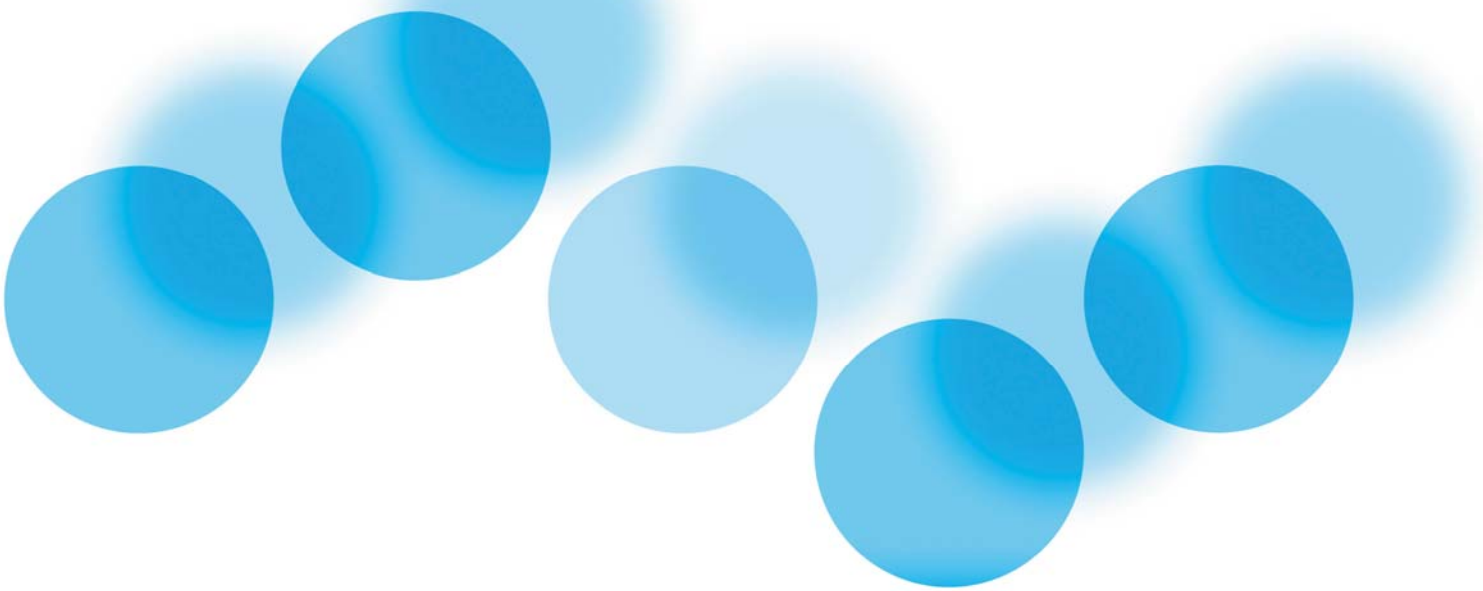
UNDP I GEF
DANUBE
REGIONAL
PROJECT

December 2006

PRUT RIVER BASIN MANAGEMENT - CASE STUDY

FINAL REPORT



UNDP GEF

WORKING FOR THE DANUBE AND ITS PEOPLE

AUTHORS

PREPARED BY:

Centre for Environmentally Sustainable Economic Policy

AUTHORS:

Oana Islam

Anca Savin

Tatiana Belous

CENTER FOR ENVIRONMENTALLY SUSTAINABLE ECONOMIC POLICY

Adress: 7, Magheru Bvd., Bucharest, 1.

Tel/Fax: +40 21 4120069

PREFACE

This document is the Final Report of the Project, covering the period March to December 2006 and carried out with the frame of the UNDP GEF Danube Regional Project (DRP).

The overall goal of the DRP is to strengthen the capabilities of Danube countries for reducing nutrient and toxic pollution and to improve transboundary cooperation in the most international river basin in the world – the Danube River Basin (DRB). The DRP is implemented in 13 DRB countries and the International Commission for the Protection of the Danube River (ICPDR) plays the co-implementing role of the project. Special efforts and assistance is provided by the DRP to the lower DRB countries, with the development of policies and legislation, but also with pilot programmes for pollution reduction, in line with EU legislation.

This specific assignment is directed at strengthening the capacity of the Prut river basin countries, specifically Romania, Moldova and Ukraine, Contracting Parties to the ICPDR, to develop the necessary steps with regards to the development of the Prut river basin management.

The concept of cross border cooperation as already implemented in other regions in the Danube River Basin (Sava, Tisza) offers a much wider scope for the exchange of data and information, methodologies, best practices, especially with regard to the integrated development of shared basin and nutrient reduction. The work will build on earlier studies and will improve the linkages between key EU policy instruments including, Water Framework Directive, IPPC, Nitrates Directive and the Common Agricultural Policy etc., within the Prut basin.

The outputs and outcomes from this project will be utilized and further developed in the context of the development of the basin wide Danube River Basin Management Plan.

The Project will assist the Prut river basin countries with the development of a regional approach to the development of the river basin management plan, in line with the EU WF and the countries commitments to the ICPDR. The ICPDR is the coordinating platform of the development of the Danube River Basin Management Plan.

The project addresses the following outputs of the Danube Regional project:

No.	Danube Regional Project Output
1.1	Development and implementation of policy guidelines for river basin management
1.2	Reduction of nutrients and harmful substances from agricultural point and non-point sources through agricultural policy changes
1.8	Recommendations for the reduction of phosphorus in detergents
3.3	Awareness raising campaigns on nutrient reduction & control of toxic substances
3.4	Public Participation / Access to Information

The following Components/Tasks are included in the Project:

⇒ Component 1: Prut River Basin Management Plan

⇒ Component 2: Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities

⇒ Component 3: Changing consumer behaviour due to the introduction of phosphate free detergent into the market

⇒ Component 4: Dialogue, partnerships and networking

Each individual component includes several activities to perform.

The Final Report presents:

- Description of the tasks
- Results
- Challenges
- Lessons learned
- Next steps

The report includes a CD with:

- The Final Report in word format
- National Technical Reports for each of the Prut countries
- Presentations at the workshops
- Pictures from the implementation of the Project

TABLE OF CONTENT

ABBREVIATIONS

AISE	Association internationale de la savonnerie, de la détergence et des produits d'entretien (the official body that represents the soap, detergent and maintenance products industry within Europe)
BAP	Best Agricultural Practice
CEE	Central and Eastern Europe
daNUbs	Nutrient Management in the Danube Basin and its Impact on the Black Sea
DRB	Danube River Basin
DRP	Danube Regional Project
DRPC	Danube River Protection Convention
EG	Expert Group
EMIS EG	Emissions Expert Group
EPER	European Pollutant Emission Register
E PRTR	European Protocol on Pollutant Release and Transfer Registers
EU	European Union
EU WFD	EU Water Framework Directive
GEF	Global Environment Facility
GIS ESG	Expert Sub-group on Cartography and GIS
GIS	Geographical Information System
GAP	Good Agricultural Practice
ICPDR	International Commission for the Protection of the Danube River
IPPC	Integrated Pollution Prevention and Control
MLIM EG	Expert Group on Monitoring, Laboratory and Information Management
MA EG	Monitoring and Assessment Exert Group
MONERIS	Modelling Nutrient Emissions into River Systems
PoM	Programme of Measures
P&M EG	Pressures and Measures Expert Group
RBM EG	Expert Group on River Basin Management
UNDP	United Nations Development Programme
RBMP	River Basin Management Plan
RR	Roof Report
TNMN	Trans National Monitoring Network
WB	World Bank

1. Project General Objective

The overall objective of this project is to initiate and support the development of the Prut river basin management plan in line with the WFD and as identified in output 1.1 of the DRP.

The project goal is to facilitate a regional approach to the development of the Prut River Basin Management Plan, in line with EU WFD, by addressing common issues that are designed to achieve specific environmental objectives for Prut River basin and interest the three countries: transboundary water management, pollution reduction, flow of information and best practices to the public and, public participation in the making decision process.

The Prut river basin is an internationally significant river system, part of the Danube River Basin, which is in need of a coordinated regional effort to develop harmonized regional policies for integrated water management and nutrient reduction.

2. PROJECT MAIN CONCLUSIONS

The main project conclusions can be grouped as follow:

A. Understanding the importance of the WFD implementation and international agreements obligations

Romania had the obligation to implement in line with the accession agreement, while Moldova has individual action plan of cooperation with EU, with the target period 2005-2007. Moldova is attempting to meet the requirements of the WFD and has progressed jointly with Romania, with whom Moldova shares a border – Prut River - in undertaking the required work to prepare the necessary information collection and assessment for reporting under WFD. Ukraine is at the beginning of preparing the necessary internal structures and management arrangements for WFD implementation and has discussed with the ICPDR and the UNDP Danube Regional Project potential assistance in capacity building related to the WFD implementation.

All three Prut countries have committed to implement the Water Framework Directive (WFD) and agreed that the ICPDR plays the coordinating platform for carrying out the necessary steps towards the development of the Danube River Basin Management Plan (Danube RBMP).

B. Joint commitment to undertake the work and acceptance of the approach

The project facilitated the coordination at the various stages to meet the obligations of the WFD through a regional approach to the development of the Prut River Basin Management Plan, in line with EU WFD, by addressing common issues that are designed to achieve specific environmental objectives for Prut River basin and interest the three countries:

- transboundary water management
- pollution reduction
- flow of information and best practices to the public and,
- public participation in the making decision process.

C. Opportunities for testing practical application of methodologies

The project offered opportunities for testing practical application of methodologies, concepts and dialogue approaches for the development of Prut RBMP through effective trilateral cooperation. Concepts for the Recommendations for Best Agricultural Practices (BAP) have been introduced at the farms in the Prut river basin.

The farmers found the information about the good agricultural practices and related advantages and benefits extremely useful. The dialogue between the water authorities and the farmers has been improved. The informative package distributed to the farmers was considered as useful and it will serve for training purposes for the extensions services at the farms.

D. Awareness-raising and dissemination activities

Target audience along the project implementation included water and environmental authorities, farmers associations, farmers, detergent industry, consumers, NGOs, the public at large.

Assistance on adapting policy objectives and measures to WFD/CAP context, through and information targeted at all stakeholders levels from farmers to policy-makers on the use of chemicals and pesticides was very useful.

Through the project web page and informative documents a mechanism has been created in order to enable the public access to information, communication and actively participation to the decision process for the development of the Prut RBMP.

E. Partnership with all relevant stakeholders and networking

The project offered the opportunity to organize partnership with all relevant stakeholders, on developing mechanisms, which enable changes of consumer behaviour in using only phosphate-free detergents for household and industrial use.

3. SUMMARY

According the contract between DRP and CESEP the Consultant had started the work on 1st of March 2006 and completes the Services by 31 December 2006. An Inception Report has been delivered by May 2006. The inception report introduced the results and findings of the project implementation, the approach agreed, the working structure and the work program remaining as discussed by the project team. Three Progress reports were delivered in the period May- November 2006.

The final report includes findings of all project phases, and therefore it also includes information contained in the Inception Report as well as in the Progress Reports. The Progress Reports were built on the structure of the Inception Report but completing with the specific components results implemented in the specific reporting period.

The Summary of the Final Report includes the following chapters, which are described below:

- Description of the tasks
- Results
- Challenges
- Lesson learned
- Next steps

3.1. Description of the tasks

The project goal is to facilitate a regional approach to the development of the Prut River Basin Management Plan, in line with EU WFD, by addressing common issues that are designed to achieve specific environmental objectives for Prut River basin and interest the three countries: transboundary water management, pollution reduction, flow of information and best practices to the public and, public participation in the making decision process.

The activities of this Project have been targeted at:

⇒ Component 1: Prut River Basin Management

⇒ Component 2: Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities

⇒ Component 3: Changing consumer behaviour due to the introduction of phosphate free detergent into the market

⇒ Component 4: Dialogue, partnerships and networking

Within this project there are key specific tasks grouped under the four components described in the project Workprogram:

(1) to practical assess the progress, the gaps and needs in the three Prut countries on the WFD implementation, in line with the ICPDR requirements for the development of the Roof Report and following steps for the development of the integreated Prut River basin management plan.

(2) to create an opportunity for testing practical application of methodologies, concepts and dialogue approaches for the development of Prut RBMP, effective trilateral cooperation, networking at all levels.

(3) to provide policy advice on the implementation of the WFD, through the development of the Prut RBMP.

(4) to provide assistance on adapting policy objectives and measures to WFD/CAP context, through awareness-raising and information targeted at all stakeholders levels from farmers to policy-makers on the use of chemicals and pesticides.

(5) to organize partnership with all relevant stakeholders, on developing mechanisms which enable changes of consumer behaviour in using only phosphate-free detergents for household and industrial use.

(6) to develop mechanism which enable the public access to information, communicate and actively participate in the decision process for the development of the Prut RBMP. Target audience includes local and central water authorities, farmers associations, farmers, detergent industry, consumers, NGOs, the public at large.

3.2. Results

As indicated in the WFD Roof report 2004 of the ICPDR, the coverage of the Prut states in the Danube River Basin River, Moldova has a share of 35.6 %, Romania has 97.4 % and Ukraine covers 5.4 % of the whole territory.

According to the Article 13 and Annex VII, the implementation tool of the WFD is the Management Plan of river basin/river basin district, which is based on the status of water bodies, establishes the target objectives for 6 years and proposes program of measures for reaching the 'good status" of water.

The wide diversity of the abilities of Romania, Moldova and Ukraine with regards to the Prut river basin management offered the opportunity for tri-lateral cooperation.

The implementation of the project helped the three involved countries to embarrass a regional approach to the development of the Prut River Basin Management Plan, in line with EU WFD.

Issues of common concern were addressed: transboundary water management, pollution reduction, flow of information and best practices to the public and, public participation in the making decision process.

The project created an opportunity for discussing and testing practical application of methodologies, specifically the Best Agricultural Practice at a farm in the basin.

The concepts for undertaking next steps in the development of Prut RBMP were clarified. This contributed to a large extent to increase the awareness on the importance of the WFD implementation as well as of the commitment of the Governments Moldova and Ukraine to encourage and support the implementation of the EU Directives.

The dialogue for the development of the RBMP proved to be useful in achieving an effective trilateral cooperation and networking at all levels.

The investigations carried out in Moldova and Ukraine linked to the project tasks provided a clear picture on the current status of data collection needs, assessment tools and methodologies to facilitate an harmonised approach for the development of the RBMP for Prut basin. The investigations clearly show that there are still gaps in data collection and in the availability of approaches and methods to carry out the tasks of Art. 5 of the WFD, as well others linked to the economic analysis.

The project also identified that there is still much to do on raising awareness in all three countries on the importance of nutrient reduction and introduction of P-free detergent.

Finally, the project proved to be an useful tool for enabling the public access to information, communication and actively participation in the decision process for the development of the Prut RBMP. This has been shown during the meetings organised in the Prut countries as well through the evidence on people accessing the project page web page as well the from the responses received from the surveys administered during the project implementation.

3.3. Challenges

One of the main challenges for the Project was to establish a dialogue and to improve the involvement and commitment of all Prut countries in the development of the Prut River Basin Management Plan.

More specifically the Project had supported the competent authorities in charge with the elaboration of the Prut RBMP in identifying the remaining gaps in data collection, in the availability of the methodologies and tools needed but also in clarifying the responsibilities associated with the deliverance of various tasks. Also the project had the challenge to reach an improved understanding on the need to introduce the Best Agricultural Practices and find ways to convince the farmers on the economic advantages to the prosperity of the farmers in addition to the environmental benefits.

Finally one key challenge is seen that the project had to deal with an important issue - the reduction of P-free detergent in the Prut countries and linked to this to raise awareness of population on the benefits of P reduction in the basin.

The Project had experienced a general need of having the competent environmental and water authorities in Moldova and Ukraine more aware on the need to support the WFD implementation through increasing the human resources and financial support for the respective work.

3.4. Lessons learned

The concept of cross border cooperation as already implemented in other regions in the Danube River Basin (Sava, Tisza) offered for Prut countries a good occasion to exchange data and information, methodologies, best practices, especially with regard to the integrated development of shared basin and nutrient reduction through various tools, such as P-free detergents.

Discussions organized at the farm Berezeni shown the need to establish a close dialogue with the farmers and agricultural society. Additionally the need for organising extension services to better be informed on the advantages of the introduction of the BAP for both the farmers as well as for the economic development of the region.

Some key technical gaps for WFD implementation were identified:

- insufficient legal framework for the introduction of BAP and BAT (Moldova and Ukraine)
- setting priorities for the government in supporting the WFD implementation (Moldova and Ukraine)
- financial support to facilitate data collection and assessment (Moldova and Ukraine)
- need for standards, methodologies and tools for undertaken specific analysis
- absence of legal background for the use of pesticides and toxic chemicals in agricultural production (Ukraine).

- need to improve the current monitoring system to allow control of diffuse pollution control (Moldova, Ukraine, Romania)
- urgent need to allocate sufficient human resources and funds to undertake the needed work (Moldova and Ukraine)
- need to allocate time and funding for improving the dialogue and training of the farmers in the Prut basin.

3.5. Next steps

The next steps following the project finalisation cover:

- Urgent need to adapt the legal framework to the requirements of the WFD (Moldova and Ukraine)
- The necessity to establish the enforcement mechanisms and human resources capable to follow the implementation of the EU legislation
- Complete the missing parts in the National Reports and submit to the ICPDR the information collected during the cooperation among all thee countries
- Follow up on the exchange of information with Romania for finalising the required tools and methodologies for WFD process

Identification of the main

1. administrative,
2. institutional and
3. funding **deficiencies**

and to propose **priority reform measures** for policies which are expected to best support the integration of environmental concerns into farm management ("best agricultural practices"), including improvements in the

a. handling of manure and sludge from livestock operations,
b. minimization of use of chemical fertilizers and pesticides,
c. promotion of improved tillage methods,
d. management of restored wetlands and
e. creation of buffer zones as well as
f. farmer education and outreach activities.

(focus on a, b and f)

It is important to identify long-term solutions taking into account important EU policy drivers (CAP, Nitrates Directive, Water Framework Directive, Support Schemes e.g. SAPARD).

The inputs from the countries and the discussion on the workshop will be collected into a report:

Recommendations for BAP in the 7 Lower DRB Countries

4. Approach of the Work

The Danube Regional Project (DRP) has been established to contribute to the sustainable human development in the Danube River Basin (DRB) through reinforcing the capacities in the basin to develop effective co-operation to ensure the protection of the Danube River. The objective of the DRP is to complement the activities of the International Commission for the Protection of the Danube River (ICPDR) to provide a regional approach to the development of national policies and legislation and the definition of actions for nutrient reduction and pollution control in the DRB.

The tasks of the ICPDR are mandated by the "Convention on Cooperation for the Protection and Sustainable Use of the Danube River" (Danube River Protection Convention, DRPC). From this Convention also derive the responsibilities of the ICPDR to elaborate and implement joint programmes for monitoring the riverine conditions in the Danube River Basin (Article 9).

This project represents an activity supporting 2 of DRP's 4 project objectives:

Objective 1: Creation of sustainable ecological conditions for land use and water management;

Objective 3: Strengthening of public involvement in environmental decision-making and reinforcement of community actions for pollution reduction and protection of ecosystems.

In order to achieve close project monitoring, along the project implementation, a project Steering Committee (SC) was created.

The SC provided a high –level oversight function for project implementation, in line with UNDP/GEF DRP requirements. It did therefore ensure full integration of project development into Prut integrated water resources management activities and provided a holistic and well-coordinated management platform.

The SC met approximately every 3 months to review project progress and agree to the proposed project deliverables for the following 3 months.

The SC was chaired by Head of WFD implementation Directorate in Prut basin, Romania, Anca Savin, and Dr. Dumitru Drumea, the Head of Delegation of Moldova, to the ICPDR, as vice- chair. The SC also included permanent members: Oana Islam (Director CESEP Romania), Gheorghe Constantin (Director in the Ministry of Environment and Water Management, Romania), Dr. Tatiana Belous (Director ECOS Moldova), and Kyryl Sereda (Deputy Head of Department for Water Resources and Ecosystems, Ukraine).

According to the topic of the discussions of the meetings, representatives of stakeholders and other relevant institutions from the three countries have been also invited.

5. PROJECT TASKS

5.1. Initiate and support the development of the Prut River Basin Management Plan

5.1.1. Methodology

A methodology was developed which relates to the Component 1, and specifically, the Activity 2, "Contribution to the WFD implementation process: Overview of the current situation concerning the Development of Prut river basin management plan: needs, gaps, expectations and steps to be undertaken".

All three countries have prepared national reports on the overview of the situation regarding the ongoing efforts undertaken by all countries towards WFD implementation, including gaps and uncertainties, and steps to be taken to overcome the current difficulties. The national overview reports follow the guidelines prepared by the project coordinator CESEP. All project partners have agreed with the methodology during the first Steering Committee Meeting.

The national reports were discussed at the first workshop, organised in Chisinau, Moldova, on 25 May 2006.

A final wrap up report was prepared based on the national contributions and discussions at the workshop.

The steps undertaken within Activity 2 included:

Activity 2. Contribution to the WFD implementation process: Overview of the current situation concerning the Development of Prut river basin management plan: needs, gaps, expectations and steps to be undertaken".	
2.1. Collect and compile data and information on the status of WFD implementation in the three countries	• Information on the current status of the development of Prut River Basin Management Plan in all three countries gathered
2.2. Conduct analysis to identify information and data gaps	• Gaps in existing information sources for the tasks of the Prut RBMP, in line with WFD, identified
2.3. Workshop April 2006, Chisinau, Moldova, WFD implementation in the Prut basin: assessment of the current status and future steps presented.	• Proposal for consultation and input received from SC and stakeholders at the workshop incorporated into a component report.

The approach accepted by the Steering Group is based on the results of the work being undertaken by the ICPDR on the development of the Roof Report 2004. The International Commission for the Protection of the Danube River (ICPDR) is the implementing body under the "Convention on Cooperation for the Protection and Sustainable Use of the Danube River" (Danube River Protection Convention, DRPC) and serves as the platform for coordination to develop the Danube River Basin Management Plan (DRBMP).

In line with the ICPDR guidelines, the development of the Danube Basin Management Plan will be based on two parts, A and B. Part A (roof report) gives the basin-wide overview; Part B (national

reports) gives all relevant further information on the national level as well as information coordinated on the bilateral level

The Roof report includes, in particular, an overview of the main pressures in the DRBD and the related impacts exerted on the environment. The contents of the Roof report results from the work of the ICPDR expert groups and has been approved by the ICPDR at its Ordinary Meetings. The issues referred to in the basin-wide overview will be the basis for the preparation of the Danube River Basin Management Plan by the end of 2009. The Roof report provided an overview of the situation in the Danube river basin district as a whole and set the frame for the understanding of the detailed national reports.

5.1.2. Results

The Prut River, a tributary of the Danube, is 953 km in length, the first 211 km of the river is on Ukrainian territory, 31 km represents border between Romania and Ukraine, and the remaining 711 km represent a natural border between Romania and Moldova.

The wide diversity of the abilities of Romania, Moldova and Ukraine with regards to the Prut river basin management offers the opportunity for tri-lateral cooperation.

The coverage of the Prut states in the Danube River Basin River shows that Moldova has a share of 35.6 %, Romania has 97.4 % and Ukraine covers 5.4 % of the whole territory.

Romania has the obligation to implement Water Framework Directive (WFD) in line with the accession agreement, while Moldova has individual action plan of cooperation with EU, with the target period 2005-2007. Moldova is attempting to meet the requirements of the WFD and has progressed jointly with Romania, with whom Moldova shares a border (Prut river), in undertaking the necessary work to prepare the necessary information collection and assessment for reporting under WFD. Ukraine is at the beginning of preparing the necessary internal structures and management arrangements for WFD implementation and has discussed with the ICPDR and the UNDP Danube Regional Project potential assistance in capacity building related to the WFD implementation.

Through out the Project the competent authorities in all three countries have agreed on the necessity to exchange data, information and methodologies, mainly with Romania where the work planned to be finalised at the end of 2004 was completed.

The project team have identified based on the conclusions of the national contributions from each country, the short and long-term solutions taking into account important EU policy drivers, in particular the WFD, which will influence the water management policy in the three Prut countries.

The project results also support, in partnership with all relevant stakeholders in Romania, Moldova and Ukraine, the elaboration of their contributions to the development of the Prut RBMP and mainly assist Moldova and Ukraine in meeting their obligations to the ICPDR and international agreements. The project outputs are also beneficial for Romania to ensure the completion of the integrated Prut river basin management, in line with its obligations towards the EC and ICPDR.

The national reports for Prut countries have different level of details and therefore, through this project the current status of the national implementation has been assessed, the needs and the gaps identified for each individual Prut country. Finally, within the frame of this component the ways to ensure the completion of national tasks have been proposed.

The project had also identified the necessary steps to give all relevant further information on the national level as well as information coordinated on the bilateral level required at Prut sub-basin level between the Prut countries, and based on the bilateral agreements in force in the basin.

In addition, transboundary issues that are relevant for the development of the Prut River Basin Management Plan were also considered according to the work on the bilateral/multilateral Prut river agreements. Based on the findings of this component, national information are now available in addition to the information provided so far for both Part A and B.

During the project implementation, close coordination was ensured with the ongoing work undertaken by the UNDP GEF Danube Regional Project, especially the activities proposed by Moldova for a UNDP-GEF PDF A project on the Prut river basin.

Finally, the experiences within the ICPDR network of activities being undertaken on other Danube sub-basins (Tisza and Sava) was also considered.

An overview of the situation regarding the ongoing efforts undertaken by all countries towards WFD implementation, including gaps and uncertainties, and steps to be taken to overcome the current difficulties has been prepared and presented at the first workshop, organised in Chisinau, on 25 May 2006.

A summary report was prepared based on the national contributions and discussions at the workshop. The report was circulated to the central water authorities in the three Prut countries.

5.2. Reduction of nutrients and other harmful substances from agriculture through policy changes

5.2.1. Methodology

The project component **"Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities"** fits into the UNDP GEF DRP objective "Agricultural Policy: Reduction of nutrients and other harmful substances from agricultural point and non-point sources through agricultural policy changes".

The activities within this component were mainly aiming at increasing ecological awareness of population in the Prut river basin on issues related to the agricultural pollution and its effects and way to improve the farmers' behaviour and understanding on the benefits of implementing the best agricultural practices. However, to facilitate a clear and realistic picture and provide the farmers with enough background knowledge and information the project Steering Committee had decided to increase the level of effort under this component and produce relevant background documentation.

The ICPDR produced a Recommendation on the introduction of the BAT for agro-industrial units in the Danube countries. All countries were asked to implement it from January 2006 and report on its implementation. The UNDP GEF DRP has produced a concept on the BAP. The farm AGROIND Berezeni, located in the Prut basin, has been selected where the concepts on BAT and BAP were discussed during a workshop.

Experience accumulated in the World Bank project on controlling pollution from agriculture by Romania, Ukraine and Moldova will be very useful.

Using an innovative framework of the "INFORMATION DIALOGUE BOX" an assessment was carry out of the pertinence of the information available among farmers.

An innovative "REFLECTION MATRIX," was developed through an interview among farmers, farmers association and other involved stakeholders, to facilitate a better understanding of the land use options and water quality management strategies facing the stakeholders in the selected farming community.

Focus areas of the Component 2 was on the improvements in the handling of manure and sludge from livestock operations and minimization of use of chemical fertilizers and pesticides, as well as farmer education and promotion activities.

Each individual country had prepared national contributions based on the guidelines offered by the project coordinator.

This component included several activities, which are presented below, with their related indicator.

Activity	**Indicator**
Activity 3. Production of project documents for transboundary farm demonstration project to be implemented as part of the joint WFD/CAP reform implementation	
3.1. Develop project documents to address transboundary issues: diffuse pollution, excessive use of pesticides	• Project documents from each country
3.2. Assess the "knowledge gap" on the measures for the introduction of "best available techniques" and "best environmental practices" to achieve "good ecological" and "good chemical status".	• Gaps in existing information sources on the use of BAP and BAT at the selected farm identified • Options to address gaps assessed
Activity 4. Organize awareness raising campaign on the introduction of the BAT at selected farm AGROIND Berezeni, Prut basin	
4.1. Organize awareness raising campaign on the introduction of the BAT at Agro-industrial Units	• Published recommendation on BAT available. • Results of previous agricultural project compiled and disseminated • Input from stakeholders provided
4.2. Through the innovative "REFLECTION MATRIX," participate in a survey on the land use options and water quality management strategies facing the stakeholders in the selected farming community.	• REFLECTION MATRIX designed • Survey organized, face-to-face, with questionnaires designed, and results discussed in a report.
4.3. Assess the pertinence of the information from the survey using an innovative framework of the "INFORMATION DIALOGUE BOX".	• INFORMATION DIALOGUE BOX designed. • Indicators selected for the dialogue box: DRP reports, emission inventories, MONERIS model parameters, others.
4.4. Organize workshop in Romania, in the Prut basin, in May 2006. Prepare evaluation report based on the discussion.	• Report available for the component 2.

5.2.2. Results

Through the Component 2, Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities, Moldova, Ukraine and Romania have benefited from enhanced understanding on the impacts of the introduction of the Best Agricultural Practices at a selected farm in the Prut Basin: Farm Berezeni.

More specifically, for each Prut country, the main problems, legal, administrative, institutional and funding deficiencies were identified in relation to the agricultural sector in their respective national contribution.

Results and findings of these reports were discussed at the second project workshop organized at the farm location AGROIND Berezeni, located in the Prut basin on 3- 4 August 2006. The results were disseminated to farmer associations, governmental agencies, NGOs and research units. The results will be published in November 2006 through project web page, flyers and articles in the specialized magazines in each of the Prut countries. Experience accumulated in the World Bank project on controlling pollution from agriculture by Romania, Ukraine and Moldova was also disseminated.

The national reports identified that also in the Prut basin the animal farms are an important pollution source to all environmental factors. Removing animal residues from animal farms pollutes first the water and, if water is not decontaminated, it affects soils, too. Part of animal waste is used as natural fertilizer. Waste management had to deal with large amounts of manure from livestock farms. Residues from animal farms affect environment. Currently, soil pollution is not monitored on a regular basis in the Prut countries.

Farmers would gain by protecting the environment since it is in their own economic interest to preserve natural resources for the future. Therefore, environmental measures could be considered marketing instruments since they can create new markets for ecological agricultural products.

The farmers in the Prut basin are not very much concerned with ecological farming.

Still, due to lack of funding the consumption of pesticides and fertilisers is very low. The products they sell on the peasant market are considered somewhat ecological and sold at better prices than products sold in some state or private stores.

Farmers are not obliged to label their products and testify in any way that their products are ecological, meaning that they did not use any chemical fertilizers or pesticides or treated seeds etc.

When the economic situation will be improved, farmers and consumers become aware of environmental problems; the demand for ecological products will increase and thus determine the supply.

Protecting the environment and natural resources implies extra work and higher costs for farmers that should be compensated accordingly. There should be economic motivations for practising environmentally friendly agriculture.

Based on the results of the workshop, a proposal for priority reform measures for policies, which are expected, to best support the integration of environmental concerns and optimisation of the use of nutrients and pesticides into farm management ("best agricultural practices") was developed.

Using an innovative framework of the "INFORMATION DIALOGUE BOX" an assessment of the pertinence of the information available among farmers was conducted.

Through an interview among farmers, farmers associations and other involved stakeholders, the three countries have identified quite an important amount of lack of knowledge on the benefits of the use of the BAP, but also doubled by the willingness to get an improved awareness on both economic and ecological benefits associated with the best practices.

Main project conclusions for this component include:

(i) The need to ensure the harmonization of national legislation with the EU directives (Moldova, Ukraine)

(ii) There is also an obvious lack of methodological materials for that, financial resources to implement the new laws, if any. The analytical laboratories are mostly very poor equipped and not accredited; there is a lack of skilled personnel, etc. (Moldova)

(iii) There is a great need to implement basin - and nationwide public awareness campaign with farmers in relation to appropriate manure stock and application, soil processing to avoid extra soil erosion, correct application of mineral fertilizers. (Ukraine, Moldova, Romania).

(iv) The most important challenges for implementation of the Best Agricultural Practices Code is to identify the water bodies the most adversely affected by the nutrient pollution; to elaborate the programs and action plans towards nutrient pollution reduction; to create Consultation Centers on implementation of Best Agricultural Practices, etc. (Moldova)

(v) The need to draft Action Plan (Romania)

The recommendations for the content of the Action Plan cover:

1. Identify the waters affected by the pollution with nitrates or susceptible to be expose to such pollution and establish proper programmes of monitoring and control.
2. Set up the cadastre of those waters.
3. Identify and design the vulnerable or the potential vulnerable areas.
4. Create and organize the integrated national support system of monitoring, surveillance, control and decisions making, formed by two interacting sub-systems for water and for soil, which will collect, stock, evaluate and report the data regarding the quality of the waters and of the soil.
5. Elaborate programs to train and inform farmers with the purpose of promoting the best agricultural practices code. (OD 1182/1270 (XI 2005) - MMGA/MAPDR
6. Elaborate, implement and put into practice the action programmes.

5.3. Changing consumer behaviour due to the introduction of phosphate free detergent into the market

5.3.1. Methodology

The implementation of this Component 3 followed a specific methodology, which was based on the identification of the most appropriate, effective, and having the highest impact level for project interventions. These target audiences included school, universities, and pharmacies. Individual designed surveys were organized in each of the Prut country.

Based on the recent experience accumulated by the project partners (CESEP and ECOS) through the UNDP GEF DRP component on the "Introduction of phosphate free detergent into the market of the Danube countries" advice and assistance could be given to facilitate an increased ecological awareness on the benefits of reducing Phosphorus through in preparation of legislation on the

introduction of phosphate free detergents, such as a voluntary agreement between a selected detergent supplier and the government, with its related economic analysis.

Each Prut countries had implemented a survey designed to increase awareness of population on the health and economic benefits of using P-free detergents.

The project component methodology had included several activities, listed below with their specific indicators.

Activity	Indicator
Activity 5. Conduct relevant stakeholders analysis on the use of phosphate free detergents	
5.1. Identify multiple stakeholders groups as target audience	• Target audience identified • The most appropriate, effective and highest impact level for project interventions chosen: schools, universities, pharmacies
5.2. Compile conclusions and policy recommendations of the UNDP GEF Danube Regional project, component on detergents.	• Informative package available. These packages contain informative publications on promoting best practices, impacts of nutrients pollution on water quality and ecosystem, etc. Benefits for consumer through the use of ecological products will be included. • Strategy for dissemination of project results designed
Activity 6. Proposal on how to influence consumer behaviour on the use of phosphate free detergents.	
6.1. Disseminate the informative package	• Information available
6.2. Prepare evaluation report containing policy	• Final report on the component 3 elaborated.

5.3.2. Results

This component had a strong character of novelty but also of difficulty as strong awareness campaign had to be designed and organized to change consumer behaviour and prevent detergent industry resistance to the activity.

The involvement of the Romanian Ministry for Economy and Trade, in the implementation of Component 3 has been beneficial considering the role of the ministry in promoting the use of good ecological products, reduction of pollution, promoting only ecological products during their lifetime, and protecting the consumers' health.

The discussions carried out with the target audience shown again great lack of awareness and knowledge on the P-free products, and also difficulties in attracting the representatives of the detergent industry into a dialogue.

Still, the efforts of the detergent industry Henkel Central Eastern Europe, which is currently implementing a project in Romania (Danube Delta) in supporting the protection of the environment, using integrated catchment management approach (SWIM) had contributed to a small extent to increase the interest of local communities in the Prut basin.

The responses of the survey organised on this component proved the need to organise strong informative campaign and also to take all necessary measures to ensure the involvement of the detergents industry in the process.

The distribution of the informative publications on promoting phosphate-free detergents, impacts of nutrients pollution on water quality and ecosystem, benefits for consumer through the use of ecological products, etc. contributed to a better understanding of the issues and increase awareness of the authorities to repeat such informative campaign.

5.4. Stakeholders dialogue, partnerships and networking

5.4.1. Methodology

Participation of all concerned parties is particularly important in the shared transboundary river basins where the various stakeholders tend to have different and sometimes-contradictory interests.

The three countries Romania, Moldova and Ukraine were grouped within the frame of this project because they: (i) represent an opportunity for sharing of experiences and benefits arising out of a common transboundary issue: Prut river basin integrated water management, the reduction of nutrients and pesticides, and (ii) can benefit of shared stakeholder networks, response measures, and language (Romania and Moldova, Moldova and Ukraine). Additionally, some savings are expected in the overall administrative costs reflected in the combined costs of the executing agency arrangements, regional coordination, and project management.

