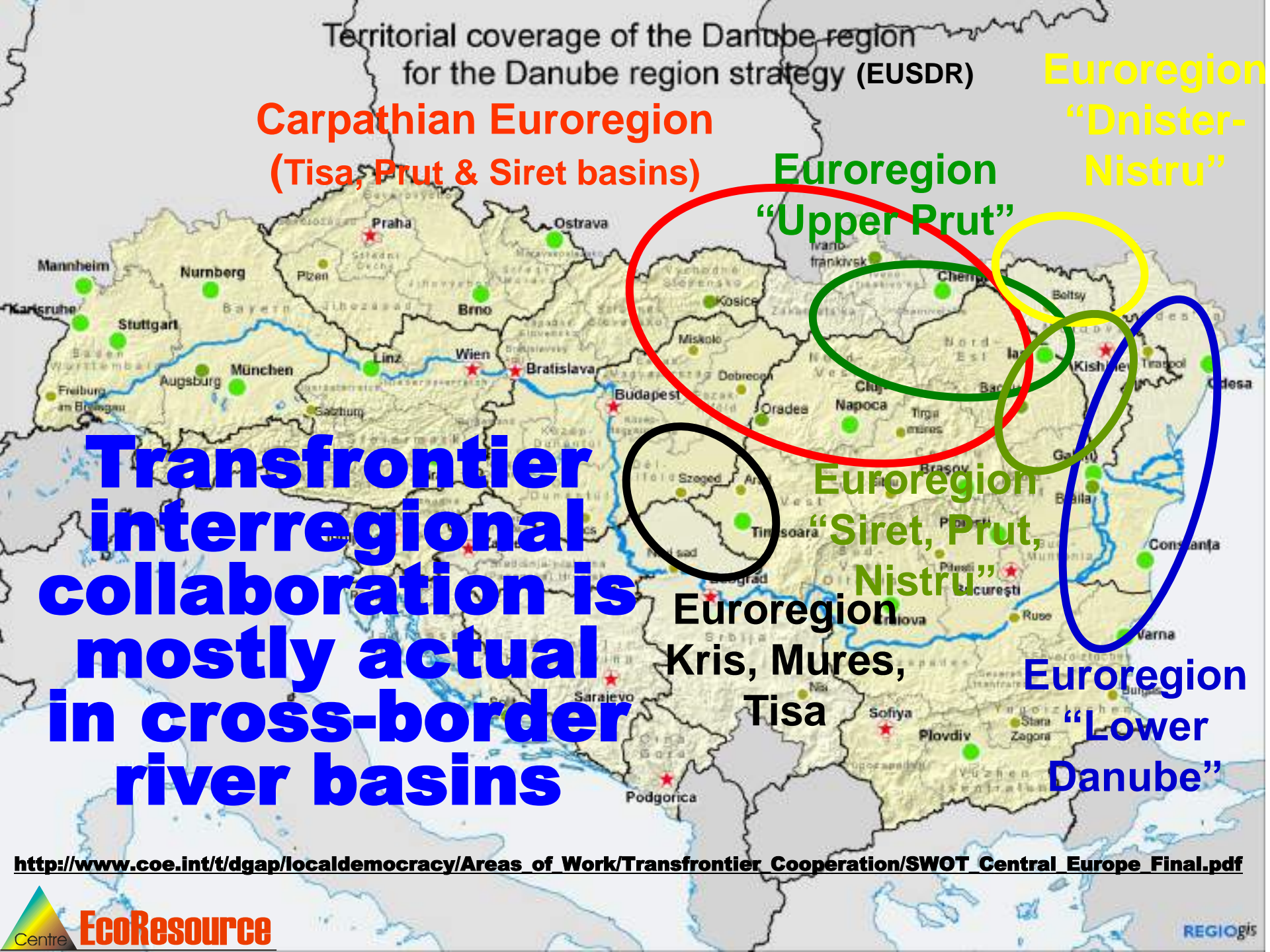
**Euroregion
"Upper Prut"**

**Euroregion
"Siret, Prut,
Nistru"**

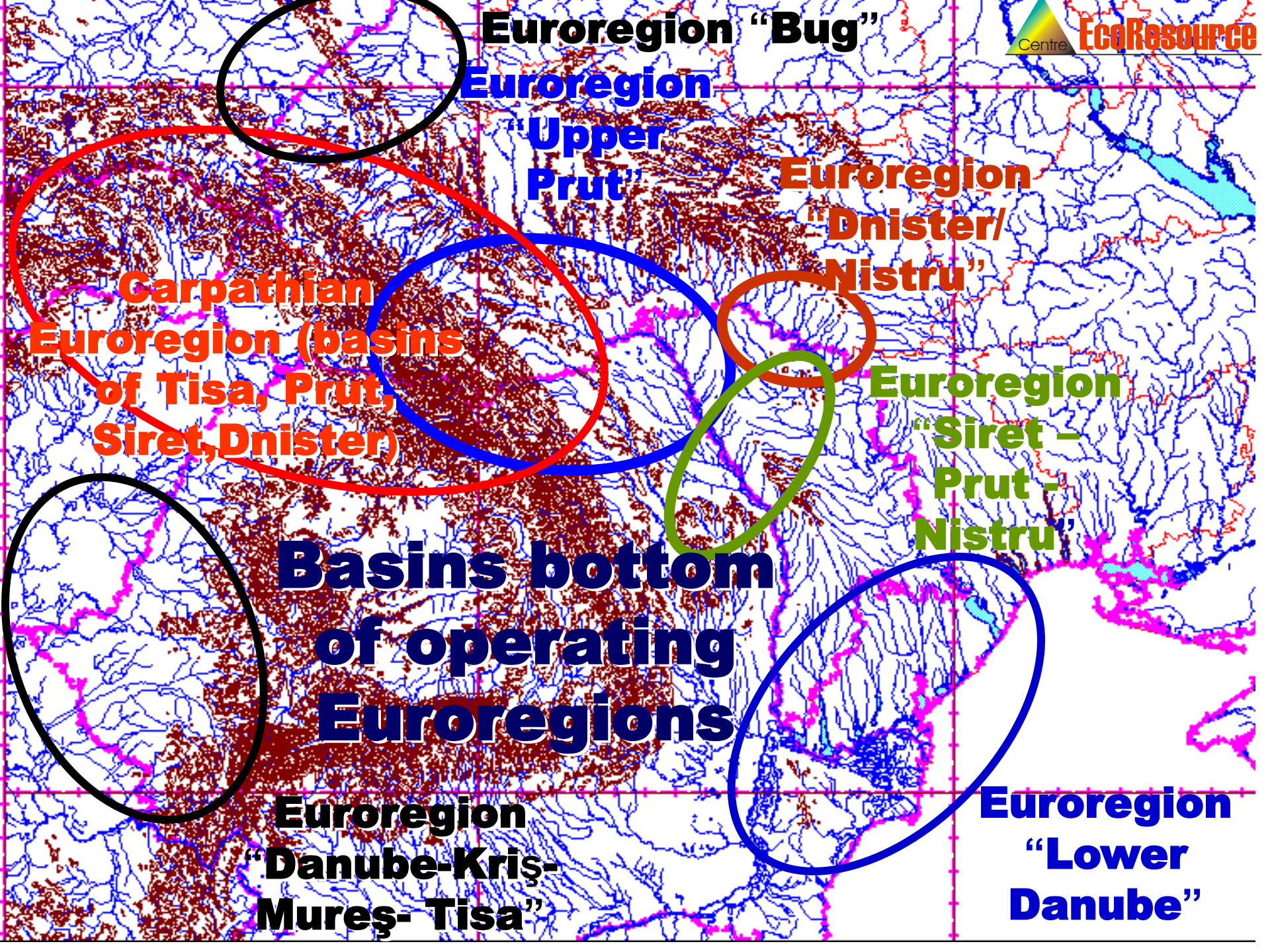
**Euroregion
Kris, Mures,
Tisa**

**Euroregion
"Lower
Danube"**

**Transfrontier
interregional
collaboration is
mostly actual
in cross-border
river basins**



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



Euroregion "Bug"

Euroregion "Upper Prut"

Euroregion "Dnister/ Nistru"

Euroregion "Siret - Prut - Nistru"

Euroregion "Lower Danube"

Euroregion "Danube-Kriş-Mureş- Tisa"

Carpathian Euroregion (basins of Tisa, Prut, Siret, Dnister)

Basins bottom of operating Euroregions

ЕКОЛОГІЧНА ПРОГРАМА ДЛЯ БАСЕЙНУ РІКИ ДУНАЙ

Державне управління екологічної безпеки у Чернівецькій області
Державний науково-технічний центр "Екоресурс"
Чернівецьке обласне управління житлово-комунального господарства
Інститут "Діпроцивільпромбуд"
Чернівецька обласна санітарно-епідеміологічна станція

ПРОПОЗИЦІЇ

щодо подальшого розвитку системи проектів
послідовного покращення стану у басейнах приток Дунаю
на території Чернівецької області
відповідно до програми дій та підготовки інвестиційної програми

Адреса для контактів: 274010 м. Чернівці, вул. Міцкевича, 5 УКРАЇНА
Контактна особа: Бройде Зіновій Самуїлович
Телефон/Факс роб. (038 0372) 55-37-70, дом. 22-62-91, факс 5-18-06
E-Mail: zinoviy@realid.chernovtsy.ua

TERRITORIAL & RIVER BASINS APPROACHES ЧЕРНІВЦІ APPLICATION 1997

Передмова

FOR

Цю систему проектів розроблено у подальший розвиток пропозицій, підготовлених в 1993-94 рр фірмою "Sir Alexandr GIBB & Partners" до плану дій та підготовки інвестиційної програми Координаційного Центру у Відні на замовлення Фонду Барбари Гаундлетт та при підтримці Світового Екологічного Центру та Світового Банку, з врахуванням змін соціально-економічної ситуації та стану техногенно-екологічної безпеки, а також з метою більш детальної технічної та фінансової локалізації можливих інвестиційних проектів.

Головною метою розроблення цих пропозицій є визначення можливої сукупності інвестиційних проектів, послідовна реалізація яких у відповідності до їх пріоритетності дозволить покращити стан екологічної безпеки, ситуацію з водокористуванням та стимулювати соціально-економічний розвиток у регіоні. Водночас пропозиції розроблено таким чином, щоб перші відносно невеликі інвестиційні проекти могли б стати пілотними для відпрацювання та демонстрації можливостей наступної реалізації системи аналогічних робіт на рівні адміністративних одиниць області та підприємств, що будуть створюватись і розвиватись в нових економічних умовах.

DANUBE POLLUTION REDUCTION PROGRAMME

NATIONAL PLANNING WORKSHOP UKRAINE

Black Sea, July 13-19, 1998



www.icpdr.org/icpdr-files/8277

Ministry of Environmental Protection
and Nuclear Safety

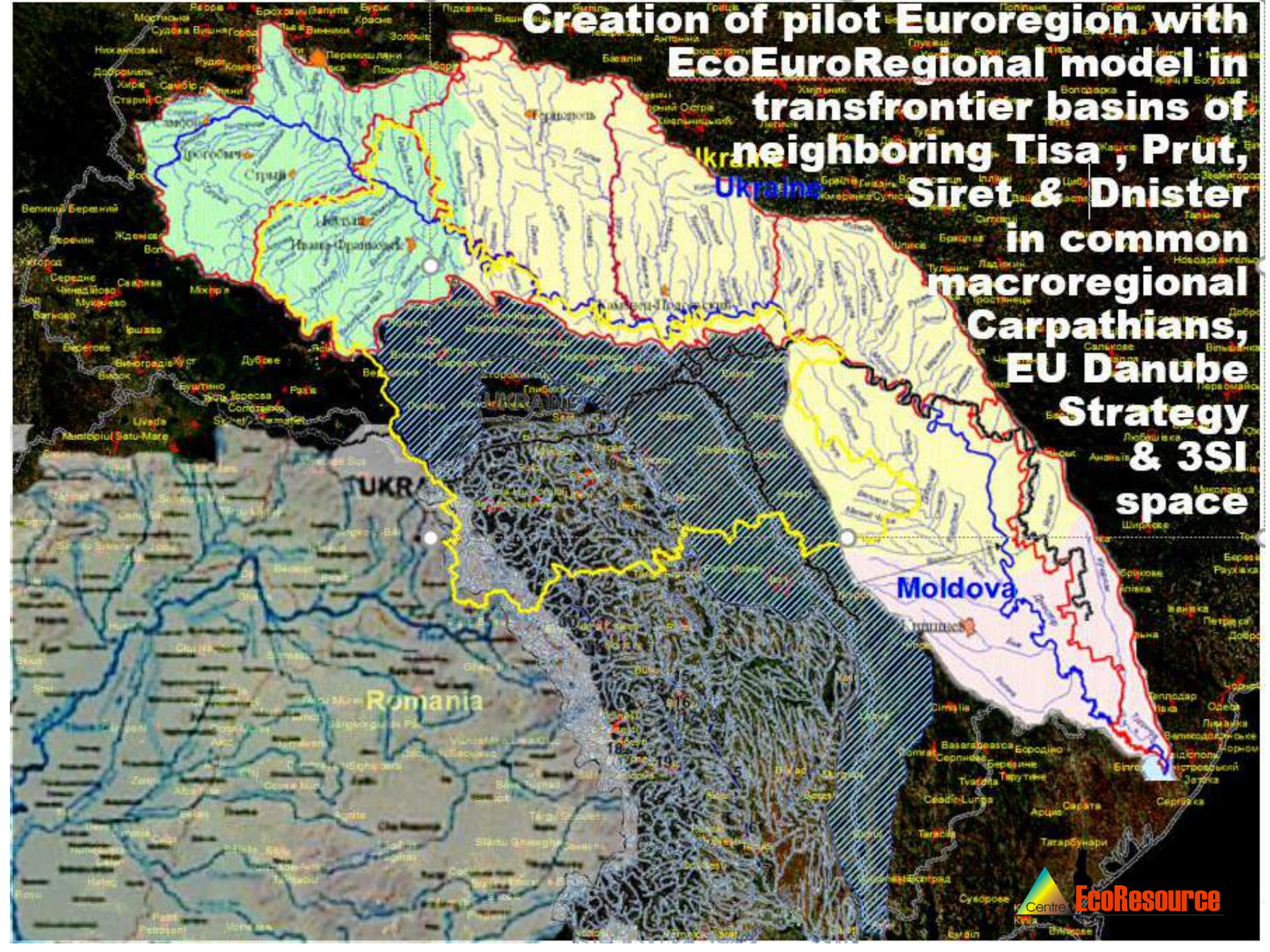


in cooperation with the

Programme Coordination Unit
UNDP/GEF Assistance



Creation of pilot Euroregion with EcoEuroRegional model in transfrontier basins of neighboring Tisa, Prut, Siret & Dnister in common macroregional Carpathians, EU Danube Strategy & 3SI space



Preliminary pilot developments in



CABINET OF MINISTERS OF UKRAINE

DECREE

of February 14, 2002 Nr. 59-p

Kyiv

Some issues concerning the development of transfrontier co-operation within the frames of the Euroregion "Upper Prut"

1. To support the proposal of the Council of the Euroregion "Upper Prut" concerning the **experimental elaboration of transfrontier co-operation mechanisms as the elements of the process of European integration and development of the regional policy** within the frames of the above-mentioned Euroregion..

2. Ministry of Foreign Affairs in co-operation with the Ministry of Economics and European Integration to negotiate with the Romanian and the Moldovian Parties the determination of experimental status of the Euroregion "Upper Prut" and experimental elaboration of transfrontier co-

operation mech
proposals to the
3. Chernivtsy R
Economics and
executive bodie
Ukraine within t
program of tran
"Upper Prut".

8/2000
OREGIUNII
US »
are ale activității
nă «Prutul de Sus»

30 noembrie 2000
5 și 6 ale Acordului
rutul de Sus"

ă următoarele domenii
că și socială reciprocă

i de transport și
loarelor transeuropene

energetice la nivelul
stat și surselor de

de apă și a sistemelor

dezvoltarea industriei
are a lemnului, a
și industriei ușoare;
ansfrontalier la nivel

DECISION № 8/2000
OF THE COUNCIL OF EUROREGION

«UPPER PRUT »

«On the priority spheres for the Social & Economical activities in Euroregion «Upper Prut»

city Edinets

November 30, 2000

Accordingly to the Articles 5 and 6 of the Agreement regarding the setting up of the Euroregion «Upper Prut»

1. Council of the Euroregion adopts the follows list of priority spheres for the linked Economical & Social activities in the Euroregion

- development of transport & communications infrastructure on the levels of Trans-European corridors and local traffic;

- development of energetic infrastructure on the levels of state systems and local sources;

- update of the water supply and canalisation systems;

- forestry and development of the timber and wood-working industries, agro-industrial complex and light industry;

- development of transfrontier trading on the local

1. Council of the Euroregion adopts the follows list of priority spheres for the linked Economical & Social activities in the Euroregion



Міністр України

A.Kinah



UA-RO-MD Euroregion "Upper Prut"

Main objectives of Euroregion "Upper Prut" (2000) are totally conform to Priority areas of EUSDR and Carpathian Convention (<http://cppk.cv.ua/i/2018723.pdf>)

2. В якості основних механізмів взаємодії у вищезначених сферах діяльності в Єврорегіоні, що мають реалізовуватися через спільні проекти і програми з врахуванням особливостей статусу депресивних регіонів Рада Єврорегіону визначає:

2. Consiliul Euroregiunii stabilește următoarele mecanisme principale de colaborare în aceste domenii de activitate în cadrul Euroregiunii, care urmează să fie realizate prin proiecte și programe comune, avându-se în vedere particularitățile statutului regiunilor defavorizate:

2. As the main mechanisms for interaction in the aforesaid areas of activity in the Euroregion, which should be realised through the common projects & programs, taking into account the particular status of depressive regions, Council of the Euroregion defines:

- providing of the Sustainable Development for the territories – components of the Euroregion and in the transfrontier basins by means of more rational usage of the Resources, implementation of the Technogenic & Environmental Safety modern facility as well as establishment of the Regional Cleaner Production Centre;

зв'язків між впливовими політичними організаціями в Єврорегіоні;

între organizațiile politice influente din cadrul Euroregiunii;

connections between authoritative political organisations in the Euroregion;

налагодження взаємодії між ЗМІ членів Єврорегіону для забезпечення поінформованості населення і широкої підтримки ним діяльності Єврорегіону.

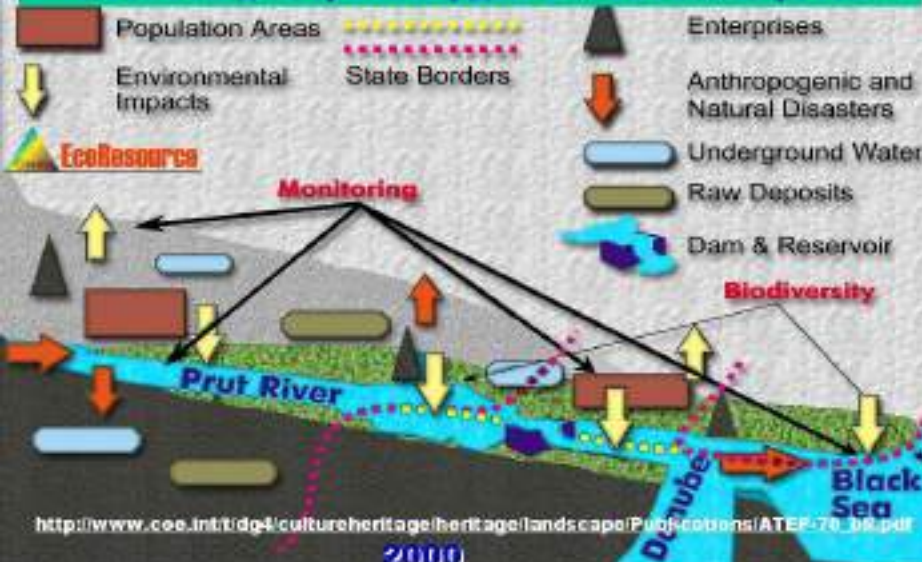
stabilirea unor legături reciproce între mijloacele de informare publică ale membrilor Euroregiunii pentru asigurarea informării populației și

• tune of collaboration between mass-media of Euroregion members to provide the interest of population and their broad support for Euroregion activity.

<http://www.oda.cv.ua/UserFiles/File/2012/Decis8.pdf>

EcoEuroRegion (Prut basin)

Модель сталого розвитку і техногенно-екологічної безпеки для транскордонних басейнів річок



supported by CoE - CEMAT

Regional Water Resource Treatment and accompanied Disasters Prevention as core elements for Sustainable Spatial Development in the pilot Euroregion "Upper Prut"

Zinovy S.BROYDE - Centre "EcoResource" (Chemivtsi, UKRAINE, broyde@acornet)

Nowadays concept on the Regional Sustainable Spatial Development can be considered as a composition of the Technology Foresight approach [1], modern understanding of the equilibrium between Economical & Environmental aspects of Mankind Activity [2-3] as well as new hierarchical vision of Safety as a multivariate process [4].

Last time these issues became very actual for the surroundings of the widening Europe an Union & NATO under the new ideas of Neighbourhood [5].

Along the new EU & NATO borders Euroregions becomes "points of growth" for new European policy. And through them can be co-ordinated (and concentrated) the efforts of the Local, Regional, National Authorities & International Organisations, aimed to find systems solutions for the above mentioned problems.

Even the enumeration of the Euroregions in these area: "Neman", "Bug", Danube-Krismires-Tisa", "Neisse", "Elbe/Laba", "Danube-Drava-Sava", "Upper Prut", "Lower Danube" etc. — allows to judge, which role plays today Water Resources and associated Security issues for the further Regional Development.

EcoEuroRegion
Technogenic & Environmental Safety for border rivers basins

AGGREGATIVE EFFECT OF FLOODS

http://www.coe.int/t/dg4/cultureheritage/heritage/landscape/Publications/ATEP-70_bil.pdf



Fig. 1 Rivers system in the Euroregion "Upper Prut"

This effect of floods also can be appeared in two ways (separately or jointly): i) when the already existent individual factors become "summarised" by the flood and then give the synergistic consequences; ii) when flood provokes previously imperceptible phenomenon, which further starts to develop and/or becomes new factor of danger.

Common roots (2001) for Carpathian Convention (2003) & the EU Danube Strategy (2010)

Adoptata la Summitul din 30 aprilie 2001

Declaration on Environment and Sustainable Development in the Carpathian and Danube Region - Bucharest, 30 April 2001 -

We, Heads of State and High Representatives of the States participating in the Summit on Environment and Sustainable Development in the Carpathian and Danube Region*

Bearing in mind the Stockholm Declaration of the United Nations Conference on Human Environment of 1972 and the Rio Declaration of the United Nations Conference on Environment and Development of 1992;

Reaffirming the importance of the implementation of the political and legal commitments undertaken by the international community following those and subsequent conferences, especially at the Pan-European level;

Being aware that the 10-year review and evaluation of the Rio Declaration commitments and the implementation of Agenda 21 to be conducted at the World Summit on Sustainable Development in Johannesburg in 2002 will provide a momentous opportunity for further action to strengthen international co-operation towards coping with the challenges of sustainable development in the twenty-first century;

Being convinced that renewed efforts are required toward that goal on the part of all Carpathian and Danubian countries in a spirit of regional solidarity;

Upholding the principle of common, yet differentiated responsibility, to manage the environment and natural resources so as to promote sustainable development to the benefit of present and future generations;

Acknowledging that the Carpathian region is a natural treasure of great beauty and ecological value, a reservoir of biodiversity, the headwaters of major rivers and Europe's largest area of virgin forest;

Acknowledging also the special economic and social importance of the Danube River and its tributaries as a major European river with multiple uses and functions, as well as its ecological significance and its value as a natural habitat for numerous wildlife species;

Recognizing that a world wide scientific assessment of biodiversity by World Wide Fund for Nature identified the Carpathian Mountains and the Danube Delta as two of the world's most important ecoregions with a representative selection of the world's most outstanding and distinctive biological resources;

Being aware of the fact that efforts to protect, maintain, and sustainably manage the natural resources of the Carpathian Mountains and the Danube River Basin cannot be achieved by one country alone and require regional co-operation;

Emphasizing that co-operation on environment and sustainable development will assist the efforts towards stability and peace in the region;

Appreciating the efforts that have been undertaken at international, regional, national and local level to enhance co-operation and support for the maintenance and protection of the natural assets and resources;



<http://www.carpat.es.org/sum/Info1.html>

TRANSREGIONAL ALPINE- CARPATHIAN DIMENSION OF DANUBE STRATEGY

Consultation on the EU Strategy for the Danube Region

Partner States, their regions, geo-landscapes and habitats. This disparity can be perceived in social-economic and spatial conditions, mentalities/traditions, approaches and accessibility to resources, energy, education, mobility, information and other "creature comforts".

Such "patchwise cohort" has, first of all, to find common fields of interests on the way to joint synergic solutions to prevent further face-off barriers for macro-regional Sustainable Development. At the moment Danube Strategy (EUSDR) establishment can be qualified by term "betweenness" as "a place of a ... where differences and borders are redefining themselves" (D. Sibony).

This betweenness overcoming opportunity was formulated by EU Commissioner O.Reilly: "Borders are restrictive. Borders limit our minds, chain actions, and reduce our influence. Frontiers are innovative. Frontiers free our minds, stimulate action, and increase our influence. Frontiers are much more substantive and functional – even mental – than geographic". From such point of view successful start up of EUSDR embodiment should be conform to the principle proclaimed by the EU in Article 175 of the ENPI: "Community assistance may be used for common benefit of Member States and partner countries and their regions, for the purpose of promoting cross-border and transregional cooperation through different EU Programs and other tools.

Further development of this EU approach was formulated in the ENPI Eastern Regional Program Strategy Paper 2007 – 2013: "seems that the most successful projects have been those which from the outset have benefited from a sustained high level political support provided from a regional institutional framework. By contrast, projects that have been implemented through a bottom-up approach, i.e. as a result of demand from individual partner countries, rather than within a well-defined political multi-lateral framework, have tended to remain isolated, even when successful, and in general have not succeeded in fostering a genuine regional spin-off".

The "natural" challenge of Climate Change in Danube area should receive "anthropogenic" answer through Sustainable Development mechanisms. Using experience of "Industrial Metabolism Refinement" in Rhine basin we can act "implementing our climate and energy package showing how tackling climate change is a dynamic element in a strategy for growth by creating jobs and boosting energy security under the Europe 2020 approach", how it was proposed by President Barroso to EU Heads of State and Government after Copenhagen.

Water is the general common Resource in Danube basin. It's evident that EUSDR will concert those activities, which are realised immediately in the river bed space, e.g. navigation, or hydro-technical processes in the river basin (irrigation, motorisation, bowels exploitation and mining water pumping, river beds regulation, dredging, sand/gravel mining on the river banks etc.).

In parallel should be revised all other anthropogenic activities impacting river basin both on more or less constant value and through emergency risks generation (probable accidents). For instance in the industrial sphere they are: production in mining and ore-dressing, chemical, forestry-wood-cellulose, all kinds of food, construction materials, electronic and machine building sectors etc. And especial attention will be paid to hazardous waste generators, waters polluters and potentially danger manufactures.

But the most general topic of EUSDR concerns Clean Water Sources in Alps and Carpathians. Under Climate Change this trending problem very soon will become more then obvious.



Taking into account actual Alpine and Carpathian Conventions - their last years collaboration should become a "Common Generator" for further EUSDR project's topics. It means utilisation of common and individual achievements and agreements of these Conventions for Sustainable Development of Transport, Energy, Water, Forests, Agriculture and other sectors. As well as both Conventions also foresee intercultural and interethnic reciprocal actions aimed to augment common heritage.



Transregional Alpine-Carpathian interaction in Danube basin




The background is a map of Europe. A yellow rectangular inset in the center shows a topographic map of the Carpathian Basin, highlighting the Carpathian Mountains and surrounding regions. The text is overlaid on this map.

**Overlapping of EU macroregional
Danube & Baltic Strategies,
Neighbourhood Facility and Carpathian
Convention area
EUSBSR + EUSDR**

**Carpathian
Convention**

**should be reflected in EU Programs
2014-2020 for common sphere of
EUSDR and Eastern Partnership under
EU Association Agreements
with Ukraine and Republic of Moldova**

EUSDR, Alpine & Carpathian Conventions have enough common Priority Areas for regional Water Management & synergic projects implementation

[PA 1B | Mobility | Rail-Road-Air \(http://groupspaces.com/MobilityRail-Road-Air/\)](http://groupspaces.com/MobilityRail-Road-Air/)

[PA 02 | Energy \(http://groupspaces.com/Energy2/\)](http://groupspaces.com/Energy2/)

[PA 03 | Culture & Tourism \(http://groupspaces.com/CultureTourism/\)](http://groupspaces.com/CultureTourism/)

[PA 04 | Water Quality \(http://groupspaces.com/WaterQuality/\)](http://groupspaces.com/WaterQuality/)

[PA 05 | Environmental Risks \(http://groupspaces.com/EnvironmentalRisks/\)](http://groupspaces.com/EnvironmentalRisks/)

[PA 06 | Biodiversity, landscapes, quality of air and soils \(http://groupspaces.com/BiodiversityLandscapesAirSoil/\)](http://groupspaces.com/BiodiversityLandscapesAirSoil/)

[PA 07 | Knowledge Society \(http://groupspaces.com/KnowledgeSociety/\)](http://groupspaces.com/KnowledgeSociety/)

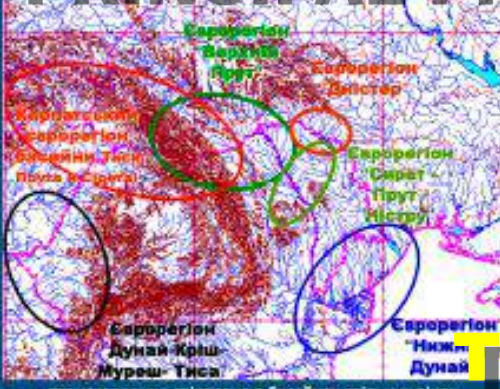
[PA 08 | Competitiveness \(http://groupspaces.com/Competitiveness/\)](http://groupspaces.com/Competitiveness/)

[PA 09 | People & Skills \(http://www.peopleandskills-danuberegion.eu/\)](http://www.peopleandskills-danuberegion.eu/)

[PA 10 | Institutional capacity and cooperation \(http://groupspaces.com/CapacityandCooperation/\)](http://groupspaces.com/CapacityandCooperation/)

[PA 11 | Security \(http://groupspaces.com/Security/\)](http://groupspaces.com/Security/)

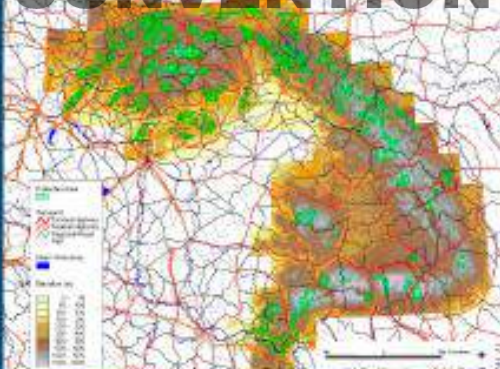
PRINCIPAL PROJECTS



TO JOINT PRIORITIES OF



CARPATHIAN CONVENTION



Large scale project East Avert embodies EcoEuroRegion model in pilot Euroregion "Upper Prut" and answers



common priorities of Carpathian Convention, EU Strategy for Danube Region and Association Agreement between EU and Ukraine, in particular for acceleration implementation of EU & EEA EU Directives in the basins of Prut and Siret

CONFORMITY

Prevention & protection against floods in upper Siret & Prut River Basins through implementation of modern monitoring system with automatic stations

Попередження і захист від повеней у верхній частині басейнів Сірету та Прута шляхом впровадження сучасної моніторингової системи з автоматичними станціями

MINISTERUL MEDIULUI, APELOR ȘI PĂDURILOR
 MINISTRY OF ENVIRONMENT, WATERS AND FORESTS
 12 Libertatii Biv, Sector 5, Bucharest, 040129 Romania
 ph. +40 040 21 316 05 21, fax 0040 21 316 02 82
 www.mmediu.ro
 Міністерство довкілля, вод і лісів Румунії

Prut-Beired Water Basin Administration
 10, Th. Vasceloanilor etc. Iasi 700462 Romania
 ph. +40 744 38 41 81 fax +40 032 18 43 84
 dispenser@dap.rowater.ro
 Управління водного басейну Прут-Бієрад

Siret Water Basin Administration
 1, Cuza Voda st, Bacau 500274 Romania
 ph. +40 234 54 16 46 fax +40 234 51 00 50
 irina.lucavetchi@das.rowater.ro
 Управління водного басейну Сірет

"Apele Moldovei" Agency
 5, Gheorghe Tudor str, Chisinau MD-2068 Republic of Moldova
 ph. +373 22 280794 fax + 373 22 280622
 Агенція «Воды Молдовы»

Dniester-Prut Basin Department of Water Resources
 154B, Chervonoarmylska str, Chernivtsy, 58013 Ukraine
 ph. +38 0372 57-92-03 fax +38 03722 7-46-42
 dnr@drbuv.org.ua
 Дністровсько-Прутський басейнове управління водних ресурсів

Chernivtsy Regional Centre on Hydrometeorology
 1, Hinka str., Chernivtsy, 58002 Ukraine ph. +38 0372 526938 fax +38 0372 526938
 hydrocherniv@meteo.gov.ua
 Чернівецький обласний центр з гідрометеорології

State Scientific and Technical Centre for inter-sectorial & regional problems of the Environmental Safety and Resources Conservation (Centre "EcoResource")
 2, Kobyljanska str. Chernivtsy 58002 Ukraine
 ph/fax +38-0372- 58 54 76
 postmaster@reald.chernivtsy.ua
 Державний науково-технічний центр з міжгалузевих і регіональних проблем екологічної безпеки та ресурсообережності (ДНТЕУ «Екоресурс»)

Resource

інансується Європейським Союзом
 Комісія є органом виконавчої влади ЄС,
 ній Союз складається з 28 країн-членів, які виступили
 єдині свої знання, ресурси, та діли. Спільно,
 ієдні, вони збудували зону стабільності, демократії
 вступу, збереження культурне різноманіття,
 свободу особистості. Європейський Союз прагне
 сімкі досягненнями та цінностями з країнами та
 його межами.