The methodology of this component considered the following activities:

Activity	Indicator
Activity 7. Organize stakeholders dialogue	
7.1. Prepare stakeholders analysis for Prut river basin	• Relationship with the project partners clarified and assessed. Gaps and needs identified
7.2. Establish a network of all relevant stakeholders in the Prut river basin	• Modalities discussed and agreed • Network created
7.3. Transfer of know-how on the development of stakeholders dialogue to partner regions based on disseminating of publications	• Share best practices on stakeholder dialogue with River Basin Committees in Prut.
Activity 8. Develop Prut river basin information and communication strategy	
8.1. Propose communication strategy with input from stakeholders	• Mechanism of having access to the relevant information related on the project activities developed • Production of basic communication tools (international and national information material, displays, information on the web)
Activity 9. Awareness raising actions	
9.1. Organize public outreach	• Information materials available to be distributed at the celebration of Danube Day, 2006

Activity	Indicator
	• Publications related to the first 3 components, elaborated and distributed. • Website operational and maintained active discussion forum, with invite feedback
9.2. Promoting media work	• Media work: 2 press releases, 3 thematic articles published in the external magazines, including Danube Watch, stakeholders dialogue through informative e-mail, leaflet on consumer behavior changes and expectations, lobbying and campaign actions.
Activity 10. Networking and partnership buildings	
10.1. Organize partnerships and networking	• Extended and on-going engagement of partnerships functioning
10.2. Create "Prut- Transboundary Cooperation Model" (PTCM).	• Final report of project results for Prut River basin available
10.3. Monitoring evaluation and reporting	• Final Report based on the findings, results and stakeholders inputs elaborated.

5.4.2. Results

Active participation of project beneficiaries and other stakeholders from the initial planning process was ensured and was important to identify potential problems and solutions, generate support, and foster knowledge sharing.

The investigations along the project implementation proved that in the Prut basin the current information infrastructure of involving the public is still weak in terms of network capabilities in the basin. However, there are a large number of non-governmental organisations in each of the Prut countries, which cooperate on the shared river basin and actively involved in bilateral or trilateral cooperation.

Through this project component, the dialogue among stakeholders has been improved and dynamic partnerships and regional- national- basin - local networking created.

Therefore, extended and on-going engagement dynamic partnership and networking are the direct responses to the current challenges.

It is believed that partnerships have effectively combined the resources of Moldova, namely, ministries, local governments, farmers, NGOs, civil society, business experience, and technical expertise with the resources and inputs of Romania, namely, ministries, river basin authorities, current improved legal framework, regulations, relevant finalized reports, and social and technical responsibility.

One output of this component will be the creation of the " Prut Transboundary Cooperation Model" (TCM), which was recognised as valid and good example of cooperation by the central environmental, and water authorities of all three countries.

During the implementation period, contacts were established in all three counties with media, journalist and publishers.

6. COORDINATION, DISSEMINATION ACTIVITIES AND COOPERATION WITH AUTHORITIES

6.1. Participation in the meetings of the ICPDR and DRP

Discussion with representatives of the ICPDR and the DRP was held on the occasion of the 1st PM EG meeting in Croatia, between DRP, ICPDR and the Prut project coordinator of Moldova, on 25-27 April 2006 and at the RBM EG meeting, in Ulm, on 4-5 May 2006.

Key points of discussion refer to:

- The inception report will also cover the whole period of the component 1 implementation, including findings of the workshop organised in Chisinau, on 25 May 2006.
- Focus of the Component 2 awareness activities shall be on BAP measures that are replicable throughout the Danube basin, particularly manure handling.
- Information and lessons learned from the DRP similar activities will be used and the activities will be coordinated as to avoid overlapping with the new PDF A Prut project proposal.
- Findings and results of the project will be adequately disseminated to mass media.

6.2. Steering Committee meetings

On 24 May 2006, in Chisinau the first Steering Committee (SC) meeting was organised. The SC was chaired by Head of WFD implementation Directorate in Prut basin, Romania, Anca Savin, and Dr. Dumitru Drumea, the Head of Delegation of Moldova, to the ICPDR, as vice- chair. Dumitru Drumea chaired the 1st SC meeting.

The second SC meeting took place on 4 August 2006, in Iasi. The third SC meeting was organised in September 25 in Bucharest.

The SC included permanent members: Oana Islam (Director CESEP Romania), Gheorghe Constantin (Director in the Ministry of Environment and Water Management, Romania), Dr. Tatiana Belous (Director ECOS Moldova), and Kyryl Sereda (Deputy Head of Department for Water Resources and Ecosystems, Ukraine).

Key elements of discussion of the 1st SC meeting were:

- Project management and administration. This will be done at a high – level of transparency and efficiency, in line with UNDP/GEF DRP requirements. Moreover, SC will make sure that full integration will be assured of project development into Prut integrated water resources management activities and provide a holistic and well-coordinated management platform.
- Reimbursement of costs of participations for the workshops. Each country will take care of financial issues.
- Issuing sub-contracts for key experts and country team leaders. CESEP has prepared contracts that were sent and signed by respective expert prior to the SC meeting.

- Organisation of the SC meetings. It was agreed that SC would meet approximately every 3 months to review project progress and agree to the proposed project deliverables for the following 3 months. According to the topic of the discussions of the meetings, representatives of stakeholders and other relevant institutions from the three countries will be invited. At the next SC meeting, scheduled to be organised back to back to the second workshop, in Iasi, Romania, representatives of the agricultural sector will be invited.

The 2nd Steering Committee meeting was organised on 4 August 2006, in Iasi. Anca Savin, the Head of WFD implementation Directorate in Prut basin, Romania chaired the meeting.

Key elements of discussion were:

- Project management and administration.
- Reimbursement of costs of participations for the workshops. Each country will take care of financial issues.
- Organisation of the implementation of project Components 3 and 4.
- Organisation of the 3rd SC meeting.
- Clarification on the target audience for the informative packages and ecological campaign on detergent topics.
- Clarification of the beneficiaries of the Component 4
- Tasks assigned for the preparation of the Final report.

Two more SC meetings were organised, one in Iasi and one in Chisianu mainly designed to discuss and agree on new challenges linked to the project implementation and clarification of roles and responsibilities.

6.3. Workshops

On 25 of May 2006, back-to-back to the 1st SC meeting, the first workshop of the project was organised in Chisinau Moldova. Each country prepared an overview following the guidelines prepared by CESEP. At the workshop the reports were presented. Local project partners had informed the workshop participants about the status of the WFD implementation in their countries.

Based on the conclusions at the workshop a report containing the gaps and needs identified by each country has been prepared.

To assist in the development of the Prut river basin management plan, the project team had discussed all issues related to the collection of data, sharing data between countries and needs of new methodologies for undertaking the remaining tasks.

The largest interest of participants refer to the procurement of equipment to properly perform monitoring in line with the WFD requirements, assurance of data quality and of appropriate methodology for undertaking risk of failure and economic analysis. Additional data were provided by Romania to Moldova to complete some of the gaps, mainly in the pressures and impact assessment.

Meeting at the expert level will be organised between all three countries to ensure exchange of data and harmonisation of approaches on the development of Prut river basin management plan.

Between 3 and 4 August 2006, back-to-back to the 2nd SC meeting, the second workshop of the project was organised at the farm Berezeni, county Vaslui, in Prut river basin.

Each country prepared an overview on the Analysis of current national legislation about Fertilizers, Manure and Pesticides in the Prut river basin, following the guidelines prepared by CESEP. Local

project partners informed the workshop participants about the status of the WFD implementation in their countries. The Romanian Code for good agricultural practices was introduced and the workshop documents were translated in Romanian. The DRP produced a concept on the Best Agricultural practices, which has been presented at the workshop together with the ICPDR BAT at the agro-industrial units, which were introduced.

A survey was organized based on a questionnaire prepared by Anca Savin and Marcel Perjoiu. The responses to the questionnaires were hand written in Romanian. The Romanian project team prepared also the selection of possible farmers to be interviewed prior the workshop.

The survey was carried out among farmers in the Prut river basin and the results were discussed at the workshop. Based on the conclusions at the workshop a report containing the Recommendations for BAP and introduction of concepts for the application of BAP in the Prut countries have been prepared and included in the workshop report.

Experience of other projects dealing with controlling agricultural pollution have been shared at the meeting: the projects funded by the DRP (e.g. project "Developing Capacities to Promote Organic Farming to Reduce Nutrient Pollution in the DRB that covers Falesti district area and is being implemented by the environmental HGO Cutezatorul; project "Public Involvement in the Process of Nutrient Pollution Prevention and Reduction in the Lower Prut Basin through Complex Monitoring of the Quality of the Environment" that covers Cahul district area and is being implemented by the Cahul Ecological Consultation Center).

The 3rd workshop of the project was held on September 11 in Chisinau, Moldova.

The workshop was organized in cooperation with Ministry of Agriculture and Food Industry, Ministry of Ecology and Natural Resources, Apele Moldovei/ Acvaproject Institute, Center for Strategic Environmental Studies ECOS and REC Moldova.

Policy objectives and measures to WFD/CAP reform were discussed in the context of nutrient reduction. Main topics of the discussion at the workshop were:

- Promotion of organic agriculture in Moldova;
- Promotion of nutrient reduction in rural localities and animal farms;
- Development of the green carcasses in agricultural areas;
- Introduction of the BAT and their impact on nutrient reduction

The problems identified include:

1. Poor information of farmers and other stakeholders on organic agriculture practices
2. Inadequate financial state of farmers, and low capacities of relevant national institutions to invest into development of organic farming
3. Poor capacities of relevant local institutions to invest into organic farming
4. Lack of relevant agro-techniques and machines for organic farming

The participants acknowledged the efforts undertaken by the Ministry if Agriculture in organizing of technical assistance to farmers through various types of projects funded by international agencies to provide agricultural units with relevant machinery, chemicals, etc. Ministry of Agriculture also organized seminars for farmers in order to raise their awareness and to strengthen capacities to introduce nutrient reduction practices.

Additionally, the necessity of organic wastes collection system in rural localities and construction of compost factories is essential in the Prut basin. According to estimations, it can reduce nutrient loads from rural localities on 10%.

Finally the rehabilitation of trees protection strips, issues concerning land ownership, low degree of public awareness that leads to illegal trees and bushes cutting, reed burning in wetland areas, etc. were also discussed at the workshop.

6.2. Meeting with the authorities

6.2.1. Meeting with the authorities for recruitment of local staff

Responsibilities of country team leaders and key experts were assigned during the 1st SC meeting. In each of the Prut basin countries local staff members has been recruited. National team leaders are: Oana Islam (Romania), Tatiana Belous (Moldova) and Kyryl Sereda (Ukraine).

The responsibilities of the country team leaders include:

- ⇒ Management of the contract and project coordination at the national level
- ⇒ Ensuring production and timely submission of all deliverables
- ⇒ Coordination among the project team members and stakeholders
- ⇒ Drafting country project reports and ensure revision and their finalization.

Further the Key experts were identified. The national team leaders have coordinated their work.

Nr.	Country	Name	Position and responsibilities
I.1	Romania	Oana Islam	> Overall project coordination and management > Prut basin wide project compilation and reporting > Financial management of project > Report back to the DRP > Daily local management of the project Team leader, Romania, responsible for the daily local project management
I.2	Romania	Gheorghe Constantin	EU WFD Key expert
I.3	Romania	Anca Savin	EU WFD and CAP expert
I.4	Romania	Marcel Perjoiu	Local expert
I.5	Romania	Anemarie Ciurea	Information dissemination expert
II.1	Moldova	Dumitru Drumea	RBM key expert
II.2	Moldova	Tatiana Belous	Team leader, Moldova, responsible for the daily local management of the project
II.3	Moldova	Melian Ruslan	RBM key expert
II.4	Moldova	Cornel Busuioc	Local expert
II.5	Moldova	Iurie Senic	Local expert
II.6	Moldova	Ruslan Melian	Local expert
II.7	Moldova	Leonid Koniuhov	Local expert
II.8	Moldova	Gavriil Galca	Local expert
III.1	Ukraine	Kyryl Sereda	Team leader, Ukraine, responsible for the daily local management of the project
III.2	Ukraine	Alexei Iarochevitch	Agricultural expert
III.3	Ukraine	Olena Marushevska	RBM key expert

Table 1: Project team composition

6.2.2. Meeting with the Ministry of Environment and Water Management, in Bucharest, and the Ministry of Ecology and Natural Resources, in Chisinau

Several consultations meetings were organised with the Head of Directorate for Water, in the Romanian Ministry of Environment and Water Management, as well as with the authorities in Moldova, at the Ministry of Ecology and Natural Resources and the branches Apele Romane and Apele Moldovei.

The project activities, its team, work program and its present status were introduced to Secretary of State of Water Department and the experts in the Directorate of Water Management, in Bucharest, and as well to the Minister at the Ministry of Ecology and Natural resources and to several experts from the ministry and the Institute of Ecology in Chisinau.

The project team assured clarification on all the issues raised by the experts. The representatives of the respective authorities have expressed commitment on providing access to the necessary data and information, and support in organizing meetings and exchange of information.

Specific tasks on organizing the workshops and SC meetings were given to several experts in both ministries in order to facilitate a smooth project implementation.

The work program was revised to accommodate the new date of the workshops planned in the Prut basin.

6.4 Web page operational

The project team had prepared a project web page where all the documents, information and results are, and will be, posted. The Web page is at http;//prut-rbmp.cesep.ro. The sites is permanently updated with the project results and follow up.

APPENDIX 1: INCEPTION REPORT

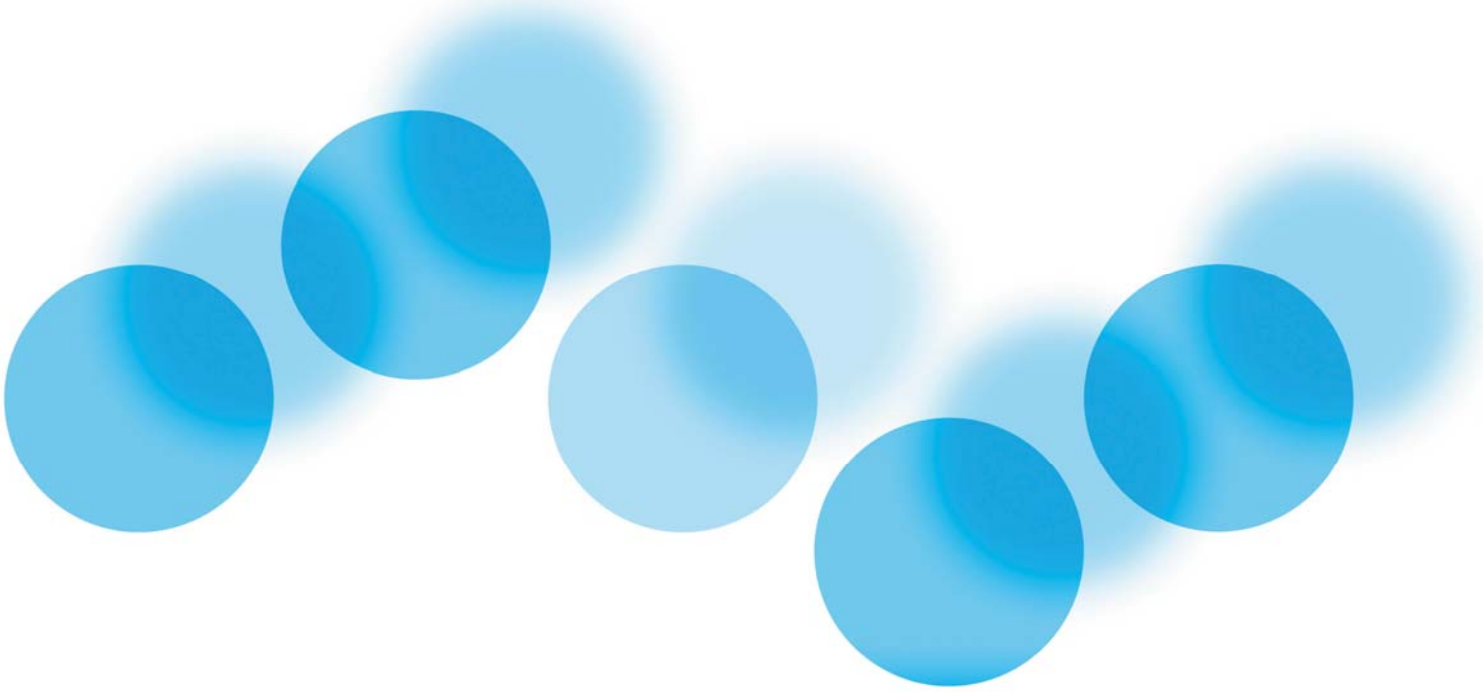
APPENDIX 2: PROGRESS REPORT

UNDP I GEF
DANUBE
REGIONAL
PROJECT

APRIL 2006

"PRUT RIVER BASIN MANAGEMENT"
CASE STUDY

Inception Report



WORKING FOR THE DANUBE AND ITS PEOPLE

UNDP I GEF
DANUBE
REGIONAL
PROJECT

AUTHORS

PREPARED BY:

Centre for Environmentally Sustainable Economic Policy

AUTHORS:

Oana Islam

Dumitru Drumea

CENTER FOR ENVIRONMENTALLY
SUSTAINABLE ECONOMIC POLICY

Adress: 7, Magheru Bvd., Bucharest, 1.
Tel/Fax: +40 21 4120069

PREFACE

This assignment is directed at strengthening the capacity of the Prut river basin countries, specifically Romania, Moldova and Ukraine, Contracting Parties to the ICPDR, to develop the necessary steps with regards to the development of the Prut river basin management. The concept of cross border cooperation as already implemented in other regions in the Danube River Basin (Sava, Tisza) offers a much wider scope for the exchange of data and information, methodologies, best practices, especially with regard to the integrated development of shared basin and nutrient reduction. The work will build on earlier studies and will improve the linkages between key EU policy instruments including, Water Framework Directive, IPPC, Nitrates Directive and the Common Agricultural Policy etc., within the Prut basin.

The outputs and outcomes from this project will be utilized and further developed in the context of the development of the basin wide Danube River Basin Management Plan.

The Project will assist the Prut river basin countries with the development of a regional approach to the development of the river basin management plan, in line with the EU WF and the countries commitments to the ICPDR. The ICPDR is the coordinating platform of the development of the Danube River Basin Management Plan.

The project addresses the following outputs of the Danube Regional project:

No.	Danube Regional Project Output
1.1	Development and implementation of policy guidelines for river basin management
1.2	Reduction of nutrients and harmful substances from agricultural point and non-point sources through agricultural policy changes
1.8	Recommendations for the reduction of phosphorus in detergents
3.3	Awareness raising campaigns on nutrient reduction & control of toxic substances
3.4	Public Participation / Access to Information

The following Components/Tasks are included in the Project:

- ⇒ Component 1: Prut River Basin Management Plan
- ⇒ Component 2: Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities
- ⇒ Component 3: Changing consumer behaviour due to the introduction of phosphate free detergent into the market
- ⇒ Component 4: Dialogue, partnerships and networking

Each individual component includes several activities to perform.

TABLE OF CONTENT

ABBREVIATIONS

BAP	Best Agricultural Practice
daNUbs	Nutrient Management in the Danube Basin and its Impact on the Black Sea
DRB	Danube River Basin
DRP	Danube Regional Project
DRPC	Danube River Protection Convention
EG	Expert Group
EMIS EG	Emissions Expert Group
EPER	European Pollutant Emission Register
E PRTR	European Protocol on Pollutant Release and Transfer Registers
EU	European Union
EU WFD	EU Water Framework Directive
GEF	Global Environment Facility
GIS ESG	Expert Sub-group on Cartography and GIS
GIS	Geographical Information System
GAP	Good Agricultural Practice
ICPDR	International Commission for the Protection of the Danube River
IPPC	Integrated Pollution Prevention and Control
MLIM EG	Expert Group on Monitoring, Laboratory and Information Management
MA EG	Monitoring and Assessment Exert Group
MONERIS	Modelling Nutrient Emissions into River Systems
PoM	Programme of Measures
P&M EG	Pressures and Measures Expert Group
RBM EG	Expert Group on River Basin Management
UNDP	United Nations Development Programme
RBMP	River Basin Management Plan
RR	Roof Report
TNMN	Trans National Monitoring Network
WB	World Bank

EXECUTIVE SUMMARY

According the contract between DRP and CESEP the Consultant shall not commence the performance of the Services later than 1st of March 2006 and complete the Services by 31 December 2006 and an Inception Report to be delivered by May 2006. This report introduces the results and findings of the project implementation, the approach agreed, the working structure and the work program remaining as discussed by the project team.

During the Inception phase the following activities has been carried out:

- ⇒ Meetings with representatives of the ICPDR and the DRP;
- ⇒ Participation in the RBM Expert Group meeting 4-5 May in Ulm, Germany;
- ⇒ Establishment of the project headquarters;
- ⇒ Mobilisation of the project team and recruitment of local support staff;
- ⇒ Meeting with the Ministry of Environment and Water Management, Directorate for Water in Bucharest;
- ⇒ Meeting with the Ministry of Ecology and Natural Resources, in Chisinau
- ⇒ Elaboration of detailed work programme for the project;
- ⇒ **Upstart of Component 1:** Establish project coordination and implementation arrangements:
  - (i) Mobilisation of partners in the 3 Prut countries,
  - (ii) Establishment of the Steering Committee,
  - (iii) Overview of the WFD status implementation in the 3 countries
  - (iv) Organization of the first workshop, in Chisinau, on the WFD implementation progress, specifically on the assessment of the current status and future steps to consider.
- ⇒ **Upstart of Component 2**: Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities
  - (i) Preparatory work for the workshop in Romania, Iasi country
  - (ii) Investigation on the workshop location
  - (iii) Select the dates of the workshop and prepare the preliminary list of participants
  - (iv) Assign responsibilities on the workshop organisation and design of the surveys
  - (v) Plan the survey and decide on the possible farmers to be interviewed prior the workshop
- ⇒ **Upstart of Component 3:** Changing consumer behaviour due to the introduction of phosphate free detergent into the market.
  - (i) Discuss options for organising the activity and decide on the location of the meeting.
- ⇒ **Upstart of Component 4**: Dialogue, partnerships and networking
  - (i) Discuss options to ensure awareness of the project for journalists and mass media.

1. OBJECTIVES OF THE ASSIGNMENT

The overall objective of this project is to initiate and support the development of the Prut river basin management plan in line with the WFD and as identified in output 1.1 of the DRP. The project goal is to facilitate a regional approach to the development of the Prut River Basin Management Plan, in line with EU WFD, by addressing common issues that are designed to achieve specific environmental objectives for Prut River basin and interest the three countries: transboundary water management, pollution reduction, flow of information and best practices to the public and, public participation in the making decision process.

Within this project there are two key specific objectives:

(1) to practical assess the progress, the gaps and needs in the three Prut countries on the WFD implementation, in line with the ICPDR requirements for the development of the Roof Report and following steps for the development of the integreated Prut River basin management plan.

(2) to create an opportunity for testing practical application of methodologies, concepts and dialogue approaches for the development of Prut RBMP, effective trilateral cooperation, networking at all levels.

(3) to provide policy advice on the implementation of the WFD, through the development of the Prut RBMP.

(4) to provide assistance on adapting policy objectives and measures to WFD/CAP context, through awareness-raising and information targeted at all stakeholders levels from farmers to policy-makers on the use of chemicals and pesticides.

(5) to organize partnership with all relevant stakeholders, on developing mechanisms which enable changes of consumer behaviour in using only phosphate-free detergents for household and industrial use.

(6) to develop mechanism which enable the public access to information, communicate and actively participate in the decision process for the development of the Prut RBMP. Target audience includes local and central water authorities, farmers associations, farmers, detergent industry, consumers, NGOs, the public at large.

2. APPROACH OF THE WORK

The Danube Regional Project (DRP) has been established to contribute to the sustainable human development in the Danube River Basin (DRB) through reinforcing the capacities in the basin to develop effective co-operation to ensure the protection of the Danube River. The objective of the DRP is to complement the activities of the International Commission for the Protection of the Danube River (ICPDR) to provide a regional approach to the development of national policies and legislation and the definition of actions for nutrient reduction and pollution control in the DRB.

The tasks of the ICPDR are mandated by the "Convention on Cooperation for the Protection and Sustainable Use of the Danube River" (Danube River Protection Convention, DRPC). From this Convention also derive the responsibilities of the ICPDR to elaborate and implement joint programmes for monitoring the riverine conditions in the Danube River Basin (Article 9).

This project represents an activity supporting 2 of DRP's 4 project objectives:

Objective 1: Creation of sustainable ecological conditions for land use and water management;

Objective 3: Strengthening of public involvement in environmental decision-making and reinforcement of community actions for pollution reduction and protection of ecosystems.

In order to achieve close project monitoring, along the project implementation, a project Steering Committee (SC) was created. The SC will provide a high –level oversight function for project implementation, in line with UNDP/GEF DRP requirements. It will therefore ensure full integration of project development into Prut integrated water resources management activities and provide a holistic and well-coordinated management platform. The SC meets approximately every 3 months to review project progress and agree to the proposed project deliverables for the following 3 months. The SC is chaired by Head of WFD implementation Directorate in Prut basin, Romania, Anca Savin, and Dr. Dumitru Drumea, the Head of Delegation of Moldova, to the ICPDR, as vice-chair. The SC will include permanent members: Oana Islam (Director CESEP Romania), Gheorghe Constantin (Director in the Ministry of Environment and Water Management, Romania), Dr. Tatiana Belous (Director ECOS Moldova), and Kyryl Sereda (Deputy Head of Department for Water Resources and Ecosystems, Ukraine). According to the topic of the discussions of the meetings, representatives of stakeholders and other relevant institutions from the three countries will be invited.

2.1. Objective 1 – Output 1.1. Development and implementation of policy guidelines for river basin management

In this section the approach to the work planned for the project objective: **"Initiate and support the development of the Prut River Basin Management Plan"** is presented. The approach is based on the recommendation provided by the DRP through the provisions of the ToR or during consultation meetings.

The Project plans to identify short and long-term solutions taking into account important EU policy drivers, in particular the WFD, which will influence the water management policy in the three Prut countries. The project will support, in partnership with all relevant stakeholders in Romania, Moldova and Ukraine, the elaboration of their contributions to the development of the Prut RBMP and mainly assist Moldova and Ukraine in meeting their obligations to the ICPDR and international agreements. The project is also beneficial for Romania to ensure the completion of the integrated Prut river basin management, in line with its obligations towards the EC and ICPDR.

In response to this objective, a methodology was developed which relates to the Component 1, and specifically, the Activity 2, "Contribution to the WFD implementation process: Overview of the current situation concerning the Development of Prut river basin management plan: needs, gaps, expectations and steps to be undertaken". The steps undertaken within Activity 2 include:

Activity 2. Contribution to the WFD implementation process: Overview of the current situation concerning the Development of Prut river basin management plan: needs, gaps, expectations and steps to be undertaken".	
2.1. Collect and compile data and information on the status of WFD implementation in the three countries	Information on the current status of the development of Prut River Basin Management Plan in all three countries gathered
2.2. Conduct analysis to identify information and data gaps	Gaps in existing information sources for the tasks of the Prut RBMP, in line with WFD, identified
2.3. Workshop April 2006, Chisinau, Moldova, WFD implementation in the Prut basin: assessment of the current status and future steps presented.	Proposal for consultation and input received from SC and stakeholders at the workshop incorporated into a component report.

The approach accepted by the Steering Group is based on the results of the work being undertaken by the ICPDR on the development of the Roof Report 2004. The International Commission for the Protection of the Danube River (ICPDR) is the implementing body under the "Convention on Cooperation for the Protection and Sustainable Use of the Danube River" (Danube River Protection Convention, DRPC) and serves as the platform for coordination to develop the Danube River Basin Management Plan (DRBMP).

In line with the ICPDR guidelines, the development of the Danube Basin Management Plan will be based on two parts, A and B. Part A (roof report) gives the basin-wide overview; Part B (national reports) gives all relevant further information on the national level as well as information coordinated on the bilateral level (see **Figure 1**).

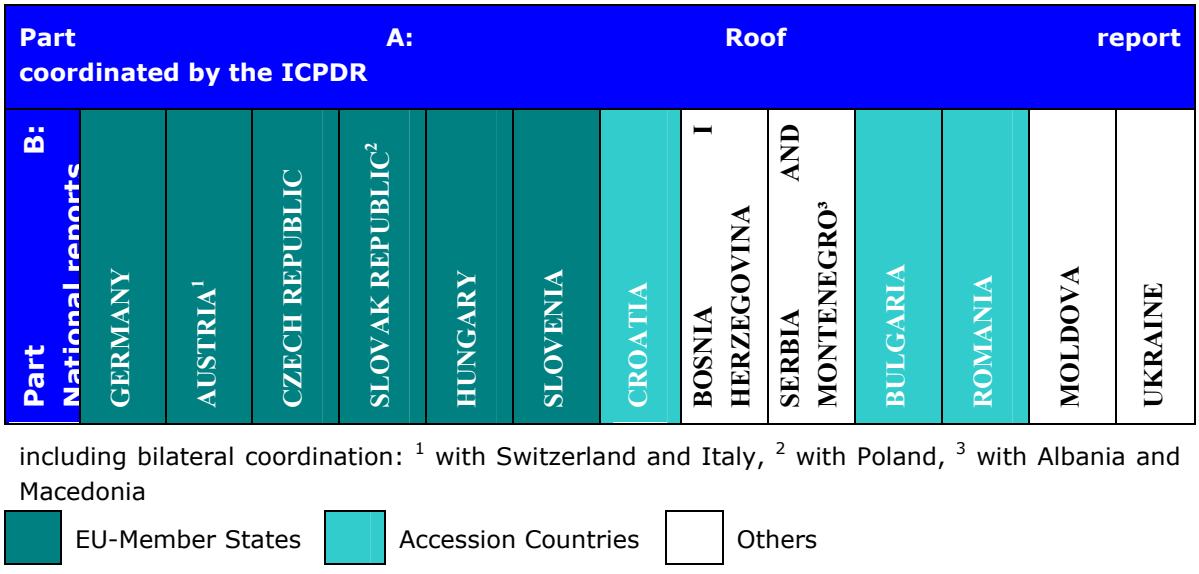


Figure 1 Structure of the report for the Danube River Basin District[1]

The Roof report includes, in particular, an overview of the main pressures in the DRBD and the related impacts exerted on the environment. The contents of the Roof report results from the work of the ICPDR expert groups and has been approved by the ICPDR at its Ordinary Meetings. The

[1] This figure reflects the situation at the time of reporting (March 2005).

issues referred to in the basin-wide overview will be the basis for the preparation of the Danube River Basin Management Plan by the end of 2009. The Roof report provided an overview of the situation in the Danube river basin district as a whole and set the frame for the understanding of the detailed national reports.

The national reports for Prut countries have different level of details and therefore, this project is proposing to assess the current status of the national implementation, and to identify needs, gaps and suggest ways to ensure the completion of national tasks. The project will identify steps to give all relevant further information on the national level as well as information coordinated on the bilateral level required at Prut sub-basin level.

In addition, transboundary issues that are relevant for the development of the Prut River Basin Management Plan are considered according to the work on the bilateral/multilateral Prut river agreements. Based on the findings of this component, national information will be given in addition to the information provided so far for both Part A and B.

During the project implementation, close coordination will be ensured with the ongoing work undertaken by the UNDP GEF Danube Regional Project, especially the activities proposed by Moldova for a UNDP-GEF PDF A project on the Prut river basin. Finally, the experiences within the ICPDR network of activities being undertaken on other Danube sub-basins (Tisza and Sava) are considered.

An overview of the situation regarding the ongoing efforts undertaken by all countries towards WFD implementation, including gaps and uncertainties, and steps to be taken to overcome the current difficulties has been prepared and presented at the first workshop, organised in Chisinau, on 25 May 2006. A summary report was prepared based on the national contributions and discussions at the workshop.

The national overview reports follow the guidelines prepared by the CESEP. All project partners have agreed with the methodology.

2.2. Objective 1 – Output 1.2 Reduction of nutrients and other harmful substances from agriculture through policy changes

In this section the approach to the work planned for the project objective: **"Agricultural Policy: Reduction of nutrients and other harmful substances from agricultural point and non-point sources through agricultural policy changes"** is presented. The project included a component "Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities". The activities within this component are mainly aiming at increasing ecological awareness of population in the Prut river basin on issues related to the agricultural pollution and its effects and way to improve the farmers' behaviour and understanding on the benefits of implementing the best agricultural practices. However, to facilitate a clear and realistic picture and provide the farmers with enough background knowledge and information the project Steering Committee has decided to increase th level of effort under this component and produce relevant background documentation. Focus areas of the Component 2 will be therefore improvements in the handling of manure and sludge from livestock operations and minimization of use of chemical fertilizers and pesticides, as well as farmer education and promotion activities.

More specifically, for each Prut country, the main problems, legal, administrative, institutional and funding deficiencies will be identified in relation to the agricultural sector. Based on the results of the workshop, a proposal for priority reform measures for policies, which are expected, to best

support the integration of environmental concerns and optimisation of the use of nutrients and pesticides into farm management ("best agricultural practices") will be developed.

A methodology is under the development. Using an innovative framework of the "INFORMATION DIALOGUE BOX" will carry out assessment of the pertinence of the information available among farmers. An innovative "REFLECTION MATRIX," will be developed through an interview among farmers, farmers association and other involved stakeholders, to facilitate a multi-stakeholder multi-criteria scenario evaluation of the land use options and water quality management strategies facing the stakeholders in the selected farming community. Results will be discussed at a workshop organized at the farm AGROIND Berezeni, located in the Prut basin, or at the Prut Water Directorate Iasi, then published and disseminated to farmer associations, governmental agencies, NGOs and research units. Experience accumulated in the World Bank project on controlling pollution from agriculture by Romania, Ukraine and Moldova will be very useful to be disseminated.

2.3. Objective 1 - Output 1.8 Recommendations for the reduction of phosphorus in detergents

In this section the approach to the work planned for the project objective: **"Changing consumer behaviour due to the introduction of phosphate free detergent into the market"** is introduced.

SC reached agreement on the carrying out the following specific tasks:

- ⇒ Identification of relevant stakeholders groups as target audience
- ⇒ Undertake the analysis on the use of phosphate free detergents

This component has a strong character of novelty but also of difficulty as strong awareness campaign needs to be designed and organized to change consumer behaviour and prevent detergent industry resistance to the activity. Still, the efforts of the detergent industry Henkel Central Eastern Europe, which is currently implementing a project in Romania (Danube Delta) in supporting the protection of the environment, using integrated catchment management approach (SWIM) are expected to help the current project implementation. Additional involvement is expected from other detergents industry in the basin, based on the very recent investigation undertaken by the DRP within the component on detergents.

The most appropriate target audience having the highest impact of project interventions consist of schools, universities, and pharmacies. Informative publications on promoting phosphate-free detergents, impacts of nutrients pollution on water quality and ecosystem, benefits for consumer through the use of ecological products, etc. will be prepared and distributed as an informative package. At the end of the project component implementation, the project will compile conclusions on the promotion of more environmentally friendly methods linked to economic benefits and change in consumer behaviour is relevant for population health and nutrient reduction.

2.4. Objective 3 - Output 3.4 Public participation and access to information

In this section the approach to the work planned for the project component **"Stakeholders dialogue, partnerships and networking"** is presented.

The approach of involving the public in the basin is considering the current information infrastructure is still weak in terms of network capabilities in the basin. Participation of all concerned parties is particularly important in the shared transboundary river basins where the

various stakeholders tend to have different and sometimes-contradictory interests. Active participation of project beneficiaries and other stakeholders from the initial planning process is important to identify potential problems and solutions, generate support, and foster knowledge sharing. The three countries Romania, Moldova and Ukraine were grouped within the frame of this project because they: (i) represent an opportunity for sharing of experiences and benefits arising out of a common transboundary issue: Prut river basin integrated water management, the reduction of nutrients and pesticides, and (ii) can benefit of shared stakeholder networks, response measures, and language (Romania and Moldova, Moldova and Ukraine). Additionally, some savings are expected in the overall administrative costs reflected in the combined costs of the executing agency arrangements, regional coordination, and project management.
Through the Component 4, the dialogue among stakeholders will be improved and dynamic partnerships and regional- national- basin - local networking created. Therefore, extended and on-going engagement dynamic partnership and networking are the direct responses to the current challenges.
The dialogue among stakeholders will be improved and dynamic partnerships and regional-national- basin - local networking created. Therefore, extended and on-going engagement dynamic partnership and networking are the direct responses to the current challenges. It is believed that partnerships will effectively combine the resources of Moldova, namely, ministries, local governments, farmers, NGOs, civil society, business experience, and technical expertise with the resources and inputs of Romania, namely, ministries, river basin authorities, current improved legal framework, regulations, relevant finalized reports, and social and technical responsibility.