MINISTRY OF ENVIRONMENT, WATERS AND FORESTS

State Scientific and Technical Centre for inter-sectorial & regional problems of the Environmental Safety and Resources Conservation (Centre "EcoResource")

Prut-Beired Water Basin Administration

National Institute of Hydrology and Water Management

"Apele Moldovei" Agency

Dniester-Prut Basin Department of Water Resources

Chernivtsy Regional Centre on Hydrometeorology

EcoResource

& EUROREGION "UPPER PRUT"

GENERAL BACKGROUND

**ASSOCIATION AGREEMENT
BETWEEN THE EUROPEAN UNION AND ITS
MEMBER STATES, OF THE ONE PART, AND
UKRAINE, OF THE OTHER PART**

**TITLE V
ECONOMIC AND SECTOR COOPERATION**

**CHAPTER 27
CROSS-BORDER AND REGIONAL COOPERATION**

Article 446

The Parties shall promote mutual understanding and bilateral cooperation in the field of regional policy, on methods of formulation and implementation of regional policies, including multi-level governance and partnership, with special emphasis on the development of disadvantaged areas and territorial cooperation, with the objective of establishing channels of communication and enhancing exchange of information between national, regional and local authorities, socio-economic actors and civil society.

Article 447

The Parties shall support and strengthen the involvement of local and regional level authorities in cross-border and regional cooperation and the related management structures, to enhance cooperation through the establishment of an enabling legislative framework, to sustain and develop capacity building measures and to promote the strengthening of crossborder and regional economic and business networks.

Article 448

The Parties shall strengthen and encourage development of cross-border and regional elements of, *inter alia*, **transport, energy, communication networks, culture, education, tourism, health and other areas covered by the present agreement which have a bearing on cross-border and regional cooperation. In particular, the Parties shall encourage the development of cross-border cooperation in the modernisation, the equipping and the coordination of emergency services.**

Article 449

A regular dialogue will take place on the issues covered by [CHAPTER 27 of TITLE V: ECONOMIC AND SECTOR COOPERATION] [of this Agreement].

**New approach
for Ukraine & RM
common work
with EU on the
regional/local
level for
EU Acquis
Communautaire
step-by-step
implementation**

**ASSOCIATION AGREEMENT
BETWEEN THE EUROPEAN UNION AND ITS
MEMBER STATES, OF THE ONE PART, AND
UKRAINE, OF THE OTHER PART**

**TITLE V
ECONOMIC AND SECTOR COOPERATION
CHAPTER 6**

Article 360

The Parties shall develop and strengthen their cooperation on environment issues, thereby contributing to the long term objective of sustainable development. It is expected that enhanced environment protection will bring benefits to citizens and businesses in Ukraine and in the EU, including through improved public health, preserved natural resources, increased economic and environmental efficiency, integration of environment into other policy areas, as well as higher production as a result of modern technologies. Cooperation shall be conducted considering the interests of the Parties on the basis of equality and mutual benefit as well as taking into account interdependence existing between the Parties in the field of environment protection and multilateral agreements in the field.

Article 361

Cooperation shall aim at preserving, protecting, improving, and rehabilitating the quality of the environment, protecting human health, prudent and rational utilisation of natural resources and promoting measures at international level to deal with regional or global environmental problems, including *inter alia* in the areas of:

- (a) climate change;
- (b) environmental governance and horizontal issues, including education and training, and access to environmental information and decision-making process;
- (c) air quality;
- (d) water quality and water resource management, including marine environment;
- (e) waste and resource management;
- (f) nature protection, including measures to enhance biodiversity;
- (g) industrial pollution and industrial hazards;
- (h) chemicals;
- (i) genetically modified organisms, including in the field of food safety;
- (j) noise pollution;
- (k) civil protection, including natural and man-made hazards;
- (l) urban environment;

ENVIRONMENT

Article 362

1. The Parties shall, *inter alia*:
 - (a) exchange information and expertise;
 - (b) implement joint research activities and exchange of information on cleaner technologies;
 - (c) plan the handling of disasters and other emergency situations;
 - (d) implement joint activities at regional and international level, including with regard to multilateral environment agreements ratified by the Parties and joint activities in the framework of relevant agencies as appropriate.
2. The Parties shall pay special attention to transboundary issues.

Article 363

Gradual approximation of Ukrainian legislation with EU policy and legislation on environment shall proceed in accordance with Annex [XXIX] [of this Agreement].

Article 364

Cooperation in the sector shall include the implementation of specific agreements in this field concluded between the Parties according to the respective powers and competences of the EU and its Member States and in accordance with the legal procedures of each Party. It shall aim *inter alia* at:

- (a) exchanging information and expertise;
- (b) exchanging and jointly developing information on cross-border emergencies, including requests for and offers of assistance;
- (c) cooperating on the assessment of the environmental impact of disasters;
- (d) exchanging information on technical work in the field of environmental protection;
- (e) inviting, on a case by case basis, observers to specific exercises and trainings organised by the EU and/or Ukraine;
- (f) strengthening of cooperation on the most effective use of available civil protection capabilities.

**EUSDR PILLAR II AS A TOOL
FOR ANTICIPATORY INTEGRATION
INTO EU ENVIRONMENTAL POLICY**



**DIRECTIVE 2000/60/EC OF THE
EUROPEAN PARLIAMENT AND
OF THE COUNCIL
of 23 October 2000
establishing a framework for
Community action
in the field of water policy**

**DIRECTIVE 2007/60/EC OF THE
EUROPEAN PARLIAMENT AND
OF THE COUNCIL
of 23 October 2007
on the assessment and
management of flood risks**

(22) This Directive is to contribute to the progressive reduction of emissions of hazardous substances to water.

**Synergy of the EU
framework Water,
Flood Risk, Urban
Waste Water**

Treatment and

Integrated Pollution

Prevention & Control

(IPPC) Directives



EcoResource

Article 1 The purpose of this Directive is to establish a framework for the assessment and management of flood risks, aiming at the reduction of the adverse consequences for human health, the environment, cultural heritage and economic activity associated with floods



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România-Ucraina-Republica Moldova
PROGRAM DE COOPERARE TRANSFRONTALIERĂ

**DIRECTIVE 2000/60/EC OF THE
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**DIRECTIVE 2007/60/EC OF THE
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OF THE COUNCIL
of 23 October 2007
on the assessment and
management of flood risks**

Decisions should be taken as close as possible to the locations where water is affected or used. Priority should be given to action within the responsibility of States through the drawing up of programmes of measures adjusted to regional and local conditions.

3) It is feasible and desirable to reduce the risk of adverse consequences, especially for, the environment, cultural heritage, economic activity and infrastructure associated with floods. However, measures to reduce these risks should, as far as possible, be coordinated throughout a river basin if they are to be effective

**DIRECTIVE 2000/60/EC OF THE
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OF THE COUNCIL
of 23 October 2007
on the assessment and
management of flood risks**

(14) The success of this Directive relies on close cooperation and coherent action at Community, Member State and local level as well as on information, consultation and involvement of the public, including users.

6) Effective flood prevention and mitigation requires, in addition to coordination between Member States, cooperation with third countries. This is in line with Directive 2000/60/EC and international principles of flood risk management as developed notably under the United Nations Convention on the protection and use of transboundary water courses and international lakes,



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PROGRAM DE COOPERARE TRANSFRONTALIERA



**DIRECTIVE 2000/60/EC OF THE
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establishing a framework for
Community action
in the field of water policy**

**DIRECTIVE 2007/60/EC OF THE
EUROPEAN PARLIAMENT AND
OF THE COUNCIL
of 23 October 2007
on the assessment and
management of flood risks**

(40) With regard to pollution prevention and control, Community water policy should be based on a combined approach using control of pollution at source through the setting of emission limit values and of environmental quality standards.

(12) In order to have available an effective tool for information, as well as a valuable basis for priority setting and further technical, financial and political decisions regarding flood risk management, it is necessary to provide for the establishing of flood hazard maps and flood risk maps showing the potential adverse consequences associated with different flood scenarios, including information



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EcoResource
Centre

**DIRECTIVE 2000/60/EC OF THE
EUROPEAN PARLIAMENT AND
OF THE COUNCIL
of 23 October 2000
establishing a framework for
Community action
in the field of water policy**

Article 5 Characteristics of river basin district review of environmental impact of human activity & economic analysis of water use

1. Each Member State shall ensure that for each river basin district or for the portion of an international river basin district falling within its territory:

- an analysis of its characteristics,
- a review of the impact of human activity on the status of surface waters and on groundwater,

**DIRECTIVE 2007/60/EC OF THE
EUROPEAN PARLIAMENT AND
OF THE COUNCIL
of 23 October 2007
on the assessment and
management of flood risks**

(12) In order to have available an effective tool for information, as well as a valuable basis for priority setting and further technical, financial and political decisions regarding flood risk management, it is necessary to provide for the establishing of flood hazard maps and flood risk maps showing the potential adverse consequences associated with different flood scenarios, including information on potential sources of environmental pollution as a consequence of floods. In this context, **States should assess activities that have the effect of increasing flood risks**

Conformably to EUSDR PAs 4 & 5 (Pillar II) large scale transfrontier project East Avert of Joint Operational Program "RO-UA-MD" should become a "trigger" for synergic EU Water Management, Regional Development & Acquis Communautaire implementation in main boundary Danube tributaries

**Prevention and protection
against Floods & Stormwater
in the Upper Prut ,Tisa & Siret
River Basins, through the
implementation of a modern
monitoring system with
automatic stations, GIS,
Systems Water Security and
Management**



Specific objectives of East Avert:

1. Ensuring of a high quantitative monitoring level of the Siret and Prut River Basins for prevention and protection against floods and accidental pollution events;
3. Elaboration of the maps representing the flooded areas during the historical flood events in the Siret and Prut River Basins, of the hazard and vulnerability maps at a adequate scale (using the high-resolution satellite images) and of the risk maps for Siret and Prut River Basin.
4. Providing of the River Basin Plan for the protection against ice-floods, hydrological drought, accidents occurred at the hydrotechnical constructions and accidental pollutions for the Siret and Prut River Basins.
5. Improving the warning system by a better common forecasting procedures and modeling.
6. Increasing the reaction capacity by a better data and forecasts dissemination, public information about flood hazard and risk.



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Romania-Ukraine-Republic of Moldova
CROSS BORDER COOPERATION

Results:

1. Developing a modern integrated monitoring and warning system to protect localities and population living in the border areas of Prut and Siret River Basins.
 2. Long-term development of the integrated approach to prevent and protect localities and population against floods, by a strategic land development planning taking into consideration the flood hazard and vulnerability/risk maps.
 3. Elaboration of the „River Basin Protection Plan against ice-floods, hydrological drought, accidents occurred at the hydrotechnical constructions” through the cooperation of the responsible stakeholders on the territory of Romania, Ukraine and Republic of Moldova;
 4. The improvement in the management of the floods, accidental pollutions in the river basin and quality of the water resources, for the prevention of emergency situations;
 5. The adjustment and implementation of the national strategy for the fight against flood risk, by informing the local communities, local public authorities and the public on the issues regarding the protection against floods in the Siret and Prut River Basins, and also on the vulnerable areas by realizing the vulnerability and risk maps for both Prut and Siret River Basins in the areas with transboundary impact.
 - 6. Review of the bilateral agreements in the field of water management – to improve the part for data exchange, warning and coordination of the preventive activities.
- Through these actions, the local authorities from the areas with high vulnerability in case of flood events or related potential pollution events will be better protected, and also a better protection of the cultural, historical and natural protected areas patrimony within these river basins will be ensured.



Romania-Ukraine-Republic of Moldova
CROSS BORDER COOPERATION

Початок створення АІВС ТИСА

- 1986 р. технічне завдання на I чергу АІВС



Угода між Міністерством УРСР і Держвідомством водного господарства Угорської Нації по темі "Інформаційно-аналітична система для прогнозу паводку і управління водними ресурсами басейну ріс", підписана в м. Будапешт 16 грудня 1986 р.

should promote well coordinated systems monitoring, GIS mapping, floods & risks modeling, as well as based on this facility synergic activities of public

Following achievements of Ukrainian-Hungarian transfrontier cooperation 28 years experience in Tisa basin on Water Management and Floods Prevention, EAST AVERT

Впровадження паводкової директиви ЄС в басейні р. Тиси



ТЕХНІЧНИЙ ЗАВДАННЯ
НА ПОВІДНІ ПІДГОТОВКУ ТА ВИКОНАННЯ
РОБІТ НА ПІДГОТОВКУ ТА ВИКОНАННЯ
РОБІТ НА ПІДГОТОВКУ ТА ВИКОНАННЯ



Моделювання затоплення паводковими водами
с. Петрово Виноградівського р-ну



emergency bodies, regional & local authorities and population in rural communes & municipalities, aimed to create efficient plans for ordinary,

emergency and disaster regimes, to construct protective installations and to provide permanent interaction between these structures

Моделювання затоплення паводковими водами
с. Петрово Виноградівського р-ну





MODERNIZATION OF CONTROL SYSTEM AICS

- *In the framework of East Avert is foreseen automatization of 24 control points in the basins of Prut & Siret, including:*
- *17 check-points on water level control,*
- *5 hydrometric crossings,*
- *19 precipitations meters, both on the check-points or separately;*
- *Establishment of 3 Dispatching Centres for information collection, analysis and transfer*



TRANSFER SCHEME FOR CONTROL DATA

- Area of the Prut river basin in borders of Ivano-Frankivsk region
- Area of the Prut river basin in borders of Chernivtsi region
- Area of the Siret river basin in borders of Chernivtsi region
- Existing hydromasts, which will be automatized
- New automatized hydromasts
- Existing precipitation gages, which will be automatized
- New precipitation gages
- Existing automatized hydromasts

Чернівці
ДП БУВР



Data transfer reliability is provided by usage of mobile system for batch communication GPRS (through 2 channels modem of 2 different mobile operators) and by satellite communication.



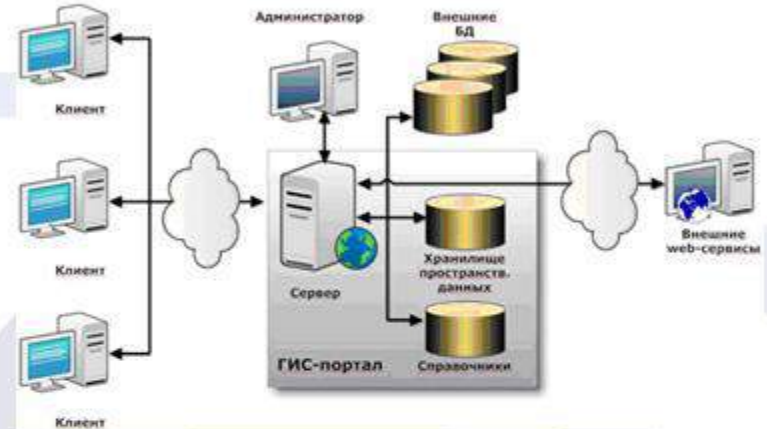
ESTABLISHMENT OF GIS FOR FORECASTING AND WATER RESORURCE MANAGEMENT

Implementation of *GIS in Prut and Siret basins* together with modeling emergency situations .