The approach used for this component is not modified and remains at it ahs been design in the project proposal. One output of this component will be the creation of the " Prut Transboundary Cooperation Model" (TCM).

During the inception period, contacts were established in all three counties with media, journalist and publishers.

3. INCEPTION PHASE ACTIVITIES

During the Inception phase the following activities has been carried out:

- ⇒ Meetings with representatives of the ICPDR and the DRP;
- ⇒ Participation in the RBM Expert Group meeting 4-5 May in Ulm, Germany;
- ⇒ Establishment of the project headquarters;
- ⇒ Mobilisation of the project team and recruitment of local support staff;
- ⇒ Meeting with the Ministry of Environment and Water Management, Directorate for Water in Bucharest;
- ⇒ Meeting with the Ministry of Ecology and Natural Resources, in Chisinau
- ⇒ Elaboration of detailed work programme for the project;
- ⇒ **Implement Component 1:** Establish project coordination and implementation arrangements:

  Mobilisation of partners in the 3 Prut countries

  (i) Establishment of the Steering Committee

  (ii) Organisation of the 1st Steering Committee meeting, in Chisinau prior the workshop, on 24 May 2006

  (iii) Preparation of national input on the Overview of the WFD status implementation in the 3 countries

  (iv) Organization of the first workshop, in Chisinau, on the WFD implementation progress, specifically on the assessment of the current status and future steps to consider.

  (v) Prepare the first report on the first component

- ⇒ **Start Component 2**: Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities

  (vi) Preparatory work for the workshop in Romania, Iasi country

  (vii) Investigation on the workshop location

  (viii) Select the dates of the workshop and prepare the preliminary list of participants

  (ix) Assign responsibilities on the workshop organisation and design of the surveys

  (x) Plan the survey and decide on the possible farmers to be interviewed prior the workshop

- ⇒ **Start of Component 3:** Changing consumer behaviour due to the introduction of phosphate free detergent into the market.

  (xi) Discuss options for organising the activity and decide on the location of the meeting, possible in Ukraine.

- ⇒ **Start of Component 4**: Dialogue, partnerships and networking

  (xii) Discuss options to ensure awareness of the project for journalists and mass media.

3.1. Meetings with representatives of the ICPDR and the DRP

Discussion with representatives of the ICPDR and the DRP was held on the occasion of the 1st PM EG meeting in Croatia, between DRP, ICPDR and the Prut project coordinator of Moldova, on 25-27 April 2006 and at the RBM EG meeting, in Ulm, on 4-5 May 2006.

Key points of discussion refer to:

- ⇒ The inception report will also cover the whole period of the component 1 implementation, including findings of the workshop organised in Chisinau, on 25 May 2006.
- ⇒ Focus of the Component 2 awareness activities shall be on BAP measures that are replicable throughout the Danube basin, particularly manure handling.
- ⇒ Information and lessons learned from the DRP similar activities will be used and the activities will be coordinated as to avoid overlapping with the new PDF A Prut project proposal.
- ⇒ Findings and results of the project will be adequately disseminated to mass media.

3.2. 1st Steering Committee meeting

On 24 May 2006, in Chisinau the first Steering Committee (SC) meeting was organised. The SC is chaired by Head of WFD implementation Directorate in Prut basin, Romania, Anca Savin, and Dr. Dumitru Drumea, the Head of Delegation of Moldova, to the ICPDR, as vice- chair. The SC will include permanent members: Oana Islam (Director CESEP Romania), Gheorghe Constantin (Director in the Ministry of Environment and Water Management, Romania), Dr. Tatiana Belous (Director ECOS Moldova), and Kyryl Sereda (Deputy Head of Department for Water Resources and Ecosystems, Ukraine).
The 1st SC meeting was chaired by Dumitru Drumea.
Key elements of discussion were:

- ⇒ Project management and administration. This will be done at a high – level of transparency and efficiency, in line with UNDP/GEF DRP requirements. Moreover, SC will make sure that full integration will be assured of project development into Prut integrated water resources management activities and provide a holistic and well-coordinated management platform.
- ⇒ Reimbursement of costs of participations for the workshops. Each country will take care of financial issues.
- ⇒ Issuing sub-contracts for key experts and country team leaders. CESEP has prepared contracts that were sent and signed by respective expert prior to the SC meeting.
- ⇒ Organisation of the SC meetings. It was agreed that SC will meet approximately every 3 months to review project progress and agree to the proposed project deliverables for the following 3 months. According to the topic of the discussions of the meetings, representatives of stakeholders and other relevant institutions from the three countries will be invited. At the next SC meeting, scheduled to be organised back to back to the second workshop, in Iasi, Romania, representatives of the agricultural sector will be invited.

3.3. Recruitment of local staff

Responsibilities of country team leaders and key experts were assigned during the 1st SC meeting. In each of the Prut basin countries local staff members has been recruited.

National team leaders are: Oana Islam (Romania), Tatiana Belous (Moldova) and Kyryl Sereda (Ukraine).

The responsibilities of the country team leaders include:

- ⇒ Management of the contract and project coordination at the national level
- ⇒ Ensuring production and timely submission of all deliverables
- ⇒ Coordination among the project team members and stakeholders
- ⇒ Drafting country project reports and ensure revision and their finalization.

Further the Key experts were identified. Their work will be coordinated by the national team leaders.

Nr.	Country	Name	Position and responsibilities
I.1	Romania	Oana Islam	Overall project coordination and management Prut basin wide project compilation and reporting Financial management of project Report back to the DRP Daily local management of the project Team leader, Romania, responsible for the daily local management of the project
I.2	Romania	Gheorghe Constantin	EU WFD Key expert
I.3	Romania	Anca Savin	EU WFD and CAP expert
I.4	Romania	Marcel Perjoiu	Local expert
I.5	Romania	Anemarie Ciurea	Information dissemination expert
II.1	Moldova	Dumitru Drumea	RBM key expert
II.2	Moldova	Tatiana Belous	Team leader, Moldova, responsible for the daily local management of the project
II.3	Moldova	Melian Ruslan	RBM key expert
II.4	Moldova	Cornel Busuioc	Local expert
II.5	Moldova	Iurie Senic	Local expert
II.6	Moldova	Ruslan Melian	Local expert
II.7	Moldova	Leonid Koniuhov	Local expert
II.8	Moldova	Gavriil Galca	Local expert
III.1	Ukraine	Kyryl Sereda	Team leader, Ukraine, responsible for the daily local management of the project
III.2	Ukraine	Alexei Iarochevitch	Agricultural expert
III.3	Ukraine	Olena Marushevska	RBM key expert

Table 1: Project team composition

3.4. Meeting with the Ministry of Environment and Water Management, in Bucharest, and the Ministry of Ecology and Natural Resources, in Chisinau

3 October 2005: Meeting with Head of Directorate for Water, Serbian Ministry of Agriculture, Forestry and Water Management.

The project activities, its team, work program and its present status were introduced to Secretary of State of Water Department and the experts in the Directorate of Water Management, in Bucharest, and as well to the Minister at the Ministry of Ecology and Natural resources and to several experts from the ministry and the Institute of Ecology in Chisinau.

The project team assured clarification on all the issues raised by the experts. Commitment was expressed by the ministers on providing access to the necessary data and information, and support in organizing meetings and exchange of information. Specific tasks on organizing the workshops and SC meetings were given to several experts in both ministries in order to facilitate a smooth project implementation.

The work program was revised to accommodate the new date of the workshop in Chisinau.

3.5. Elaboration of detailed work programme for the Project

The project work programme has been revised. Based on the decisions where to organise the remaining SC meetings and workshops the draft work programme will be finalised.

For further information see Annex 1.

3.6. Implementation of Component 1: Contribution to the WFD implementation process: "Overview of the current situation concerning the Development of Prut river basin management plan: needs, gaps, expectations and steps to be undertaken".

On 25 of May 2006, back to back to the 1st SC meeting, the first workshop of the project was organised. Annex 2 includes the list of participants and agenda of the workshop.

Each country prepared an overview following the guidelines prepared by CESEP. At the workshop the reports were presented (Annex 3, 4 and 5). Local project partners had informed the workshop participants about the status of the WFD implementation in their countries.

Based on the conclusions at the workshop a report containing the gaps and needs identified by each country has been prepared. (Annex 6).

To assist in the development of the Prut river basin management plan, the project team had discussed all issues related to the collection of data, sharing data between countries and needs of new methodologies for undertaking the remaining tasks.

The largest interest of participants refer to the procurement of equipment to properly perform monitoring in line with the WFD requirements, assurance of data quality and of appropriate methodology for undertaking risk of failure and economic analysis.

Additional data will be provided by Romania to Moldova to complete some of the gaps, mainly in the pressures and impact assessment.

Meeting at the expert level will be organised between all three countries to ensure exchange of data and harmonisation of approaches on the development of Prut river basin management plan.

The key conclusions and findings of the component 1 will be summarised in the final project report.

4. TASKS AND TIMETABLE

The project addresses two DRP Outputs:

This project represents an activity supporting 2 of DRP's 4 project objectives:

Objective 1: Creation of sustainable ecological conditions for land use and water management;

Objective 3: Strengthening of public involvement in environmental decision-making and reinforcement of community actions for pollution reduction and protection of ecosystems.

There are 10 activities to be implemented through 4 components

4.1. Timetable

A timetable is presented in Annex 2.

ANNEXES

ANNEX 1	Time table
ANNEX 2	Chisinau workshop Component 1 Agenda and list of participants
ANNEX 3	Romania, National status report on WFD implementation by the Team leader
ANNEX 4	Moldova, National status report on WFD implementation by the Team leader
ANNEX 5	Ukraine, National status report on WFD implementation by the Team leader
ANNEX 6	Gaps and needs analysis on the Prut River Basin Management plan

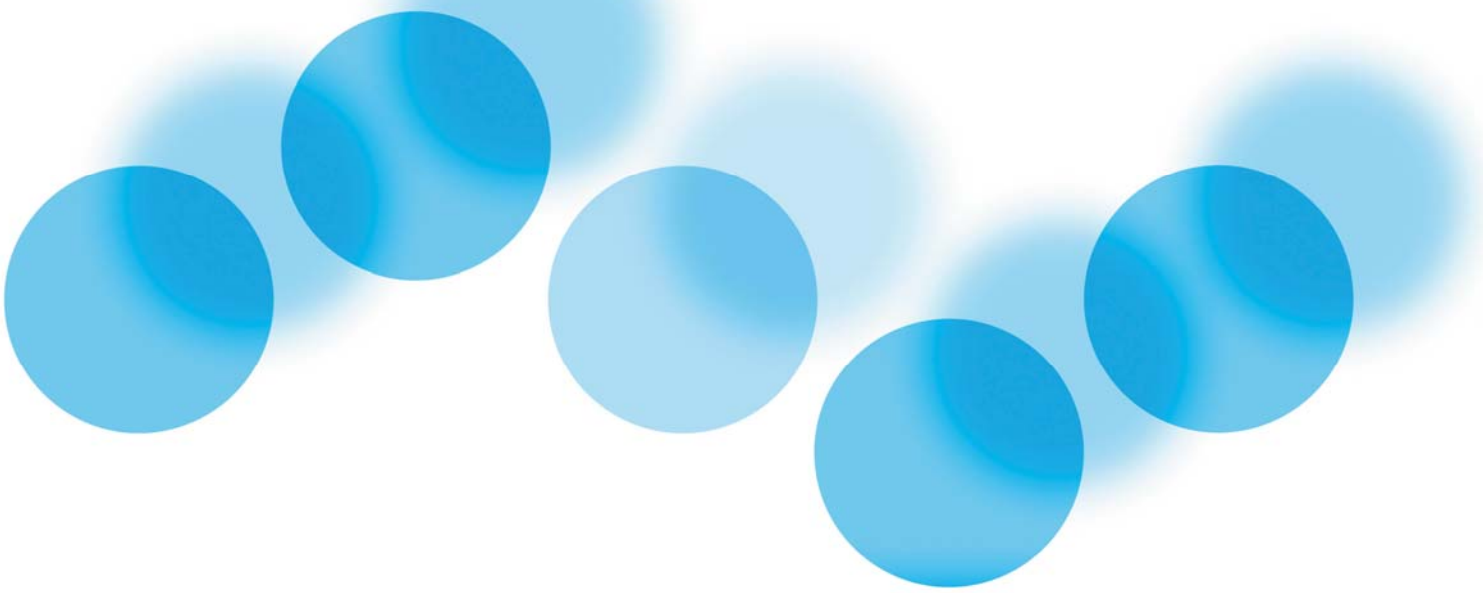
See the Progress Report for Annexes

UNDP I GEF
DANUBE
REGIONAL
PROJECT

OCTOBER 2006

PRUT RIVER BASIN MANAGEMENT - CASE STUDY

Progress Report (June - September 2006)



WORKING FOR THE DANUBE AND ITS PEOPLE

UNDP I GEF
DANUBE
REGIONAL
PROJECT

AUTHORS

PREPARED BY:

Centre for Environmentally Sustainable Economic Policy

AUTHORS:

Oana Islam

Anca Savin

Tatiana Belous

CENTER FOR ENVIRONMENTALLY SUSTAINABLE ECONOMIC POLICY

Adress: 7, Magheru Bvd., Bucharest, 1.

Tel/Fax: +40 21 4120069

PREFACE

This assignment is directed at strengthening the capacity of the Prut river basin countries, specifically Romania, Moldova and Ukraine, Contracting Parties to the ICPDR, to develop the necessary steps with regards to the development of the Prut river basin management. The concept of cross border cooperation as already implemented in other regions in the Danube River Basin (Sava, Tisza) offers a much wider scope for the exchange of data and information, methodologies, best practices, especially with regard to the integrated development of shared basin and nutrient reduction. The work will build on earlier studies and will improve the linkages between key EU policy instruments including, Water Framework Directive, IPPC, Nitrates Directive and the Common Agricultural Policy etc., within the Prut basin.

The outputs and outcomes from this project will be utilized and further developed in the context of the development of the basin wide Danube River Basin Management Plan.

The Project will assist the Prut river basin countries with the development of a regional approach to the development of the river basin management plan, in line with the EU WF and the countries commitments to the ICPDR. The ICPDR is the coordinating platform of the development of the Danube River Basin Management Plan.

The project addresses the following outputs of the Danube Regional project:

No.	Danube Regional Project Output
1.1	Development and implementation of policy guidelines for river basin management
1.2	Reduction of nutrients and harmful substances from agricultural point and non-point sources through agricultural policy changes
1.8	Recommendations for the reduction of phosphorus in detergents
3.3	Awareness raising campaigns on nutrient reduction & control of toxic substances
3.4	Public Participation / Access to Information

The following Components/Tasks are included in the Project:

- ⇒ Component 1: Prut River Basin Management Plan
- ⇒ Component 2: Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities
- ⇒ Component 3: Changing consumer behaviour due to the introduction of phosphate free detergent into the market
- ⇒ Component 4: Dialogue, partnerships and networking

Each individual component includes several activities to perform.

TABLE OF CONTENT

ABBREVIATIONS

BAP	Best Agricultural Practice
daNUbs	Nutrient Management in the Danube Basin and its Impact on the Black Sea
DRB	Danube River Basin
DRP	Danube Regional Project
DRPC	Danube River Protection Convention
EG	Expert Group
EMIS EG	Emissions Expert Group
EPER	European Pollutant Emission Register
E PRTR	European Protocol on Pollutant Release and Transfer Registers
EU	European Union
EU WFD	EU Water Framework Directive
GEF	Global Environment Facility
GIS ESG	Expert Sub-group on Cartography and GIS
GIS	Geographical Information System
GAP	Good Agricultural Practice
ICPDR	International Commission for the Protection of the Danube River
IPPC	Integrated Pollution Prevention and Control
MLIM EG	Expert Group on Monitoring, Laboratory and Information Management
MA EG	Monitoring and Assessment Exert Group
MONERIS	Modelling Nutrient Emissions into River Systems
PoM	Programme of Measures
P&M EG	Pressures and Measures Expert Group
RBM EG	Expert Group on River Basin Management
UNDP	United Nations Development Programme
RBMP	River Basin Management Plan
RR	Roof Report
TNMN	Trans National Monitoring Network
WB	World Bank

EXECUTIVE SUMMARY

According the contract between DRP and CESEP the Consultant shall not commence the performance of the Services later than 1st of March 2006 and complete the Services by 31 December 2006 and an Inception Report to be delivered by May 2006. This report introduces the results and findings of the project implementation, the approach agreed, the working structure and the work program remaining as discussed by the project team.

The final report will include findings of all project phases, and therefore it will include information contained in the Inception Report as well as in the Progress Report. The Progress Report is built on the structure of the Inception Report but completing with the specific components results implemented in the specific reporting period, this time June –September 2006.

During the Inception phase the following activities has been carried out:

- ⇒ Meetings with representatives of the ICPDR and the DRP;
- ⇒ Participation in the RBM Expert Group meeting 4-5 May in Ulm, Germany;
- ⇒ Establishment of the project headquarters;
- ⇒ Mobilisation of the project team and recruitment of local support staff;
- ⇒ Meeting with the Ministry of Environment and Water Management, Directorate for Water in Bucharest;
- ⇒ Meeting with the Ministry of Ecology and Natural Resources, in Chisinau
- ⇒ Elaboration of detailed work programme for the project;
- ⇒ **Upstart of Component 1:** Establish project coordination and implementation arrangements:
  - (i) Mobilisation of partners in the 3 Prut countries,
  - (ii) Establishment of the Steering Committee,
  - (iii) Overview of the WFD status implementation in the 3 countries
  - (iv) Organization of the first workshop, in Chisinau, on the WFD implementation progress, specifically on the assessment of the current status and future steps to consider.
- ⇒ **Upstart of Component 2**: Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities
  - (i) Preparatory work for the workshop in Romania, Iasi country
  - (ii) Investigation on the workshop location
  - (iii) Select the dates of the workshop and prepare the preliminary list of participants
  - (iv) Assign responsibilities on the workshop organisation and design of the surveys
  - (v) Plan the survey and decide on the possible farmers to be interviewed prior the workshop
- ⇒ **Upstart of Component 3:** Changing consumer behaviour due to the introduction of phosphate free detergent into the market.
  - (i) Discuss options for organising the activity and decide on the location of the meeting.
- ⇒ **Upstart of Component 4**: Dialogue, partnerships and networking
  - (i) Discuss options to ensure awareness of the project for journalists and mass media.

Progress in the Reporting Period June – September 2006

⇒ **Upstart of Component 2**: Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities

(i) Preparatory work for the workshop in Romania, Iasi country, at the Farm Berezeni, Jud Vaslui.

(ii) Assigned responsibilities on the workshop organisation and design of the surveys

(iii) Planned the survey and decided on the possible farmers to be interviewed prior the workshop

(iv) Carried out the survey among farmers in the Prut river basin and discuss the results at the workshop

(v) Analysis of current national legislation about Fertilizers, Manure and Pesticides in the Prut river basin. National contribution prepared.

(vi) Organised the workshop at the farm Berezeni, on 3-4 August 2006

(vii) Recommendations for BAP and introduction of concepts for the application of BAP in the Prut countries distributed to the farmers in the Prut river basin.

(viii) Organization and participation at the Second meeting of the Steering Committee, Iasi, 4 August 2006-10-16

(ix) Technical reports prepared and submitted to the project team

(x) Progress report prepared and submitted for comments to the project team.

⇒ **Upstart of Component 3:** Changing consumer behaviour due to the introduction of phosphate free detergent into the market.

(i) Discussed options for organising the activity and decided on the content of the informative package to be distributed to the target audience: schools, pharmacies and local NGOs.

(ii) Distributed informative packages, including the DRP flyers on the detergent issue.

⇒ **Upstart of Component 4**: Dialogue, partnerships and networking

(i) Discussed options to ensure awareness of the project for journalists and mass media.

(ii) Prepared and made operational the Prut project Web page, at http://prut-rbmp.cesep.ro. The site is permanently updated with the project results.

(iii) Planned further activities for networking and awareness.

Objectives of Assignment

The overall objective of this project is to initiate and support the development of the Prut river basin management plan in line with the WFD and as identified in output 1.1 of the DRP. The project goal is to facilitate a regional approach to the development of the Prut River Basin Management Plan, in line with EU WFD, by addressing common issues that are designed to achieve specific environmental objectives for Prut River basin and interest the three countries: transboundary water management, pollution reduction, flow of information and best practices to the public and, public participation in the making decision process.

Within this project there are two key specific objectives:

(1) to practical assess the progress, the gaps and needs in the three Prut countries on the WFD implementation, in line with the ICPDR requirements for the development of the Roof Report and following steps for the development of the integreated Prut River basin management plan.

(2) to create an opportunity for testing practical application of methodologies, concepts and dialogue approaches for the development of Prut RBMP, effective trilateral cooperation, networking at all levels.

(3) to provide policy advice on the implementation of the WFD, through the development of the Prut RBMP.

(4) to provide assistance on adapting policy objectives and measures to WFD/CAP context, through awareness-raising and information targeted at all stakeholders levels from farmers to policy-makers on the use of chemicals and pesticides.

(5) to organize partnership with all relevant stakeholders, on developing mechanisms which enable changes of consumer behaviour in using only phosphate-free detergents for household and industrial use.

(6) to develop mechanism which enable the public access to information, communicate and actively participate in the decision process for the development of the Prut RBMP. Target audience includes local and central water authorities, farmers associations, farmers, detergent industry, consumers, NGOs, the public at large.

1. Approach of the Work

The Danube Regional Project (DRP) has been established to contribute to the sustainable human development in the Danube River Basin (DRB) through reinforcing the capacities in the basin to develop effective co-operation to ensure the protection of the Danube River. The objective of the DRP is to complement the activities of the International Commission for the Protection of the Danube River (ICPDR) to provide a regional approach to the development of national policies and legislation and the definition of actions for nutrient reduction and pollution control in the DRB.

The tasks of the ICPDR are mandated by the "Convention on Cooperation for the Protection and Sustainable Use of the Danube River" (Danube River Protection Convention, DRPC). From this Convention also derive the responsibilities of the ICPDR to elaborate and implement joint programmes for monitoring the riverine conditions in the Danube River Basin (Article 9).

This project represents an activity supporting 2 of DRP's 4 project objectives:

> **Objective 1**: Creation of sustainable ecological conditions for land use and water management;
>
> **Objective 3**: Strengthening of public involvement in environmental decision-making and reinforcement of community actions for pollution reduction and protection of ecosystems.

In order to achieve close project monitoring, along the project implementation, a project Steering Committee (SC) was created. The SC will provide a high –level oversight function for project implementation, in line with UNDP/GEF DRP requirements. It will therefore ensure full integration of project development into Prut integrated water resources management activities and provide a holistic and well-coordinated management platform. The SC meets approximately every 3 months to review project progress and agree to the proposed project deliverables for the following 3 months. The SC is chaired by Head of WFD implementation Directorate in Prut basin, Romania, Anca Savin, and Dr. Dumitru Drumea, the Head of Delegation of Moldova, to the ICPDR, as vice-chair. The SC will include permanent members: Oana Islam (Director CESEP Romania), Gheorghe Constantin (Director in the Ministry of Environment and Water Management, Romania), Dr. Tatiana Belous (Director ECOS Moldova), and Kyryl Sereda (Deputy Head of Department for Water Resources and Ecosystems, Ukraine). According to the topic of the discussions of the meetings, representatives of stakeholders and other relevant institutions from the three countries will be invited.

1.1. Objective 1 – Output 1.1. Development and implementation of policy guidelines for river basin management

In this section the approach to the work planned for the project objective: **"Initiate and support the development of the Prut River Basin Management Plan"** is presented. The approach is based on the recommendation provided by the DRP through the provisions of the ToR or during consultation meetings.

The Project plans to identify short and long-term solutions taking into account important EU policy drivers, in particular the WFD, which will influence the water management policy in the three Prut countries. The project will support, in partnership with all relevant stakeholders in Romania, Moldova and Ukraine, the elaboration of their contributions to the development of the Prut RBMP and mainly assist Moldova and Ukraine in meeting their obligations to the ICPDR and international agreements. The project is also beneficial for Romania to ensure the completion of the integrated Prut river basin management, in line with its obligations towards the EC and ICPDR.

In response to this objective, a methodology was developed which relates to the Component 1, and specifically, the Activity 2, "Contribution to the WFD implementation process: Overview of the current situation concerning the Development of Prut river basin management plan: needs, gaps, expectations and steps to be undertaken".

The steps undertaken within Activity 2 include:

Activity 2. Contribution to the WFD implementation process: Overview of the current situation concerning the Development of Prut river basin management plan: needs, gaps, expectations and steps to be undertaken".	
2.1. Collect and compile data and information on the status of WFD implementation in the three countries	• Information on the current status of the development of Prut River Basin Management Plan in all three countries gathered
2.2. Conduct analysis to identify information and data gaps	• Gaps in existing information sources for the tasks of the Prut RBMP, in line with WFD, identified
2.3. Workshop April 2006, Chisinau, Moldova, WFD implementation in the Prut basin: assessment of the current status and future steps presented.	• Proposal for consultation and input received from SC and stakeholders at the workshop incorporated into a component report.

The approach accepted by the Steering Group is based on the results of the work being undertaken by the ICPDR on the development of the Roof Report 2004. The International Commission for the Protection of the Danube River (ICPDR) is the implementing body under the "Convention on Cooperation for the Protection and Sustainable Use of the Danube River" (Danube River Protection Convention, DRPC) and serves as the platform for coordination to develop the Danube River Basin Management Plan (DRBMP).

In line with the ICPDR guidelines, the development of the Danube Basin Management Plan will be based on two parts, A and B. Part A (roof report) gives the basin-wide overview; Part B (national reports) gives all relevant further information on the national level as well as information coordinated on the bilateral level (see **Figure 1**).

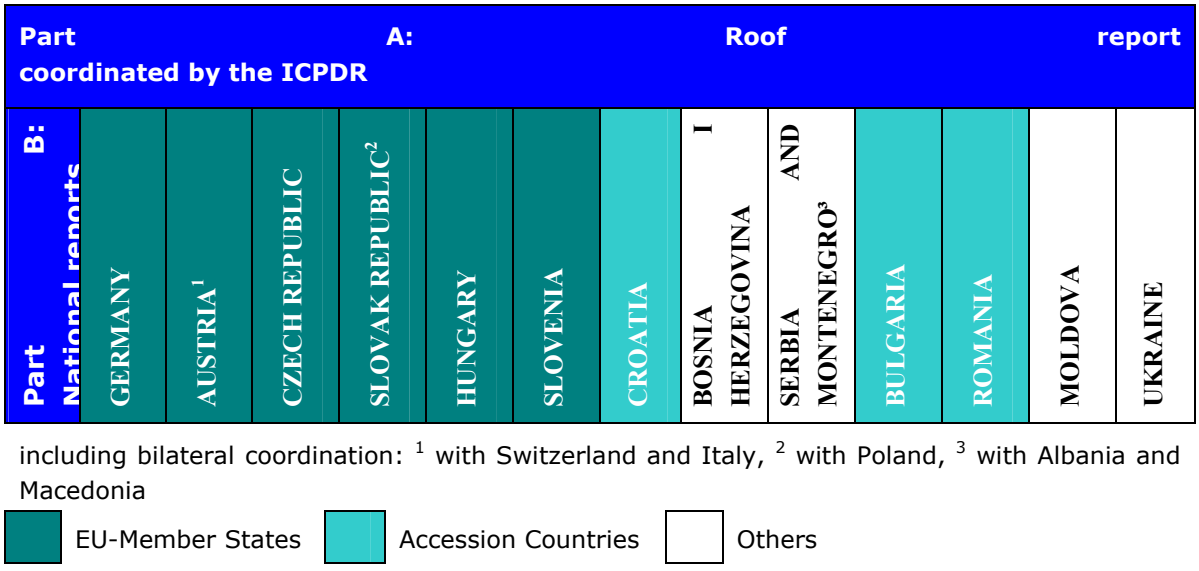


Figure 1 Structure of the report for the Danube River Basin District[1]

[1] This figure reflects the situation at the time of reporting (March 2005).

The Roof report includes, in particular, an overview of the main pressures in the DRBD and the related impacts exerted on the environment. The contents of the Roof report results from the work of the ICPDR expert groups and has been approved by the ICPDR at its Ordinary Meetings. The issues referred to in the basin-wide overview will be the basis for the preparation of the Danube River Basin Management Plan by the end of 2009. The Roof report provided an overview of the situation in the Danube river basin district as a whole and set the frame for the understanding of the detailed national reports.

The national reports for Prut countries have different level of details and therefore, this project is proposing to assess the current status of the national implementation, and to identify needs, gaps and suggest ways to ensure the completion of national tasks. The project will identify steps to give all relevant further information on the national level as well as information coordinated on the bilateral level required at Prut sub-basin level.

In addition, transboundary issues that are relevant for the development of the Prut River Basin Management Plan are considered according to the work on the bilateral/multilateral Prut river agreements. Based on the findings of this component, national information will be given in addition to the information provided so far for both Part A and B.

During the project implementation, close coordination will be ensured with the ongoing work undertaken by the UNDP GEF Danube Regional Project, especially the activities proposed by Moldova for a UNDP-GEF PDF A project on the Prut river basin. Finally, the experiences within the ICPDR network of activities being undertaken on other Danube sub-basins (Tisza and Sava) are considered.

An overview of the situation regarding the ongoing efforts undertaken by all countries towards WFD implementation, including gaps and uncertainties, and steps to be taken to overcome the current difficulties has been prepared and presented at the first workshop, organised in Chisinau, on 25 May 2006. A summary report was prepared based on the national contributions and discussions at the workshop.

The national overview reports follow the guidelines prepared by the CESEP. All project partners have agreed with the methodology.

1.2. Objective 1 – Output 1.2 Reduction of nutrients and other harmful substances from agriculture through policy changes

In this section the approach to the work planned for the project objective: **"Agricultural Policy: Reduction of nutrients and other harmful substances from agricultural point and non-point sources through agricultural policy changes"** is presented. The project included a component "Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities". The activities within this component are mainly aiming at increasing ecological awareness of population in the Prut river basin on issues related to the agricultural pollution and its effects and way to improve the farmers' behaviour and understanding on the benefits of implementing the best agricultural practices. However, to facilitate a clear and realistic picture and provide the farmers with enough background knowledge and information the project Steering Committee has decided to increase the level of effort under this component and produce relevant background documentation. Focus areas of the Component 2 will be therefore improvements in the handling of manure and sludge from livestock operations and minimization of use of chemical fertilizers and pesticides, as well as farmer education and promotion activities. National contributions were prepared by each of the Prut countries.

More specifically, for each Prut country, the main problems, legal, administrative, institutional and funding deficiencies will be identified in relation to the agricultural sector. Based on the results of the workshop, a proposal for priority reform measures for policies, which are expected, to best support the integration of environmental concerns and optimization of the use of nutrients and pesticides into farm management ("best agricultural practices") are developed.

Using an innovative framework of the "INFORMATION DIALOGUE BOX" will carry out assessment of the pertinence of the information available among farmers. An innovative "REFLECTION MATRIX," were developed through an interview among farmers, farmers association and other involved stakeholders, to facilitate a multi-stakeholder multi-criteria scenario evaluation of the land use options and water quality management strategies facing the stakeholders in the selected farming community. Results have been discussed at the workshop organized at the farm AGROIND Berezeni, located in the Prut basin on 3- 4 August 2006. The results were disseminated to farmer associations, governmental agencies, NGOs and research units. The results will be published in November 2006 through project web page, flyers and articles in the specialized magazines in each of the Prut countries. Experience accumulated in the World Bank project on controlling pollution from agriculture by Romania, Ukraine and Moldova was also disseminated.

1.3. Objective 1 - Output 1.8 Recommendations for the reduction of phosphorus in detergents

In this section the approach to the work planned for the project objective: **"Changing consumer behaviour due to the introduction of phosphate free detergent into the market"** is introduced.

SC reached agreement on the carrying out the following specific tasks:

- ⇒ Identification of relevant stakeholders groups as target audience
- ⇒ Undertake the analysis on the use of phosphate free detergents

This component has a strong character of novelty but also of difficulty as strong awareness campaign needs to be designed and organized to change consumer behaviour and prevent detergent industry resistance to the activity. Still, the efforts of the detergent industry Henkel Central Eastern Europe, which is currently implementing a project in Romania (Danube Delta) in supporting the protection of the environment, using integrated catchment management approach (SWIM) are expected to help the current project implementation. Additional involvement is expected from other detergents industry in the basin, based on the very recent investigation undertaken by the DRP within the component on detergents.

The most appropriate target audience having the highest impact of project interventions consist of schools, universities, and pharmacies. Informative publications on promoting phosphate-free detergents, impacts of nutrients pollution on water quality and ecosystem, benefits for consumer through the use of ecological products, etc. will be prepared and distributed as an informative package. At the end of the project component implementation, the project will compile conclusions on the promotion of more environmentally friendly methods linked to economic benefits and change in consumer behaviour is relevant for population health and nutrient reduction.

1.4. Objective 3 - Output 3.4 Public participation and access to information

In this section the approach to the work planned for the project component **"Stakeholders dialogue, partnerships and networking"** is presented.

The approach of involving the public in the basin is considering the current information infrastructure is still weak in terms of network capabilities in the basin. Participation of all concerned parties is particularly important in the shared transboundary river basins where the various stakeholders tend to have different and sometimes-contradictory interests. Active participation of project beneficiaries and other stakeholders from the initial planning process is important to identify potential problems and solutions, generate support, and foster knowledge sharing. The three countries Romania, Moldova and Ukraine were grouped within the frame of this project because they: (i) represent an opportunity for sharing of experiences and benefits arising out of a common transboundary issue: Prut river basin integrated water management, the reduction of nutrients and pesticides, and (ii) can benefit of shared stakeholder networks, response measures, and language (Romania and Moldova, Moldova and Ukraine). Additionally, some savings are expected in the overall administrative costs reflected in the combined costs of the executing agency arrangements, regional coordination, and project management.
Through the Component 4, the dialogue among stakeholders will be improved and dynamic partnerships and regional- national- basin - local networking created. Therefore, extended and on-going engagement dynamic partnership and networking are the direct responses to the current challenges.
The dialogue among stakeholders will be improved and dynamic partnerships and regional-national- basin - local networking created. Therefore, extended and on-going engagement dynamic partnership and networking are the direct responses to the current challenges. It is believed that partnerships will effectively combine the resources of Moldova, namely, ministries, local governments, farmers, NGOs, civil society, business experience, and technical expertise with the resources and inputs of Romania, namely, ministries, river basin authorities, current improved legal framework, regulations, relevant finalized reports, and social and technical responsibility.

The approach used for this component is not modified and remains at it ahs been design in the project proposal. One output of this component will be the creation of the " Prut Transboundary Cooperation Model" (TCM).

During the inception period, contacts were established in all three counties with media, journalist and publishers.

2. Inception phase activities

During the Inception phase the following activities has been carried out:

- ⇒ Meetings with representatives of the ICPDR and the DRP;
- ⇒ Participation in the RBM Expert Group meeting 4-5 May in Ulm, Germany;
- ⇒ Establishment of the project headquarters;
- ⇒ Mobilisation of the project team and recruitment of local support staff;
- ⇒ Meeting with the Ministry of Environment and Water Management, Directorate for Water in Bucharest;
- ⇒ Meeting with the Ministry of Ecology and Natural Resources, in Chisinau
- ⇒ Elaboration of detailed work programme for the project;
- ⇒ **Implement Component 1:** Establish project coordination and implementation arrangements:

  Mobilisation of partners in the 3 Prut countries

  (i) Establishment of the Steering Committee

  (ii) Organisation of the 1st Steering Committee meeting, in Chisinau prior the workshop, on 24 May 2006

  (iii) Preparation of national input on the Overview of the WFD status implementation in the 3 countries

  (iv) Organization of the first workshop, in Chisinau, on the WFD implementation progress, specifically on the assessment of the current status and future steps to consider.