Structure of the System

- digital model of eminences,
- detailed vector maps,
- inundation zones maps,
- thematic layers (hydrographic objects, settlements, relief, hydrotechnical constructions),
- geographic and attributive data bases),
- model of probable risks forecasting

GIS Portal creation to provide unified access point to geo-informational resources



Romania-Ukraine-Republic of Moldova
CROSS BORDER COOPERATION



Programme funded by the EUROPEAN UNION





IMMEDIACY BOOSTING FOR MANAGEMENT DECISIONS MAKING



1 година



3 години



4-5 години



5 хвилини

Збір даних



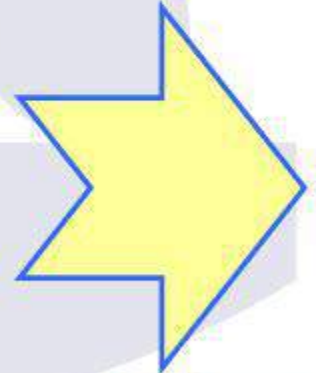
< 1 хвилини

Передача даних



1-2 години

**Обробка даних, прогнозування,
моделювання**



**Прийняття
рішень**

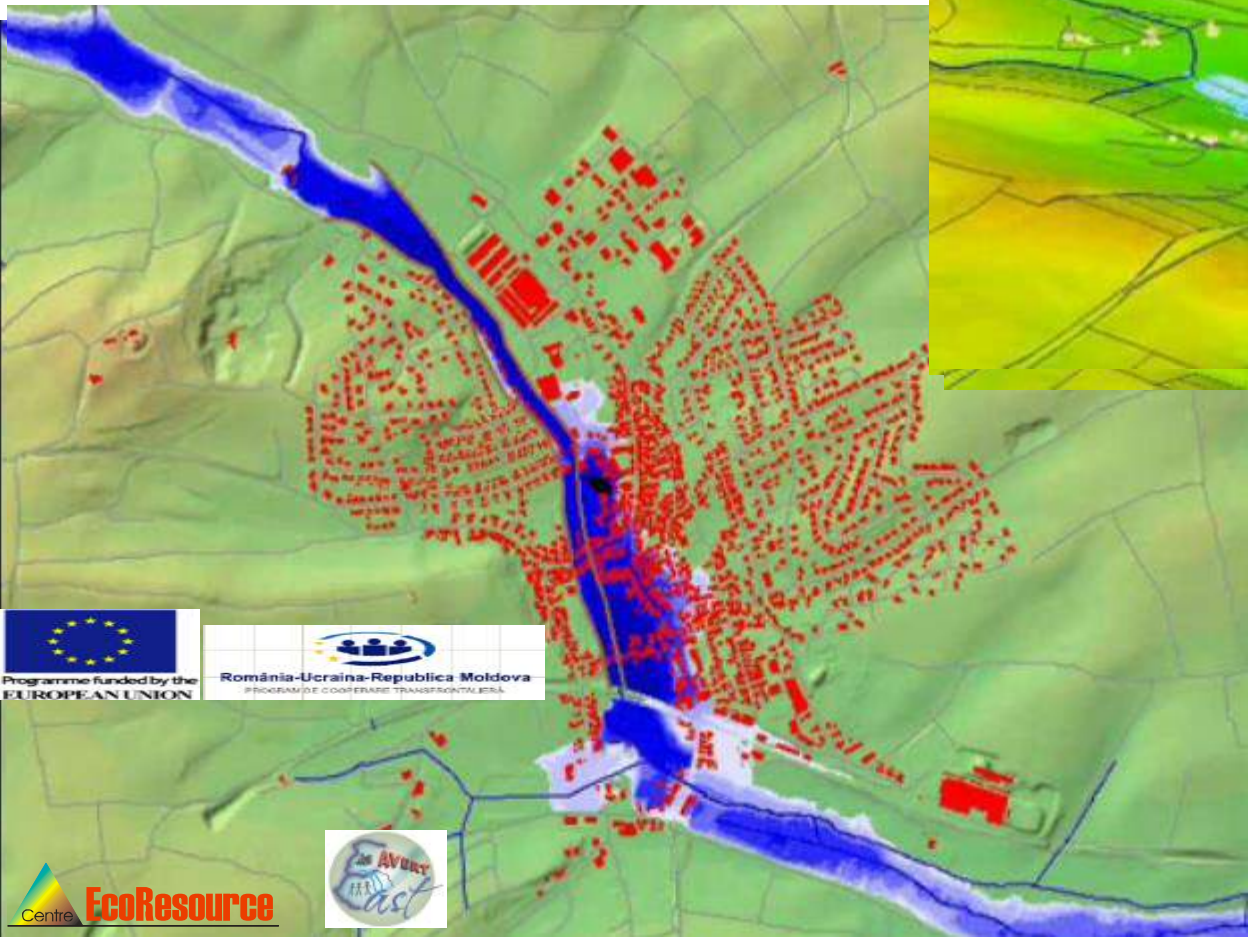
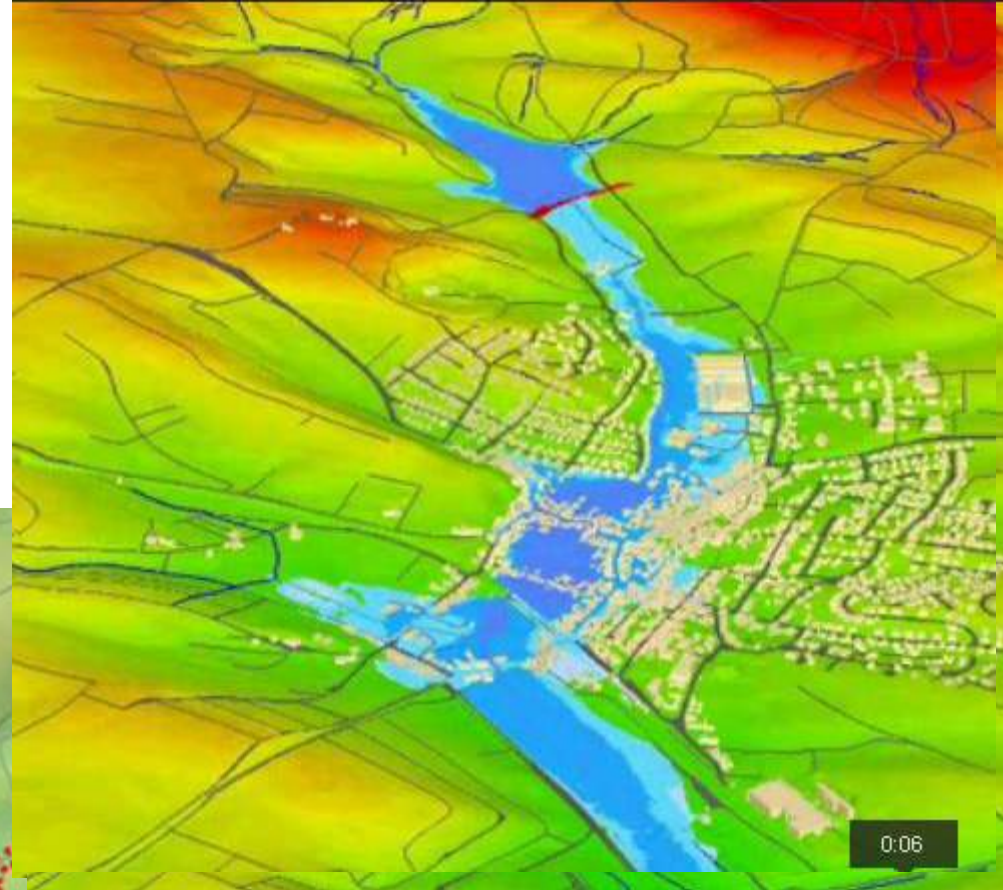


Romania-Ukraine-Republic of Moldova
CROSS BORDER COOPERATION



Programme funded by the
EUROPEAN UNION

Modeling & Scenarios of riverbed & storm-water floods & associated events development on GIS basis and mapping for



territorial prevention, protection & actions planning by specialized bodies & communities



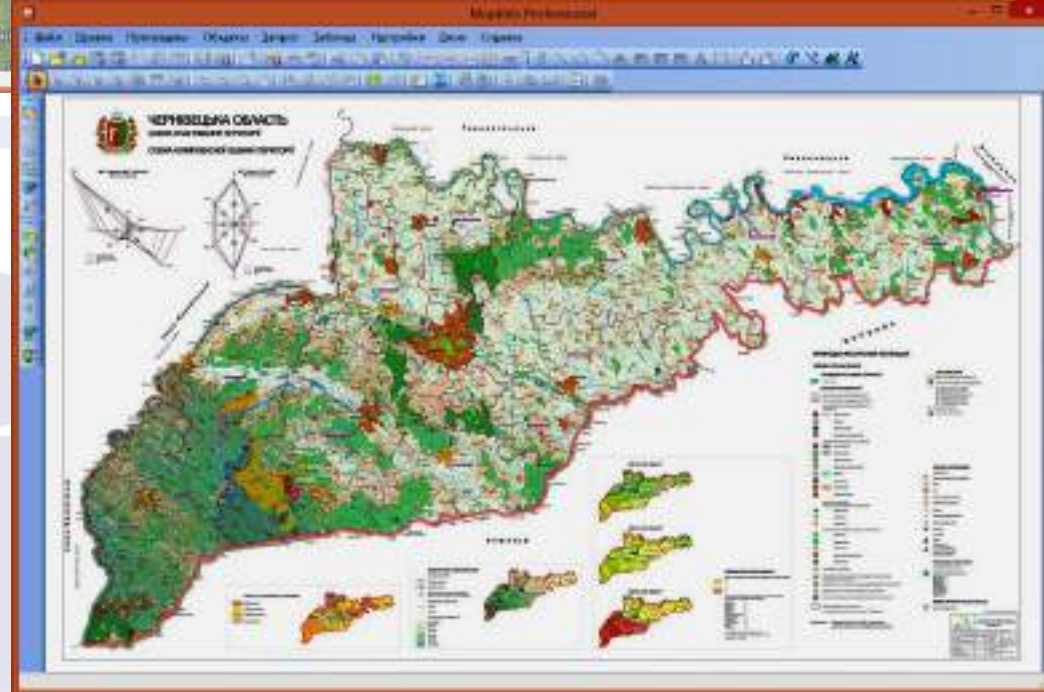
Basin Management improvement for Prut & Siret, following Tisa, and further spreading to East



Through Flood & Stormwater risks mapping, GIS integrated facility & Spatial Planning



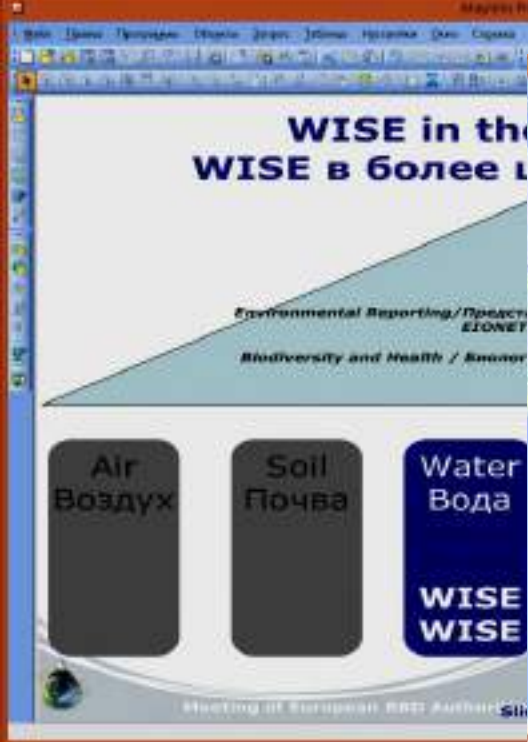
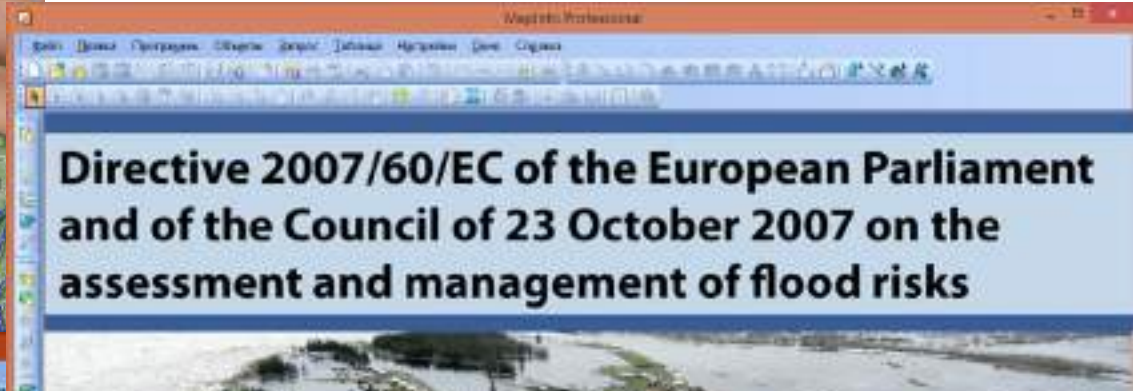
EAST AVERT
promotes
Regional
Sustainable
Development



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CROSS BORDER COOPERATION



& accelerates EU Directives rooting

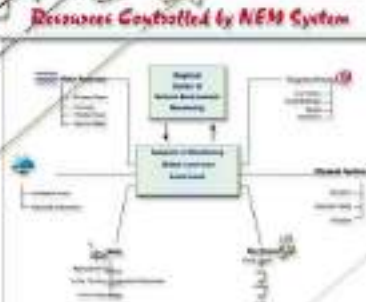
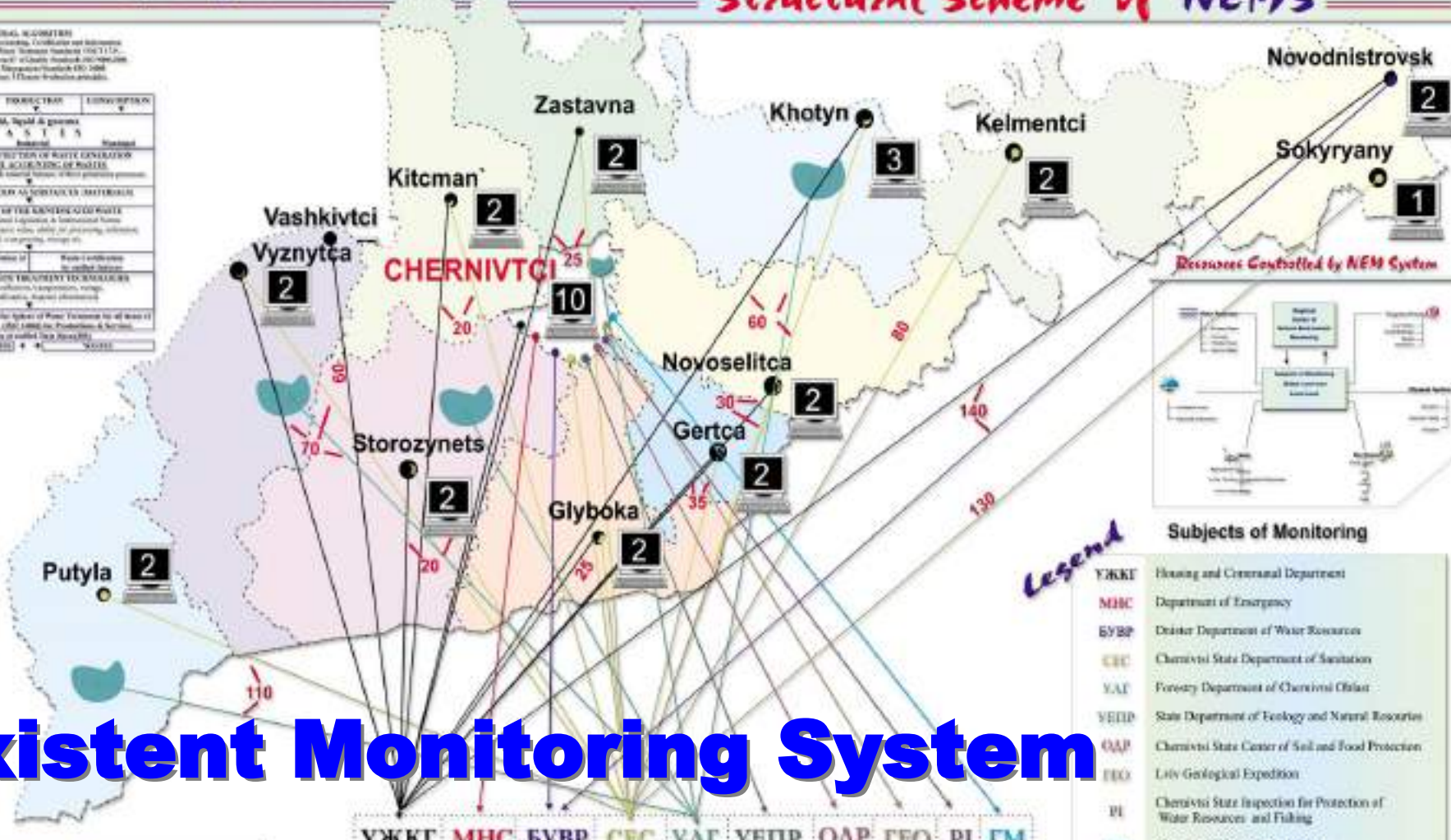


GENERAL INFORMATION

for Water resources monitoring, land-use and environment support under the EU Rural Development Programme (2007-2013) in Ukraine - "green approach" within the National Environmental Action Plan & Environmental Management Framework (EMF) under the Ministry of Environment and Natural Resources.

RESOURCE	INDICATOR	DESCRIPTION
WASTES		
Site	Industrial	Municipal
TRENDS AND A DEFINITION OF RISKY GENERATION (DANGER) AND RISK OF RISK		
by intensity of the impact & critical factors of the generation process		
WASTE REUSE AND RECYCLING CAPABILITY		
CLASSIFICATION OF THE RISKY GENERATION (according to National Legislation & International Norms in terms of design, material, value, ability of processing, utilization, disposal, recycling, storage etc.)		
Water Resources & Quality of	Quantity	Water Pollution
SELECTION OF WASTE TREATMENT TECHNOLOGIES (incineration, collection, compression, storage, processing, utilization, reuse, etc.)		
Change of risk status in the system of Water Treatment for all areas of the City (Urban, Industrial, Agricultural, Production & Services)		

ENVIRONMENTAL MONITORING



Subjects of Monitoring

Code	Department
УЖКГ	Housing and Communal Department
МНС	Department of Emergency
БУВР	Drainage Department of Water Resources
СЕС	Chernivtsi State Department of Sanitation
УЛГ	Forestry Department of Chernivtsi Oblast
УЕПР	State Department of Ecology and Natural Resources
ОДР	Chernivtsi State Center of Soil and Food Protection
ГЕО	Leiv Geological Expedition
ПІ	Chernivtsi State Inspection for Protection of Water Resources and Fishing
ГМ	Chernivtsi Meteorological Center

Legend

Server NEMS

existent Monitoring System

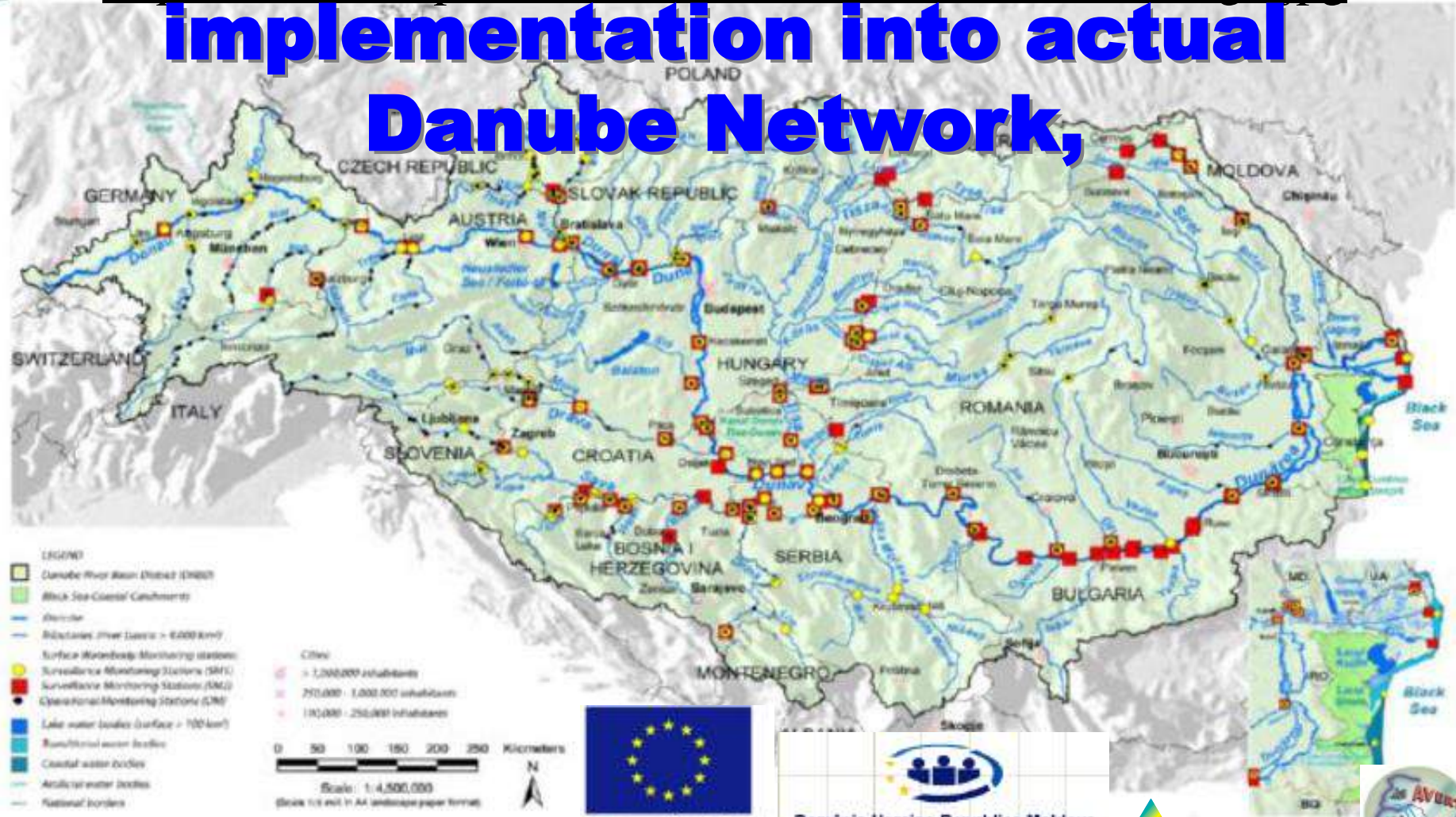


Trans National Monitoring Network - TNMN

icpdr ikspd
 International Commission for the Protection of the Danube River
 Internationale Kommission zum Schutz der Donau

http://enlib.exdep.com/tw_files2/urls_5/18/d-17496/img5.jpg

implementation into actual Danube Network,



- LEGEND**
- Danube River Basin (DDBR) (DDBR)
 - Black Sea Coastal Catchment
 - River
 - Tributaries (river length > 6000 km)
 - Surface Waterbody Monitoring station
 - Surveillance Monitoring Stations (SMS)
 - Surveillance Monitoring Stations (SMS)
 - Operational Monitoring Stations (OMS)
 - Lake water bodies (surface > 100 km²)
 - Transitional water bodies
 - Coastal water bodies
 - Artificial water bodies
 - National borders

Cities

- > 1,000,000 inhabitants
- 250,000 - 1,000,000 inhabitants
- 100,000 - 250,000 inhabitants

0 50 100 150 200 250 Kilometers

Scale: 1:4,500,000
 (Scale 1:1 mil. in A4 landscape paper format)

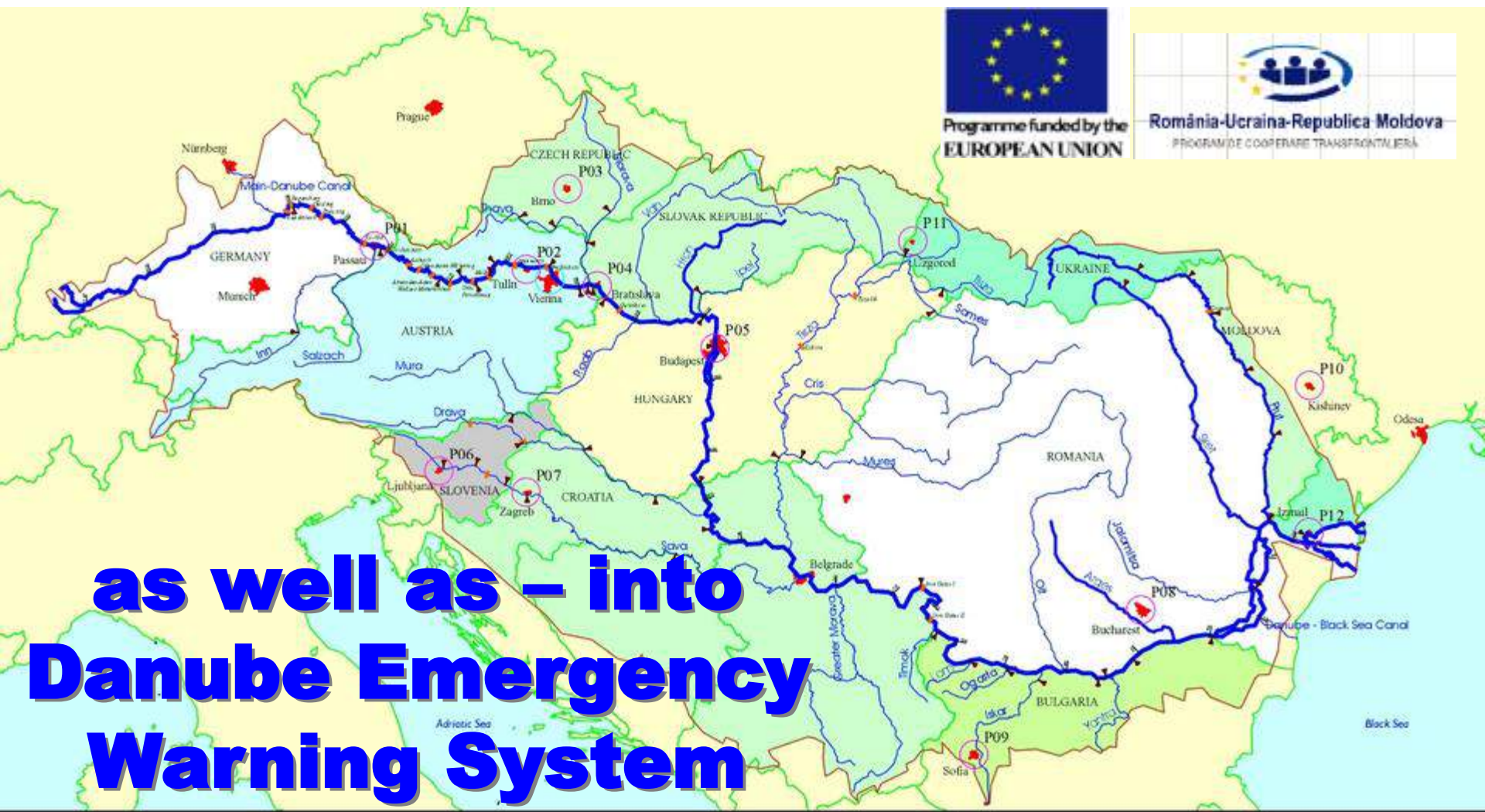




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România-Ucraina-Republica Moldova
PROGRAMUL DE COOPERARE TRANSFRONTALIERĂ



as well as – into Danube Emergency Warning System

DANUBE BASIN MAP

ACCIDENT EMERGENCY WARNING SYSTEM

- P11 Principal International Alert Centre
- Danube Secretariat
- Catchment boundary
- State boundary
- City
- River
- Water level measuring station
- Hydropower dams



Date: January 1996

Prepared by:

<http://www.meteo.md/newmejd1/dunai/azmap.jpg>

FLOODMARKING WITH BASIN MODELLING SYSTEMIC APPROACH



Triblateral project "The prevention and protection against floods in the upper Siret and Prut River Basins, through the implementation of a modern monitoring system with automatic stations - EAST AVERT",
MIS-ETC Code 966



Questionnaire for specialists of authority bodies,
involved into the System of Floods prevention and counteraction

1. Specialist

Last name, initials	Place of work	Position	Phone	E-mail
1	2	3	4	5

Fulfilled since _____ 2014 Working experience in the System _____ years
Functional field: Emergency, Water management, executive body, self-government body, scientific-underline the necessary
technical, engineering, IT, medical, social, another (specify)

Category: chief, specialist, rescuer, medic, worker, another (specify)
underline the necessary

2. List of Emergencies, which were observed or are known to specialist

Nr of event	Nomination of the Emergency situation	Year, month, day, time	Data source
6	7	8	9

3. Essential information about each event, which was observed or is known to specialist

Nr of event recorded in head. 2	Place, where the event was observed	Maps/schemes availability (coordinates)	Actions & prevention plans availability	Informing sources & schemes	Event characterization	Event periodicity
10	11	12	13	14	15	16

4. Special peculiarities of each event, which was observed or is known to specialist

Nr of event recorded in head. 2	Flood generation mechanism in the place head. 11	High-water marks in the place head. 11	Water rise continuation & high water duration	Ways & how was water abatement	Concrete impoundment objects list	Floods aftermaths in the place head. 11
17	18	19	20	21	22	23

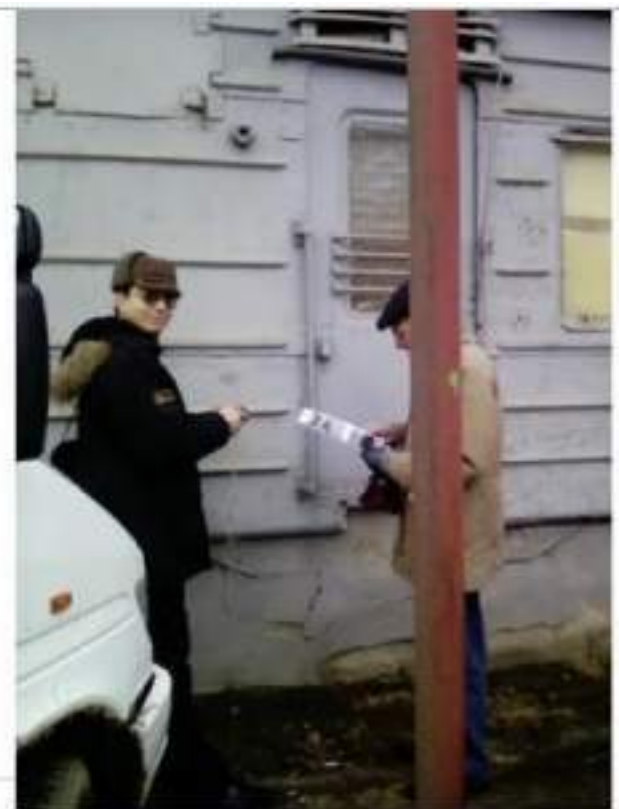
5. Informing & planning concerned prevention and action plans

Nr of event recorded in head. 2	Preparing measures & informing	Sources & content of the information through event	Information about the aftermath & elimination	Measures & means of counter-measures & actions	Estimate of engineering structures efficiency	The necessity of changes & follow-up actions
24	25	26	27	28	29	30



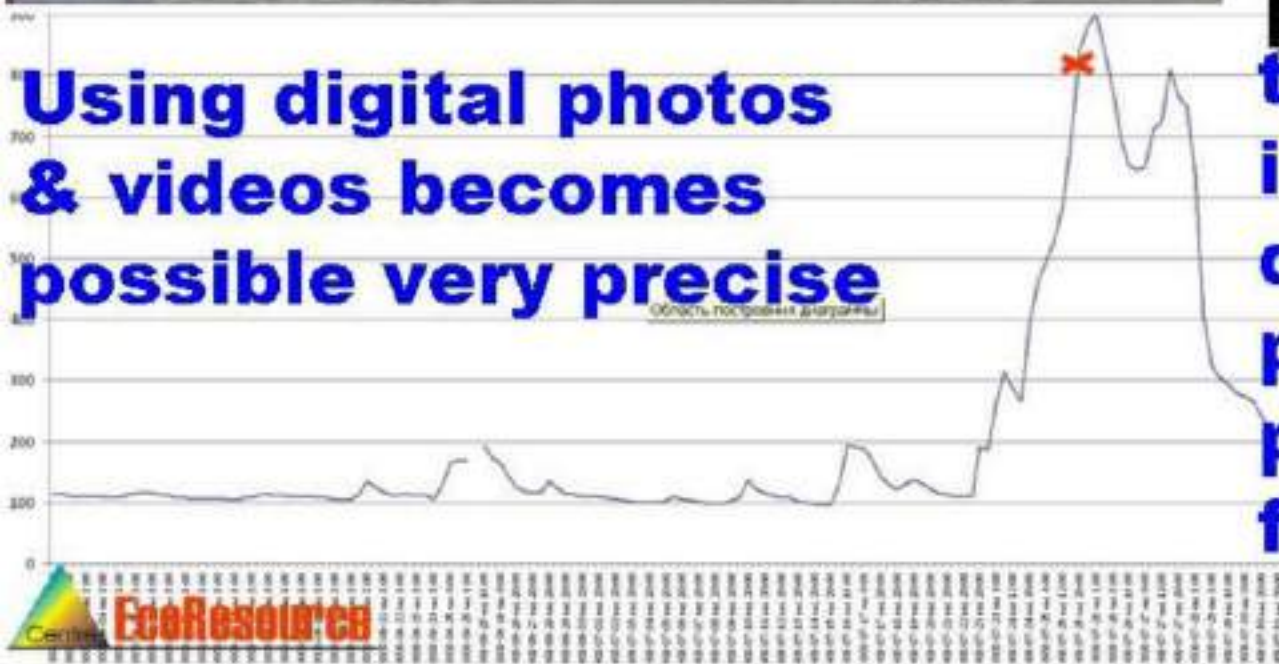
Through population, authorities & specialized bodies surveying in vulnerable

zones were determined both most adjusted methods for Floods & concerned Risks mapping and the sectors of Upper Prut and Siret basins for further detailed historical floods and potential risks evaluation as a basis for