  (v) Prepare the first report on the first component

- ⇒ **Start Component 2**: Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities

  (vi) Preparatory work for the workshop in Romania, Iasi country

  (vii) Investigation on the workshop location

  (viii) Select the dates of the workshop and prepare the preliminary list of participants

  (ix) Assign responsibilities on the workshop organisation and design of the surveys

  (x) Plan the survey and decide on the possible farmers to be interviewed prior the workshop

- ⇒ **Start of Component 3:** Changing consumer behaviour due to the introduction of phosphate free detergent into the market.

  (xi) Discuss options for organising the activity and decide on the location of the meeting, possible in Ukraine.

- ⇒ **Start of Component 4**: Dialogue, partnerships and networking

  (xii) Discuss options to ensure awareness of the project for journalists and mass media.

2.1. Meetings with representatives of the ICPDR and the DRP

Discussion with representatives of the ICPDR and the DRP was held on the occasion of the 1st PM EG meeting in Croatia, between DRP, ICPDR and the Prut project coordinator of Moldova, on 25-27 April 2006 and at the RBM EG meeting, in Ulm, on 4-5 May 2006.

Key points of discussion refer to:

- ⇒ The inception report will also cover the whole period of the component 1 implementation, including findings of the workshop organised in Chisinau, on 25 May 2006.
- ⇒ Focus of the Component 2 awareness activities shall be on BAP measures that are replicable throughout the Danube basin, particularly manure handling.
- ⇒ Information and lessons learned from the DRP similar activities will be used and the activities will be coordinated as to avoid overlapping with the new PDF A Prut project proposal.
- ⇒ Findings and results of the project will be adequately disseminated to mass media.

2.2. 1st Steering Committee meeting

On 24 May 2006, in Chisinau the first Steering Committee (SC) meeting was organised. The SC is chaired by Head of WFD implementation Directorate in Prut basin, Romania, Anca Savin, and Dr. Dumitru Drumea, the Head of Delegation of Moldova, to the ICPDR, as vice- chair. The SC will include permanent members: Oana Islam (Director CESEP Romania), Gheorghe Constantin (Director in the Ministry of Environment and Water Management, Romania), Dr. Tatiana Belous (Director ECOS Moldova), and Kyryl Sereda (Deputy Head of Department for Water Resources and Ecosystems, Ukraine).
The 1st SC meeting was chaired by Dumitru Drumea.
Key elements of discussion were:

- ⇒ Project management and administration. This will be done at a high – level of transparency and efficiency, in line with UNDP/GEF DRP requirements. Moreover, SC will make sure that full integration will be assured of project development into Prut integrated water resources management activities and provide a holistic and well-coordinated management platform.
- ⇒ Reimbursement of costs of participations for the workshops. Each country will take care of financial issues.
- ⇒ Issuing sub-contracts for key experts and country team leaders. CESEP has prepared contracts that were sent and signed by respective expert prior to the SC meeting.
- ⇒ Organisation of the SC meetings. It was agreed that SC will meet approximately every 3 months to review project progress and agree to the proposed project deliverables for the following 3 months. According to the topic of the discussions of the meetings, representatives of stakeholders and other relevant institutions from the three countries will be invited. At the next SC meeting, scheduled to be organised back to back to the second workshop, in Iasi, Romania, representatives of the agricultural sector will be invited.

2.3. Recruitment of local staff

Responsibilities of country team leaders and key experts were assigned during the 1st SC meeting. In each of the Prut basin countries local staff members has been recruited.

National team leaders are: Oana Islam (Romania), Tatiana Belous (Moldova) and Kyryl Sereda (Ukraine).

The responsibilities of the country team leaders include:

- ⇒ Management of the contract and project coordination at the national level
- ⇒ Ensuring production and timely submission of all deliverables
- ⇒ Coordination among the project team members and stakeholders
- ⇒ Drafting country project reports and ensure revision and their finalization.

Further the Key experts were identified. The national team leaders will coordinate their work.

Nr.	Country	Name	Position and responsibilities
I.1	Romania	Oana Islam	Overall project coordination and management Prut basin wide project compilation and reporting Financial management of project Report back to the DRP Daily local management of the project Team leader, Romania, responsible for the daily local management of the project
I.2	Romania	Gheorghe Constantin	EU WFD Key expert
I.3	Romania	Anca Savin	EU WFD and CAP expert
I.4	Romania	Marcel Perjoiu	Local expert
I.5	Romania	Anemarie Ciurea	Information dissemination expert
II.1	Moldova	Dumitru Drumea	RBM key expert
II.2	Moldova	Tatiana Belous	Team leader, Moldova, responsible for the daily local management of the project
II.3	Moldova	Melian Ruslan	RBM key expert
II.4	Moldova	Cornel Busuioc	Local expert
II.5	Moldova	Iurie Senic	Local expert
II.6	Moldova	Ruslan Melian	Local expert
II.7	Moldova	Leonid Koniuhov	Local expert
II.8	Moldova	Gavriil Galca	Local expert
III.1	Ukraine	Kyryl Sereda	Team leader, Ukraine, responsible for the daily local management of the project
III.2	Ukraine	Alexei Iarochevitch	Agricultural expert
III.3	Ukraine	Olena Marushevska	RBM key expert

Table 1: Project team composition

2.4. Meeting with the Ministry of Environment and Water Management, in Bucharest, and the Ministry of Ecology and Natural Resources, in Chisinau

3 October 2005: Meeting with Head of Directorate for Water, Serbian Ministry of Agriculture, Forestry and Water Management.

The project activities, its team, work program and its present status were introduced to Secretary of State of Water Department and the experts in the Directorate of Water Management, in Bucharest, and as well to the Minister at the Ministry of Ecology and Natural resources and to several experts from the ministry and the Institute of Ecology in Chisinau.

The project team assured clarification on all the issues raised by the experts. Commitment was expressed by the ministers on providing access to the necessary data and information, and support in organizing meetings and exchange of information. Specific tasks on organizing the workshops and SC meetings were given to several experts in both ministries in order to facilitate a smooth project implementation.

The work program was revised to accommodate the new date of the workshop in Chisinau.

2.5. Elaboration of detailed work programme for the Project

The project work programme has been revised. Based on the decisions where to organise the remaining SC meetings and workshops the draft work programme will be finalised.

For further information see Annex 1.

2.6. Implementation of Component 1: Contribution to the WFD implementation process: "Overview of the current situation concerning the Development of Prut river basin management plan: needs, gaps, expectations and steps to be undertaken".

On 25 of May 2006, back to back to the 1st SC meeting, the first workshop of the project was organised. Annex 2 includes the list of participants and agenda of the workshop.

Each country prepared an overview following the guidelines prepared by CESEP. At the workshop the reports were presented (Annex 3, 4 and 5). Local project partners had informed the workshop participants about the status of the WFD implementation in their countries.

Based on the conclusions at the workshop a report containing the gaps and needs identified by each country has been prepared. (Annex 6).

To assist in the development of the Prut river basin management plan, the project team had discussed all issues related to the collection of data, sharing data between countries and needs of new methodologies for undertaking the remaining tasks.

The largest interest of participants refer to the procurement of equipment to properly perform monitoring in line with the WFD requirements, assurance of data quality and of appropriate methodology for undertaking risk of failure and economic analysis.

Additional data will be provided by Romania to Moldova to complete some of the gaps, mainly in the pressures and impact assessment.

Meeting at the expert level will be organised between all three countries to ensure exchange of data and harmonisation of approaches on the development of Prut river basin management plan.

The key conclusions and findings of the component 1 will be summarised in the final project report.

3. Progress in the Reporting Period June – September 2006

3.1. Implementation of Component 2: Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities

3.1.1. Workshop at the Farm Berezeni, Romania

Between 3 and 4 August 2006, back-to-back to the 2nd SC meeting, the second workshop of the project was organised at the farm Berezeni, county Vaslui, in Prut river basin. Annex 13 includes the list of participants and agenda of the workshop.

Prior to the workshop the allocation of tasks among project partners was defined by the Project Manager (Annex 20). Annex 21 summarises the tasks of the Component 2.

Each country prepared an overview on the Analysis of current national legislation about Fertilizers, Manure and Pesticides in the Prut river basin, following the guidelines prepared by CESEP. At the workshop the reports were presented (Annex 14, 15, and 16). The Ukrainian national report is currently under revision. Local project partners had informed the workshop participants about the status of the WFD implementation in their countries. The Romanian Code for good agricultural practices was introduced (Annex 11). The workshop documents were translated in Romanian (Annex 8). The DRP produced a concept on the Best Agricultural practices, which has been presented at the workshop (Annex 12). Also the ICPDR BAT at the agro-industrial units were introduced (Annex 19).

A survey was organized based on a questionnaire (Annex 9) prepared by Anca Savin and Marcel Perjoiu. The responses to the questionnaires were hand written in Romanian. Total number of completed questionnaires is 23. A sample of such completed questionnaire is attached. (Annex 10) and The Romanian project team prepared also the selection of possible farmers to be interviewed prior the workshop.

The survey was carried out among farmers in the Prut river basin and the results were discussed at the workshop. Based on the conclusions at the workshop a report containing the

Recommendations for BAP and introduction of concepts for the application of BAP in the Prut countries have been prepared and included in the workshop report (Annex 17).

Key points of discussion at the workshop, also reflected in the national reports, were:

Animal farms are an important pollution source to all environmental factors. Removing animal residues from animal farms pollutes first the water and, if water is not decontaminated, it affects soils, too. Part of animal waste is used as natural fertilizer. Waste management had to deal with large amounts of manure from livestock farms. Residues from animal farms affect environment. Currently, soil pollution is not monitored on a regular basis in the Prut countries.

Farmers would gain by protecting the environment since it is in their own economic interest to preserve natural resources for the future. Therefore, environmental measures could be considered marketing instruments since they can create new markets for ecological agricultural products.

The farmers in the Prut basin are not very much concerned with ecological farming. Still, due to lack of funding the consumption of pesticides and fertilisers is very low. The products they sell on the peasant market are considered somewhat ecological and sold at better prices than products sold in some state or private stores. Farmers are not obliged to label their products and testify in any way that their products are ecological, meaning that they did not use any chemical fertilizers

or pesticides or treated seeds etc. When the economic situation will be improved, farmers and consumers become aware of environmental problems; the demand for ecological products will increase and thus determine the supply.

Protecting the environment and natural resources implies extra work and higher costs for farmers that should be compensated accordingly. There should be economic motivations for practising environmentally friendly agriculture.

Experience of other projects dealing with controlling agricultural pollution have been shared at the meeting: the projects funded by the DRP (e.g. project "Developing Capacities to Promote Organic Farming to Reduce Nutrient Pollution in the DRB that covers Falesti district area and is being implemented by the environmental HGO Cutezatorul; project "Public Involvement in the Process of Nutrient Pollution Prevention and Reduction in the Lower Prut Basin through Complex Monitoring of the Quality of the Environment" that covers Cahul district area and is being implemented by the Cahul Ecological Consultation Center).

The discussions at the workshop and the national contributions show:

(i) The need to ensure the harmonization of national legislation with the EU directives (Moldova, Ukraine)

(ii) There is also an obvious lack of methodological materials for that, financial resources to implement the new laws, if any. The analytical laboratories are mostly very poor equipped and not accredited; there is a lack of skilled personnel, etc. (Moldova)

(iii) There is a great need to implement basin - and nationwide public awareness campaign with farmers in relation to appropriate manure stock and application, soil processing to avoid extra soil erosion, correct application of mineral fertilizers. (Ukraine, Moldova, Romania).

(iv) The most important challenges for implementation of the Best Agricultural Practices Code is to identify the water bodies the most adversely affected by the nutrient pollution; to elaborate the programs and action plans towards nutrient pollution reduction; to create Consultation Centers on implementation of Best Agricultural Practices, etc. (Moldova)

(v) The need to draft Action Plan (Romania)

The recommendations for the content of the Action Plan cover:

1. Identify the waters affected by the pollution with nitrates or susceptible to be expose to such pollution and establish proper programmes of monitoring and control.
2. Set up the cadastre of those waters.
3. Identify and design the vulnerable or the potential vulnerable areas.
4. Create and organize the integrated national support system of monitoring, surveillance, control and decisions making, formed by two interacting sub-systems for water and for soil, which will collect, stock, evaluate and report the data regarding the quality of the waters and of the soil.
5. Elaborate programs to train and inform farmers with the purpose of promoting the best agricultural practices code. (OD 1182/1270 (XI 2005) - MMGA/MAPDR
6. Elaborate, implement and put into practice the action programmes.

The key conclusions and findings of the component 2 which are already highlighted in the Annex 17 and in the present progress report will be summarised in the final project report.

3.1.2. 3rd Workshop on Policy objectives and measures to WFD/CAP reform

The 3rd workshop of the project was held on September 11 in Chisinau, Moldova. Agenda of the workshop (Annex 22) and the List of Participants (Annex 23) are enclosed.

The workshop was organized in cooperation with Ministry of Agriculture and Food Industry, Ministry of Ecology and Natural Resources, Apele Moldovei/ Acvaproject Institute, Center for Strategic Environmental Studies ECOS and REC Moldova.

Policy objectives and measures to WFD/CAP reform were discussed in the context of nutrient reduction. Main topics of the discussion at the workshop were:

- Promotion of organic agriculture in Moldova;
- Promotion of nutrient reduction in rural localities and animal farms;
- Development of the green carcasses in agricultural areas;
- Introduction of the BAT and their impact on nutrient reduction

Speaker on the topic Promotion of organic agriculture in Moldova was Mr. Iurie Senic, Deputy Head of the Department of Organic Agriculture, Ministry of Agriculture and Food Industry.

Mr. Senic presented to the audience the European experience in development of organic agriculture. He also was speaking about main problems and some achievements of its development in Moldova. There were identified next problems:

1. Poor information of farmers and other stakeholders on organic agriculture practices
2. Poor financial state of farmers, and low capacities of relevant national institutions to invest into development of organic farming
3. Poor capacities of relevant local institutions to invest into organic farming
4. Lack of relevant agro-techniques and machines for organic farming

Mr. Senic also mentioned about efforts undertaken by the Ministry if Agriculture in organizing of technical assistance to farmers, and listed various types of projects funded by international agencies to provide agricultural units with relevant machinery, chemicals, etc. Ministry 0f Agriculture also organizes seminars for farmers in order to raise their awareness and to strengthen capacities to introduce nutrient reduction practices.

Speaker on the topic on Promotion of nutrient reduction in rural localities and animal farms was Dr. Ruslan Melian, Institute Acvaproject. In his presentation Dr. Melian told about platforms for stocking of organic wastes in rural areas. He underlined the necessity of organic wastes collection system in rural localities and construction of compost factories. According to estimations, it can reduce nutrient loads from rural localities on 10%

Speaker on the topic on Development of the green carcasses in agricultural areas was Dr. Tatiana Belous. She told about reduction of nutrient loads through the development of green carcasses (green network) in agricultural areas. Main problems identified by Dr. Belous were rehabilitation of trees protection strips, issues concerning land ownership, low degree of public awareness that leads to illegal trees and bushes cutting, reed burning in wetland areas, etc.

Main conclusions of her presentation were the following:

- To modify relevant laws and regulations in line with the EU and establish enforcement mechanisms;
- To increase share of land under the green strips till 5% of agricultural areas, etc

Last presentation on topic Introduction of the BAT and their impact on nutrient reduction were made by Dr. Dumitru Drumea.

3.2. 2nd Steering Committee meeting

On 4 August 2006, in Iasi, the second Steering Committee (SC) meeting was organised (Annex 18). The SC was chaired by Head of WFD implementation Directorate in Prut basin, Romania, Anca Savin.

Key elements of discussion were:

- ⇒ Project management and administration.
- ⇒ Reimbursement of costs of participations for the workshops. Each country will take care of financial issues.
- ⇒ Organisation of the implementation of project Components 3 and 4.
- ⇒ Organisation of the 3rd SC meeting.
- ⇒ Clarification on the target audience for the informative packages and ecological campaign on detergent topics.
- ⇒ Clarification of the beneficiaries of the Component 4
- ⇒ Tasks assigned for the preparation of the Final report.

3.3. Implementation of Component 3: Changing consumer behaviour due to the introduction of phosphate free detergent into the market.

This component is currently under the implementation. Options were discussed for organising the activity and decided on the content of the informative package to be distributed to the target audience: schools, pharmacies and local NGOs.

The informative packages have included the DRP flyers on the detergent issue (Annex 26) and information from various initiatives in the DRB countries.

The project team is also preparing another flyer on the ecological and health impact of phosphates and benefits of using phosphate free detergents.

Based on the feed back from distributing the informative packages and discussing the issue with the target audience in Moldova a report has been prepared (Annex 24).

Annex 25 contains a proposal for text to be translated in Romanian and Ukrainian and together with some pictures to be used for a flyer.

3.4. Web page operational

The project team had prepared a project web page where all the documents, information and results are, and will be, posted. The Web page is at http;//prut-rbmp.cesep.ro. The site is permanently updated with the project results.

4. Tasks and timetable

The project addresses two DRP Outputs:

This project represents an activity supporting 2 of DRP's 4 project objectives:

Objective 1: Creation of sustainable ecological conditions for land use and water management;

Objective 3: Strengthening of public involvement in environmental decision-making and reinforcement of community actions for pollution reduction and protection of ecosystems.

There are 10 activities to be implemented through 4 components

4.1. Timetable

A timetable is presented in Annex 2.

ANNEXES

Red: Component 1

Green: Component 2

Blue: Component 3

Pink: Component 4

ANNEX 1	Time table
ANNEX 2	Workshop 1 Chisinau, Component 1 Agenda and list of participants
ANNEX 3	Romania, National status report on WFD implementation by the Team leader
ANNEX 4	Moldova, National status report on WFD implementation by the Team leader
ANNEX 5	Ukraine, National status report on WFD implementation by the Team leader
ANNEX 6	Gaps and needs analysis on the Prut River Basin Management plan
ANNEX 7	Workshop 2 Farm Berezeni Romania Component 2 Agenda
ANNEX 8	Component 2 Summary (in Romanian)
ANNEX 9	Questionnaire administered at farm BEREZENI
ANNEX 10	Sample of completed questionnaire by a farmer (in Romanian)
ANNEX 11	Presentation of the Romanian Code for good agricultural practices
ANNEX 12	Presentation of the DRP Concept on the BAP in the DRB
ANNEX 13	List of the participants Farm Berezeni Romania
ANNEX 14	National Report Moldova

PROJECT IMPLEMENTATION TIMETABLE

	PHASE I						PHASE II					
Activities	Ian	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Activity 1. Establish project coordination and implementation arrangements. Steering committee in Iasi		SC										
Activity 2. Contribution to the WFD implementation process. Workshop and steering committee in Chisinau				W+SC	W+SC							
Activity 3. Production of project documents for transboundary farm												
Activity 4. Organize awareness raising campaign on the introduction of the BAT.Workshop in Iasi					W							
Activity 5. Conduct relevant stakeholders analysis on the use of phosphate free detergents. Steering committee in Bucharest							SC					
Activity 6. Proposal on how to influence consumer behaviour on the use of phosphate free detergents. Workshop and steering committee in Bucharest										W+SC		
Activity 7. Organize stakeholders dialogue												
Activity 8. Develop Prut river basin information and communication strategy												
Activity 9. Awareness raising actions												
Activity 10. Networking and partnership buildings. Steering committee in Iasi												SC

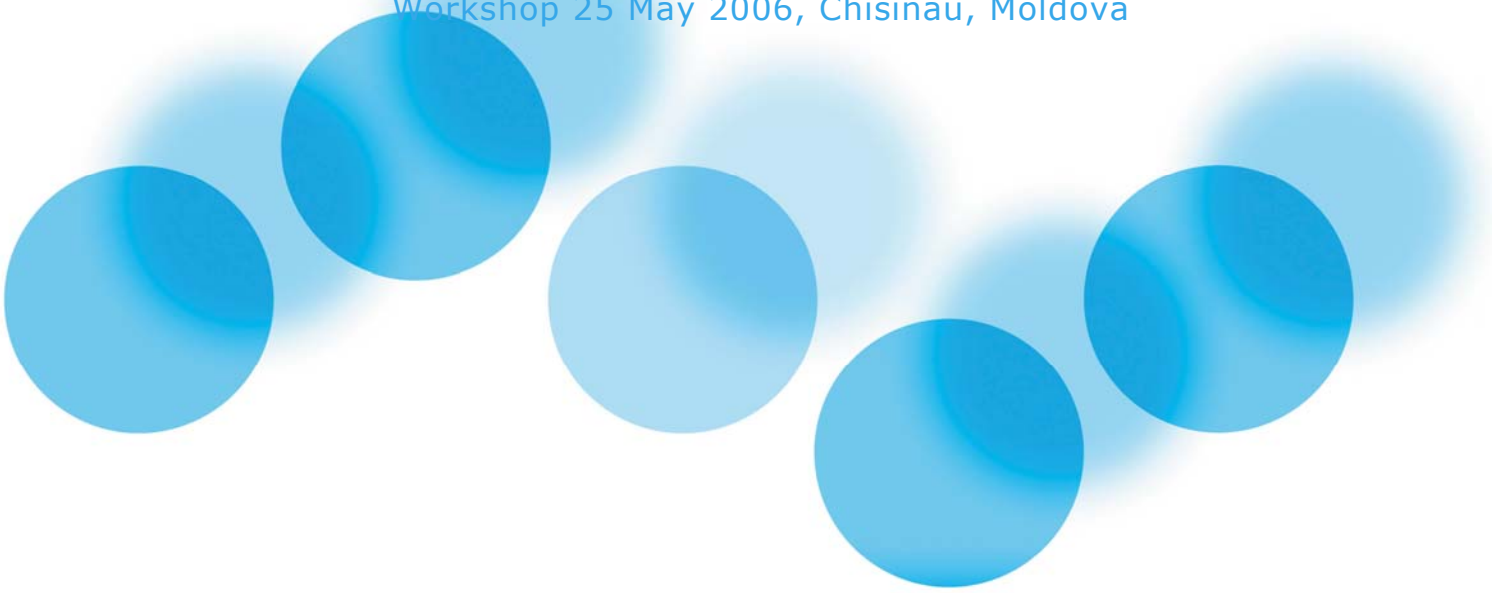
UNDP I GEF
DANUBE
REGIONAL
PROJECT

"PRUT RIVER BASIN MANAGEMENT" CASE STUDY

WFD implementation in the Prut basin

Assessment of the current status and future steps

Workshop 25 May 2006, Chisinau, Moldova



UNDP GEF

WORKING FOR THE DANUBE AND ITS PEOPLE

LOCATION

Venue: Hotel Tourist. Small Conference Hall

Address: bd. Renasterii, 13, Chisinau, Moldova

LIST OF PARTICIPANTS

1. Oana Islam, Center For Environmentally Sustainable Economic Policy (CESEP)
2. Anca Savin, National Administration Romanian Waters, Prut Directorate Iasi, Romania
3. Marcel Perjoiu, Administration " Romanian Water", Prut Directorate Iasi, Romania
4. Kyryl Sereda, Ministry of Environment, Ukraine
5. Olena Marushevska, Ministry of Environment, Ukraine
6. Dumitru Drumea, Center for Strategic Environmental Studies ECOS, Moldova
7. Tatiana Belous, Center for Strategic Environmental Studies ECOS, Moldova
8. Iurie Senic, Ministry of Agriculture and Food Industry, Moldova
9. Ruslan Melian, Acvaproject Institute, Moldova
10. Leonid Koniuhov, Acvaproject Institute, Moldova
11. Gavriil Galca, NGO INQUA Moldova
12. Tamara Guvir, Ministry of Ecology and Natural Resources, Division of Environmental Pollution Prevention
13. Tatiana Plesco, Ministry of Ecology and Natural Resources, Division of Environmental Policies and Strategies

AGENDA

WORKSHOP OBJECTIVES

1. Assess the current situation concerning the Development of Prut river basin management plan
2. Identify needs, gaps, expectations
3. Propose steps to be undertaken in order to develop a complete Prut river basin management plan

CHAIR: DUMITRU DRUMEA/ TATIANA BELOUS

09:30 Welcome (Moldova)

09:40 Introduction of participants

10:00 Introduction of the project components and workshop objectives (OI)

10:20 National report of Romania (AS)

10:40 National report of Ukraine (KS)

11:00 National report of Moldova (TB)

11:20 Coffee break

11:40 Discussion on the needs of data, methodologies, and gaps.

12:00 Lunch break

13:30 Discussions (cont)

14:30 Next steps, responsibilities, deadlines

16:00 End of the workshop

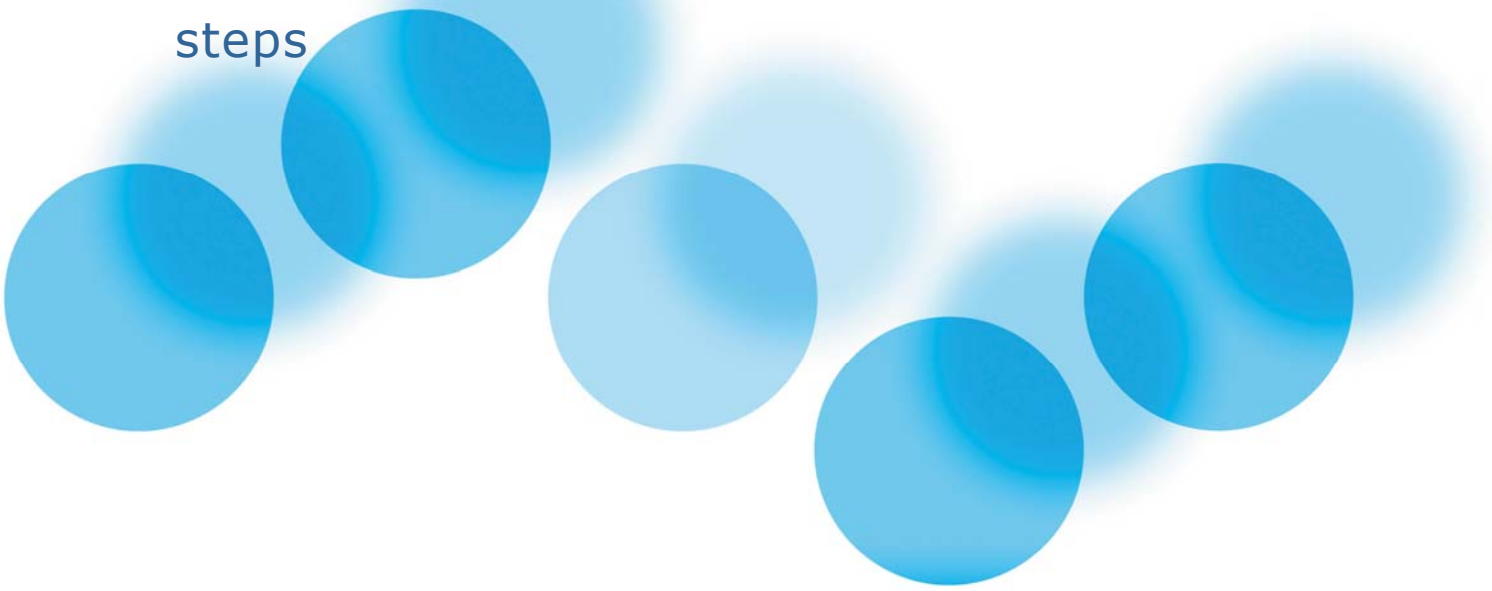
UNDP I GEF
DANUBE
REGIONAL
PROJECT

May 2006

"PRUT RIVER BASIN MANAGEMENT"

CASE STUDY

Romanian country report for development of the Prut River Basin Management Plan - Assessment of the current status and future steps



UNDP GEF

WORKING FOR THE DANUBE AND ITS PEOPLE

TABLE OF CONTENT

"PRUT RIVER BASIN MANAGEMENT"

CASE STUDY

Romanian country report for development of the

Prut river basin management plan

Actual state of art in the development of the Integrated Prut River Basin Management Plan in Romania

1. INTRODUCTION

River Basin Management Plan is the most important tool for the implementation of the Water Framework Directive 2000/60/UE. The Prut Basin Plan has to fit into the Romanian National Management Plan, which fit into Danube District Management Plan (PMDHD).

The 2004 Report of The Prut Basin Management Plan accomplish the obligations of reporting to the European Commission according to Water Framework Directive Article 5, Annex II and Annex III, concerning the first assessment and characterisation of Prut basin. Also, information about the progress realised for the implementation of the Article 6 and Annex IV, concerning the register of the protected areas, and progress connected with Article 14, concerning the public information and consultation are provided.

As a requirement of WFD the appropriate coordination have to be established between the countries sharing the same river basin.

Romania and Ukraine have at the level of government signed the agreement for cooperation in water management for transboundary rivers. Information exchange is according with the annual programmes.

An agreement at the level of governments between Romania and Moldova it is not yet signed.

Although the information exchange exists between our countries, it was strengthen now by the implementation of WFD. In the framework of the co-operation Romanian experts from National Administration "Romanian Waters" and from Prut Directorate participated in working visit at Chisinau in February 2004. The objectives of the visit were to give assistance in the development of the typology for the surface water, to identify the surface and ground water bodies and to assess the pressures and impacts.

To achieve the objectives it is important to closely co-operate with Moldavian partners, because it cannot be different river types or water bodies on the same river segments on the left and right bank.

As a result of the visit three river types were identified on the Prut River. The first delimitation leads us to the identification of five surface water bodies. For the Romanian experts the visit, the exchange of data and information, was a confirmation of the already defined typology and water bodies' delimitation. The results of the visit encouraged us in carrying out together the next step of the implementation process. The Moldavian experts visited Romania during 24th -28th August 2004.

2. GENERAL PRESENTATION OF THE BASIN

Prut bazin covers a surface of 10,967 km^2 (4.6% from the surface of Romania) with a length of the river network of 4,551 km and an average density of 0.41 km/km^2 (the average in Romania is 0.33). On 80% of the river network the drought phenomena is developed. The main important tributaries on the Romanian side are: Baseu (L=118km), Jijia (L=275 km), Bohotin (L=22 km), Elan (L=73 km) and Chineja (L=79km).

The relief is mainly of plain, with small areas of continental plateau, with a temperate continental climate (the mean annual temperature is of 90C) and mean annual precipitations between 400 mm and 600 mm per year.

In the Prut basin the arable lend and the forest covers a surface of 8,356 km2, which represent 76 % from the total area.

Administrative, Prut basin covers integral the counties: Botosani, Iasi, and partial the counties Vaslui and Galati

The present population within this zone is about 1.205 millions inhabitants, from which almost 50% live in the urban area.

3. TYPOLOGY AND REFERENCE CONDITIONS

The typology for rivers and lakes have been defined by applying the unitary methodology elaborated at national level (By Serban P., Jula G. Radulescu D., 2001), taking into account the abiotic parameters of the system B recommended by Water Framework Directive.

The performed analyze through the application of the methodology in Prut basin, divides the watercourses into 8 types of rivers from which 2 types are rivers with non permanent flow, one type of natural lake (Pochina lake) and 2 types of reservoirs.

The next step is the validation of those types, applying specific methodologies which are going to take into account the direct measurements of the characteristic parameters of the biologic communities.

For the determination of the reference conditions, reference sites without or with limited anthropogenic impact were selected. Until now, in this sites, relatively few observations and measurements of the physical-chemical and biological parameters have been carried out. Reference sites have not been found for all river types; only 1 from 8 river types was selected. From this reason, the best available sites have been used, sites which allowed parameter extrapolation from present estate to reference conditions.

4. IDENTIFICATION OF SIGNIFICANT PRESSURES

Main clasas of pressures from Prut basin are point source pollution, diffuse pollution and hydromorphological alterations.

Based on ICPDR criteria, which take into account only the pressures, and of METIMPRA integrated method (Serban P., Moldovan F., Tuchiu E., 2001), which take into account both the pressures and impact, 14 significant point source pollutions were identified, from the total of 87 inventoried sources. From those, 12 represents municipalities with more than 10,000 equivalent inhabitants with improper functioning of the waste water treatment plants.

The discharges from the significant point source pollutions represents 80% from the total discharge of the inventoried point source pollutions.

The significant point source pollutions from Prut basin, on classes are :

- Sewage: municipalities: Botosani, Iasi, Darabani, Dorohoi, Saveni, Harlau, Belcesti, Tg. Frumos, Pd. Iloaiei, Husi, Beresti, Tg. Bujor.
- Industrial: industrial units: SC Cotnari
- Agricultural: farms: Prodsuis Stanilesti

Diffuse pollution sources are represented especially by:

- Chemical fertilisers used in agriculture, which are 1.56 kg P/ha and 6.91 kg N/ha. These values are much less than the average on Danube Basin of 5.9 kg P/ha and 31.4 kg N/ha.
- Pesticide used in agriculture represent 0.14 kg /ha, less than 1.39 kg/ha –the average in 7 states from Danube Basin.
- Domestic animals which have a density of 0.3 equivalent cows / ha in the studied area , under the average in the Danube Basin which varies between 0.45 - 0.55 equivalent cows /ha, depending on the methodology used for calculation.
- Municipalities in the rural and urban areas taking into account the small percent of the population connected to the sewerage system – 0.9 % and respectively 68.7%

Concerning the identification of significant pressures the main problem is the lack of monitoring data, especially data for the identification of priority substances, priority / dangerous and heavy metals in the waste waters. Also the lack of data for the calculation of pollution loading from the diffuse sources.

Hydromorphological alterations affect 107 rivers (43%) from the total of 248 watercourses from Prut area. The most important hydromorphological pressures are caused by:

- 32 reservoirs, from which the most important is Stanca Costesti Reservoir;
- 592 km embankments and 301 km river regulation, from which the most important are on the rivers: Prut (33%), Baseu (42%), Sitna (54%), Miletin (51%), Bahlui (35%) etc.
- 2 water diversion
- 1 important water abstractions and 8 important water restitutions

An important characteristic of the Prut basin are the construction, beginning with the historical time, of the fishpond affecting 90 (~36%) from the total of 248 watercourses with basins larger than 10 km^2.

5. SURFACE WATER BODIES

For the delineation of surface water bodies, the European guide was adapted to the conditions of hydrografic network from Romania. The criteria used for the delineation of surface water bodies are:

- surface waters clasas;
- surface waters typology;
- physical – geographic and hydromorphologic characteristics of the basin;
- pressures and surface waters status;
- limits of the protected areas;

Applying the mentioned criteria **191** surface water bodies have been delimited from which 55 are lakes. The average length of surface water bodies is 34.58 km. From the total of water bodies 47 (24.61%) represents water bodies with permanent flow.

6. HEAVILY MODIFIED AND ARTIFICIAL WATER BODIES

The process of delineation of heavily modified water bodies is usually based on biological data. Taking into account the fact that at the moment there are not available sufficient biological data, **abiotic criteria** were used **for temporary delineation of heavily modified water bodies**. These criteria are based on different types of hydro technical works and their impact on the aquatic ecosystems (Serban P., Radulescu D., 2001).

In Prut basin the delineation of water bodies (47) with permanent flow led to:

- 33 (70.21%) heavily modified water bodies;
- 4 (8.51%) candidate to heavily modified water bodies;
- 5 (10.64 %) water bodies which are not heavily modified;
- 5 (10.64%) artificial water bodies;

7. GROUNDWATER BODIES

The identification and delineation of groundwater bodies was made taking into account the following criteria;

- geologic;
- hydrodynamic;
- the qualitative and quantitative state of water body:

The delineation of groundwater body was made only on the area on which exist significant aquifers for water abstraction (water abstraction is higher than 10 m3/day).

In the Prut basin 4 groundwater bodies have been delineated, from which 1 is transboundary groundwater body.

8. SURFACE AND GROUNDWATER BODIES WITH RISK OF FAILURE TO REACH A GOOD STATUS

The evaluation of risk failure to reach the good status for water bodies take into account the criteria for the identification of pressures and the criteria for the impact evaluation. The analyse was made considering:

- pollution with organic substances;
- pollution with nutrients;
- pollution with priority substances / dangerous substances
- hydromorphological alterations

A body is "at risk" if one of the criteria concerning pressures and/or impact is achieved. If no criteria is achieved then the body is "without risk". In the case that the data for the evaluation of risk are missing, then the body is considered "possible at risk". Taking into account the criteria mentioned, the state of the 47 surface water bodies is:

- 23 (48.94 %) at risk; 14 (29.79 %) possible la risk; 10 (21.28 %) without risk from the point of view of organic substances;
- 25 (53.19 %) at risk; 14 (29.79 %) possible at risk; 8 (17.02 %) without risk from the point of view of nutrient;
- no body at risk; 1 (2.13 %) possible at risk; 46 (97.87 %) without risk from the point of view of priority substances / priority dangerous;
- 38 (80.85 %) at risk; 4 (8.51 %) possible at risk; 5 (10.64 %) without risk from the point of view of hydromorphological alterations.