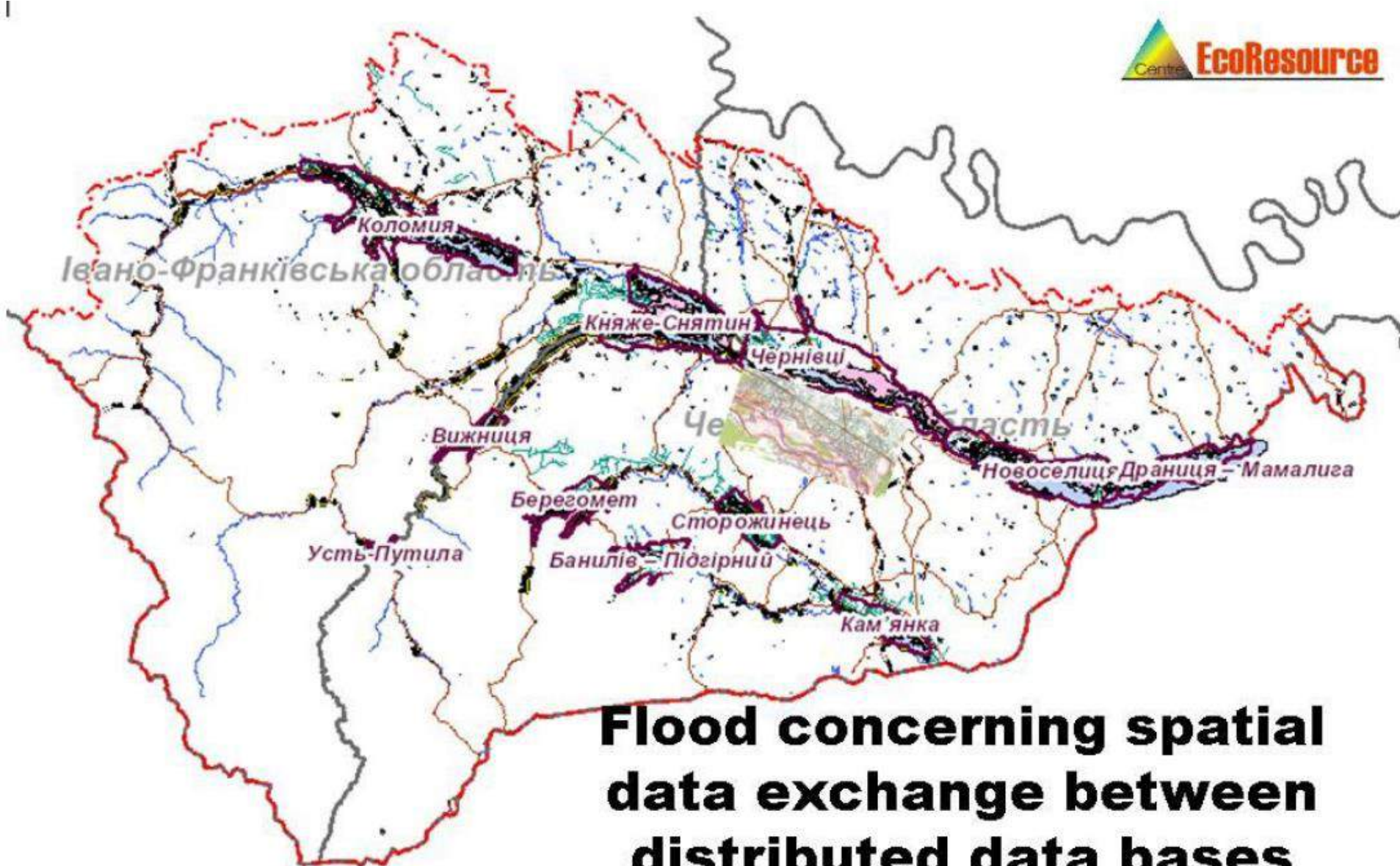
**Using digital photos
& videos becomes
possible very precise**

область подтопления в г. Кишинев



**to define
inundation
depths in exact
place, time &
position on the
flood level peak**





Flood concerning spatial data exchange between distributed data bases



Programme funded by the



EAST AVERT PROJECT MIS ETC 966

www.ro-ua.md.net



Romania-Ukraine-Republic of Moldova

CROSS BORDER COOPERATION

INTEGRATION WITH ACTING MONITORING AND EMERGENCY SYSTEMS

Галерея

Мое избранное Популярные ресурсы моей организации

Попередження і захист від паводків EAST-AVERT. Популярные ресурсы

Сортировать по: Название

- Показать
- все
- Карты
- Слои
- Приложения
- Инструменты
- Файлы



Актуальні орто-фото плани ділянок



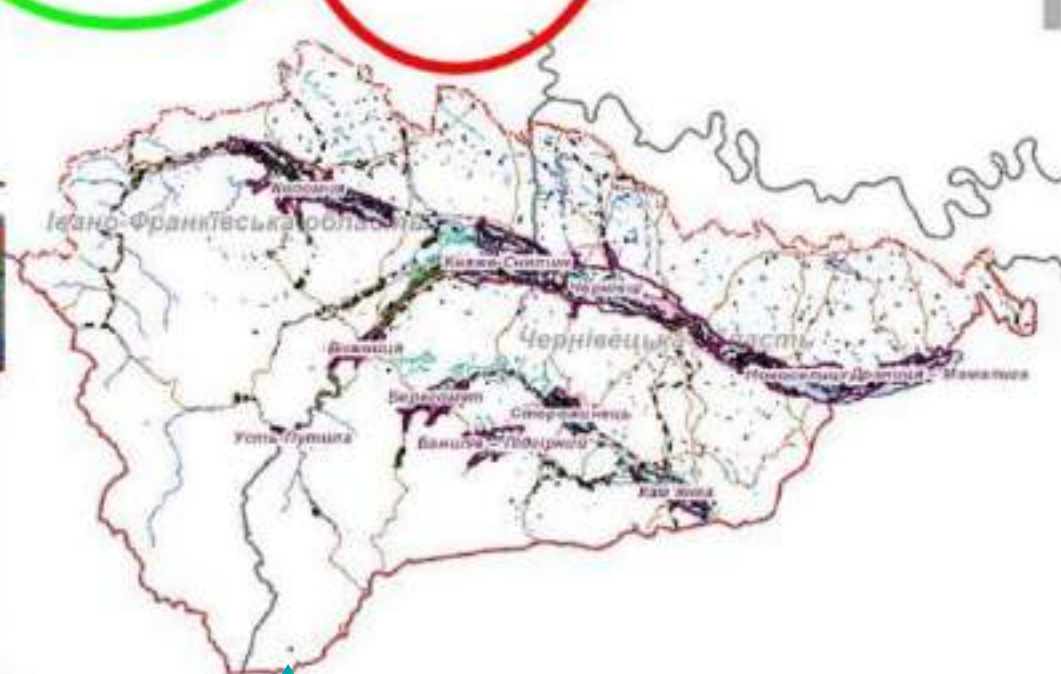
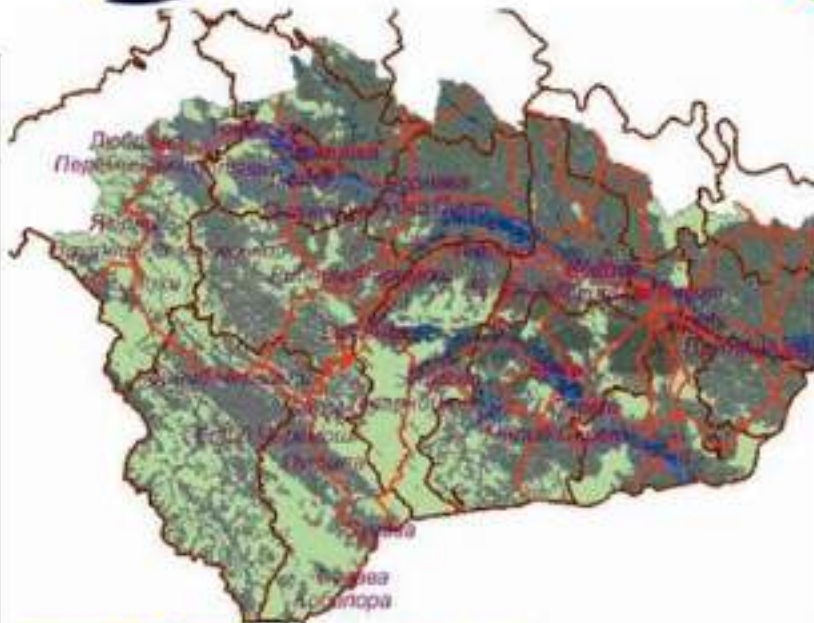
Базова карта Чернівецької області



Зони затоплення та оцінка ризику



Мозаїка аеріальних знімків



Programme funded by the



www.east-vert.org



EcoResource

CROSS BORDER COOPERATION

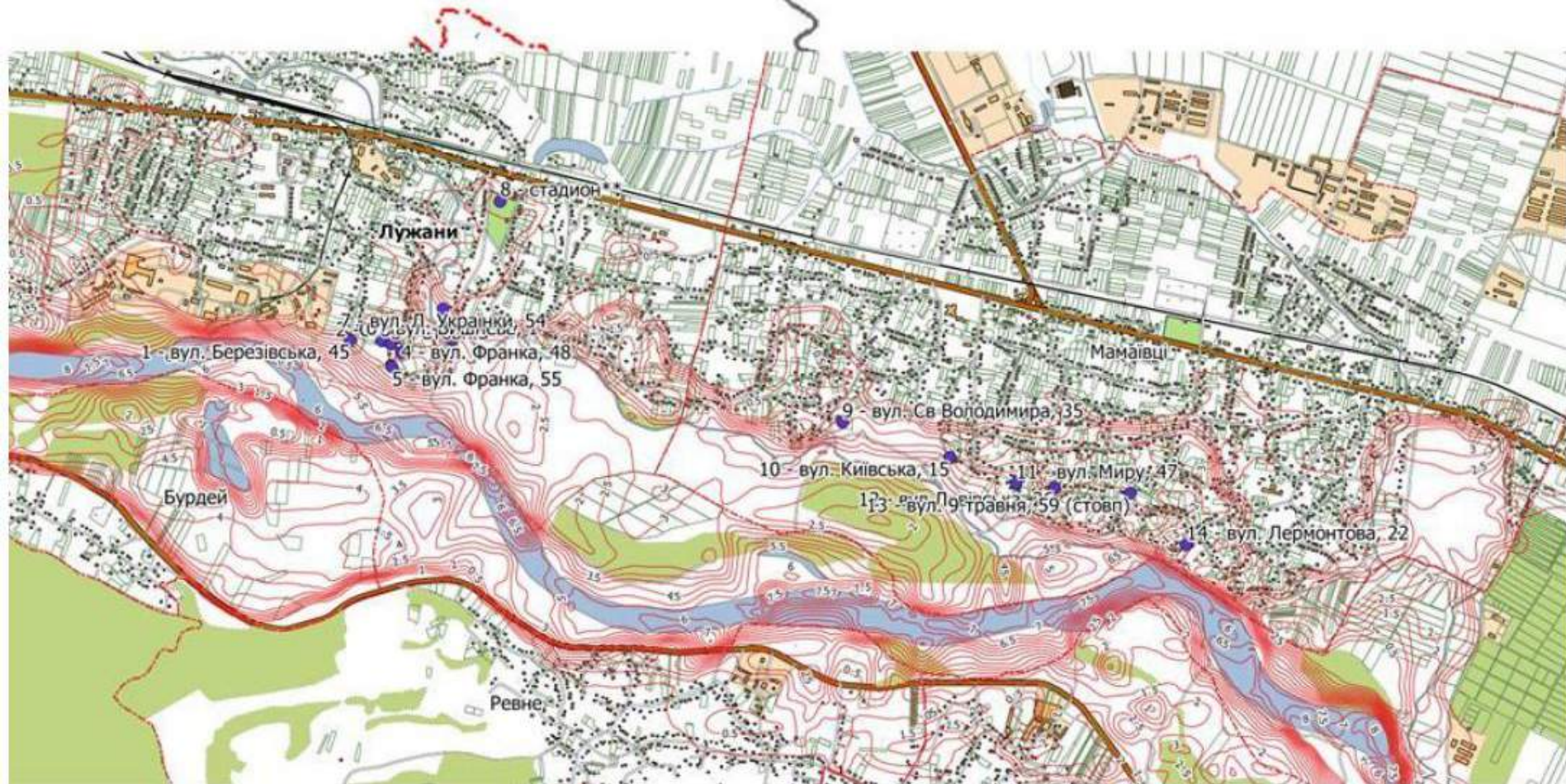


Historical floods & risks reference points in settlement Stata Zhadova Storozhinets district 29/05/2014



**Risks
assessment &
emergency
planning,
verified
through
floods
modeling**





Basins & local flood scenarios mutual verification through floodmarkings



Programme funded by the



EAST AVERT PROJECT MIS ETC 966



EcoResource



Romania-Ukraine-Republic of Moldova

CROSS BORDER COOPERATION

and flashflood "space" in case of Stormwater



Косівський район

Кути



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www.ro-ua-md.net

EcoResource

For such modeling successful implementation and further development it's necessary to have adjusted methodology for maximally precise data collection both on the historical floods and through the future emergency situations. For modeling establishment, verification and further utilization in emergency planning activity, risks assessment and immediacy through running disasters -the most important to know dynamic changes of the real water level “mirror” in anthropogenic zones, vulnerable to floods and stormwater.

As it shown below – the previous flood maps, as well as population and specialists inquiring, don't give such precise data. E.g. typical watermarks on the bridge footings don't provide real water level “mirror” for modeling.

Therefore for historical floods mapping, GIS modeling and risk assessments we use logically revealed chains of investigated digital photos & video-records, allowing to determine precise place, level & time of flood water “mirror”.

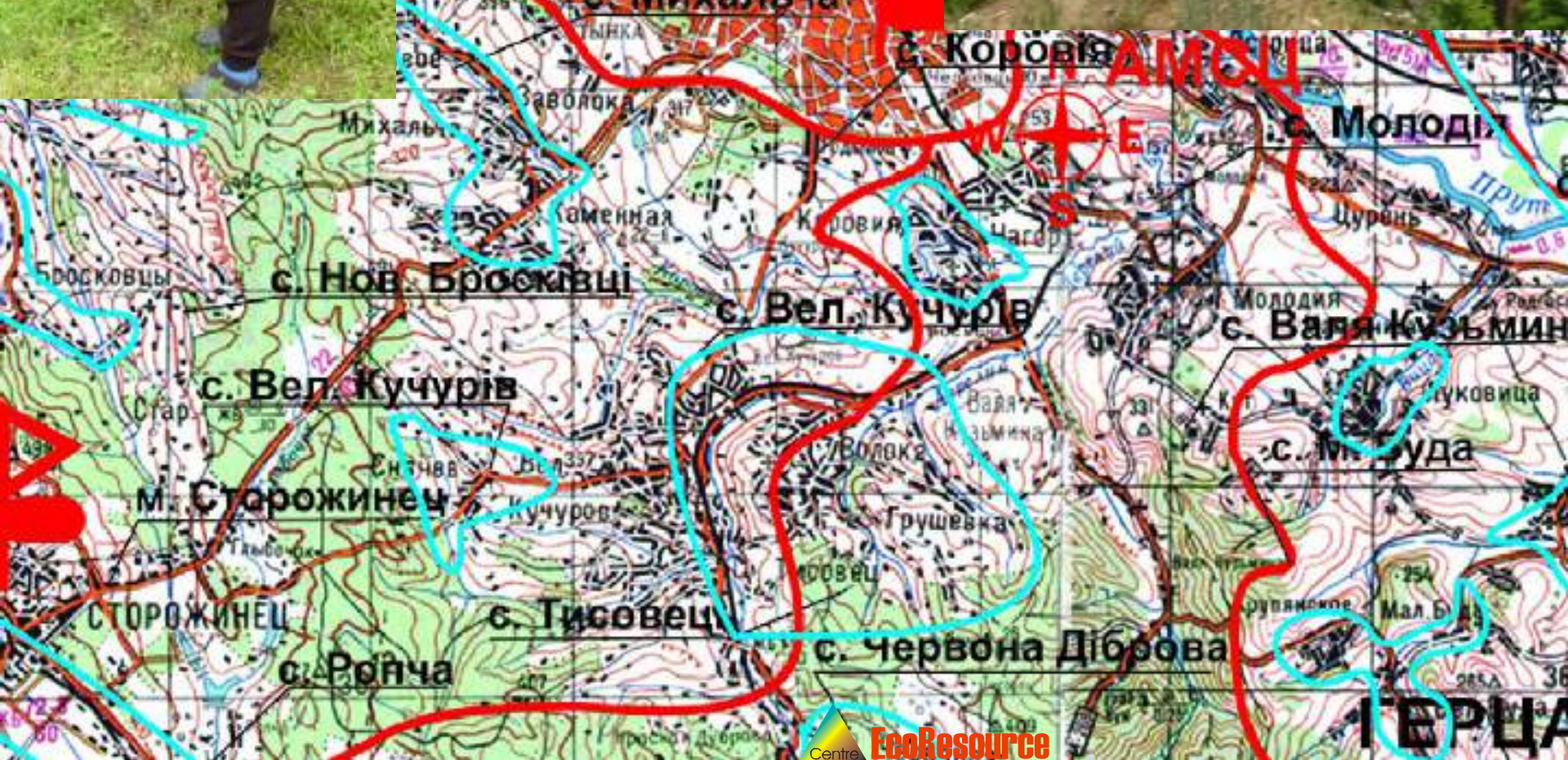


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FLIED WORK





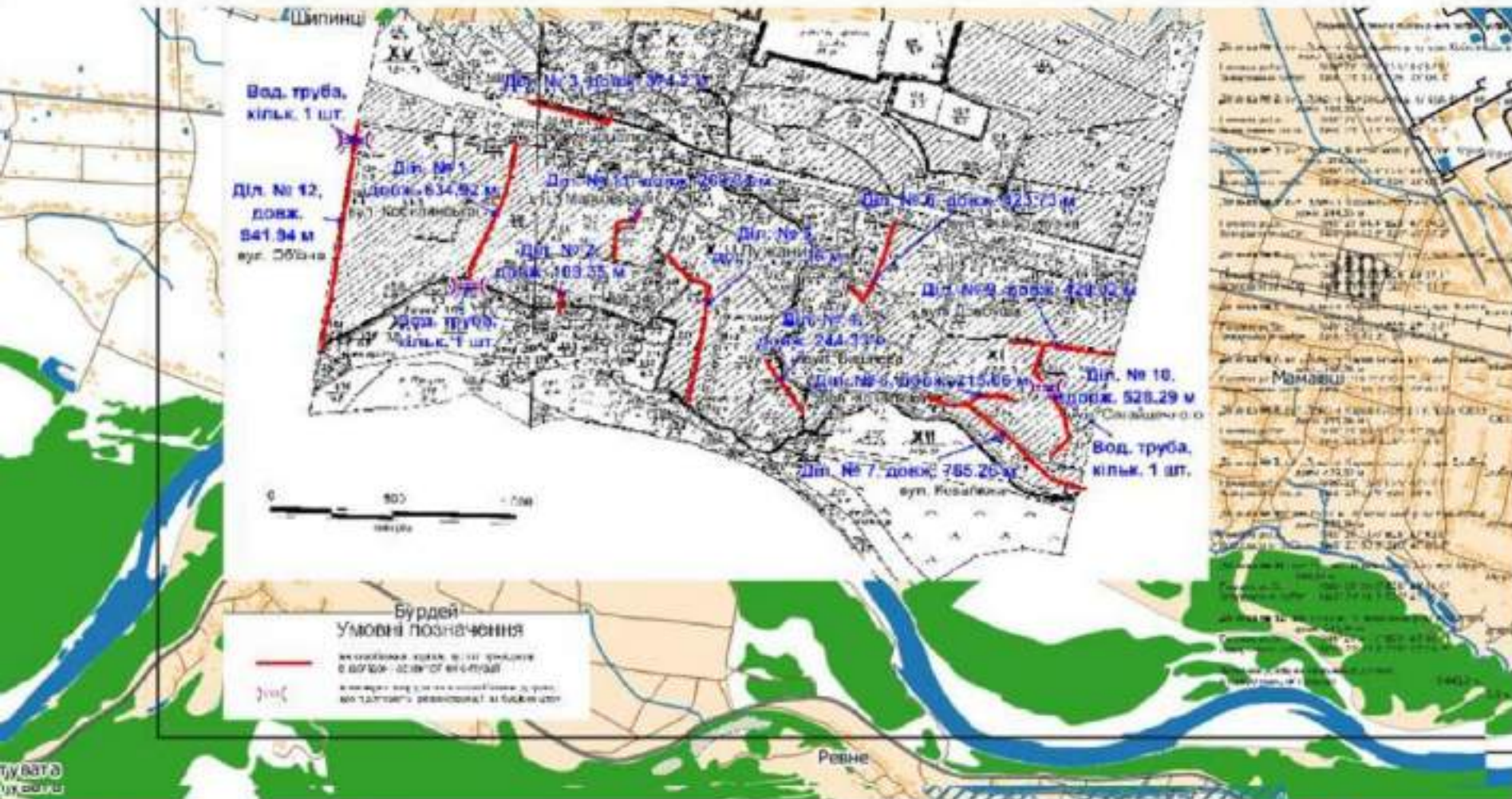
DATA PRECISING



SINERGY WITH EXISTING MAPS



Additional verification of floods mapping



ТУ ВАТ 0
ТУХ ВАТ 0



EAST AVERT PROJECT MIS ETC 966



Romania-Ukraine-Republic of Moldova



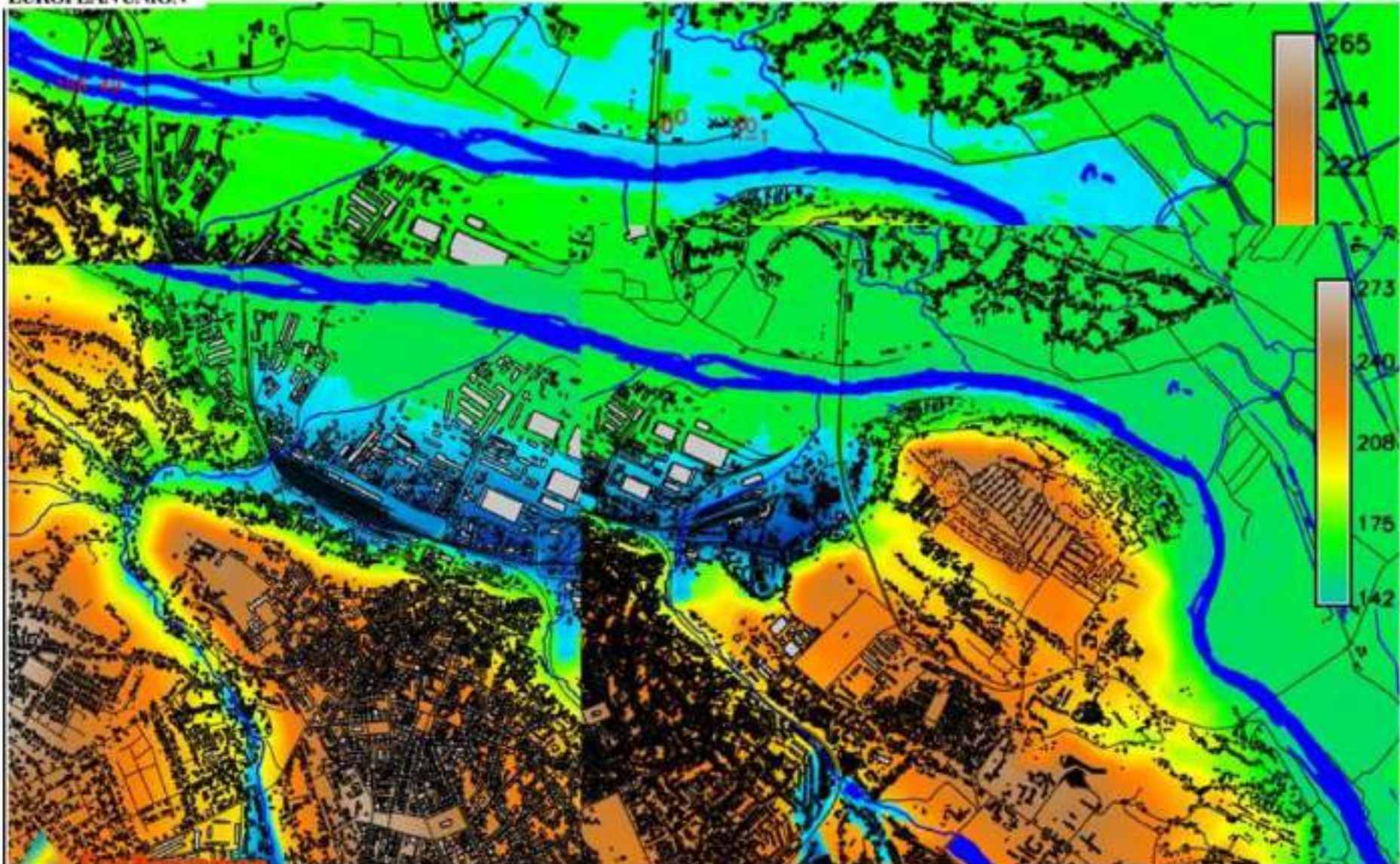
Romania-Ukraine-Republic of Moldova

CROSS BORDER COOPERATION

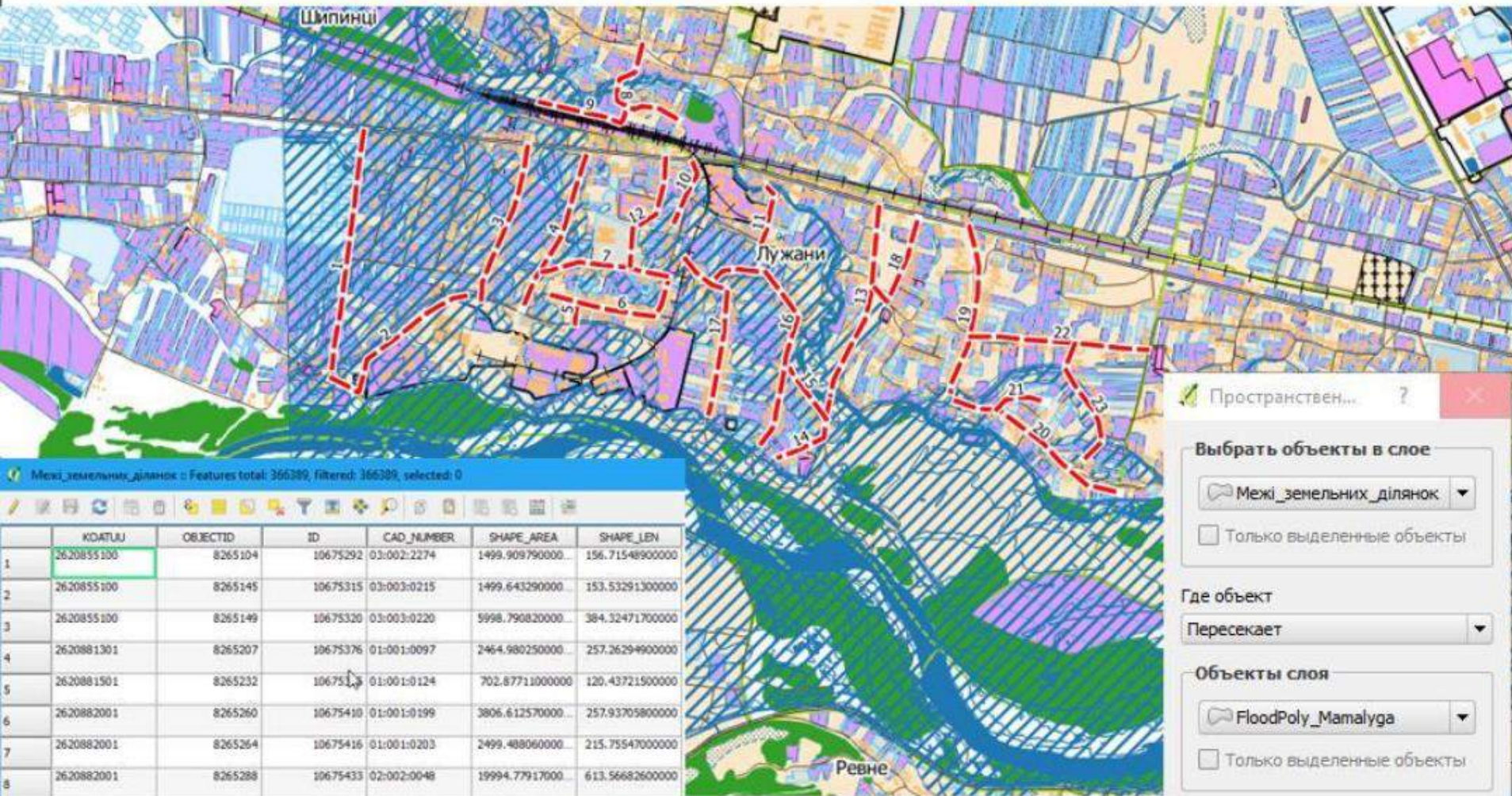


Programme funded by the
EUROPEAN UNION

Floodplain & urban flashflood hazards for city



Local flood hazards & risks assessment for estates



Межі_земельних_ділянок : Features total: 366389, filtered: 366389, selected: 0

	КДАТУД	ОБ'ЄКТІД	ID	CAD_NUMBER	SHAPE_AREA	SHAPE_LEN
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3	2620855100	8265149	10675320	03:003:0220	5998.790820000...	384.324717000000
4	2620881301	8265207	10675376	01:001:0097	2464.980250000...	257.262949000000
5	2620881501	8265232	10675113	01:001:0124	702.87711000000...	120.437215000000
6	2620882001	8265260	10675410	01:001:0199	3806.612570000...	257.937058000000
7	2620882001	8265264	10675416	01:001:0203	2499.488060000...	215.755470000000
8	2620882001	8265288	10675433	02:002:0048	19994.77917000...	613.566826000000
9	2620882501	8265294	10675445	01:001:0084	17599.59605000...	650.849964000000
10	2620882501	8265302	10675482	01:001:0228	2499.596520000...	220.423779000000
11	2620882502	8265338	10675506	01:001:0062	2358.545390000...	198.711417000000
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13	2620883501	8265376	10675584	02:001:0065	19995.17984000...	945.281373000000
14	2620883501	8265377	10675594	02:001:0066	6853.862490000...	329.029768000000
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16	2620884001	8265409	10675626	01:004:0035	6255.830150000...	395.889746000000

Пространствен... ?

Выбрать объекты в слое

▼

Только выделенные объекты

Где объект

Пересекает ▼

Объекты слоя

▼

Только выделенные объекты

Результат запроса

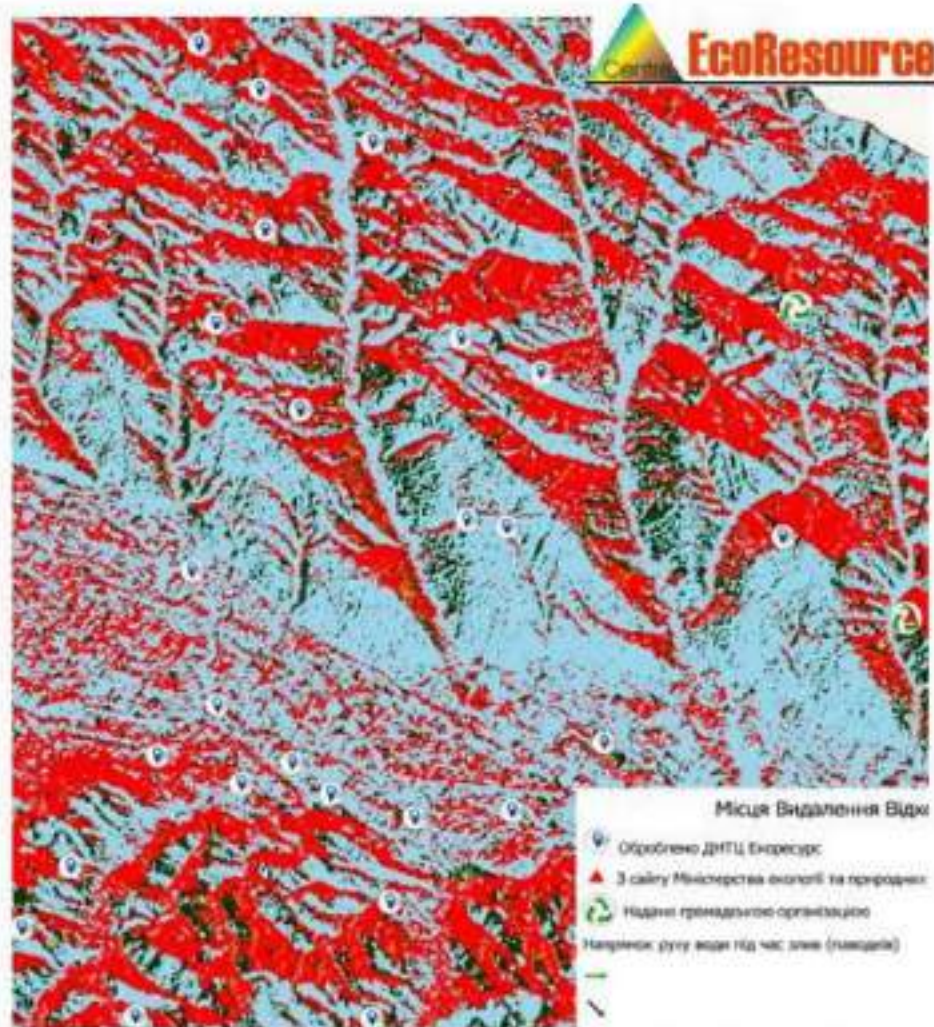
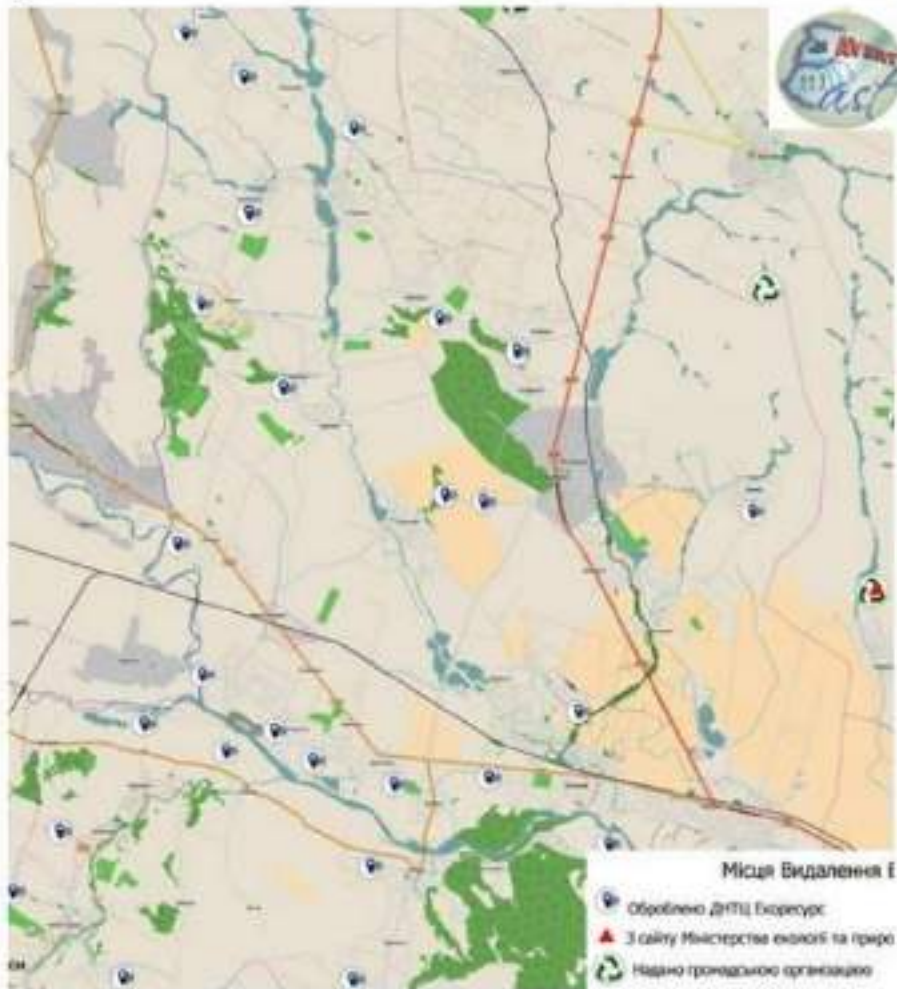
Создание нового выделения ▼