For the **underground water** one body had been identified at risk:

- Bottom land and tables of middle and downstream Prut and its tributaries GWPR02.

The underground water body is at risk due to the historical sources, like agro zoo technical farms which now are not in use any more and also to actual sources which are situated in vulnerable areas.

9. PROTECTED AREAS

In the last 50 years, a large part of the wetlands along the rivers changed the destination due to the constructing of dikes. These areas lost their role of protection against floods, recharging of aquifers and of habitats for specific fauna and flora.

In Prut basin had been identified 8 areas designated for water surface abstraction, all having protected zones and 73 areas designated for groundwater abstraction, from which 54 (74%) have protected zones.

There are no areas designated for the protection of aquatic species economically significant, excepting natural zones along the Prut River on a length of 584 km from the confluence with Danube up to the Stanca Reservoir. In this area there are migratory fish species – sturgeons (starlet, beluga and sevruga). The total length of the river proposed as protected area with aquatic species economically significant, represents 7.5% from the total length of watercourses.

Until now, the areas designated for the protection of habitats or species where the maintenance or improvement of the status of water is an important factor are 12 with a total surface of 15700 ha, representing 1.4% from the area of Prut basin. These areas have been designated using the Romanian laws (Law 13/1993 and law 462/2001).

The entire Prut basin is designated nutrient- sensitive area in concordance with the Position Document agreed between Romania and European Community.

The nitrates vulnerable areas from agricultural sources have been designated the perimeters of 23 localities from Prut basin.

Until now, there are no areas designated as bathing waters.

10. ECONOMIC ANALYSIS

Regarding the economic analysis of water use it was studied the economic importance for water services and for water users and the future trends of water demand and economic indicators of the short and long term macro economic indicators. Relevant trend elaboration at the level of Prut basin is very questionable especially due to the transitory period which affects the economic activities. After 1990 until 2003 can be observed a pronounced decrease of water demand with 77%, like a consequence of: industrial activity decreasing, unemployment of irrigation systems, abolition of a large number of animal farms. Also the price for the water supply services in Prut basin is varying between 7150 and 12745 ROL / m^3 (0.19 - 0.33 euro/m^3) for population. The tariff for the distribution and wastewater treatment is varying between 1630 and 7110 ROL / m^3 (0.04 and 0.18 euro/m^3). From the final price at the consumer an average of 2% represents the contribution for the management of water resources.

11. PUBLIC INFORMATION AND CONSULTATION

The activity of Public Participation, according to Article 14 of Water Framework Directive 2000/60/EC, was concretised in the elaboration of "Methodological Instructions concerning Public Participation" (Vasiu A, 2003) through the adaptation of the guide "Public Participation" elaborated by European Union and of Strategy on Public Participation for Danube District.

Basin Committee made on the base of HG 1212/2000, represents the main unit for information and consultation of the public at basin and local level. Also, the Basin Committee certify public participation in the process of decision making in the water field.

In the meetings of Basin Committee have been presented:

- The calendar and the working program for the elaboration of River Basin Management Plan and its role in the public participation
- The Report 2004 of River Basin Management Plan

12. PROBLEMS

Like a constant fact in the process of characterisation of waters has to be underlined the lack of data regarding chemical and biological monitoring.

It became obvious the necessity of the implementation of the new concept of integrated monitoring of waters with triple integration: of areas and investigation field and also of elements / components which are surveyed: biologic, hydromorfologic and physical – chemical.

Reference sites have not been found for all river and lakes types. It has to be underlining the missing of historical relevant data for the evaluation of reference sites.

There is a lot of incertitude concerning the reference sites for the rivers without permanent water flow.

Studies concerning the characterization and establish of the environmental objectives are necessary for the rivers without permanent water flow.

Taking into account the large number of bodies "possible at risk" it is necessary a special monitoring, which will survey the entire water body and determine as accurate as possible all the pressures, including the diffuse pressures.

For a further detailed and complete characterization, mathematical models, criteria of evaluation and case studies are necessary (e.g. "The effect of anthropogenic pressures on biota" or "The impact of the reservoirs on the rivers"). Also it is necessary to elaborate methodologies for the global characterization of water quality in 5 classes according the Water Framework Directive 2000/60/EC.

At the level of the basin there were not yet evaluated the enviromental costs and the costs due to the over explotation of the natural resources.

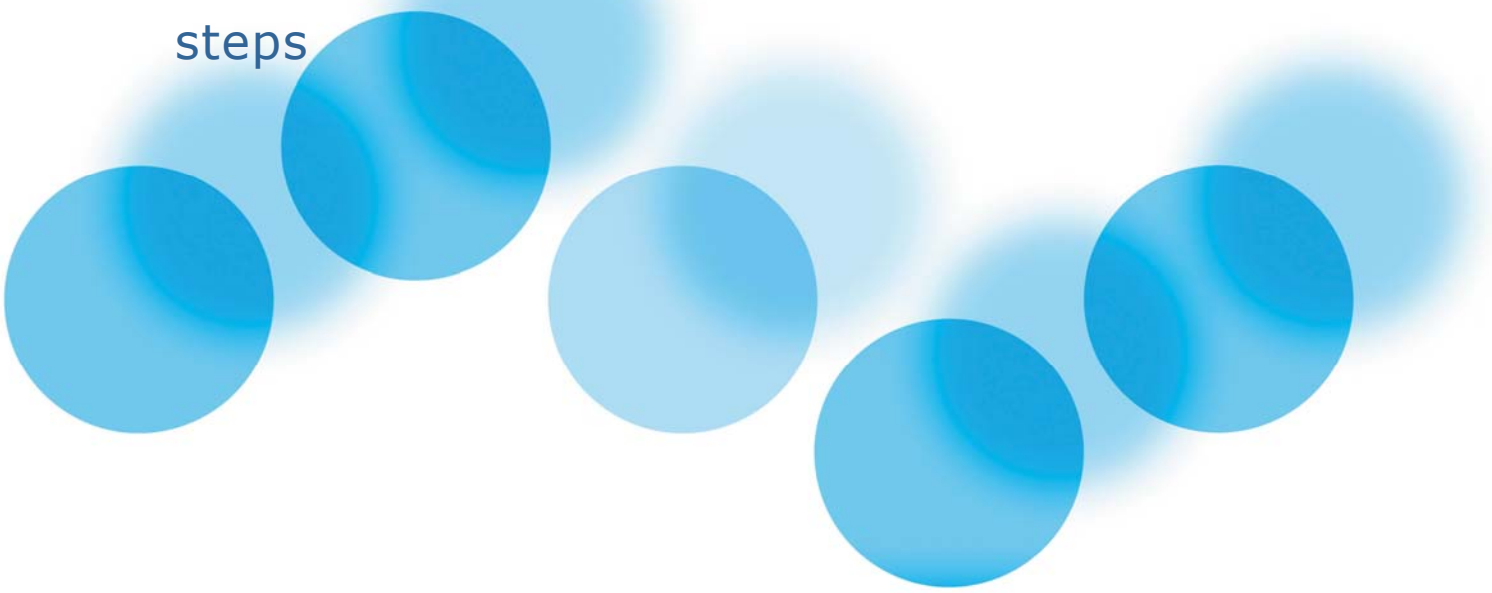
UNDP I GEF
DANUBE
REGIONAL
PROJECT

May 2006

"PRUT RIVER BASIN MANAGEMENT"

CASE STUDY

Moldavian country report for development of the Prut River Basin Management Plan - Assessment of the current status and future steps



UNDP GEF

WORKING FOR THE DANUBE AND ITS PEOPLE

TABLE OF CONTENT

UNDP/GEF Danube Regional Project

Case-study: "Prut river basin management"

Moldavian country report for development of the Prut river basin management plan

Actual state of art in the development of the Integrated Prut River Basin Management Plan in Moldova

1. INTRODUCTION

Total area of the Prut river basin in Moldova is around 8300 km2, and Prut River forms the border with Romania. Total length of the river in Moldova is 710 km. In the middle of 70th river was embanked and Costesti-Stinca water reservoir was established. Total volume of accumulated water in this reservoir is around 1 km2, or about 40% of river flow. There are two important water related protected areas – "Padurea Domneasca" in the upper stretch of the Moldavian part of the Prut River (middle part of the Prut river) with the area of 6690 ha and "Prutul de Jos" in the lower part of the basin with total area of 1691 ha. In the year of 2000 lower part of the Prut river in Moldova (down the town of Cantemir) was proposed a "gift to the earth" in the frame of the creation of the Lower Danube green corridor. In 2000 the area encompassing 19,150 ha where the biggest in Moldova natural lakes Beleu and Manta was designated as a Ramsar Site.

Update of the status of the part B report.

Moldova has submitted data for the part A of the roof report for the Danube river basin. In 2003 there was organized a workshop, where Romanian and Moldavian experts had exchanged with experience in the field of development of the Integrated River Basin Management Plan and presented reports on:

- general issues regarding implementation of the WFD in Romania and Moldova
- public participation
- actual state of monitoring network in the DRB and data presentation format
- wetland restoration issues
- ICPDR activities towards promotion further cooperation of Romanian and Moldavian experts

In February 2004 a group of Romanian experts from "Apele Romane" visited Ministry of Ecology and Natural Resources of Moldova, state concern "Apele Moldovei" and Institute

"ACVAPROIECT", where technical meetings were organized. It allowed (i) to discuss and agreed the Prut river main stream water bodies delimitation (at the stretch between Romania and Moldova, no Ukranian part had been included), (ii) to clarify and agreed the common approach for proposed water body designation (as quazi-natural, heavily modified and natural), (iii) to provide common data regarding characterization (description) of proposed water bodies (completed ICPDR worksheets), (iv) discuss issues regarding Costesti-Stanca reservoir to be included in the Roof Report, (v) to introduce Romanian example of typolody to be potentially applied in Moldova, (vi) to discuss in general terms the further steps in Moldova for application of similar modality for Prut river tributaries, as well as for Ialpug and Cahul rivers.

The Romanian expert also works with Hydrometeo Services in order to identify in more deep content the typology of the Prut river. It is also important that national agency for geology (AGEOM) had collaborate with Romanian groundwater specialists for differentiation of groundwater aquifers and select transboundary groundwater bodies.

In general the national working group expressed a good satisfaction in cooperation with the Romanian experts and agree future actions in order to achieve harmonized approach for the Prut river.

In august 2004 the group of Moldavian experts from ACVAPROIECT, Ministry of Ecology and Natural Resources, and National Institute of Ecology visited main office of "Apele Romane" in Bucharest, where main approaches used in Romania for implementation of the WFD were presented by Romanian counterpart (common methodology for data evaluation and presentation, identification of reference conditions, public participation, functions of the basin councils, etc) and discussed during the meeting. It was agreed that Romanian water authorities will support development of relevant activities in Moldova and necessity of the involvement of Ukrainian experts in the development of the Integrated Prut River Basin Management Plan.

Further discussions had place in Iasi in the office of the "Apele Prut". Romanian colleges presented main achievements in the development of the Prut River Management Plan, methodology of the presentation of relevant data, computer simulation of the Prut basin (Romanian part) and presented to Moldavian experts relevant data and methodology for their presentation in agreed format.

These activities allowed Moldavian relevant authorities improve cooperation with Romanian counterparts, and in 2005 on the basis of agreements of Romanian, Moldovan and Ukrainian ministers of environment a "Prut Initiative" had launched. First draft of the project was presented by Moldavian representative in the River River Basin Management expert group of the ICPDR and then to the ordinary meeting of the ICPDR in December 2005. This initiative was strongly supported by the Heads of Delegations to the ICPDR and actually PDF A phase of the project proposal is submitted to the UNDP/GEF office in Bratislava.

During last years Moldavian institutions involved in the Danube related activities permanently present relevant data, which could be used for the development of the Integrated Prut River Basin Management Plan. In addition, Moldova participates in a number of local initiatives, which allowed organizing in 2005 with the support of REC Moldova and national Commission of the Republic of Moldova for UNESCO three meetings in Balti, Chisinau and Cahul with involving of around 200 local authorities, for presentation to them main issues associated with the implementation of the EU WFD in Moldova. During these meetings presentations on main components of the WFD, integrated river basin management and objectives of new Water Strategy in Moldova were presented.

The following issued were also discussed by local relevant authorities:

- Public participation
- Cooperation of local authorities with the Prut River Bain Management
- Applied research program needed for implementation of the WFD and development of the Integrated river basin management plan
- Institutional arrangements needed for implementation of the EU WFD in Moldova

Recently Ministry of Ecology and Natural Resources has performed comparative analysis of Moldavian water legislation in force with the provisions of the WFD and presented them during meeting in the frame of the implementation of the Moldova – EU Action Plan signed in April 2005. This document represents a basic act dealing with cooperation of EU with Moldova. In addition, Moldova actively participates in the future neighborhood program of EU and cooperates with Romania in implementation of this plan. Environmental issues were recognized as of a high priority in this process.

The WFD approaches and relevant technical issues will be specifically in focus of future National Water Resource Management Strategy, currently under development by Apele Moldovei (responsible is - ACVAROIECT institute). The strategy will reflect provisions of National Water Policy Concept (2003) and will promote the principals of the integrated river basin management. The first practical test of WFD requirements for River Basin District delimitation, Water Bodies delimitation (tributary), Water Bodies Designation and Characterization, data collection on typology, mapping of rivers stretches had been done as a starting point.

2. CURRENT STATUS OF IMPLEMENTATION OF THE WFD IN MOLDOVA: NEEDS OF DATA, METHODOLOGIES AND ACTUAL GAPS

Main gap in Moldova is GIS development and use of GIS format for presentation of different data, maps, etc. In this context, Moldavian expert in the GIS expert group has presented a report, which could serve as a base for estimation of concrete needs of Moldova in this context. On the base of estimations made for GIS expert group one could conclude necessity of Moldavian Institutions in procurement of relevant hardware and software.

Another point is insufficient data in the estimation of water flows, especially on the small rivers. Relevant proposals were made for the TACIS project on water governance, where Moldova has proposed development of the unified reporting format on water management, obtaining of data on water quality and quantity on the entrance and leaving of the country. Identification of surface water quality categories for the Prut river basin fits to the 2 categories – river and artificial water body. Total number of artificial water bodies in the Moldavian part of the Prut River basin –with the volume over 1 mln. m3 each is 23.

River flow of small rivers is strongly modified together with deteriorated of the qualitative and quantitative parameters.

It is also important to complete the data collection for river bodies' characterization as it is only the first step has been done by ACVAPROIECT (testing of some initial WFD requirements). It is important to work further in deep for pressure and impact analysis and HMWB designation test.

The gap can be also associated with economic analysis.

Good definition of reference conditions (for internal rivers and lakes) is a week point as well. It is also related to the designing of monitoring networks according to the water bodies approach (currently there are no modification of traditional monitoring approaches from "to monitor rivers at different points" towards more integrated information for water bodies, combined water quantity and quality monitoring, assessment of tributaries impacts, biological water quality status and reference conditions, assessment of good ecological status and maximal ecological potential)

Legal incorporation of WFD provisions and IWRM concept in national legislation may the important and urgent steps for "legalization" of WFD in Moldova. It will allow attracting the national budget and other funds for expertise and technical assistance, which is urgently required for WFD implementation and transboundary cooperation.

3. TYPES OF WATERS AND REFERENCE CONDITIONS.

Prut River basin in Moldova is located within 2 eco-regions: 16 Eastern plains, and 12 Pontic Province. These ecoregions were identified in 2005 during expert meeting between Romanian and Moldavian experts

Types of the water in the Prut River needs to be identified in Moldova. Next step should be development of typology of the small rivers.

Water ecosystems in the protected areas "Padurea Doneasca" and "Prutul de Jos" would serve as a reference conditions for the lakes in the Prut river basin.

Reference conditions should be also defined for the small rivers, different types of small river streams and natural/artificial lakes (for this categories the data from natural protected areas can be used). Moldovan, Romanian and Ukranian experts should further develop the common reference conditions for the main Prut river stream.

Since 2000 hydrobiological data on the Prut River are produced in Moldova. At the same time, small rivers practically are poor monitored from physical-chemical and biological point of view. The identification of the heavily modified water bodies practically has not been performed and is urgently needed for development of the Integrated Prut river basin management plan.

4. IDENTIFICATION OF SIGNIFICANT PRESSURES

Quantitative estimations of the pollution loads in the Prut river basin were performed in the frame of the Danube Pollution Reduction program (1999), harmonized inventory of nitrogen and phosphorus emissions (2002), etc. Expert group on pressures and measures includes in its report data on emissions from Moldova (Prut River basin). These data could be used for the development of the Integrated River basin management plan together with the data

submitted by Moldova to the Monitoring and Assessment expert group under ICPDR. Actually it is important to develop methodology on incorporation of these data in unified format for further use in the development of the Integrated Prut Rier Basin management plan this activity should be harmonized among all Prut basin countries.

Prut river is not navigable and alterations associated with this type of activity are not important ones. Fish farming and small fleet exists in the Costesti-Stinca water body, but is very insignificant and does not influence on the state of hydromorphology. This artificial water body was established for various purposes, and one of the very important purposes is flood protection. Fluctuations of water level linked with discharges from the reservoir cause alterations at the distance of around 80 km. Lower part of the Prut River flood plains and wetlands was largely desiccated and actual input of these activities practically has never been estimated in regard to the state of water ecosystems.

ACVAPROIECT have start (for testing purposes) the process for identification of significant pressures, mainly associated with hydrological alteration for selected water streams.

5. HEAVILY MODIFIED WATER BODIES.

There are data on water quality in Moldova that could be used for identification of the Heavily Modified water bodies. At the same time quantitative parameters should be updated together with the data on hydromorphological alterations, including data on sedimentation of water reservoirs, sediment transport, etc. It is important to assemble and assess national data on hydromorphological alteration (dams, weirs, dukes, water levels and fluctuation and associated human activities – irrigation, land reclamation, drainage, hydropower, flood protection, etc.).

6. GROUND WATERS

Identification of the ground water bodies has not been performed in Moldova and presents a great challenge for Moldavian water authorities. The preliminary identification for deep groundwater horizons has been made during working meeting with Romanian experts.

7. ECONOMIC ANALYSIS

Economic studies on water management issues are very poor developed and need strong assistance, and cooperation in development of the methodology for economic analysis. It will allow prepare economical tools for incorporation in the Integrated Prut river basin management plan

8. PUBLIC PARTICIPATION

Moldova had ratified Aarhus Convnetion. Actual legislation is favorable for large public involvement in water related issues in Moldova and in decision-making process. There is also a need for improvement of regional public cooperation in implementation of the WFD.

In the beginning of 2006 the initiative toward the "Clean Prut" was launched in Moldova in cooperation with Romanian NGOs. Ukrainian involvement in this activity is very welcome.

Moldavian state and public institutions took part in the Odessa conference (27-28 February 2006) on sustainable development of the Danube Delta. Lower part of the Prut river is included in the Delta-Liman region. Detailed rehabilitation and management plan for the "Prutul de Jos" protected area is going to be developed by 2010. Detailed study of this area was performed in in 1998 in the framework of the Tacis project "Selected Actions in Ukraine and Molodva" and in 2004-2005 in the frame of the project supported by Ramsar Convention Secretariat with main objectives like: investigation of the nutrient regime of protected area ecosystems, review of flora and fauna, etc. Nutrient budgets were studied also in the protected area "Padurea Domneasca". Both studies could contribute to the identification of reference conditions in the respective parts of the Prut river basin.

9. MILESTONES FOR THE PROJECT DEVELOPMENT

Development of the integrated river basin management plan is recognized as a priority for the ICPDR. Actual project is an integrated part of the efforts of the Danube community to implement main provision of EU WFD as an integrated river basin management plan for the whole Danube and relevant activity in the Prut basin will contribute to this issue.

Activity	Deadline
Identification of gaps in data for the development of the Prut river management plan	June 2006
Identification of needs of Moldova for the development of the Integrated Prut river basin management plan	July 2006
Visit to Romania for estimation of best agricultural practices for inclusion in the management plan for the Prut river	July 2006
Evaluation of needs and gaps in data collection and development of methodology for identification of data processing (softs)	August 2006
Evaluation of the pre-accession experience of Romania in implementation of the WFD	September 2006
Presentation of the draft of needs and gaps for the Integrated river basin management planning to main stakeholders in Moldova	October 2006
Final report of Moldova on the needs and gaps in developing of the Integarted River basin management plan	November 2006

Actual project will be implemented in Moldova in cooperation with Romanian and Ukrainian Institutions. Leading partner for this activity in Moldova will be Center for Strategic Environmental Studies "ECOS". Outcomes of the project will be further used for the development of UNDP/GEF activities under the Prut Initiative and other relevant activities in the basin.

10. MAIN STAKEHOLDERS AND BENEFICIARIES INVOLVED IN THE PROJECT:

- ⇒ Ministry of Ecology and Natural Resources
- ⇒ State Concern "Apele Moldovei"
- ⇒ Institute "ACVAPROIECT"
- ⇒ State Ecological Inspectorate
- ⇒ Regional Ecological Inspectorate located in the Prut river basin
- ⇒ Local authorities
- ⇒ NGO community
- ⇒ Research Institutions

Development of the project will strongly contribute to the strengthening of capacities of Moldavian institutions in implementation of the WFD provisions on national level and facilitate the process of cooperation with EU in the frame of Action Plan EU - Moldova. This project presents first steps in coordinated efforts of Moldova, Romania and Ukraine for cooperation in the field of water management and further joint efforts in the frame of future Prut initiative. Romanian experience as an accession country in the field of implementation of the WFD will be crucial for further success of the integrated river management planning in the basin and cooperation of EU and non-EU countries.

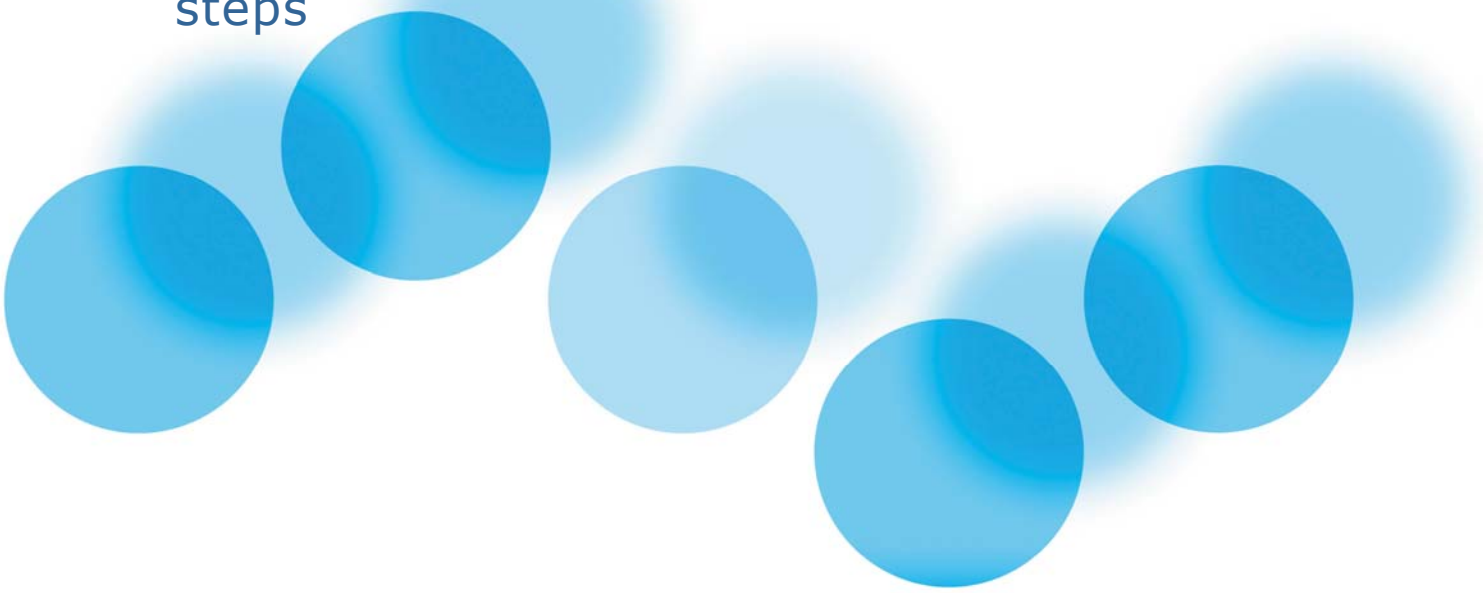
UNDP I GEF
DANUBE
REGIONAL
PROJECT

May 2006

"PRUT RIVER BASIN MANAGEMENT"

CASE STUDY

Ukrainian country report for development of the Prut River Basin Management Plan - Assessment of the current status and future steps



UNDP GEF

WORKING FOR THE DANUBE AND ITS PEOPLE

TABLE OF CONTENT

"PRUT RIVER BASIN MANAGEMENT"

CASE STUDY

Ukrainian country report for development of the

Prut river basin management plan

Contribution to the WFD implementation process

1. INTRODUCTION

Prut takes its source at northern-Eastern hill of Chornogora mountains at height around 1600 m. Besides Danube itself, Tisza and Siret, Prut is another Ukrainian river from Danube river basin. The length of the river is 967 km, out of which 299 km flow on Ukrainian territory. According to the data from Guidebook "Water fund of Ukraine", the total catchment area is 27,500 km2, out of this 17 400 km is at Ukrainian area (63%). This river is transboundary between Ukrainian, Moldova and Romania. At the Ukrainian territory the basin is located in two administrative districts (Oblasts): Chernivtsi and Ivano-Frankivsk.

2. UPDATE ON THE STATUS OF PART B REPORT

WFD is not obligatory for Ukraine, because it is not member of EU. However, implementation of WFD is very actual issue for transboundary water bodies located at Western borders of Ukraine for harmonization of approaches on river basin management. Ukraine is a Contracting Party of ICPDR since Ukrainian Parliament has ratified Danube Convention 17 January 2002.

At present, Ukraine actively participates in the preparation of roof report for Tisza basin in frame of ICPDR. Importance of the preparation of the same report for Prut river was highlighted many times and now there is an urgent need to develop it, as far as one of the basin countries is going to become EU member in 2007. According to the WFD, until 2009 Danube River Basin Management Plan should be developed, and Prut RBMP should be an integral part of the Plan.

Ukraine signed governmental co-operation on cooperation on transboundary waters with Romania (30.09.1997). In February 1994, an agreement on the common use and protection of transboundary waters was signed between the Governments of Moldova and Ukraine. State Water Committee is in charge of implementation of these agreements on behalf of Ukraine. The areas of common interest between Ukraine and Moldova are quantitative protection of surface and groundwater sources, and prevention of their pollution, they also have agreed on common water quality objectives and water quality criteria. In March 1997, a cooperation agreement on environmental protection and the sustainable use of natural resources was signed between Moldova and Romania, which among other topics promotes cooperation on issues concerning the Prut River. In the frame of the agreement with Romania, two Working groups were established: one for Tisza and another – for Prut basin. In December 2005 on ICPDR Ordinary meeting Heads of Delegations of all three countries expressed their political will to develop together Integrated Prut Basin River Management Plan.

3. OVERVIEW OF CURRENT STATUS OF ART 5 OF THE WFD: NEEDS OF DATA, METHODOLOGIES AND GAPS

At present, WFD is not implemented in the Ukrainian part of Prut basin. Below there is analysis of needs to implement WFD for Prut.

3.1. Identification of surface waters categories

It seems that it is very simple task. Among 5 proposed by WFD categories, there are just 2 categories in Prut – rivers and artificial water bodies (water storages and ponds) – total number of which is more than 500, no significant lakes.

3.2. Surface water types and reference conditions

Prut basin is located within 3 ecoregions: 10 Carpathians, 16 Eastern plains, and 12 Pontic Province. The Ukrainian part of the basin is located only in two first eco-regions. Traditional Ukrainian physical-geographical zoning in general fits with ecoregions proposed by WFD. They can be used as a basis. Typology was not done in Ukraine, except Tisza basin.

The major part of Tisza basin is located in Carpathian ecoregion, so this experience can be used for Prut. The Typology was done using System B: obligatory 3 descriptors + ecoregions + mean size of river bottom substrate. Class differentiation for obligatory descriptors is done according to the System A. Another descriptor - mean size of river bottom substrate - was proposed as one of the most relevant for biological assessment. Class borders are connected to another descriptor - catchment altitude to avoid creation of new non-necessary types. This typology was written taken into account Romanian typology, so it can be transformed for the Prut basin.

There were several biological furled surveys conducted to define reference conditions. However, this data is incomplete, and there is a need for further investigations. There is not data on hydromorphological reference conditions.

3.3. Identification of surface water bodies

The identification should be done after typology is done. The identification of heavily modified water bodies is also not done, but taking into consideration that part of the basin is located at the territory of Carpathian national park we can suppose, that it is not modified.

3.4. Identification of significant pressures

Water quality monitoring data is available, but they cover around 20 main parameters, such as physical-chemical, oxygen regime, nutrients and main ions and some metals. There is a lack of classification system. None of Ukrainian laboratories in the basin does have atomic absorption spectrophotometers and gas chromatographers to determinate Priority substances.

There are no enterprises – significant polluters in the basin. However Chernovsty city and other cities discharge its waste waters into Prut river, which lead to high contains of nutrients. Downstream of Ukrainian part of Prut basin is heavily used for agriculture, regardless that the quantity of mineral fertilisers and pesticides is dramatically decreased during last two decades, diffuse pollution is a large issue to be studied.

There are no significant hydromorphological alterations, because the river is non-navigable, as well as no water diversion and hydropower generation.

3.5. Assessment of impact on basin-wide level.

Analysis of impacts from organic pollution, contamination of hazardous substances, from nutrient loads, by hydromorphological alterations and over-fishing is not done. There are just separate researches done by different organizations in different time, which needs to be summarised.

3.6. Heavily modified surface waters.

Analysis of heavily modified water bodies was not conducted. There is no methodology and experience how to conduct such a work. However, as it was stated above, we can suppose that there are not many heavily modified surface water bodies in the basin.

3.7. Characteristics of ground waters

There are monitoring data on quality and quality of ground waters. However, the delineation of ground waters is not conducted. There is no clear information which waters are transboundary and on risk assessment.

3.8. Economic analysis

There is official statistics of surface and ground water in-take and wastewater discharge with identification of pollution loads. There is statistics of charges collected in the basin for these forms of water use. Statistics shows distribution of charges by different water users in different fields of economy for long-term period. There is prognostic data on water use up to 2015.

4. PROPOSED TIMETABLE AND RESPONSIBILITIES FOR PRUT RIVER BASIN MANAGEMENT PLAN COMPLETION

The milestone for Danube RBMP is 2009. By this date, it should be finished together with Prut RBMP as its component. Indicative timetable is as follows:

#	Activity	Deadline
1	Establishment of Prut national expert group Establishment of Prut international expert group	September 2006
2	Inventory and gap analysis	December 2006
3	Preparation of Prut RBMP (following the experience of Tisza, Sava and Danube RBMP)	December 2007
4	Presentation of Draft Prut RBMP and its public discussion	March 2008
5	Prut River basin managements plan completed	November 2008

5. ORGANISATIONS INVOLVED

The general co-ordination of Prut RBMP preparation from Ukrainian side will be done by the Ministry of Environmental Protection of Ukraine under guidance of Head of ICPDR Delegation from Ukraine.

The organizations involved in the collection of data for Prut RBMP:

- State Department of Environment and Natural Resources in Ivano-Frankivsk Oblast
- State Department of Environment and Natural Resources in Chernivsti Oblast
- Prut and Dnister water management Department
- Ivano-Frankivsk Oblast Hydrometerological Service
- Chernivtsi Oblast Hydrometerological Service
- Water supply and treatment companies
- Oblast departments of the Ministry of Health care.

In the process of data evaluation and writing of the final Prut RBMP documents, national specialists from different sciences (hydrology, biology, chemistry, economics) should be involved.

UNDP I GEF
DANUBE
REGIONAL
PROJECT

May 2006

"PRUT RIVER BASIN MANAGEMENT"

CASE STUDY - WFD IMPLEMENTATION IN THE PRUT BASIN

Needs and Gaps Analysis – Actual state of art in the development of the Integrated Prut River Basin Management Plan in the Prut Countries

Workshop 25 May 2006, Chisinau, Moldova

I. Romania

The report on WFD has been prepared and submitted to the EC.

As a requirement of WFD the appropriate coordination have to be established between the countries sharing the same river basin.

- Romania and Ukraine have at the level of government signed the agreement for cooperation in water management for transboundary rivers. Information exchange is according with the annual programmes.
- An agreement at the level of governments between Romania and Moldova it is not yet signed.

Needs

1. Lack of data regarding chemical and biological monitoring.
2. The necessity of the implementation of the new concept of integrated monitoring of waters with triple integration: of areas and investigation field and also of elements / components which are surveyed: biologic, hydromorphologic and physical – chemical.
3. Reference sites have not been found for all river and lakes types. It has to be underlining the missing of historical relevant data for the evaluation of reference sites.
4. There is a lot of incertitude concerning the reference sites for the rivers without permanent water flow.
5. Studies concerning the characterization and establish of the environmental objectives are necessary for the rivers without permanent water flow.
6. Taking into account the large number of bodies "possible at risk" it is necessary a special monitoring, which will survey the entire water body and determine as accurate as possible all the pressures, including the diffuse pressures.
7. For a further detailed and complete characterization, mathematical models, criteria of evaluation and case studies are necessary (e.g. "The effect of anthropogenic pressures on biota" or "The impact of the reservoirs on the rivers"). Also it is necessary to elaborate methodologies for the global characterization of water quality in 5 classes according the Water Framework Directive 2000/60/EC.
8. At the level of the basin there were not yet evaluated the enviromental costs and the costs due to the over explotation of the natural resources.

II. Moldova

Recently Ministry of Ecology and Natural Resources has performed comparative analysis of Moldavian water legislation in force with the provisions of the WFD and presented them during meeting in the frame of the implementation of the Moldova – EU Action Plan signed in April 2005.

The WFD approaches and relevant technical issues will be specifically in focus of future National Water Resource Management Strategy, currently under development by Apele Moldovei (responsible is - ACVAROIECT institute).

Gaps

Main gap in Moldova is GIS development and use of GIS format for presentation of different data, maps, etc. In this context, Moldavian expert in the GIS expert group has presented a report, which could serve as a base for estimation of concrete needs of Moldova in this context. On the base of estimations made for GIS expert group one could conclude necessity of Moldavian Institutions in procurement of relevant hardware and software.

Another point is insufficient data in the estimation of water flows, especially on the small rivers.

Another important gap is to complete the data collection for river bodies characterization as it is only the first steps has been done by ACVAPROIECT (testing of some initial WFD requirements). It is important to work further in deep for pressure and impact analysis and HMWB designation test.

The gap can be also associated with economic analysis.

Good definition of reference conditions (for internal rivers and lakes) is a week point as well. It is also related to the designing of monitoring networks according to the water bodies approach (currently there are no modification of traditional monitoring approaches from "to monitor rivers at different points" towards more integrated information for water bodies, combined water quantity and quality monitoring, assessment of tributaries impacts, biological water quality status and reference conditions, assessment of good ecological status and maximal ecological potential)

Legal incorporation of WFD provisions and IWRM concept in national legislation may the important and urgent steps for "legalization" of WFD in Moldova. It will allow to attract the national budget and other funds for expertise and technical assistance which is urgently required for WFD implementation and transboundary cooperation.

III. Ukraine

Update on the status of Part B report

WFD is not obligatory for Ukraine, because it is not member of EU. However, implementation of WFD is very actual issue for transboundary water bodies located at Western borders of Ukraine for harmonization of approaches on river basin management.

Ukraine signed governmental co-operation on cooperation on transboundary waters with Romania (30.09.1997). In February 1994, an agreement on the common use and protection of

Gaps

The data is incomplete, and there is a need for further investigations to define reference conditions. There is not data on hydromorphological reference conditions.

Analysis of heavily modified water bodies was not conducted. There is no methodology and experience how to conduct such a work. However, as it was stated above, we can suppose that there are not many heavily modified surface water bodies in the basin.

There are monitoring data on quality and quality of ground waters. However, the delineation of ground waters is not conducted. There is no clear information which waters are transboundary and on risk assessment.

There is official statistics of surface and ground water in-take and wastewater discharge with identification of pollution loads. There is statistics of charges collected in the basin for these forms of water use. Statistics shows distribution of charges by different water users in different fields of economy for long-term period. There is prognostic data on water use up to 2015.

PRUT RIVER BASIN MANAGEMENT CASE STUDY

WFD implementation in the Prut basin
Component 1
Assessment of the current status and future steps

Workshop 25 May 2006, Chisinau, Moldova

Oana Islam, CESEP Romania

Project Management

- **Funding**: UNDP/GEF Danube Regional Project
- **Technical supervision**: Steering Committee
- **SC Chairs**: Anca Savin and Dumitru Drumea
- **SC members**: Oana Islam, Gheorghe Constantin, Tatiana Belous, and Kyryl Sereda
- **Execution**: Romania, Moldova, Ukraine

Project Objective

- To support Moldova, Ukraine and Romania for the development of the Prut river basin management plan, in line with the WFD

Main Components

- **Component 1** - **Prut River Basin Management Plan**
- **Component 2** - **Adapting policy objectives and measures to WFD/CAP reform, through raising awareness**
- **Component 3** - **Changing consumer behaviour due to the introduction of phosphate free detergent into the market**
- **Component 4** - **Stakeholders dialogue, partnerships and networking**

Component 1 - Prut River Basin Management Plan

- **Activity 1. Establish project coordination (SC)**

- **Activity 2.**

Contribution to the WFD implementation process:

- **Prepare Overview of the current situation concerning the Development of Prut river basin management plan:**
  - ⇨ **Needs**
  - ⇨ **Gaps**
  - ⇨ **Expectations, and**
  - ⇨ **Steps to be undertaken.**

Component 1. Activity 2.

Contribution to the WFD implementation process: Prepare Overview of the current situation concerning the Development of Prut river basin management plan

Tasks

- **2.1. Collect and compile data and information on the status of WFD implementation in the three countries**
- **2.2. Conduct analysis to identify information and data gaps**
- **2.3. Workshop April 2006, Chisinau, Moldova, WFD implementation in the Prut basin: assessment of the current status and future steps presented.**
- **Drafting the report of the component 1.**

Component 2.

Adapting policy objectives and measures to WFD/CAP through awareness raising activities

- **Production of project documents for transboundary farm demonstration project to be implemented as part of the joint WFD/CAP reform implementation**
- **Organize awareness raising campaign on the introduction of the BAT at selected farm AGROIND Berezeni, Prut basin**
- **Design REFLECTION MATRIX," and INFORMATION DIALOGUE BOX".**
- **Organize workshop, Romania Prut basin**
- **Date ???**

Annex 7

AGENDA OF THE WORKSHOP

3RD – 4TH AUGUST 2006
IASI, ROMANIA

3 August 2006		
	Arrival of participants	
4 August 2006		
7:30	Transfer of participants to the Farm	Anca and Marcel
10:00	Start of the meeting. Introduction of participants	
10:10	Introduction of the project component 2	Oana
10:20	Presentation of the farm (Romania)	Chief eng. from the farm
10:30	Presentation of National reports	Dumitru, Kyryl
10:50	Results of the World Bank projects on controlling pollution from agriculture. Maybe something about WB projects in Ukraine and Moldavia.	Dumitru, Kyryl
11:10	Coffee break	
11:30	Presentation of BAT, experience in Romania. (concept, principles, controlling pollution from agriculture, implementation, next steps, responsibilities)	Marcel
12:10	Discussions (collecting the questionnaires, discussions of the survey results)	Anca, Marcel
12:30	Visit the farm (implementation of BAT)	
13:00	Transfer of participants from the Farm to Iasi	
15:30	Lunch	
17:00	Steering Committee meeting: Discussions about report: next steps, responsibilities, and deadlines. Component 3, further steps	
18:00	End of the workshop	
19:00	Dinner	

Annex 8

Component 2:
Constientizare ecologica privind Codul celor mai bune practice agricole conform legislatieie Uniunii Europene

Activitatea	**Indicator**
Activitatea 3. Elaborare documente pentru a fi discutate la ferma selectata	
3.1. **Discutii legate de poluarea difuza a apei datorita agriculturii prin consum** excesiv de ingrasaminte	• Rapoarte ale fiecarei tari
3.2. Evaluarea gradului de cunoastere a fermierilor privind utilizarea celor mai bune practice agricole pentru realizarea unei calitati bune a apelor conform cu Directiva Cadru a Apei a UE	• Gradul de cunoastere privind cele mai bune practici agricole • Recomandari pentru imbunantatirea constientizarii ecologice afermierilor
Activitatea 4. Organizarea campaniei ecologice de introducere a Codului celor mai bune practice agricole la AGROIND Berezeni, Vaslui	
4.1. Organizarea campaniei ecologice de introducere a Codului celor mai bune practice agricole la AGROIND Berezeni	• Distribuire documente. • Discutarea experientelor tarilor implicate • Input de la fermieri
4.2. Evaluarea modalitatilor de introducere a Codului celor mai bune practice agricole la ferma AGROIND prin crearea unei **Matrici a Opiniilor** prin participarea tuturor partilor interesate.	• **Matricea Opiniiilor** este creata. • Se administreaza chestionarul (elaborat de Directia Apelor Prut), fata in fata, si rezultatele se pun in matrice.
4.3. Se evaluaeaza relevanta problematicii nutrientilor si a utilizarii Codului prin realizarea unei " **Casute de dialog**", on line in care se pot adresa intrebari de catre fermieri si se pot obtine raspunsuri oferite de partenerii implicati in proiect.	• " **Casuta de dialog"** creata in pagina de web a proiectului • Se aleg intrebari si raspunsuri posibile leagte de poluare, nutrienti, masuri de reducere a polarii din agricultura, etc.
4.4. Organizare workshop in Romania, la AGROIND Berezeni.	• Se elaboreaza Raportul final de componenta

Annex 9

Chestionar privind aplicarea Codului de Bune Practici Agricole * in fermele din Romania

1. Denumiti ingrasamintele utilizate conform tabelului anexat:

Nr. crt	Specificul fermei	Denumire ingrasamant	Perioada aplicata	Cantitate /ha

2. Pentru a se reduce riscul de spalare, precizati cu cate un X in casuta alaturata daca se aplica ingrasaminte, sau nu functie de cum este solul:

Solul	Se aplica (DA)	Nu se aplica (NU)
Imbibat cu apa		
Inundat		
Inghetat		
Acoperit de zapada		

3. Precizati care este valoarea corecta a cantitatii de ingrasamant organic natural (gunoi de grajd) care este permisa a se aplica anual la ha de suprafata inierbata: (notati cu x)

Cantitate ingrasamint gunoi de grajd maxim admis anual pe suprafata inerbata [kg azot / ha]	Valoarea corecta
150	
250	
350	
450	

4. Precizati care este valoarea corecta a cantitatii de ingrasamant organic natural (gunoi de grajd) care este permisa a se aplica anual la ha de suprafata neinierbata: (notati cu x)

Cantitate ingrasamint gunoi de grajd maxim admis anual pe suprafata neinerbata [kg azot / ha]	Valoarea corecta
210	
310	
410	
510	

5. Nu se aplica ingrasaminte naturale lichide, gunoi de pasari sau namol lichid de canalizare fermentat, pe soluri nisipoase sau subtiri, pe campuri inierbate permanent, sau pe care se cultiva culturi de toamna, in perioada: (notati cu X intervalul corect):

Perioada de interdictie	**Valoarea corecta**
1 iulie- 1 ianuarie	
1 septembrie – 1 ianuareie	
1 septembrie – 1 februarie	
1 octombrie – 1 martie	

6. Nu se aplica ingrasaminte naturale lichide, gunoi de pasari sau namol lichid de canalizare fermentat, pe soluri nisipoase sau subtiri, ori pe campuri pe care se aplica alte culturi decat cele de toamna in perioada: (notati cu X intervalul corect):

Perioada de interdictie	**Valoarea corecta**
1 iulie- 1 ianuarie	
1 august – 1 februarie	
1 septembrie – 1 februarie	
1 octombrie – 1 martie	

7. In cazul aplicarii ingrasamintelor de tip –dejectie lichida- distanta minima pana la apa de suprafata trebuie sa fie de:

Distanta minima pana la apa de suprafata [m]	**Valoarea corecta**
10	
20	
30	
40	

8. In cazul aplicarii ingrasamintelor de tip –dejectie lichida- distanta minima pana la punctul de captare apa potabila trebuie sa fie de:

Distanta minima pana la captarea apei potabile [m]	**Valoarea corecta**
100	
200	
300	
400	

9. Capacitatea de depozitare disponibila pentru dejectiile animaliere ce nu pot fi aplicate pe perioada inchisa de toamna trebuie sa fie:

Capacitatea de depozitare in perioada inchisa	**Valoarea corecta**
Egala cu capacitatea curenta	
Egala cu ¾ din capacitatea curenta	
Nu conteaza daca daca exista alte mijloace de eliminarea nepericuloase pentru mediu	

10. Evidentele de pastrat intr-o ferma care trebuie prezentate organului de control:

Evidentele de pastrat	**Numai in zona vulnerabila**	**In orice zona**
Suprafata fermei si a fiecarui camp in parte, exclusive suprafetele impadurite si drumurile de acces		
Culturi semanate pe fiecare camp, inclusiv data semanatului		
Aplicarile de ingrasamant cu azot, inclusiv cantitatile si datele aplicarii		
Toate aplicarile de ingrasaminte naturale, inclusiv tipul, cantitatile si datele aplicarii		
Animalele crescute la ferma, inclusiv tipul si durata existentei (respectiv ciclurile normale de reinnoire)		
Gunoiul de grajd scos din ferma, inclusiv cantitatile , datele si detalii cu privire la destinatar.		

---

* Codul de Bune Practici Agricole a fost realizat in Romania in baza Ordinului nr. 918/2002 al MMGA, si aprobat prin Ordinele comune nr. 1182/ 2005 a MMGA si nr.1270/2005 a MAPDR

Annex 10

Chestionar privind aplicarea Codului de Bune Practici Agricole * in fermele din Romania

1. Denumiti ingrasamintele utilizate conform tabelului anexat:

Nr. crt	Specificul fermei	Denumire ingrasamant	Perioada aplicata	Cantitate /ha
	mixta	amoniu	In vegetatie	70
		nitrati	In vegetatie	90
		uree	In vegetatie	90
		superfosfati	Inainte semanat	120-130

2. Pentru a se reduce riscul de spalare, precizati cu cate un X in casuta alaturata daca se aplica ingrasaminte, sau nu functie de cum este solul:

Solul	Se aplica (DA)	Nu se aplica (NU)
Imbibat cu apa		X
Inundat		X
Inghetat	X	
Acoperit de zapada	X	

3. Precizati care este valoarea corecta a cantitatii de ingrasamant organic natural (gunoi de grajd) care este permisa a se aplica anual la ha de suprafata inierbata: (notati cu x)

Cantitate ingrasamint gunoi de grajd maxim admis anual pe suprafata inerbata [kg azot / ha]	Valoarea corecta
150	
250	X
350	
450	

4. Precizati care este valoarea corecta a cantitatii de ingrasamant organic natural (gunoi de grajd) care este permisa a se aplica anual la ha de suprafata neinierbata: (notati cu x)

Cantitate ingrasamint gunoi de grajd maxim admis anual pe suprafata neinerbata [kg azot / ha]	Valoarea corecta
210	X
310	
410	
510	

5. Nu se aplica ingrasaminte naturale lichide, gunoi de pasari sau namol lichid de canalizare fermentat, pe soluri nisipoase sau subtiri, pe campuri inierbate permanent, sau pe care se cultiva culturi de toamna, in perioada: (notati cu X intervalul corect):

Perioada de interdictie	**Valoarea corecta**
1 iulie- 1 ianuarie	
1 septembrie – 1 ianuareie	
1 septembrie – 1 februarie	X
1 octombrie – 1 martie	X

6. Nu se aplica ingrasaminte naturale lichide, gunoi de pasari sau namol lichid de canalizare fermentat, pe soluri nisipoase sau subtiri, ori pe campuri pe care se aplica alte culturi decat cele de toamna in perioada: (notati cu X intervalul corect):

Perioada de interdictie	**Valoarea corecta**
1 iulie- 1 ianuarie	
1 august – 1 februarie	X
1 septembrie – 1 februarie	X
1 octombrie – 1 martie	

7. In cazul aplicarii ingrasamintelor de tip –dejectie lichida- distanta minima pana la apa de suprafata trebuie sa fie de:

Distanta minima pana la apa de suprafata [m]	**Valoarea corecta**
10	
20	X
30	
40	

8. In cazul aplicarii ingrasamintelor de tip –dejectie lichida- distanta minima pana la punctul de captare apa potabila trebuie sa fie de:

Distanta minima pana la captarea apei potabile [m]	**Valoarea corecta**
100	
200	
300	X
400	

9. Capacitatea de depozitare disponibila pentru dejectiile animaliere ce nu pot fi aplicate pe perioada inchisa de toamna trebuie sa fie:

Capacitatea de depozitare in perioada inchisa	Valoarea corecta
Egala cu capacitatea curenta	X
Egala cu ¾ din capacitatea curenta	
Nu conteaza daca daca exista alte mijloace de eliminarea nepericuloase pentru mediu	

10. Evidentele de pastrat intr-o ferma care trebuie prezentate organului de control:

Evidentele de pastrat	Numai in zona vulnerabila	In orice zona
Suprafata fermei si a fiecarui camp in parte, exclusive suprafetele impadurite si drumurile de acces	X	X
Culturi semanate pe fiecare camp, inclusiv data semanatului	X	X
Aplicarile de ingrasamant cu azot, inclusiv cantitatile si datele aplicarii		X
Toate aplicarile de ingrasaminte naturale, inclusiv tipul, cantitatile si datele aplicarii		X
Animalele crescute la ferma, inclusiv tipul si durata existentei (respectiv ciclurile normale de reinnoire)	X	X
Gunoiul de grajd scos din ferma, inclusiv cantitatile , datele si detalii cu privire la destinatar.		X

---

* Codul de Bune Practici Agricole a fost realizat in Romania in baza Ordinului nr. 918/2002 al MMGA, si aprobat prin Ordinele comune nr. 1182/ 2005 a MMGA si nr.1270/2005 a MAPDR

CODUL CELOR MAI BUNE PRACTICI AGRICOLE

Workshop Agroind Berezeni Vaslui

3-4 August 2006

Oana Islam, CESEP Romania

Cadrul legal

ORDIN Nr. 1270 din 30.11. 2005

MINISTERUL MEDIULUI ŞI GOSPODARIRII APELOR
si
MINISTERUL AGRICULTURII, PADURILOR ŞI DEZVOLTARII RURALE

privind aprobarea Codului de bune practici agricole pentru protectia apelor impotriva poluarii cu nitrati din surse agricole

CONTINUTUL CODULUI

- CUPRINS
- I INTRODUCERE
- 1.1 Apa şi solul ca resurse naturale regenerabile
- 1.2 Prevenirea poluării mediului inconjurător
- 1.3 Agricultura ca factor poluant al mediului, in special al solului şi apei
- 1.4 Zonele vulnerabile sau potenţial vulnerabile la poluarea cu nitraţi din surse agricole
- II DEFINIŢII
- III SISTEME DE AGRICULTURA
- IV INGRĂŞĂMINTELE, SURSE POTENŢIALE DE POLUARE A APEI ŞI
- SOLULUI
- 4.1 Ingrasaminte minerale sau chimice
- 4.2 Ingrasaminte organice
- 4.3 Principii generale de fertilizare rationala

CONTINUTUL CODULUI

- V FERTILIZANŢI CARE CONŢIN AZOT
- VI FERTILIZANŢI CARE CONŢIN FOSFOR
- VII DEPOZITAREA ŞI MANIPULAREA ÎNGRĂŞĂMINTELOR CHIMICE;
- VIII DEPOZITAREA ŞI MANAGEMENTUL EFLUENŢILOR ŞI
- GUNOIULUI DE GRAJD
- IX APLICAREA FERTILIZANŢILOR CU AZOT
- X APLICAREA FERTILIZANŢILOR CU FOSFOR
- XI ASPECTE DE MANAGEMENT AL TERENURILOR AGRICOLE ÎN
- CEEA CE PRIVESTE DINAMICA AZOTULUI
- XII PREVENIREA POLUĂRII APELOR DE SUPRAFAŢĂ ŞI A APELOR
- SUBTERANE CAUZATE DE FERTILIZANŢI ÎN CAZUL IRIGAŢIILOR ŞI
- UDĂRILOR
- XIII PLANURI DE FERTILIZARE ŞI REGISTRUL EVIDENŢEI

UTILIZĂRII FERTILIZANŢILOR ÎN EXPLOATAŢIILE AGRICOLE

XIV FIŞE ŞI BORDEROURI CUPRINSE ÎN PROGRAMUL DE ACŢIUNE ÎN ZONELE VULNERABILE LA POLUAREA CU NITRAŢI

- ANEXE

UNDP I GEF
DANUBE
REGIONAL
PROJECT

Annex 12

"PRUT RIVER BASIN MANAGEMENT" CASE STUDY

Component 2

Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities

UNDP GEF Danube Regional Project Concept of the Best Agricultural Practices/Good Farm Practices

Workshop 3-4 August 2006, Iasi, Romania

LOCATION

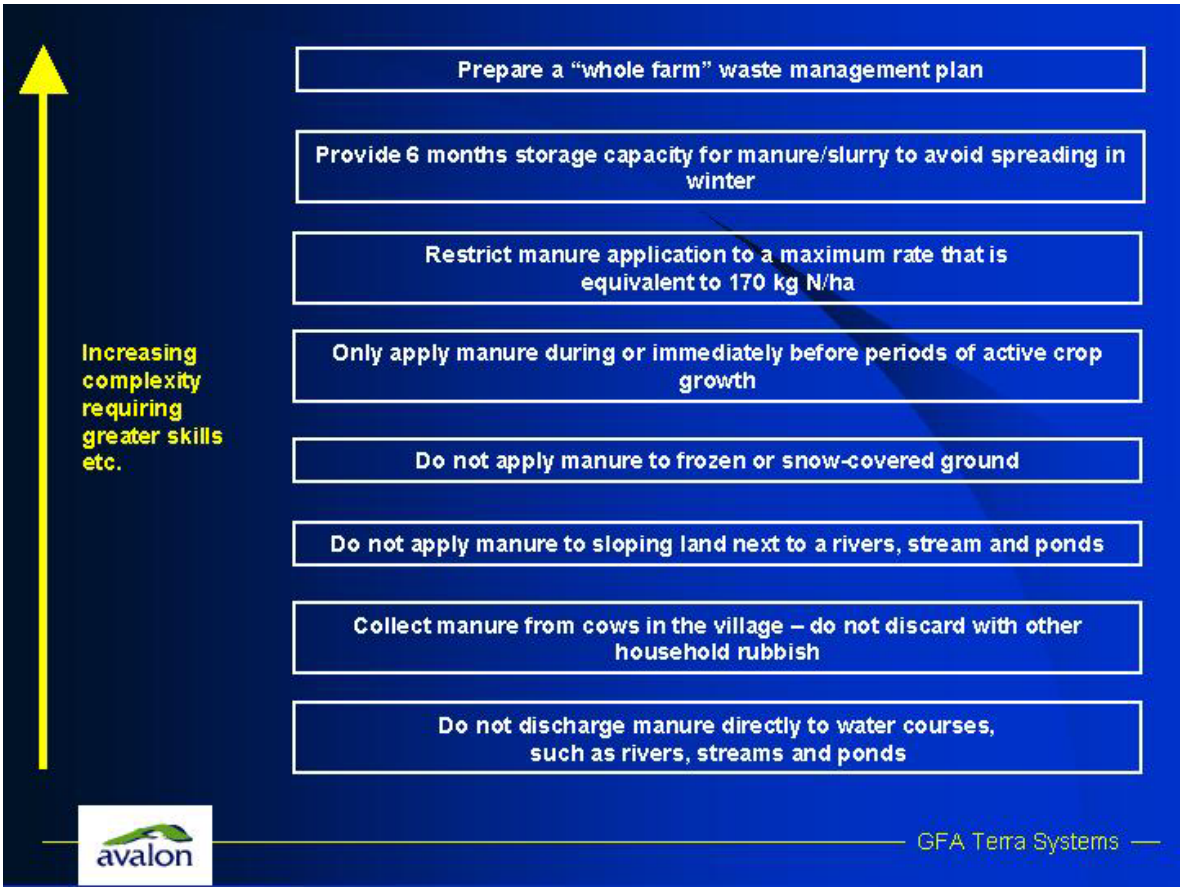
Farm Agroind Berezeni

BEST AGRICULTURAL PRACTICES (BAP)/ GOOD FARM PRACTICES (GFP)

DEFINITION

"…the highest level of pollution control practice that any farmer can reasonably be expected to adopt when working within their own national, regional and/or local context in the Danube River Basin" and the associated hierarchy of BAP.

Example of BAP/GFP for manure application is given below:



The BAP is not a fixed or prescriptive concept, but provides a framework for understanding that the level of pollution control/environmental management that we can reasonably expect from farmers in different DRB countries will vary according to:

- **Agronomic**, **environmental** and **socio-economic** context
- **Available know-how and technology** etc. to support farmers to adopt higher levels of BAP
- **Available policy instruments/tools** to "push/pull" farmers up to higher levels of BAP – including regulatory, economic and informative/advisory policy instruments.

CONDITIONS FOR GOOD IMPLEMENTATION:

- The concept of BAP must be **flexible and adaptable** to address the considerable diversity of the DRB countries
- The concept is appropriate is appropriate to the DRB, but requires **further development and elaboration**
- It is important to consider the **pre-conditions for BAP** – consolidation of land ownership, greater co-operation between farmers, increased institutional capacity and policy-making experience
- There remains a **significant lack of information** on the causes of agricultural pollution in the DRB and the practical measures for farmers to reduce the risk of pollution
- It is necessary to target awareness-raising and information at **all stakeholders levels** from farmers to policy-makers
- The promotion of BAP must be linked to **economic benefits** for the farmer such as improvements in yield and savings in the cost of agrochemical inputs
- There should be more emphasis upon a **"farming systems" approach** to agricultural pollution control rather than simply an "input reduction" approach.

UNDP I GEF
DANUBE
REGIONAL
PROJECT

Annex 13

"PRUT RIVER BASIN MANAGEMENT" CASE STUDY

Component 2

Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities

Workshop 3-4 August 2006, Iasi, Romania

LOCATION

Farm Agroind Berezeni

LIST OF PARTICIPANTS

1. **Oana Islam, Center For Environmentally Sustainable Economic Policy (CESEP)**
2. **Anca Savin, National Administration Romanian Waters, Prut Directorate Iasi, Romania**
3. **Marcel Perjoiu, Administration " Romanian Water", Prut Directorate Iasi, Romania**
4. **Dumitru Drumea, Center for Strategic Environmental Studies ECOS, Moldova**
5. **Tatiana Belous, Center for Strategic Environmental Studies ECOS, Moldova**
6. **Anatol Ciobanu, Moldova**
7. **Mihai Lupu, Moldova**
8. **Rodica Boica, Moldova**
9. **Vasilie Ionese, Moldova**
10. **Kyryl Sereda, Ministry of Environment, Ukraine**
11. **Mr. Anatoliy Stashuk, Ukraine**

WORKSHOP OBJECTIVES

1. Assess the current situation concerning the use of Best Agricultural practices at a selected farm: problems, pollution, practices
2. Enhance understanding on the impacts of the introduction of the Best Agricultural Practices at a selected farm
3. Present BAT concept and BAP experiences
4. To discuss options for demonstrating benefit of BAP introduction at farms

AGENDA OF THE WORKSHOP

3RD – 4TH AUGUST 2006
IASI, ROMANIA

LOCATION

Farm Agroind Berezeni

CHAIR: ANCA SAVIN / MARCEL PERJOIU

3 August 2006		
	Arrival of participants	
4 August 2006		
7:30	Transfer of participants to the Farm	Anca and Marcel
10:00	Start of the meeting. Introduction of participants	
10:10	Introduction of the project component 2	Oana
10:20	Presentation of the farm (Romania)	Chief eng. from the farm
10:30	Presentation of National reports	Dumitru, Kyryl
10:50	Results of the World Bank projects on controlling pollution from agriculture. Maybe something about WB projects in Ukraine and Moldavia.	Dumitru, Kyryl
11:10	Coffee break	
11:30	Presentation of BAT, experience in Romania. (concept, principles, controlling pollution from agriculture, implementation, next steps, responsibilities)	Marcel
12:10	Discussions (collecting the questionnaires, discussions of the survey results)	Anca, Marcel
12:30	Visit the farm (implementation of BAT)	
13:00	Transfer of participants from the Farm to Iasi	
15:30	Lunch	
17:00	Steering Committee meeting: Discussions about report: next steps, responsibilities, and deadlines. Component 3, further steps	
18:00	End of the workshop	
19:00	Dinner	

Annex 14

National Report - Moldova

Best Agricultural Practices Code of Moldova was developed in 2006 by the specialists from the Ministry of Agriculture/ Soil Institute, Academy of Sciences and Ministry of Ecology with support of the WB/ GEF project Agricultural Pollution Control - Moldova.

The Code is not a draft law but is only advisory in nature. It was elaborated in conformity with several European Directives, Code of Good Agricultural Practices (CGAP), which has connection to EUs Nitrate Directive (676/91/EEC) and which only relates to nitrogen; Common Standards of Good Farming Practice (GFP) - determined by Council Regulation 1257/1999/EEC (provisons concerning suport for rural development under the EAGGF), which determines that member states have to formulate "good farm practice" standards in their Rural Development Plan 2004-2006; Statutory Management Requirements (SMR) - determined by EU Regulation 1782/2003/EEC, and is a set of EU directives in the area of nature, agri-environment, food saftey and animal welfare; Good Agricultural and Environmental Condition (GAEC) - determined by EU Regulation 1782/2003/EEC, and are regionally determined measures, which the farmers must observe concerning minimum standards for land management; Best Available Technique (BAT) – determined by EU Directive on Integrated Pollution Prevention and Control (IPPC) implying –the most effective and advanced stage in the development of activities and their methods of operation which indicate the practical suitability of particular techniques for providing in principle the basis for emission limit values designed to prevent and, where that is not practicable, generally to reduce emissions and the impact on the environment as a whole; 2092/91/CEE on use of biological methods in agri-culture; 91/271/CEE (tertiary treatment of municipal wastewaters), etc. which are aimed at reducing the use of manure and artificial fertilisers; measures aimed at reducing pesticide input; forestry measures and the agri-environment package.

The Best Agricultural Code Practices was also harmonized with relespective moldovan laws, such as Soil Code, Water Code, numerous laws on water, soil and forests protection.

However, until present there exists no a sepatate law regulating concentration of nutrients in watrr and soil to prevent surface water euthrofication. Their content is being regulated by so called allowble maximum concentrations elaborated during soviet times.

Within a long period of time concerns related to the management of aquatic resources have been focused primarily on water quality, and water quality management efforts were solely directed at assuring of the certain water quality conditions designed for the certain water use. By the time the scope of these management initiatives expanded to include protection of aquatic organisms and/ or other designated uses. However, a growing body of evidence have indicated that management efforts directed solely at the attainment of surface water quality criteria may not provide an adequate basis for protecting the of environment for aquatic ecosystems and therefore in recent years concerns related to the health of aquatic ecosystems reemerged.

The current system of water quality standards which is currently in use in Moldova comprises two main elements:

- *Ambient standards*, which are expressed in terms of *Maximum Allowable Concentrations (MACs)*. These are defined as the concentration of a substance in water above which the water is unsuitable for one or several types of water use (GOST 27065-86); and
- *Effluent standards*, which are expressed in terms of *Maximum Allowable Discharges (MADs).* These are the maximum mass of a substance in waste water that is allowed to be disposed of in the established regime in a given point of the waterbody per unit of time, in order to secure compliance with water quality standards at the check point (GOST 17.1.1.01-77).

The rationale for the establishment of former soviet ambient water quality standards was that the concentration of toxic substances in waters should not have a direct or indirect harmful impact on humans, animals or fish'. Soviet standards were thus based strictly on health considerations and were set at a level that, at least in theory, poses zero risk to human health. It was assumed that concentrations even slightly above the MAC presented a potential health risk. Procedures for the setting of standards were similarly based solely on health criteria and did not take into account available control technology, economic feasibility nor the ability in practice to detect pollutants at the concentrations necessary in order to determine compliance with the standards.

The system of ambient standards was developed on the basis of classification of waterbodies for particular uses. Waterbodies are categorized according to three designated uses:

- fishery;
- drinking water abstraction; and
- other water abstraction and recreation.

Two types of MAC standards are applied in relation to these categories:

- if a waterbody is used for drinking water supply, recreation and household/industrial purposes, sanitary MACs are applied; or
- if a waterbody is used for fishery purposes, fishery MACs are applied.

Sanitary MACs represent the maximum concentration, which does not affect (directly or indirectly) human health of present and future generations and does not impact adversely the sanitary conditions of water use. Fishery MACs represent the maximum concentration not affecting fishery operations in a waterbody or reducing its capacity to supportrt a viable commercial fishery.

Fishery criteria apply to all surface waters, derives from Resolution No.1045 of the Council of Ministers of the USSR of September 15, 1958. This stated that "All waterbodies and their tributaries which are being used or could be used for commercial fishing or are of importance to commercial fish reproduction are considered waterbodies for fishery purposes". Thus, almost all surface waters were classified as fishery waterbodies and were subject to regulations aimed at supporting a viable commercial fishery.

This classification system is still in place in Moldova and forms the basis for water quality regulation. The requirements for fishery waters are more stringent than those for other uses.

The "Water Code" allows national waterbodies to be used for: (i) drinking, domestic suppy and the food industry; (ii) health treatment (e.g. spas); (iii) agricultural irrigation; (iv) industrial supply and hydro-electric power generation; (v) navigation; (vi) fishery (i.e. fish-farming); (vii) (hunting and) natural reserves, (viii) discharge of wastewater, (ix) fire fighting and other state and public needs. The Water Code declares that the priorities for water use are drinking and domestic water supply.

The Water Code states that use of a waterbody with extraordinary national value, or with the high scientific and cultural value may be strictly prohibited. This protected status is indicated by designating the waterbody as a "natural reserve". The procedure for this is for the environmental authorities to propose a list of waterbodies to be adopted by the Government.

In addition, the Law on Natural Resources states that natural (water) bodies which have a high ecological value, and can not be used for production purposes, can be designated as "protected resources". If a waterbody is not in use, but potentially can be used, it is designated as a "reserve".

Law on the Animal Kingdom which states that all waterbodies that are used or potentially can be used for reproduction, growing and catching of fish and other water organisms and plants are designated as "fish-farming water" and the standards recommended for "fish-farming water" are particularly much stricter than standards for water used for drinking purposes.

No water quality parameters are defined for maintenance of aquatic ecosystems. The nearest parameters are those for fish farming, which may be considered as ecologically oriented, as they are based on methodologies which determine the extent of adverse impacts to aquatic organisms.

There is no definition of sensitive waters in Moldova legislation, nor a clear definition of protected waters. Associated natural components such as wetlands, feeding, breeding sites and habitats are not considered in the existing water quality objectives for fish-farming waters. The whole list of water quality parameters (more than 1000) is included in the water quality criteria for fish farming, no priority is given to dangerous substances, and funds for monitoring and reporting are severely limited. Hence, the whole list of substances cannot be used for monitoring, defining and controlling measures to improve water quality.

In practice, no official national assessments of waterbodies are carried out and no formal classification schemes are actually applied to classify real waterbodies. Therefore the default designation of "fish farming water" is widely applied to waterbodies.

The basis for environmental regulation in Moldova might be the a system of environmental quality standards (EQS) adopted in EU the primary aim of which is to protect human health and the natural environment from adverse effects including eithrofication.

In fact, nutrients Moldovan Fishery MAC's for the which to the certain degree of probability can be compared to the EU Freshwater Fishlife Directive (for cyprinid fish) are the following: N-NH4 (as NH4) - 0,39 mg/dm; N-NO2 (as NO2) – 0,02 mg/dm; N-NO3 (as N) – 9,1 mg/dm; molibdate reactive phosphorus (MRF as PO4) – mg/dm. Maximum allowable concentrations of total nitrogen and phosphorus are not determined. The surface water quality is regulary monitored by the State Hydrometeorological Service.

The same type of MAC's exists for determination of soil quality. In fact, for Nitrates (as NO3) it is 130 mg/kg, for Phosphates (as P2O5) – 200 mg/kg. Monitoring of the soil quality on arable lands is also carried out by the State Hydrometeorological Service, and also from time to time the soil quality survey is being performed by the Soil Institute and Agro-Chemistry Service.

Main part of pollutants originating from agriculture refers to the application of organic and mineral fertilizers, pesticides and wastes from animal farms. In comparison with the nineties, when the average use of mineral fertilizers was on the level of 220 kg/ha of a.c.(active component) for N and P, now actual average is on the level of 10 kg of N and 1kg of P per ha. Amount of organic fertilizers has also strongly reduced and consists actually of 0,3 tones per ha annually.

Agricultural sources of pollution are mainly represented by the diffuse sources, where any treatment is impossible. Main point sources of pollution from agriculture are animal farms, which actually are not working, but manure accumulated for many years is a significant source of pollution especially for underground aguifers.

Another pollutant originating from agriculture is pesticides. Actually the amount of pesticide application is on the level of 3-4 kg/ha and half of this amount is presented by copper sulfate.

On the base of the results obtained from material accounting for the Nutrient balances for the Moldavian part of the Danube River basin, actually the most important source of nitrogen and phosphorus for Moldova is erosion. In accordance with estimations it gives 2000-2300 tons of N and 130-200 of P.

Actually due to the structural changes in agricultural practice, approximately the same amount of animals is growing up in the households, without any treatment or deposited facilities.

Recently private households have become main producer of meat in Moldova. Treatment facilities at the private households are absent and produced manure is not treated. It is stored directly near the settlement or is used on the adjacent to the house cultivated area. Thus rural settlement can be estimated as a diffuse source of pollution especially for nutrients, BOD, bacteria and viruses.

Such a mode of the nutrient water quality assessment does not comply with Europen standards considering appropriate water quality control to prevent euthrophication and needs to be revised

To adequately protect and reduce nutrient load into surface water the relevant Moldovan laws should be approximated to European ones as soon as possible. There exists a strong political will for this however due to some reasons it is still under discussion.

There is also an obvious lack of methodological materials for that, financial resources to implement the new laws, if any. Tthe analytical laboratories are mostly very poor equipped and not accreditted, there is a lack of skilled personnel, etc.

Besides, there is a great need to implement basin- and nationwide public awareness campaigh with farmenrs in relation to appropriate manure stock and application, soil processing to avoid extra soil erosion, correct application of mineral fertilizers. In this regard some affoirts are being made in the framework of projects funded by the DRP (e.g. project "Developing Capacities to Promote Organic Farming to Reduce Nutrient Pollution in the DRB that covers Falesti district area and is being implemented by the environmental HGO Cutezaturul; project "Public Involvement in the Process of Nutrient Pollution Prevention and Reduction in the Lower Prut Basin through Complex Monitoring of the Quality of the Environment" that covers Cahul district area and is being implemented by the Cahul Ecological Consultation Center)

The most important challenges for implementation of the Best Agricultural Practices Code is to identify the waterbodies the most adversely affected by the nutrient pollution; to elaborate the programs and action plans towards nutrient pollution reduction; to develop and promote public awareness campaigns and create Consultation Centers on implementation of Best Agricultural Practices, etc.

Annex 15

Component 2

Romania national contribution

Reduction of nutrients and harmful substances from agricultural point and non-point sources through agricultural policy changes

Directive no. 91/676/EEC , regarding the protection of the waters against the pollution caused by nitrates from agricultural sources, was totally transposed, by adopting the following national normative documents:

- Romanian Government Decision no. 964/2000 regarding the approval of an Action Plan for the protection of the waters against the pollution with nitrates from agricultural sources and also regarding the setting up a Committee and a Support Group to apply this plan. The Committee includes specialists from the Ministry of Agriculture, Forestry, Water and Environment and from the Ministry of Health; the Support Group, formed by representatives of National Administration Romanian Waters, basinal committee and other specialised institutions being under the subordination, coordination or the authority of the ministries, works together with the Committee.
- Common Disposition no. 452/2001 and 105.951/2001 of the Ministry of Waters and the Protection of the Environment and of the Ministry of the Agriculture, Food and Forestry for the approval of the organizational and functional statute, prerogatives and constituent parts of the Committee and of the Support Group, in order to put into practice the Action Plan ;
- Disposition no.740/2001 of the Ministry of Waters and the Protection of the Environment for the approval of the nominal constituents of the Committee;
- Disposition no.918/2002 of the Ministry of Waters and the Protection of the Environment for the approval of the Best Practices Code in Agriculture for farmer's usage ;
- Institutionalization of the System Integrated National Support of monitoring, surveillance, control and decision-making to reduce the contribution of the pollutants from agricultural sources in underground and surface waters realized by the Disposition 1072/2003 of the Ministry of Agriculture, Forestry, Water and Environment
- Institutionalization of the the System Integrated National Support of monitoring, surveillance, control and decision-making to reduce the contribution of the pollutants from agricultural sources into the soil and also the institutionalization of the Management System of the organic sediments from agriculture by the Common Disposition no. 242/197/2005 of the Ministry of the Environment and Waters Management and of the Ministry of Agriculture, Forestry and Rural Development;
- Elaboration and approval of the Technical Action Programme for working out an Action Plan in vulnerable areas, by the Common Disposition no. 296/216/2005 of the Ministry of the Environment and Waters Management and of the Ministry of Agriculture, Forestry and Rural Development;
- Approval of the lists of the localities from different counties or catchment areas where exists nitrates sources from agricultural activities (vulnerable or potential vulnerable areas), by the Common Disposition no. 241/196/2005 of the Ministry of the Environment and Waters Management and of the Ministry of Agriculture, Forestry and Rural Development

Competent authorities and factors involved in implementation

Responsability for the Directive: Ministry of the Environment and Waters Management

Domain of activity: Underground and surface waters monitoring (nitrates matter contained) and agricultural management (best practices code in agriculture, implementation and action programmes of the necessary measures), training activities.

Ministries and authorities which cooperates: Ministry of Agriculture, Forestry and Rural Development**,** Ministry of Health and county authorities.

The authorized factors and their responsibilities are prezented in the Tabel 2 :

The authorized factors and their responsibilities

Authorized factor	**Responsability**
Institution of Pedological and Agrochemical Researches (ICPA) and 37 County Offices of Pedologycal and Agrochemical Studies, being under the technical coordination of ICPA	Basic institution and reference centre for the national integrated system of monitoring the agricultural lands qualities, control and decision-making. Identification of the vulnerable areas. Re – examination of the vulnerable areas. Administration of the system for management of the organical residua from zootechny. Participation at the elaboration and coordination of the action programmes implementation in vulnerable areas. Authorized for training activities.
National Administration Romanian Waters (ANAR) and National Institute of Hydrology and Water Management (INHGA), under the subordination of ANAR	Administration of the national monitoring system, control and decision making regarding the underground and surface waters quality (nitrates level) and also a reference centre of this system. Monitoring the eutrophisation level of the fresh and coastal waters. Identification and cadastral surveyance of the waters affected by nitrates pollution. Participation at the elaboration and coordination of the action programmes implementation in vulnerable areas. Control the implementation of the action programmes and of the proposed measures.
Environmental Protection Agencies (APM)	Participation at the elaboration and the control of the action programmes implementation
Research & Development National Institute for the Environmental Protection (ICIM)	Participation at methodologies, studies and researches elaboration. Participation at the vulnerable areas identification

Authorized factor	Responsability
National Agency for Counselling in Agriculture (ANCA) together with the Directorates for the Agriculture and Rural Development (DADR) and with ICPA	Training and informing the farmers in consideration of the implementation of the Best Agricultural Practices Code (CBPA) and of the action programmes.
Public Health Institute (ISP)	Monitoring the nitrates determined in fresh waters
Basinal Committee	Designation, coordination and convocation of the Workgroups (Support Groups) for drafting the Action Programmes in vulnerable areas Enacting the action programmes and ways to apply the measures specified in the programmes.
Public Administration at the county or communal level	Realize and administrate the communal platforms of manure deposition and also coordinate the individual platforms accomplishment. Set up the communal public services of stable manure management. Apply the regulations regarding the stable manure management. Participate at the action programmes implementation and coordinate the activities planned to accomplishment the measures included in these plans.
Farms and agricultural exploitations	Comply with Best Agricultural Practices Code regulations and apply the regulations stipulated in Best Practices Code for farm management Implement the action programmes. Set up deposit spaces for stable manure and liquid dejections. Apply the regulations of management, manipulation and application of the stable manure and of the liquid dejections.
Marine Research & Development National Institute Grigore Antipa – Constanta (IRCM)	Elaboration and implementation of the programmes for improving the eutrophisation level of the waters from the coastal area.
The Directorates for Agriculture and Rural Development (DADR)	Participate at the action programmes implementation Participation at the elaboration and coordination of the action programmes implementation in vulnerable areas. Supervision the action programmes implementation and the proposed measures
Environmental National Guard (GNM) and its county Commissariats	Inspection and control in applying the specific legislation from environmental protection field.

Deficiency in implementation

Underground and surface waters are frequently monitorized, but the laboratory equipments are decrepit or insufficient; in addition, the computer data processing network between the control and monitoring factors has not been realized. The laboratories are not accredited.

The agricultural land is partially monitorized regarding the nutrients level in soil or the applied quantities of fertilizers; in addition, the laboratory equipment and the technique to collect the samples are decrepit or insufficient. The laboratories are not accredited.

The existent farms and zootechnical centres have spaces for depositing the stable manure and the liquid dejection, but these spaces require massive rehabilitation; it is also necessary to rehabilitate and modernize the existent treatment station and the decrepit or improper instalations for discharging the dejection; equipment for manipulating and administrate the natural organic fertilizers is necessary, as well.

There are many areas where the animal breeding is done in a traditional way in the rural households, but, at the communal level, there is no platform for depositing the stable manure and the liquid dejections, nor the proper equipmnets to manipulate and administrate the natural organic fertilizers; there are also few individual platforms for depositing the stable manure and the liquid dejections in the small agricultural producers' households.

Main inquiries of the Action Plan

1. Identify the waters affected by the pollution with nitrates or susceptible to be expose to such pollution and establish proper programmes of monitoring and control.
2. Set up the cadastre of those waters.
3. Identify and design the vulnerable or the potential vulnerable areas.
4. Create and organize the integrated national support system of monitoring, surveillance, control and decisions making, formed by two interacting sub-systems for water and for soil, which will collect, stock, evaluate and report the data regarding the quality of the waters and of the soil.
5. Elaborate a best agricultural practices code and some programmes to train and inform farmers with the purpose of promoting such code.
6. Elaborate, implement and put into practice the action programmes.

The present phase in implementation of the Action Plan inquiries

Realised until now:

1. Identification of the waters affected by the pollution with nitrates or susceptible to be expose to such pollution and establish proper programmes of monitoring and control.
2. Set up the cadastre and maps of those waters.
3. Identification of the vulnerable or potential vulnerable areas which drain into the waters affected by the pollution with nitrates
4. Elaborate a best agricultural practices code and some programmes to train and inform farmers with the purpose of promoting such code.
5. Institutionalization of the integrated national support system of monitoring, surveillance, control and decisions making for the reduction of the pollutants contribution from the agricultural sources from underground and surface waters, by the disposition 1072/2003 of the Minister of Agriculture, Forestry, Waters and Environment.
6. Institutionalization of the integrated national support system of monitoring, surveillance, control and decisions making for the reduction of the pollutants contribution from the agricultural sources in soil and of the Management System for the organic residua from agriculture, by the Common Disposition no. 242/197/2005 of the Minister of the Environment and Waters Management and of the Minister of Agriculture, Forestry and Rural Development.
7. Elaboration and approval of the Technical Action Plan to prepare the Action Programmes in the vulnerable areas, by the Common Disposition no. 296/216/2005 of the Minister of the Environment and Waters Management and the Minister of Agriculture, Forestry and Rural Development.
8. Re-examination and completion of the Best Agricultural Practices Code for the waters protection and setting up a Best practices Code for farm management until the end of 2005 (inclusively a publication of this code)

Next steps:

1. Organize and equip the integrated national support system of monitoring, surveillance, control and decisions making, formed by two interacting sub-systems for water and for soil, which will collect, stock, evaluate and report the data regarding the quality of the waters and of the soil.
2. Elaborate, in 2006, in the frame of the basinal Committes, the implementation and the application in 2007 of the action programmes in the vulnerable or the potential vulnerable areas.

Action programmes are focused over the following actions:

- realize stocking capacities for the stable manure, inclusively in the households and endow with necessary equipments to manipulate and administrate the manure;
- implement the Best Agricultural Practices Code specific to each vulnerable area;
- rehabilitate/ realize the filter and/or waste water treatment capacities from the animal breeding farms.

- rehabilitate the systems of discharging and manipulate the dejections from the existent animal breeding farms.
- stable manure management and prohibition periods
- correlation between the number of the animals and the agricultural surfaces where the dejections are applied;
- optimize and severely restrict to the essentials the hydrogen application on agricultural lands;
- develop and implement the fertilizing plans and the stable manure management plans.

Best agricultural practices code is compulsory in the vulnerable areas and voluntary in the rest of the country.

Annex 16

Use of the Best Agricultural Practices in Ukrainian part of the Danube basin

Ukraine has the same problems, related to extensive and uncaring land use like all former Soviet Union republics. During the last 60 years, land use has led to transformation and change of the main natural features of the land. It was considered effective to transform lands to tillage. However, ploughing the lands, earlier covered by grass, irrigation in dry region and bog reclamation in wetlands regions, which has led to increase of arable land, promotes growth of agricultural production. Fro the other side, such processes led to significant changes in the environment. Quite often such changes are undesirable, far beyond planned results. Ukraine has 33.3 mln. ha of arable land or 80% of agricultural lands, 2.2 mln. ha – grassland (5% agricultural land); 5.2 mln. ha - pastures (11% of agricultural land).

In the same time, enlargement of mines, industrial development, urban, rural, hydrotechnical and transport construction require constantly to take out some areas from agricultural use. At present Ukrainian population is almost 49 mln. people, but the land reserve has decreased to 0.6 ha / person, including for arable lands – from 1 to 0.6 ha. Due to decrease of the area of agricultural lands, potentially population is less provided with the food, and industry – with agricultural raw materials..

Other problems, faced by Ukrainian farmers, are related to chernosems ("black earth" – very rich soils). In 30s they had bigger content of humus, whereas in 80s their content of humus decreased from 6—9 to 3—5%. In general, for the 1961—1982 period (years when the special research of soils was conduced) loss of humus were bigger, than in 1882—1961: in steppe zone — in 2.4 times, in forest-steppe — in 1.65 times and in Polissya – in 8.4 times. Such tendency forced farmers to use more often pesticides.

Composition of agricultural lands to large extend depends on the natural conditions of the zone, where agricultural activities take place. There are three main zones at Ukrainian territory of Danube basin: Polissya, forest-steppe and steppe. Polissya zone include – Zakarpattya (Tisza river Basin), Ivano-Frankivska region (Prut river basin), forest-steppe - Chernivetska (Prut river basin); and steppe – Odessa region (Danube river basin).

Natural-economic zones have different structure of agricultural lands. If arable land in Polissya makes up only 70%, then in forest-steppe — 86%, and in steppe — 83%. Polissya has the less ploughed lands, because here are the biggest natural forage lands – almost 30%, comparing with 12% in forest-steppe and 13% in steppe. The share of perennial plants in all zones is small (little higher in Zakarpattya), however it is in 1.8 times higher in steppe; and in forest-steppe it is in 1.2 times higher, then in Polissya. At present, more than 2/5 of all area of perennial plans is located in steppe, including 1/3 of gardens and 9/10 of graveyards.

In Ukraine the area of very fertile soils include more than 60% of different chernosems, and around 20% - forest-steppe soils.

Pollution of Lands in Agriculture

Intensive pollution of environment is to large extend due to irrational agricultural production. Each year 193,000 tons of fluorine, 1600,000 tons of zinc, 620,000 tons of copper and 622 tons of potassium enter agriculture lands of Ukraine with mineral fertilizers. In the end of 90s, the residual number of pesticides left in food, plants and animals increased in more than 9 times in Ukraine (comparing with 60s).

Poisonous substances, which are in mineral fertilizers, chemicals and insecticides, are quite dangerous if incorrectly used. Special attention should be paid to use of systemic fungicides (at present, around 300 chemicals are recommended for use), persistent to washing out from plants. Their incorrect use cause big damage to crops, environment, peoples' health, cattle and poultry. In 1980-1990, many Ukrainian institutions set standard of use of the fungicides in big diapason, e.g. 1-2 kg per 1 ha of the land. In the same time, according to FAO, average their use in the world per 1 ha is up to 300 g.

Here, we should take into account that herbicides act differently in different meteorological conditions. Difference of conditions in each agricultural group of soils requires a special approach to the rational use of fertilizers. E.g., soils at north of Polissya have acid reaction and should be periodically limed – without this it is impossible to use fertilizers effectively. If farmers do not follow the standards and instructions, it leads to ineffective use of pesticides and in the same time to increase of their concentration in the soils and agricultural products.

Amount of mineral fertilizers, applied in soil is defined by structure of their production. However, combination of doses of fertilizers, which at present Ukrainian producers apply, is not optimal, especially by phosphorus – its content in soils in Ukraine is low. Due to misbalance in fertilizers one cannot use to full extend their potential to support fertility of the soils. Major part of nitric fertilizers does not work – here the law of "minimum" is applied, when the fertility is defined by the scarcest chemical element.

Large doses of fertilizers can make the quality of the production worse as well as groundwater, which lead to pollution of near-by rivers and ponds. Use of mineral fertilizers allows to some extend increasing fertility of the crops, but the further growth of their doses in Ukraine in the beginning of 80s of the last century did not promote already their growth due to decrease of contains of humus in soil. It is impossible to increase fertility without improvement of technology of use of fertilizers. Their uncontrolled use in the beginning of 90s of the last century led to environmental pollution, which even now threatens people's health. Incorrect or over-use of pesticides is especially dangerous. Here some part of them is transformed, so the new toxic substances appear (secondary toxication). It is hard to assess all consequences of use of pesticides in Ukraine due to insufficient research methods.

The issue of pollution by pesticides of soil and groundwater in Ukraine is another important problem. Majority of groundwater at southern Ukraine has high concentration of nitrites. In the same time the content of pesticides in soil waters and village wells is not controlled.

It was calculated that 98% insecticides (against insects) and fungicides (against fungi), 60—95% herbicides (against weeds) do not reach the purpose, but come into water and air. Besides, people use also zoocides against rodents, negatively affecting biogeotsenosis.

Use of pesticides lead to less biological activity of soils and impede natural restoration of fertility, lead to loss of nutrient value and taste of agricultural products, increase expenditures and decrease the term of production conservation as well as decrease fertility of many crops due to death of pollinating insects.

According to the Ukrainian scientific data, each year in Ukraine there chemical means of protection significantly over-used, and totally applied instead of selective approach. In 1970-1990, up to 40% of pesticides in Ukraine (as well in other Soviet Union republics) was sprayed, which is totally

prohibited in many countries. As it was mentioned earlier, standards of use of pesticides are exaggerated. E.g. Japanese use their pesticides "topsine" 67 g per 100 l of solution, and in Ukrainian instruction in order to "simplify" the technology norms are 100 g per 100 l.

Use of pesticides and agricultural chemicals is regulated by the Law of Ukraine "On Pesticides and Agricultural Chemicals" (approved in 1995, with amendments in 2005). This Law regulates legal relations, related to state registration (responsible authority is Ministry of Environmental Protection of Ukraine), production, buying, transport, conservation, selling and safe for people's health and environment use of pesticides and agricultural chemicals. Licenses for protection and sale of pesticides are issued by the Ministry of Agricultural Policy of Ukraine.

Lists of pesticides, allowed for use in Ukraine, including for spraying in air by planes, are approved by the Ministry of Environmental Protection, agreeing it with the Ministry of Health and Ministry of Agroindustrial Policy.

Gaps in existing information sources on the use of BAP and BAT

1. Current policy of Ukrainian government concerning the management of old and useless pesticides and best agricultural practices, unfortunately, is not effective yet. It is due to absence of legal background for introduction of BAP as well as clear national priorities concerning use of pesticides and poison chemicals in agricultural production.
2. Ukraine does not have strategy and training program for different groups of stakeholders concerning introduction of BAP principles.

In the same time, in the frame of UNDP/GEF/DRP project, **"Technical Guidance for Fertilizers Management in the countries in basin of Central and Lower Danube"** (GFA Terra Systems-Avalon, march 2004) and **"Recommendation on Best Available Techniques at Agro-industrial Units"** (March 2004 Dr. Franz Ueberwimmr, EMIS/EG). The mentioned above methodologies were disseminated among interested farmers in Chernivsti (Prut) and Odessa (Lower Danube) basins.

One of the main results of dissemination of the methodologies in the Danube basin was interest of farmers in organic agriculture. Taking into account interest to "environmentally friendly" food, workshops were organized in Chernivtsi and Odessa oblasts. They were workshops-trainings for farmers, who work or are going to work in this direction. The issues covered at the workshop include development of own technology of organic agriculture: how to feed plant, how to cultivate the land, how to protect against illnesses and pests etc.

After reforming Ukraine got favorable conditions for development of farming, which as participants of the workshop think, should be developed based on EU experience. For example, in Germany farms, producing environmentally clean production sell the clean production to state or directly to population via specialized shops and under control of quality control laboratories.

Although in Ukraine this topic is scientifically and practically developed, but such experience is not implemented yet here. Taking into consideration that such production is more expensive than production, grown using chemical fertilizers and pesticides, the state should provide guarantees and financial support to those farmers, who introduce BAP and organic agriculture.

3. A separate issue is how to develop and introduce the monitoring program for pesticides and their residuals during all their life cycle, starting from production, use and treatment, irreversible accumulation of pesticides residuals in environment and food up to end phase – utilization.
4. Need to develop and introduce system of monitoring of diffuse sources of pollution

At present, Ukraine does not have legal basis for river protection against diffuse pollution as well as legitimate methodologies of calculating the damage done, when fertilizers and poisonous chemicals enter rivers due to non-compliance by farmers of the standards of application of fertilizers and pesticides.

5. Harmonization of Ukrainian legislation on use of pesticides with international legislation
6. Need to make inventory of all storages of pesticides.

There are several such cases in all regions of Ukraine (especially Zakarpatska oblast), when due to bankrupting in 90s of the last century of some kolhoses and sovhozes, storage places for pesticides were dissembled and pesticides without any marks were re-buried at dumps or buried at household yards. At present, new owners (more often farmers) of such households face the problem of utilization of old pesticides and recultivation of the storage places of poisonous chemicals. At the same time, Ukraine does not have laboratories, which could conduct expertise of the composition of poisonous chemicals at world level and devices to burn them.

7. To utilize old and useless pesticides by environmentally-friendly means

At present, Ukraine does not have environmentally safe technologies of pesticides utilization. Therefore, French companies suggest the following scheme: re-packing at Ukrainian territory of useless, old and not licensed pesticides, to take them to France and to burn at French plants. However implementation of such a scheme requires significant state funding from Ukraine and co-funding EU.

8. The need to develop monitoring program for pesticides residuals in food and environment.
9. To develop and present strategies and educational programs (trainings) concerning introduction among farmers and other Ukrainian agricultural producers BAP principles.

Annex 17

"PRUT RIVER BASIN MANAGEMENT"

CASE STUDY

Component 2

Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities

Questionnaire on the use of the

Best Agricultural Practices/Good Farm Practices

Workshop 3-4 August 2006, Iasi, Romania

Good Practice for Improving the Management of Fertiliser and Manures

1 OVERVIEW OF NUTRIENTS ESTIMATES IN PRUT RIVER BASIN

Diffuse pollution

Diffuse nutrient losses from agriculture are greatly influenced by climate, soil type, cropping system and the forms and quantity of fertiliser and manure applied. Additionally diffuse losses of P are influenced by factors such as the vulnerability of soil to erosion.

Summary of data (1998–2000) from the MONERIS model showing a) estimates of nitrogen balance/surplus (kg N/ha), b) agricultural area (km2) and c) estimated nitrogen loss by diffuse pollution (tonnes N/year) for Prut basin is presented in Table 1.

Country	**Estimated N Balance (kg N/ha)**[1]	**Agricultural Area within Danube Catchment Area (km^2)**	**Estimated N Loss by Diffuse Pollution (tonnes N/year)** [2]
Romania	21.5	112 931	68 366
Moldova	19.1	11 474	2 113
Ukraine	15.7	19 433	13 976

Source: Schreiber *et al.* (2003)

Tabel 1. Nutrient estimates in Prut basin.

Use of Mineral Fertilizers in the Prut River Basin Countries

A range of mineral fertiliser products containing nitrogen (N) and phosphorus (P) are available to farmers in Prut countries. Types of N and P Fertiliser commonly used by farmers are described in the Table 2.

Fertiliser Type	**% N/P**	**Prut basin countries**		
		MD	**RO**	**UA**
Straight N Fertilisers:				

[1] Nutrient balances for the Danube river catchment were prepared for the MONERIS model using the standard OECD soil surface nitrogen balance methodology with crop and livestock data supplied by national consultants for selected countries. Where these data were not available, figures from the OECD and FAO databases were used

[2] The total contribution of agricultural non-point source pollution to nutrient emissions into the Danube river is estimated by the MONERIS model (IGB Berlin) as the sum of losses via Surface Run-off, Erosion, Tile Drainage and Groundwater less Background losses

Ammonium sulphate	**21% N**		✓	✓
Ammonium nitrate	**30-35% N**	✓✓	✓	✓
Calcium nitrate	**15% N**			✓
Calcium ammonium nitrate	**27% N**			
Urea	**46% N**	✓	✓	✓
Anhydrous ammonia	**82% N**			
Aqueous ammonia	**25-29% N**		✓	
Other				✓
Straight P Fertilisers:				
Rock phosphate				
Superphosphate	**< 25% P2O5**			✓
Concentrated superphosphate	**> 25% P2O5**		✓	
Calcium phosphate				
Other				
Compound N-P-K Fertilisers:				
Mono-ammonium phosphate		✓	✓	✓
Di-ammonium phosphate			✓	
Other		✓		✓

Table 2. Types of N and P Fertilisers used in Prut basin

2 METHODOLOGY

Due to the limited availability of data sources on mineral fertiliser use in the region, national experts in each of the Prut countries under study were asked to undertake a survey of:

1. **amounts** of mineral N and P fertilisers typically applied in their won country and **how** they are used (e.g. what crops are they applied to)
2. any information available on **bad practice** by farmers regarding the use of these fertilisers

A simple questionnaire approach was used that took the experts through 4 key steps:

Step 1 – identification of the types of N and P mineral fertiliser (including the nutrient-containing chemicals and materials) that are commonly used in agriculture and horticulture.

Step 2 – estimation of the total consumption of N and P mineral fertilisers by farmers for the years 1997 - 2004. All data collected was for the amount of nutrient (N or P) not the amount of fertiliser product/chemical (for example, 1 tonne of ammonium nitrate typically contains only 345 kg of nitrogen)

Step 3 – collection of information on the characteristics of N and P mineral fertiliser use by farmers, including:

- approximately what percentage of the crops grown currently have mineral fertilisers applied to them
- the current average or "typical" application rate (kg per ha) for N and P fertilisers
- the typical time of fertiliser application (e.g. in autumn or spring)

Step 4 – identification of problems relating to the use of mineral fertilisers, including known "bad practice" such as:

- using application rates that are higher than recommended rates
- poor application due to old or poorly maintained equipment
- spreading too closely to water sources e.g. streams and rivers
- applying mineral fertiliser at an inappropriate time of year (i.e. when the crop is not growing)

The results of the survey and the inventories prepared for each country are included in this report.

3 PROBLEMS ASSOCIATED WITH MINERAL FERTILISERS, MANURE APPLICATION AND LAND MANAGEMENT IN THE PRUT COUNTRIES

The environmental impact of fertiliser use is also closely related both to:

a) the way in which farmers apply fertilisers to their crops and

b) the overall management of their farming system

In particular, the changes in management practice required to optimise the use of mineral fertilisers and avoid their misuse are related to the application of manure and slurry to agricultural land, as well as other soil management practices such as cultivations.

Typical problems and "bad practice" identified by the national experts during preparation of the questionnaire included:

- there is a lack of information on "pollution" amongst farmers and no information on the importance of managing fertilisers and manures properly
- the machinery used for spreading fertilisers is outdated and not appropriate for the modern agricultural operations
- fertilisers and manures are commonly stored in unauthorised places where there is a risk of causing pollution
- some farmers do not consider the nutrient requirements of the crops they are applying fertilisers (and manures)
- farmers and agronomists do not sufficiently recognise the potential value of nutrients in livestock manure
- bad timing of fertiliser application is a common problem
- fertilisers and manures are spread too closely to surface waters – rivers, lakes, ponds, streams and springs
- fertilisers and manures are spread on sloping land where there is the risk of surface run-off from heavy rain washing them into rivers and streams
- most farmers do not have good storage facilities for manure

4 GOOD AGRICULTURAL PRACTICES TO REDUCE DIFFUSE POLLUTION

In order to reduce the risk of diffuse pollution by nutrients (N and P) from agriculture it is necessary to encourage management practices are commonly promoted to reduce the risk of nitrate leaching:

1. Ensure that fertilizer N is applied according to the crop's requirement and taking account of:
   - the crop species/variety, expected yield and required quality
   - the natural supply of N from the soil, including N released from soil organic matter, crop residues and applied manure/slurry
2. Avoid applications of N fertilizers and manure in autumn and very early spring when crop requirements for N are very low
3. Limit the application rate of organic manure to ensure that N supply does not exceed crop requirements
4. Take special care when applying fertilizers and manure/slurry on fields where there is a risk of run-off to surface waters
5. When applying fertilizers/manures, ensure that an adequate distance (a "buffer zone") is kept away from surface waters to avoid pollution

5 RECOMMENDATIONS FOR POLICY REFORM IN PRUT COUNTRIES

Despite the relatively low levels (compared to many EU Member States) of mineral fertiliser and manure currently applied to agricultural land in the Prut countries, the national governments should take seriously the risk of diffuse pollution arising from fertiliser and manure application.

The following tasks relating to fertiliser and manure application are recommended for all national strategies aiming to control nutrient pollution from agriculture.

Recommendation 1: Develop greater understanding at a national/regional level of the relationship between agricultural practice (fertiliser, manure and land management) and the risk of diffuse nutrient pollution

For example:

- the nutrient content of animal manures need to be quantified to aid more precise application
- the nutrient losses to be measured and the causes of these losses established
- the underlying soil processes affecting nutrient availability (e.g. soil mineralisation) need to be better understood

Recommendation 2: Develop appropriate policy instruments and institutional arrangements for promoting better management of fertilisers and manures

2.1 **Raise Farmer Awareness of Good Practice**

For example:

- simple and easy to understand information materials, combined with well-targeted publicity campaigns

2.2 **Develop and Promote National Codes of Good Practice** – national authorities should agree upon clear and simple codes of voluntary good practice for fertiliser and manure management. Romania introduced the Code of Good Agricultural practices, available to all farmers, authorities.

2.3 **Use Economic Instruments to Promote Good Practice** This involves the establishment of certain conditions that farmers have to meet in order to be eligible to receive government support.

2.4 **Develop Appropriate Agricultural Extension Services** play a key role in raising awareness and improving the technical skills of farmers with respect to good practice for fertiliser and manure management.

Recommendation 3: Promote certified organic farming and other low input farming systems as viable alternatives to the conventional use of fertilisers

3.1 **Raise Farmer Awareness**

3.2 **Develop Relevant Legislation** – national legislation for the certification and inspection of organic farming systems in compliance with EC legislation.

3.3 Develop Appropriate Extension Capacity

RESPONSES: MOLDOVA

Types of N and P Fertiliser Commonly Used by Farmers in Moldova

Type of Fertiliser	Typical Nutrient-containing Chemicals	Typical Formulation (N:P:K)	Comments
N FERTILISERS			
Straight N Fertilisers	Ammonium nitrate NH4NO3	34	This type of fertiliser constitutes about 99% of total straight N fertilisers applied in Moldova
Compound Fertilisers	Mono-ammonium phosphate	11 : 44 : 0	This type of fertiliser constitutes about 40% of total compound fertilisers applied in Moldova
	Compound fertiliser "Nitroamofosca"	17 : 17 : 17	This type of fertiliser constitutes about 60% of total compound fertilisers applied in Moldova

P FERTILISERS			
Straight P Fertilisers			Not used
Compound Fertilisers	Mono-ammonium phosphate	11 : 44 : 0	This type of fertiliser constitutes about 40% of total compound fertilisers applied in Moldova
	Compound fertiliser "Nitroamofosca"	17 : 17 : 17	This type of fertiliser constitutes about 60% of total compound fertilisers applied in Moldova

Total Consumption of N and P Fertiliser by Farmers in Moldova

		2000	2001	2002	2004/2005	Source of data
N FERTILISERS	Total N consumption (th tonnes)	8,10	13,45	20,58	14,2	Department for Soil Fertilization State Inspectorate of the Ministry of Agriculture and Food Industry Statistical Yearbook, 2004
	Total agricultural area treated (`000s ha)	270,0	395,6	588,0	747	As above Statistical Yearbook, 2004
P FERTILISERS	Total P consumption (tonnes)	0,10	0,28	1,83	0,8	As above Statistical Yearbook, 2004
	Total agricultural area treated (`000s ha)	5,9	12,2	83,2	42	As above Statistical Yearbook, 2004

Characteristics of N and P Fertiliser Use by Farmers in Moldova

	N FERTILISERS			P FERTILISERS		
Crop	% Crop Receiving N Fertiliser	Typical Application Rate (kg N/ha)	Typical Timing of Application	% Crop Receiving P Fertiliser	Typical Application Rate (kg P/ha)	Comments
Wheat, barley etc	**60 - 75**	**35 - 55**	**In spring and summer**	**5 – 10**	**15 – 25**	
Maize	**10 - 15**	**25 - 35**	**In spring**	**0**	**0**	The P fertilisers are not applied to maize because of the current economic situation
Sunflower	**5 - 10**	**25 - 30**	**In spring**	**0**	**0**	As above
Sugar beet	**35 - 45**	**35 - 55**	**In spring**	**30 - 40**	**15 – 30**	
Tobacco	**10 - 15**	**25 - 35**	**In spring**	**5 - 10**	**15 – 25**	

Potatoes	**30 - 40**	**25 – 35**	**In spring**	**30 – 40**	**20 – 25**	
Field vegetables (except potatoes)	**20 - 25**	**25 – 35**	**In spring and summer**	**20 – 25**	**15 – 25**	
Glasshouse vegetables	**60 - 80**	**25 – 30**	**In autumn and spring**	**60 – 80**	**15 - 25**	
Orchards	**0**	**0**		**0**	**0**	As above
Vineyards	**0**	**0**		**0**	**0**	As above
Pasture and other grassland	**0**	**0**		**0**	**0**	As above

Known "Bad Practice" by Farmers Regarding Nutrient Management in Moldova

Crops	**Known Bad Practice by Farmers**	**Source of Information**
Wheat, barley, maize, sunflower	Unilateral application of straight N fertilisers (increase the risk of water pollution with nitrogen) Frequent fertilisers storage in unauthorized places	Mr Valentin Gurau, senior specialist of the Department for Soil Fertilization, Plant Protection with the State Inspectorate of the Ministry of Agriculture and Food Industry
Maize, sunflower, sugar beet, tobacco	Irregular application due to old equipment Frequent fertilisers storage in unauthorized places	As above
Potatoes, field vegetables	Spreading too closely to water sources (ponds and rivers)	As above
Glasshouse vegetables	Applying mineral fertilisers without estimate the nutrient needs of vegetables and soil test	As above

Additional Data

According to the data of the Department for Soil Fertilization, Plant Protection with the State Inspectorate in Moldova were applied for soil fertilization 157,837 tonnes of manure in 2001 and 199,245 tonnes – in 2002.

Currently the use of mineral fertilisers in agriculture of Moldova was reduced by 10 – 15 times comparative to the 1990s. At the moment in Moldova does not exist the special report on the environmental impact of mineral fertilisers use in the last years. The latest report on this issue is: "Nutrient Balances for Danube Countries. Country Report Moldova. Volume 1. 1996", which was prepared of the National Institute of Ecology. Some of these reports were included in the "UNDP / GEF Danube Pollution Reduction Programme, National Review, 1998. Moldova, Executive Summary".

RESPONSES: ROMANIA

Types of N and P Fertiliser Commonly Used by Farmers in Romania

Type of Fertiliser	Typical Nutrient-containing Chemicals	Typical Formulation (N:P:K)	Comments
N FERTILISERS			
Straight N Fertilisers	Ammonium sulphate		21% N+24 S
	Ammonium nitrate		33-34.5% N
	Urea		46% N
	Aqueous ammonia		250 (2.9:0:0)
Compound Fertilisers	Mono-ammonium phosphate		61% P_2O_5 ; 12% N
	Di-ammonium phosphate		10% P_2O_5: 20%N

P FERTILISERS			
Straight P Fertilisers	Triple superphosphate		55-66 P_2O_5: 13-18 N
Compound Fertilisers	Mono-ammonium phosphate		48 P_2O_5: 11 N : 0 K
	Di-ammonium phosphate		10:20:0
	Poliphosphats		56-60 13-18 0

Total Consumption of N and P Fertiliser by Farmers in Romania

		2000	2001	2002	2004/2005	Source of data
N FERTILISERS	Total N consumption (tonnes)	460	390	340		Agriculture Ministry
	Total agricultural area treated ('000s ha)	2900000	2700000	2500000		
P FERTILISERS	Total N consumption (tonnes)	205	183	165		As above
	Total agricultural area treated ('000s ha)	1800000	1750000	1700000		

Characteristics of N and P Fertiliser Use by Farmers in Romania

	N FERTILISERS			P FERTILISERS		
Crop	**% Crop Receiving N Fertiliser**	**Typical Application Rate (kg N/ha)**	**Typical Timing of Application**	**% Crop Receiving P Fertiliser**	**Typical Application Rate (kg P/ha)**	**Comments**
Wheat, barley etc	**45**	**30-66**	**autumn**	**48**	**30-60**	**N 45: P 23: K 0.5: trends in fertiliser use**
Maize	**35**	**48-60**	**spring**	**20**	**48-60**	
Sunflower	**40**	**48-60**	**spring**	**20**	**48**	
Sugar beet	**40**	**60-80**	**spring**	**48**	**48-60**	
Tobacco	**20**	**20-45**	**spring**	**20**	**40-60**	
Potatoes	**60**	**60-120**	**spring**	**40**	**60-80**	
Field vegetables (except potatoes)	**65**	**60-80**	**spring**	**45**	**30-60**	
Glasshouse vegetables	**85**	**60-80**	**vegetation**	**35**	**30-70**	
Orchards	**20**	**40-60**	**vegetation**	**20**	**30-40**	
Vineyards	**45**	**30-60**	**spring**	**25**	**30-40**	
Pasture and other grassland	**15**	**30**	**spring**	**-**	**-**	

RESPONSES: UKRAINE

Types of N and P Fertiliser Commonly Used by Farmers in Ukraine

Type of Fertiliser	Typical Nutrient-containing Chemicals	Typical Formulation (N:P:K)	Comments (product names)
N FERTILISERS			
Straight N Fertilisers	Ammonium sulphate		
	Ammonium nitrate		
	Urea		
	Ammonium sulphate		
Compound Fertilisers	Mono-ammonium Phosphate	N -11%; P_2O_5 - 49%; N - 3%; P_2O_5 - 5%; N -2%; P_2O_5 -16%; N -1-2%; P_2O_5 -18-29%; N - 3%; P_2O_5 -17-18%	Superagro NP, Ammonium Phosphate, 2-16-0; Granphose
	Diammonium Phosphate	N -16%; P_2O_5 -16%	Ammophosphate NP
	Compound - NK	N -10%; K_2O -6%; S -5%; B -0,4%	Ecolist
	Compound – various NPK	N -3-20%; P_2O_5 -5-41%; K_2O -8-38%; N - 2,1-6%; P_2O_5 - 0,8-17%; K_2O -0,8-14,0%; N -6-18%; P_2O_5 -7-24%; K_2O -8-24%; N - 10-17%; P_2O_5 -9-19%; K_2O -9-17%; N -8-18%; P_2O_5 -5-17%; K_2O -16-28%; N - 4,3%; P_2O_5 -1,9%; K_2O -1,9%; N -3%; P_2O_5 -5%; K_2O -5%;	Aquarine; Tekos; Kemira NPK; Nitrogranphoska; Rastvorin; Riverm; Superagro NPK
P FERTILISERS			
Straight P Fertilisers	Super Phospfate (GR)	P_2O_5 - 17%-20%	
Compound Fertilisers	Mono-ammonium Phosphate	N -11%; P_2O_5 - 49%; N - 3%; P_2O_5 - 5%; N -2%; P_2O_5 -16%; N -1-2%; P_2O_5 -18-29%; N - 3%; P_2O_5 -17-18%	Superagro NP, Ammonium Phosphate, 2-16-0; Granphose
	Di-ammonium Phosphate	N -16%; P_2O_5 -16%	Ammophosphate NP
	Compound - PK	P_2O_5 -14,4%; K_2O -14,5%	Granphoska
	Compound – various NPK	N -3-20%; P_2O_5 -5-41%; K_2O -8-38%; N - 2,1-6%; P_2O_5 - 0,8-17%; K_2O -0,8-14,0%; N -6-18%; P_2O_5 -7-24%; K_2O -8-24%; N - 10-17%; P_2O_5 -9-19%; K_2O -9-17%; N -8-18%; P_2O_5 -5-17%; K_2O -16-28%; N - 4,3%; P_2O_5 -1,9%; K_2O -1,9%; N -3%; P_2O_5 -5%; K_2O -5%;	Aquarine; Tekos; Kemira NPK; Nitrogranphoska; Rastvorin; Riverm; Superagro NPK

Total Consumption of N and P Fertiliser by Farmers in Ukraine

		2000	2001	2002	2004 /2005	Comments
N FERTILISERS	Total N consumption (tonnes)	223,3	318,2	311,1		
	Total agricultural area treated with N fertilisers (‘000s ha)	4632	6388	6226		
P FERTILISERS	Total N consumption (tonnes)	37,6	52,0	55,0		
	Total agricultural area treated with P fertilisers (‘000s ha)	4632	6388	6226		

Characteristics of N and P Fertiliser Use by Farmers in Ukraine

	N FERTILISERS			P FERTILISERS		
Crop	% Crop Receiving N Fertiliser	Typical Application Rate (kg N/ha)	Typical Timing of Application	% Crop Receiving P Fertiliser	Typical Application Rate (kg P/ha)	Comment
Wheat, barley etc	**60**	**33**	**spring**	**60**	**31**	
Maize	**42**	**27**	spring		**7,2**	
Sunflower	**12**	**2,5**	spring		**2,1**	
Sugar beet	**68**	**59**	spring		**20**	
Tobacco	**-**	**-**	**-**	**-**	**-**	
Potatoes	**52**	**39**	**spring**		**26**	
Field vegetables (except potatoes)	31	27	**spring**		12	
Pasture and other grassland	**13**	**5,8**	**spring**		**0,6**	

Known "Bad Practice" by Farmers Regarding Nutrient Management in Ukraine

Agricultural policy of Ukraine in part of agrochemical protection of plants and certain out of control activities of farmers make the agri-industrial sector un efficient. It causes overuse of fertilisers and pesticides and does facilitate pollution of the environment - particularly water, air and soil. It also induces soil erosion and sedimentation of water reservoirs.

There are the following bad agricultural practices that are common in Ukraine:

- Farmers use out of date, illegal and non-certified pesticides and fertilisers that cost much less than normal. The practice causes soil oxidisation and has unpredictable effects on the environment and crops.
- Farmers apply machines with non-point sprayers. It makes fertilisers spread too largely and thus contaminate soils and water. It also causes over-enrichment of fertilisers to crops.
- There are no unique or complex fertilisers. Farmers use several kinds of fertilisers for every certain kind of weeds and pests. It results in mixing of fertilisers and thus unpredictable influence on the environment and crops.
- Farmers do not apply the practice of vegetative cover. It makes pollutants come easily to air and finally drop down into water and soils.
- No practice of covered storage of animal wastes. It causes air pollution and water eutrophication (nitrogen and phosphorous load).
- Farmers do not apply the practice of crop rotation following short-term economic purposes. Steadily it causes more and more poor yields and thus farmers apply more and more fertilisers.
- Local agriculture and forest bodies do not provide planting of forest and grass buffers around agricultural fields in order to protect water basins from sedimentation.
- Local agriculture, forest and water industry bodies do not provide engineering protection of water streams and water reservoirs from sedimentation due to agricultural activity.
- In Ukraine around 19 thousand tones of pesticides prohibited for use are stored. The Cabinet of Ministers of Ukraine issued the Decree that prohibited some chemical weeds- and plants-killers. Hence agricultural enterprises came Negative list fertilisers to specials storage places. For the time being the chemicals started dropping down to soils and contaminating water and air.

Annex 16

"PRUT RIVER BASIN MANAGEMENT"

CASE STUDY

Component 2

Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities

Questionnaire on the use of the

Best Agricultural Practices/Good Farm Practices

Workshop 3-4 August 2006, Iasi, Romania

GOOD PRACTICE FOR IMPROVING THE MANAGEMENT OF FERTILISER AND MANURES

1. OVERVIEW OF NUTRIENTS ESTIMATES IN PRUT RIVER BASIN

Diffuse pollution

Diffuse nutrient losses from agriculture are greatly influenced by climate, soil type, cropping system and the forms and quantity of fertiliser and manure applied. Additionally diffuse losses of P are influenced by factors such as the vulnerability of soil to erosion.

Summary of data (1998–2000) from the MONERIS model showing a) estimates of nitrogen balance/surplus (kg N/ha), b) agricultural area (km2) and c) estimated nitrogen loss by diffuse pollution (tonnes N/year) for Prut basin is presented in Table 1.

Country	**Estimated N Balance (kg N/ha)**[1]	**Agricultural Area within Danube Catchment Area (km^2)**	**Estimated N Loss by Diffuse Pollution (tonnes N/year)** [2]
Romania	21.5	112 931	68 366
Moldova	19.1	11 474	2 113
Ukraine	15.7	19 433	13 976

Source: Schreiber *et al.* (2003)

Tabel 1. Nutrient estimates in Prut basin.

Use of Mineral Fertilizers in the Prut River Basin Countries

A range of mineral fertiliser products containing nitrogen (N) and phosphorus (P) are available to farmers in Prut countries. Types of N and P Fertiliser commonly used by farmers are described in the Table 2.

Fertiliser Type	**% N/P**	**Prut basin countries**		
		MD	**RO**	**UA**
Straight N Fertilisers:				
Ammonium sulphate	**21% N**		✓	✓
Ammonium nitrate	**30-35% N**	✓✓	✓	✓

[1] Nutrient balances for the Danube river catchment were prepared for the MONERIS model using the standard OECD soil surface nitrogen balance methodology with crop and livestock data supplied by national consultants for selected countries. Where these data were not available, figures from the OECD and FAO databases were used

[2] The total contribution of agricultural non-point source pollution to nutrient emissions into the Danube river is estimated by the MONERIS model (IGB Berlin) as the sum of losses via Surface Run-off, Erosion, Tile Drainage and Groundwater less Background losses

Calcium nitrate	**15% N**			✓
Calcium ammonium nitrate	**27% N**			
Urea	**46% N**	✓	✓	✓
Anhydrous ammonia	**82% N**			
Aqueous ammonia	**25-29% N**		✓	
Other				✓
Straight P Fertilisers:				
Rock phosphate				
Superphosphate	**< 25% P2O5**			✓
Concentrated superphosphate	**> 25% P2O5**		✓	
Calcium phosphate				
Other				
Compound N-P-K Fertilisers:				
Mono-ammonium phosphate		✓	✓	✓
Di-ammonium phosphate			✓	
Other		✓		✓

Table 2. Types of N and P Fertilisers used in Prut basin

2. METHODOLOGY

Due to the limited availability of data sources on mineral fertiliser use in the region, national experts in each of the Prut countries under study were asked to undertake a survey of:

1. **amounts** of mineral N and P fertilisers typically applied in their won country and **how** they are used (e.g. what crops are they applied to)
2. any information available on **bad practice** by farmers regarding the use of these fertilisers

A simple questionnaire approach was used that took the experts through 4 key steps (See Annex 1):

Step 1 – identification of the types of N and P mineral fertiliser (including the nutrient-containing chemicals and materials) that are commonly used in agriculture and horticulture.

Step 2 – estimation of the total consumption of N and P mineral fertilisers by farmers for the years 1997 - 2002. All data collected was for the amount of nutrient (N or P) not the amount of

fertiliser product/chemical (for example, 1 tonne of ammonium nitrate typically contains only 345 kg of nitrogen)

Step 3 – collection of information on the characteristics of N and P mineral fertiliser use by farmers, including:

- approximately what percentage of the crops grown currently have mineral fertilisers applied to them
- the current average or "typical" application rate (kg per ha) for N and P fertilisers
- the typical time of fertiliser application (e.g. in autumn or spring)

Step 4 – identification of problems relating to the use of mineral fertilisers, including known "bad practice" such as:

- using application rates that are higher than recommended rates
- poor application due to old or poorly maintained equipment
- spreading too closely to water sources e.g. streams and rivers
- applying mineral fertiliser at an inappropriate time of year (i.e. when the crop is not growing)

The results of the survey and the inventories prepared for each country are included in Annexes 2 – 4 of this report.

3. PROBLEMS ASSOCIATED WITH MINERAL FERTILISERS, MANURE APPLICATION AND LAND MANAGEMENT IN THE PRUT COUNTRIES

The environmental impact of fertiliser use is also closely related both to:

a) the way in which farmers apply fertilisers to their crops and

b) the overall management of their farming system

In particular, the changes in management practice required to optimise the use of mineral fertilisers and avoid their misuse are related to the application of manure and slurry to agricultural land, as well as other soil management practices such as cultivations.

Typical problems and "bad practice" identified by the national experts during preparation of the questionnaire included:

- there is a lack of information on "pollution" amongst farmers and no information on the importance of managing fertilisers and manures properly
- farmers often consider manure as a "waste product" rather than a source of nutrients that should be used carefully to save money spent on fertilisers
- the machinery used for spreading fertilisers is outdated and not appropriate for the modern agricultural operations
- fertilisers and manures are commonly stored in unauthorised places where there is a risk of causing pollution
- there is a tendency in some areas for farmers to grow the same crop (or same simple rotation of crops) for many years without application of fertiliser or manures. This is leading to a serious decline in soil fertility and the risk of increasing soil erosion due to loss of soil organic matter

- farmers do not consider the nutrient requirements of the crops they are applying fertilisers (and manures)
- it is not very common for farmers to practice soil testing before deciding where to apply fertilisers and manures and in what quantities
- farmers and agronomists do not sufficiently recognise the potential value of nutrients in livestock manure. Consequently the application rate of fertilisers is not adjusted and nutrients are wasted because they are surplus to the crop's requirement
- bad timing of fertiliser application is a common problem
- fertilisers and manures are spread too closely to surface waters – rivers, lakes, ponds, streams and springs
- fertilisers and manures are spread on sloping land where there is the risk of surface run-off from heavy rain washing them into nearby rivers and streams
- even though the number of farm animals has declined and the quantity of animal wastes produced is less, most farmers do not have good storage facilities for manure and slurry – therefore manures and slurries are being applied at inappropriate times (e.g. autumn and winter) when there is a high risk of leaching or run-off
- because of simplified tax systems in many countries for households and private agricultural plots, including small farms, there is no official obligation for them to have a book-keeping system. As a result they do not keep records of their purchases or use of fertilisers, manures or other relevant information (e.g. crop yields or sales) and there is therefore no reliable information regarding application of fertilizers

4. GOOD AGRICULTURAL PRACTICES TO REDUCE DIFFUSE POLLUTION

In order to reduce the risk of diffuse pollution by nutrients (N and P) from agriculture it is necessary to encourage management practices are commonly promoted to reduce the risk of nitrate leaching (especially during periods of high risk, such as the autumn and winter months):

1. Ensure that fertilizer N is applied according to the crop's requirement and taking account of:
   - the crop species/variety, expected yield and required quality
   - the natural supply of N from the soil, including N released from soil organic matter, crop residues and applied manure/slurry
2. Avoid applications of N fertilizers and manure/slurry in autumn and very early spring when crop requirements for N are very low
3. Limit the application rate of organic manure/slurry to ensure that N supply does not exceed crop requirements – this includes applying in smaller quantities at regular intervals to match more closely the crops requirement for nutrients during the growing season
4. Take special care when applying fertilizers and manure/slurry on fields where there is a risk of run-off to surface waters
5. When applying fertilizers/manures, ensure that an adequate distance (a "buffer zone") is kept away from surface waters to avoid the risk of direct pollution
6. Ensure accurate calibration of fertilizer spreading equipment to minimize the risk of excessive application
7. Minimize the period when the soil is left without any crop and susceptible to nitrate leaching.

The important thing is to ensure that the practical guidance developed for "good practice" is flexible and pragmatic.

5. RECOMMENDATIONS FOR POLICY REFORM IN PRUT COUNTRIES

Despite the relatively low levels (compared to many EU Member States) of mineral fertiliser and manure currently applied to agricultural land in the Prut countries, the national governments should take seriously the risk of diffuse pollution arising from fertiliser and manure application.

The following tasks relating to fertiliser and manure application are recommended for all national strategies aiming to control nutrient pollution from agriculture.

Recommendation 1: Develop greater understanding at a national/regional level of the relationship between agricultural practice (fertiliser, manure and land management) and the risk of diffuse nutrient pollution

For example:

- the nutrient content of animal manures need to be quantified to aid more precise application
- the nutrient losses to be measured and the causes of these losses established
- the underlying soil processes affecting nutrient availability (e.g. soil mineralisation) need to be better understood

Recommendation 2: Develop appropriate policy instruments and institutional arrangements for promoting better management of fertilisers and manures

2.1 **Raise Farmer Awareness of Good Practice**

For example:

- simple and easy to understand information materials, combined with well-targeted publicity campaigns

2.2 **Develop and Promote National Codes of Good Practice** – national authorities should agree upon clear and simple codes of voluntary good practice for fertiliser and manure management. (Romania and Moldova already have these available)

2.3 **Use Economic Instruments to Promote Good Practice** This involves the establishment of certain conditions that farmers have to meet in order to be eligible to receive government support.

2.4 **Develop Appropriate Agricultural Extension Services** play a key role in raising awareness and improving the technical skills of farmers with respect to good practice for fertiliser and manure management. National funding should be provided for the training of advisers in good practice and modern extension techniques.

Recommendation 3: Promote certified organic farming and other low input farming systems as viable alternatives to the conventional use of fertilisers

3.1 **Raise Farmer Awareness** – alternative-farming systems, such as organic farming, should be actively promoted to farmers through the preparation of simple and easy to understand information materials. Organic farming is the most well-developed of all alternative farming systems and has good potential to reduce nutrient losses.

3.2 **Develop Relevant Legislation** – national legislation for the certification and inspection of organic farming systems in compliance with internationally recognised standards (particularly those in accordance with EC legislation) should be developed and implemented as a high priority in order to promote the development of domestic markets and international trade.

3.3 **Develop Appropriate Extension Capacity** – agricultural extension services and farm advisers play a fundamental role in the re-orientation of farmers towards alternative production systems, particularly those such as organic farming, which require higher levels of technical knowledge and management.

ANNEX 1: QUESTIONNAIRE ON THE REVIEW OF THE USE OF MINERAL FERTILIZERS PRODUCTS IN THE PRUT COUNTRIES

Step 1 – Types of N and P Fertilizers Commonly Used by Farmers

Please identify the types of mineral fertiliser (including the nutrient-containing chemicals and materials) that are commonly used by in agriculture and horticulture by completing the boxes in the tables below.

Make the distinction between the use of so-called **straight fertilisers** that include a single nutrient-containing chemical and **compound (NPK) fertilisers** that include chemicals or mixtures of chemicals that contain more than one nutrient

If you have any comments upon the importance of particular fertiliser types, trends in use etc please add them to the final column

Type of Fertiliser	**Used by Farmers - Yes/No?**	**Typical Nutrient-containing Chemicals**	**Yes/ No?**	**Typical Formulation (N:P:K)**	**Comments**
N FERTILISERS					
Straight N Fertilisers		Ammonium sulphate		Not	
		Ammonium nitrate		applicable	
		Calcium nitrate			
		Urea			
		Anhydrous ammonia			
		Aqueous ammonia			
		Other – please specify			
Compound Fertilisers		Mono-ammonium phosphate			
		Di-ammonium phosphate			
		Other – please specify			
P FERTILISERS					
Straight P Fertilisers		Rock phosphate		Not	
		Triple superphosphate		Applicable	
		Other – please specify			
Compound Fertilisers		Mono-ammonium phosphate			
		Di-ammonium phosphate			
		Other – please specify			

Step 2 – Total Consumption of N and P Fertiliser by Farmers

Please complete the following table with as much national data as possible on the total use of mineral fertilisers by farmers in your country for the years 2004 or 2005. Please ensure that the data you use for the quantity of fertilisers used and applied is the **amount of nutrient** (N

or P) not the amount of fertiliser product/chemical (for example, 1 tonne of ammonium nitrate contains only 345 kg of nitrogen)

		2000	2002	2003	2004	2005
N FERTILISERS	Total N consumption (tonnes)					
	Total agricultural area treated with N fertilisers ('000s ha)					
P FERTILISERS	Total N consumption (tonnes)					
	Total agricultural area treated with P fertilisers ('000s ha)					

Step 3 – Characteristics of N and P Fertilizers Use by Farmers

1. approximately what **percentage of the crops grown** currently have mineral fertilisers applied to them – if no crops are have fertilisers applied because of the current economic situation, for example, please clearly state this in the final column under Comments
2. the current **average or "typical" application rate** (kg per ha) for N and P fertilisers – again please ensure this is the **amount of nutrient** (N or P) applied not the amount of fertiliser product/chemical. If the application rates vary greatly according to the crop, please clearly state this and include the range of application rates (e.g. 30 - 70 kg N per ha according to the crop variety being grown)
3. the **typical time of fertiliser application** (e.g. in autumn or spring when planting) – this is particularly important regarding the application of N fertilisers

	N FERTILISERS			P FERTILISERS		
Crop	% Crop Receiving N Fertiliser	Typical Application Rate (kg N/ha)	Typical Timing of Application	% Crop Receiving P Fertiliser	Typical Application Rate (kg P/ha)	Comments
Wheat, barley etc						
Maize						
Sunflower						
Sugar beet						
Tobacco						
Potatoes						
Field vegetables (except potatoes)						
Glasshouse vegetables						
Orchards						
Vineyards						
Pasture and other grassland						
Others – please specify						

Step 4 - Known "Bad Practice" Regarding the Use of Mineral Fertilisers

Next - we would like you to identify any "bad practice" associated with the use of mineral fertilisers by farmers in your country - for example, this might include:

- using application rates that are higher than recommended rates (unlikely in many countries)
- poor application due to old or poorly maintained equipment
- spreading too closely to water sources e.g. streams and rivers
- applying mineral fertiliser at an inappropriate time of year (i.e. when the crop is not growing)

The table below is organised according to crop, but if you have only general comments to use please delete these crops (or if you have more specific comments to make, please add more crops)

Crops	**Known Bad Practice by Farmers**	**Source of Information**
Wheat, barley etc		
Maize		
Sunflower		
Sugar beet		
Tobacco		
Potatoes		
Field vegetables (except potatoes)		
Glasshouse vegetables		
Orchards		
Vineyards		
Pasture and other grassland		
Others		

ANNEX 2: MOLDOVA

Types of N and P Fertiliser Commonly Used by Farmers in Moldova

Type of Fertiliser	Typical Nutrient-containing Chemicals	Typical Formulation (N:P:K)	Comments
N FERTILISERS			
Straight N Fertilisers	Ammonium nitrate		This type of fertiliser constitutes about 99% of total straight N fertilisers applied in Moldova
Compound Fertilisers	Mono-ammonium phosphate	11 : 44 : 0	This type of fertiliser constitutes about 40% of total compound fertilisers applied in Moldova
	Compound fertiliser "Nitroamofosca"	17 : 17 : 17	This type of fertiliser constitutes about 60% of total compound fertilisers applied in Moldova
P FERTILISERS			
Straight P Fertilisers			Not used
Compound Fertilisers	Mono-ammonium phosphate	11 : 44 : 0	This type of fertiliser constitutes about 40% of total compound fertilisers applied in Moldova
	Compound fertiliser "Nitroamofosca"	17 : 17 : 17	This type of fertiliser constitutes about 60% of total compound fertilisers applied in Moldova

Total Consumption of N and P Fertiliser by Farmers in Moldova

		2000	2001	2002	2004/ 2005	Source of data
N FERTILISERS	Total N consumption (tonnes)	8,10	13,45	20,58		Department for Soil Fertilization State Inspectorate of the Ministry of Agriculture and Food Industry
	Total agricultural area treated ('000s ha)	270,0	395,6	588,0		As above
P FERTILISERS	Total P consumption (tonnes)	0,10	0,28	1,83		As above
	Total agricultural area treated ('000s ha)	5,9	12,2	83,2		As above

Characteristics of N and P Fertiliser Use by Farmers in Moldova

	N FERTILISERS			P FERTILISERS		
Crop	% Crop Receiving N Fertiliser	Typical Application Rate (kg N/ha)	Typical Timing of Application	% Crop Receiving P Fertiliser	Typical Application Rate (kg P/ha)	Comments
Wheat, barley etc	**60 - 75**	**35 - 55**	**In spring and summer**	**5 – 10**	**15 – 25**	
Maize	**10 - 15**	**25 - 35**	**In spring**	**0**	**0**	The P fertilisers are not applied to maize because of the current economic situation
Sunflower	**5 - 10**	**25 - 30**	**In spring**	**0**	**0**	As above
Sugar beet	**35 - 45**	**35 - 55**	**In spring**	**30 - 40**	**15 – 30**	
Tobacco	**10 - 15**	**25 - 35**	**In spring**	**5 - 10**	**15 – 25**	
Potatoes	**30 - 40**	**25 – 35**	**In spring**	**30 – 40**	**20 – 25**	
Field vegetables (except potatoes)	**20 - 25**	**25 – 35**	**In spring and summer**	**20 – 25**	**15 – 25**	
Glasshouse vegetables	**60 - 80**	**25 – 30**	**In autumn and spring**	**60 – 80**	**15 - 25**	
Orchards	**0**	**0**		**0**	**0**	As above
Vineyards	**0**	**0**		**0**	**0**	As above
Pasture and other grassland	**0**	**0**		**0**	**0**	As above

Known "Bad Practice" by Farmers Regarding Nutrient Management in Moldova

Crops	Known Bad Practice by Farmers	Source of Information
Wheat, barley, maize, sunflower	Unilateral application of straight N fertilisers (increase the risk of water pollution with nitrogen) Frequent fertilisers storage in unauthorized places	Mr Valentin Gurau, senior specialist of the Department for Soil Fertilization, Plant Protection with the State Inspectorate of the Ministry of Agriculture and Food Industry
Maize, sunflower, sugar beet, tobacco	Irregular application due to old equipment Frequent fertilisers storage in unauthorized places	As above
Potatoes, field vegetables	Spreading too closely to water sources (ponds and rivers)	As above
Glasshouse vegetables	Applying mineral fertilisers without estimate the nutrient needs of vegetables and soil test	As above

Additional Data

According to the data of the Department for Soil Fertilization, Plant Protection with the State Inspectorate in Moldova were applied for soil fertilization 157,837 tonnes of manure in 2001 and 199,245 tonnes – in 2002.

Currently the use of mineral fertilisers in agriculture of Moldova was reduced by 10 – 15 times comparative to the 1990s. At the moment in Moldova does not exist the special report on the environmental impact of mineral fertilisers use in the last years. The latest report on this issue is: "Nutrient Balances for Danube Countries. Country Report Moldova. Volume 1. 1996", which was prepared of the National Institute of Ecology. Some of these data's report were included in the "UNDP / GEF Danube Pollution Reduction Programme, National Review, 1998. Moldova. Executive Summary".

ANNEX 3: ROMANIA

Types of N and P Fertiliser Commonly Used by Farmers in Romania

Type of Fertiliser	Typical Nutrient-containing Chemicals	Typical Formulation (N:P:K)	Comments
N FERTILISERS			
Straight N Fertilisers	Ammonium sulphate		21% N+24 S
	Ammonium nitrate		33-34.5% N
	Urea		46% N
	Aqueous ammonia		250 (2.9:0:0)
Compound Fertilisers	Mono-ammonium phosphate		61% P_2O_5 ; 12% N
	Di-ammonium phosphate		10% P_2O_5: 20%N

P FERTILISERS			
Straight P Fertilisers	Triple superphosphate		55-66 P_2O_5: 13-18 N
Compound Fertilisers	Mono-ammonium phosphate		48 P_2O_5: 11 N : 0 K
	Di-ammonium phosphate		10:20:0
	Poliphosphats		56-60 13-18 0

Total Consumption of N and P Fertiliser by Farmers in Romania

		2000	2001	2002	2004/2005	Source of data
N FERTILISERS	Total N consumption (tonnes)	460	390	340		Agriculture Ministry
	Total agricultural area treated ('000s ha)	2900000	2700000	2500000		
P FERTILISERS	Total N consumption (tonnes)	205	183	165		As above
	Total agricultural area treated ('000s ha)	1800000	1750000	1700000		

Characteristics of N and P Fertiliser Use by Farmers in Romania

	N FERTILISERS			P FERTILISERS		
Crop	**% Crop Receiving N Fertiliser**	**Typical Application Rate (kg N/ha)**	**Typical Timing of Application**	**% Crop Receiving P Fertiliser**	**Typical Application Rate (kg P/ha)**	**Comments**
Wheat, barley etc	**45**	**30-66**	**autumn**	**48**	**30-60**	**N 45: P 23: K 0.5: trends in fertiliser use**
Maize	**35**	**48-60**	**spring**	**20**	**48-60**	
Sunflower	**40**	**48-60**	**spring**	**20**	**48**	
Sugar beet	**40**	**60-80**	**spring**	**48**	**48-60**	
Tobacco	**20**	**20-45**	**spring**	**20**	**40-60**	
Potatoes	**60**	**60-120**	**spring**	**40**	**60-80**	
Field vegetables (except potatoes)	**65**	**60-80**	**spring**	**45**	**30-60**	
Glasshouse vegetables	**85**	**60-80**	**vegetation**	**35**	**30-70**	
Orchards	**20**	**40-60**	**vegetation**	**20**	**30-40**	
Vineyards	**45**	**30-60**	**spring**	**25**	**30-40**	
Pasture and other grassland	**15**	**30**	**spring**	**-**	**-**	

ANNEX 4: UKRAINE

Types of N and P Fertiliser Commonly Used by Farmers in Ukraine

Type of Fertiliser	Typical Nutrient-containing Chemicals	Typical Formulation (N:P:K)	Comments (product names)
N FERTILISERS			
Straight N Fertilisers	Ammonium sulphate		
	Ammonium nitrate		
	Urea		
	Ammonium sulphate		
Compound Fertilisers	Mono-ammonium Phosphate	N -11%; P_2O_5 - 49%; N - 3%; P_2O_5 -5%; N -2%; P_2O_5 -16%; N -1-2%; P_2O_5 -18-29%; N - 3%; P_2O_5 -17-18%	Superagro NP, Ammonium Phosphate, 2-16-0; Granphose
	Diammonium Phosphate	N -16%; P_2O_5 -16%	Ammophosphate NP
	Compound - NK	N -10%; K_2O -6%; S -5%; B -0,4%	Ecolist
	Compound – various NPK	N -3-20%; P_2O_5 -5-41%; K_2O -8-38%; N -2,1-6%; P_2O_5 - 0,8-17%; K_2O -0,8-14,0%; N -6-18%; P_2O_5 -7-24%; K_2O -8-24%; N -10-17%; P_2O_5 -9-19%; K_2O -9-17%; N -8-18%; P_2O_5 -5-17%; K_2O -16-28%; N -4,3%; P_2O_5 -1,9%; K_2O -1,9%; N -3%; P_2O_5 -5%; K_2O -5%;	Aquarine; Tekos; Kemira NPK; Nitrogranphoska; Rastvorin; Riverm; Superagro NPK
P FERTILISERS			
Straight P Fertilisers	Super Phospfate (GR)	P_2O_5 - 17%-20%	
Compound Fertilisers	Mono-ammonium Phosphate	N -11%; P_2O_5 - 49%; N - 3%; P_2O_5 -5%; N -2%; P_2O_5 -16%; N -1-2%; P_2O_5 -18-29%; N - 3%; P_2O_5 -17-18%	Superagro NP, Ammonium Phosphate, 2-16-0; Granphose
	Di-ammonium Phosphate	N -16%; P_2O_5 -16%	Ammophosphate NP
	Compound - PK	P_2O_5 -14,4%; K_2O -14,5%	Granphoska
	Compound – various NPK	N -3-20%; P_2O_5 -5-41%; K_2O -8-38%; N -2,1-6%; P_2O_5 - 0,8-17%; K_2O -0,8-14,0%; N -6-18%; P_2O_5 -7-24%; K_2O -8-24%; N -10-17%; P_2O_5 -9-19%; K_2O -9-17%; N -8-18%; P_2O_5 -5-17%; K_2O -16-28%; N -4,3%; P_2O_5 -1,9%; K_2O -1,9%; N -3%; P_2O_5 -5%; K_2O -5%;	Aquarine; Tekos; Kemira NPK; Nitrogranphoska; Rastvorin; Riverm; Superagro NPK

Total Consumption of N and P Fertiliser by Farmers in Ukraine

		2000	**2001**	**2002**	**2004/2005**	**Comments**
N FERTILISERS	Total N consumption (tonnes)	223,3	318,2	311,1		
	Total agricultural area treated with N fertilisers (‘000s ha)	4632	6388	6226		
P FERTILISERS	Total N consumption (tonnes)	37,6	52,0	55,0		
	Total agricultural area treated with P fertilisers (‘000s ha)	4632	6388	6226		

Characteristics of N and P Fertiliser Use by Farmers in Ukraine

	N FERTILISERS			P FERTILISERS		
Crop	% Crop Receiving N Fertiliser	**Typical Application Rate (kg N/ha)**	Typical **Timing of Application**	% Crop Receiving **P Fertiliser**	Typical Application Rate (kg P/ha)	Comments
Wheat, barley etc	**60**	**33**	**spring**	**60**	**31**	
Maize	**42**	**27**	spring		**7,2**	
Sunflower	**12**	**2,5**	spring		**2,1**	
Sugar beet	**68**	**59**	spring		**20**	
Tobacco	**-**	**-**	**-**	**-**	**-**	
Potatoes	**52**	**39**	**spring**		**26**	
Field vegetables (except potatoes)	31	27	**spring**		12	
Pasture and other grassland	**13**	**5,8**	**spring**		**0,6**	

Known "Bad Practice" by Farmers Regarding Nutrient Management in Ukraine

Agricultural policy of Ukraine in part of agrochemical protection of plants and certain out of control activities of farmers make the agri-industrial sector un efficient. It causes overuse of fertilisers and pesticides and does facilitate pollution of the environment - particularly water, air and soil. It also induces soil erosion and sedimentation of water reservoirs.

There are the following bad agricultural practices that are common in Ukraine:

- Farmers use out of date, illegal and non-certified pesticides and fertilisers that cost much less than normal. The practice causes soil oxidisation and has unpredictable effects on the environment and crops.
- Farmers apply machines with non-point sprayers. It makes fertilisers spread too largely and thus contaminate soils and water. It also causes over-enrichment of fertilisers to crops.
- There are no unique or complex fertilisers. Farmers use several kinds of fertilisers for every certain kind of weeds and pests. It results in mixing of fertilisers and thus unpredictable influence on the environment and crops.
- Farmers do not apply the practice of vegetative cover. It makes pollutants come easily to air and finally drop down into water and soils.
- No practice of covered storage of animal wastes. It causes air pollution and water eutrophication (nitrogen and phosphorous load).
- Farmers do not apply the practice of crop rotation following short-term economic purposes. Steadily it causes more and more poor yields and thus farmers apply more and more fertilisers.
- Local agriculture and forest bodies do not provide planting of forest and grass buffers around agricultural fields in order to protect water basins from sedimentation.
- Local agriculture, forest and water industry bodies do not provide engineering protection of water streams and water reservoirs from sedimentation due to agricultural activity.
- In Ukraine around 19 thousand tones of pesticides prohibited for use are stored. The Cabinet of Ministers of Ukraine issued the Decree that prohibited some chemical weeds- and plants-killers. Hence agricultural enterprises came Negative list fertilisers to specials storage places. For the time being the chemicals started dropping down to soils and contaminating water and air.

PRUT RIVER BASIN MANAGEMENT CASE STUDY

WFD implementation in the Prut basin
Component 2
Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities

Workshop 3 August 2006, Farm AGROIND Berezeni, Romania

Oana Islam, CESEP Romania

Project Management

- **Funding**: UNDP/GEF Danube Regional Project
- **Technical supervision**: Steering Committee
- **SC Chairs**: Anca Savin and Dumitru Drumea
- **SC members**: Oana Islam, Gheorghe Constantin, Tatiana Belous, and Kyryl Sereda
- **Execution**: Romania, Moldova, Ukraine

Project Objective

- To support Moldova, Ukraine and Romania for the development of the Prut river basin management plan, in line with the WFD

Main Components

- **Component 1** - **Prut River Basin Management Plan**
- **Component 2** - **Adapting policy objectives and measures to WFD/CAP reform, through raising awareness**
- **Component 3** - **Changing consumer behaviour due to the introduction of phosphate free detergent into the market**
- **Component 4** - **Stakeholders dialogue, partnerships and networking**

Component 1 - Prut River Basin Management Plan

- **Activity 1. Establish project coordination (SC)**

- **Activity 2.**

Contribution to the WFD implementation process:

- **Prepare Overview of the current situation concerning the Development of Prut river basin management plan:**
  - **Needs**
  - **Gaps**
  - **Expectations, and**
  - **Steps to be undertaken.**

Component 2.

Adapting policy objectives and measures to WFD/CAP

through awareness raising activities

Tasks

- **Production of project documents for transboundary farm demonstration project to be implemented as part of the joint WFD/CAP reform implementation**
- **Organize awareness raising campaign on the introduction of the BAP at selected farm AGROIND Berezeni, Prut basin**
- **Discuss the questionnaire**
- **Design REFLECTION MATRIX," and INFORMATION DIALOGUE BOX".**
- **Organize workshop, Romania Prut basin, 3-4 August 2006**

Steering Committee 2
August 4, 2006

Agreement on the Component 3 implementation

- **Technical supervision**: Steering Committee
- **SC Chairs**: Anca Savin and Dumitru Drumea
- **SC members**: Oana Islam, Gheorghe Constantin, Tatiana Belous, and Kyryl Sereda

Component 3 -

Changing consumer behavior due to the introduction of phosphate free detergent into the market

- **Activity 5.**

  Conduct relevant stakeholders analysis on the use of phosphate free detergents

  - **Target audience identified**
  - **The most appropriate, effective and highest impact level for project interventions chosen: schools, universities, pharmacies**

UNDP I GEF
DANUBE REGIONAL PROJECT

Component 3 -

Changing consumer behavior due to the introduction of phosphate free detergent into the market

- **Activity 6.**

  Proposal on how to influence consumer behavior on the use of phosphate free detergents.

  - **Disseminate the informative package**
  - **Prepare evaluation report containing policy**

Annex 19

Recommendation on Best Available Techniques at Agro-industrial Units

March 2004

Prepared by Dr. Franz Uberwimmer, in cooperation with the members of the EMIS Expert Group.

ICPDR Document IC/081, 1 March 2004

International Commission for the Protection of the Danube River

Vienna International Centre D0412

P.O. Box 500

A-1400 Vienna, Austria

Phone: +(43 1) 26060 5738

Fax: +(43 1) 26060 5895

e-mail: icpdr@unvienna.org

web: http://www.icpdr.org/DANUBIS

Recommendation on Best Available Techniques at Agro-industrial Units

The Commission,

recalling Paragraph 1 of Article 2 of the Danube River Protection Convention in which the Contracting Parties shall strive at achieving the goals of a sustainable and equitable water management, including the conservation, improvement and the rational use of surface waters and ground water in the catchment area as far as possible;

recalling also Paragraph 2 of Article 2 of the Danube River Protection Convention according to which the