Обработка 2/2 - 6%

Закреть Применить

ROJECT MIS ETC 966

Decisions making for Waste accumulations (landfills, dumps, burial grounds for animals etc.) placement & risks caused



by actual danger of flash floods from slopes (on Stormwater nature), which are provoked by Climate Change

ДСТУ 3910-99
(ГОСТ 17.9.1.1-99)

ДЕРЖАВНИЙ СТАНДАРТ УКРАЇНИ

ОХОРОНА ПРИРОДИ
ПОВОДЖЕННЯ З ВІДХОДАМИ
КЛАСИФІКАЦІЯ ВІДХОДІВ

Порядок найменування відходів
за генетичним принципом
і віднесення їх до класифікаційних категорій

ОХРАНА ПРИРОДЫ
ОБРАЩЕНИЕ С ОТХОДАМИ
КЛАССИФИКАЦИЯ ОТХОДОВ

Порядок наименования отходов
по генетическому принципу
и отнесения их к классификационным категориям

NATURE PROTECTION
WASTE TREATMENT
WASTE CLASSIFICATION

Order of waste denomination
according to their genesis
and their reckon with classification categories

Чинний від 2001-01-01

ВИЯВЛЕННЯ ВІДХОДІВ
І ПОДАННЯ ІНФОРМАЦІЙНИХ ДАНИХ
ПРО ВІДХОДИ

Загальні вимоги

ОХРАНА ПРИРОДЫ.
ОБРАЩЕНИЕ С ОТХОДАМИ

ВЫЯВЛЕНИЕ ОТХОДОВ
И ПРЕДСТАВЛЕНИЕ ИНФОРМАЦИОННЫХ ДАННЫХ
ОБ ОТХОДАХ

Общие требования

NATURE PROTECTION
WASTE TREATMENT
WASTE DETECTION

AND SUBMISSION OF THE INFORMATION
DATA ABOUT WASTE

General requirements

Чинний від 2001-01-01

using actual in UA & MD
Standards harmonized
with AC

ДСТУ 2195-99
(ГОСТ 17.9.0.2-99)

ДЕРЖАВНИЙ СТАНДАРТ УКРАЇНИ

ОХОРОНА ПРИРОДИ.
ПОВОДЖЕННЯ З ВІДХОДАМИ

ТЕХНІЧНИЙ ПАСПОРТ ВІДХОДУ

Склад, вміст, виклад
і правила внесення змін

ОХРАНА ПРИРОДЫ.
ОБРАЩЕНИЕ С ОТХОДАМИ

ТЕХНИЧЕСКИЙ ПАСПОРТ ОТХОДА

Состав, содержание, изложение
и правила внесения изменений

NATURE PROTECTION
WASTE TREATMENT

TECHNICAL CERTIFICATE OF WASTE

Make-up, content, writing
and alteration rules

Чинний від 2001-01-01



Programme funded by the
EUROPEAN UNION

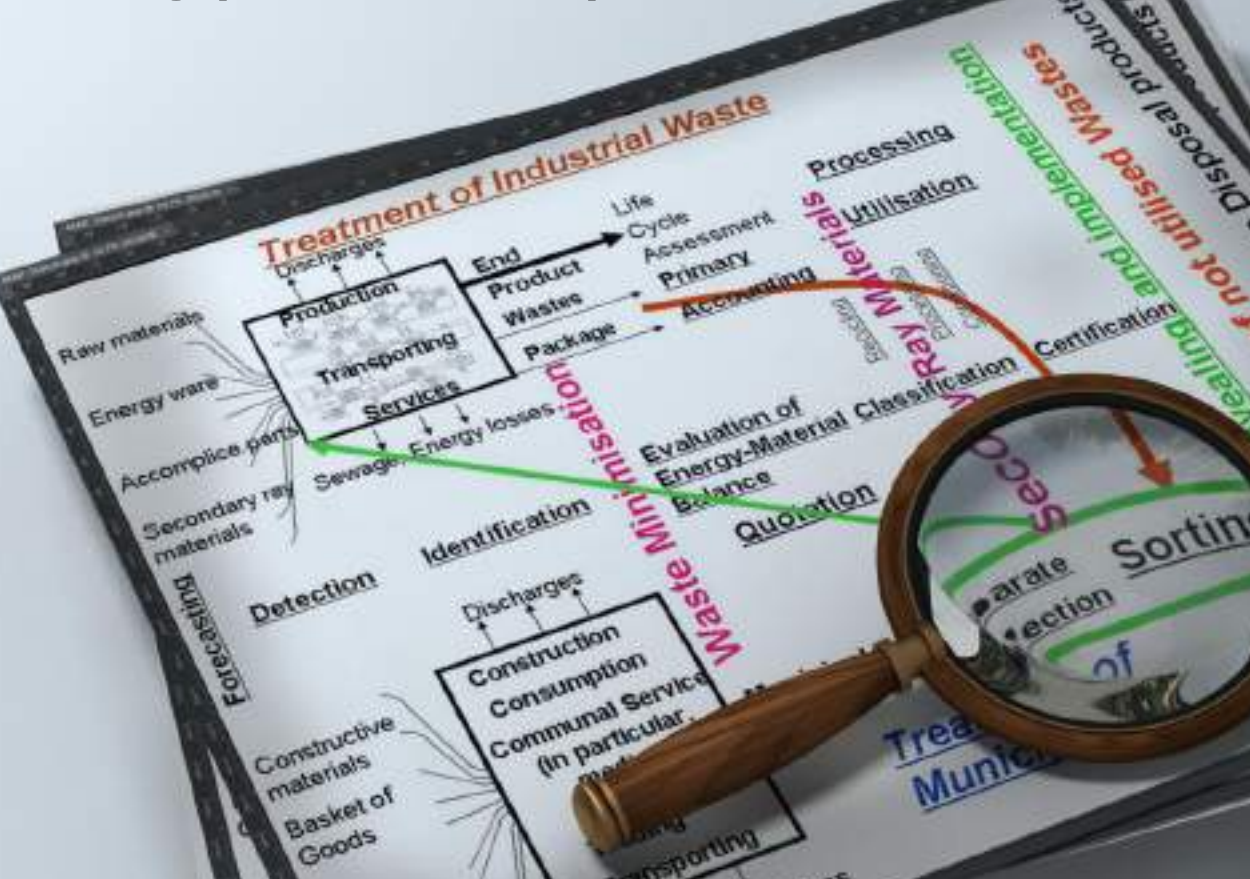


România-Ucraina-Republica Moldova
PROGRAM DE COOPERARE TRANSFRONTALIERĂ



EcoResource

Transfrontier collaboration for establishment of efficient System for Municipal and Industrial Waste Treatment on the basis of their Sorting (SMIWASTRES)



through other appropriate EUSDR priority projects,
 EcoResource

for EUSDR principal project Cross-border cooperation on establishment of effective system of sorting waste products, farm waste and municipal waste on the base of the best available techniques (BAT)"



which provide step-by-step transformations



FROM DISPARITY



**TO CONVERGENCE
OF REGIONAL
ENVIRONMENTAL &
ANTHROPOGENIC
SPHERES**

These developments of GIS grounded integrated Water Policy – Flood Risks – Pollution Prevention Management can serve as a basis for synergic transfrontier & national projects selection & implementation accordingly to common priorities of EUSDR, Alpine & Carpathian Conventions and other available international toolkits for Sustainable Regional Development

see examples of binding projects & initiatives, which simultaneously answering to EUSDR Priority Areas (PA) & Carpathian Convention Articles (Art)



Romania-Ukraine-Republic of Moldova
CROSS BORDER COOPERATION



EcoResource

TEN-T completion by Via Carpathia and Transit path Ukraine



PA 1 -
Art. 5, 8



PA 2 -
Art. 10



PA 3 -
Art. 9, 11



PA 4 -
Art. 6



PA 5 -
Art. 5, 12



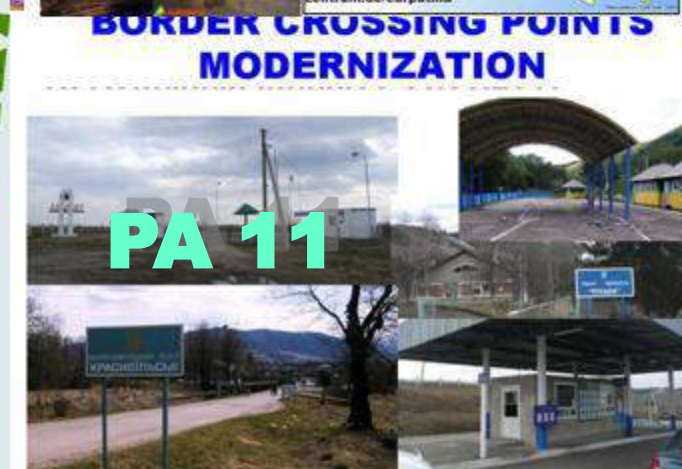
PA 6 -
Art. 4, 5, 7



PA 7,9
Art. 13



PA 8, 10 -
Art. 5



PA 11

Examples of Acquis Communautaire acts, foreseen by the EU Association Agreements with UA & MD, which implementation mechanisms can be fine-tune through appropriate projects under the EUSDR Priority Areas

<p>(EC)1315/2013 on Union guidelines for development of TEN-T 91/440/EEC on the development of the Community's railways 2001/14/EC on the allocation of railway infrastructure capacity 2008/57/EC on interoperability of the rail system</p> <p style="text-align: center; color: green; font-weight: bold;">PA 1b</p>	<p>(EC) 1228/2003 on conditions for access to network for cross-border exchanges 2006/32/EC on energy end-use efficiency and energy services 2004/8/EC on the promotion of cogeneration</p> <p style="text-align: center; color: green; font-weight: bold;">PA 2</p>	<p>Association Agreement between European Union and its Member States and Ukraine TITLE V ECONOMIC AND SECTOR COOPERATION CHAPTER 16 TOURISM CHAPTER 24 CULTURE</p> <p style="text-align: center; color: green; font-weight: bold;">PA 3</p>
<p>2000/60/EC establishing a framework for Community action in the field of water policy 91/271/EEC on urban waste water treatment 98/83/EC on quality of water intended for human consumption</p> <p style="text-align: center; color: green; font-weight: bold;">PA 4</p>	<p>2007/60/EC on the assessment and management of flood risks 91/676/EC concerning the protection of waters against pollution; 96/82/EC on control of major accident hazards involving dangerous substances</p> <p style="text-align: center; color: green; font-weight: bold;">PA 5</p>	<p>2008/98/EC on waste 2006/21/EC on the management of waste from extractive industries; 2010/75/EU on industrial emission (integrated pollution prevention and control)</p> <p style="text-align: center; color: green; font-weight: bold;">PA 6</p>
<p>Association Agreement between European Union and its Member States and Ukraine Title V Economic & Sector Cooperation CHAPTER 9 Cooperation in Science & Technology CHAPTER 23 Education, Training & Youth</p> <p style="text-align: center; color: green; font-weight: bold;">PA 7, 9</p>	<p>Association Agreement between European Union and its Member States and Ukraine TITLE V ECONOMIC AND SECTOR COOPERATION CHAPTER 10 INDUSTRIAL AND ENTERPRISE POLICY</p> <p style="text-align: center; color: green; font-weight: bold;">PA 8, 10</p>	<p>Association Agreement between European Union and its Member States and Ukraine Article 16 Cooperation on migration, asylum and border management</p> <p style="text-align: center; color: green; font-weight: bold;">PA 11</p>



CONSILIUL EUROREGIUNII
„PRUTUL DE SUS”
REZOLUȚIA Nr. 85-R

РАДА ЄВРОРЕГІОНУ
«ВЕРХНІЙ ПРУТ»
РЕЗОЛЮЦІЯ № 85-R

„Cu privire la integrarea activității Euroregiunii „Prutul de Sus” în Strategia UE pentru regiunea Dunării

«Про інтегрування діяльності Єврорегіону «Верхній Прут» до Стратегії ЄС для Дунайського регіону»

mun. Bălți

14 mai 2014

м. Белш

14 травня 2014 року

Conducându-se după art. 3-6 și 8.1 din Acordul privind crearea Euroregiunii „Prutul de Sus”, capitolul 8 din Statutul Euroregiunii, Declarațiile Summit-urilor de la București ale celor 14 țări din regiunea Dunării din 30.04.2001 – pentru mediu și dezvoltarea durabilă a regiunii Carpato-Dunărene și din 08.10.2010 și Concluziile Consiliului UE din 13.04.2014 privind Strategia UE pentru regiunea Dunării (în continuare – EUSDR), Consiliul Euroregiunii însărcinează pe Președintele în Exercițiu al Consiliului:

Керуючись положеннями статей 3-6 і 8.1 Угоди про утворення Єврорегіону «Верхній Прут», розділу 8 Статуту Єврорегіону, Декларацій Бухарестських Самітів 14 країн Дунайського регіону від 30.04.2001 - з довідки і сталого розвитку Карпатсько-Дунайського регіону і від 08.10.2010 та висновків Ради ЄС від 13.04.2014 - щодо Стратегії ЄС для Дунайського регіону (надалі EUSDR) Рада Єврорегіону доручає Виконавчому Голові Ради:

1. de comun acord cu membrii Euroregiunii să înainteze propuneri către guvernele celor 3 țări privind:

1. узгоджено з членами Єврорегіону внести пропозиції до Урядів 3-х країн:

1.1 selecția și promovarea comună prin lobby a proiectelor transfrontaliere fundamentale, care corespund domeniilor prioritare ale EUSDR, inclusiv ținând cont de experiența părților ucraineană și română conform Convenției-cadru privind protecția și dezvoltarea Carpaților (în continuare – Convenția Carpatică);

1.1 щодо спільного відбору та лобювання ключових транскордонних проектів, які відповідають пріоритетним сферам EUSDR, а урахуванням також напрацювань української та румунської сторін за Рамковою конвенцією із захисту та сталого розвитку Карпат (надалі Карпатська конвенція);

1.2 oglindirea la următorul Forum EUSDR de la Viena (Austria) din 26-27 iunie 2014 a inițiativelor de susținere cu prioritate a unor astfel de proiecte prin instrumentele disponibile ale politicii regionale și politicii de vecinătate a UE și de extindere a proiectelor similare și asupra bazinului râului Nistru;

1.2 щодо висвітлення на черговому Форумі EUSDR у м. Відні (Австрія) 26-27 червня 2014 року ініціатив щодо пріоритетної підтримки таких проектів наявними інструментами регіональної політики і політики сусідства ЄС та про поширення дії таких проектів також і на басейн р. Дністер;

These prospective opportunities for synergic EU association projects've stimulated initiative on spreading EUSDR activities also on the whole Dnister/Nistru basin in Ukraine and Republic of Moldova,



EcoResource



Lviv

Ternopol

Khmel'nitsky

Vinnitsa

Oblasts of Ukraine



**and enlargement
further also
on Dnipro basin**

**Spreading
EUSDR projects
for whole Dnister
/Nistru basin
in Ukraine & Moldova**





Буковель
Яремче
Ukraine

Коломия

**Association of regions,
cities & territorial
communities
of river Prut
basin**

Вижницька
Кутська ОТГ
Вашківецька і
Снятинська ОТГ

Чернівців

Мамалига
Ліпсані
Briceni
Ocnița

Botoșani

Edinet
Rișcani
Glodeni

Fălești

Iași

Ungeni

Moldova

**with perspective of
further enlargement for
basins of Siret & Dnister**

Romania

Leova

Ukraine

Cahul

Giurgiulești
Рені

Galati



bringing together opinions of public society,



professionals & authorities



СПІЛЬНИМИ ЗУСИЛЛЯМИ !



VIRIBUS UNITIS !

ЧЕРНІВЕЦЬКА МІСЬКА РАДА

10.10.2012



Офіційний веб-портал

EAST AVERT



Thanks for your attention!

zinoviy.broyde@gmail.com

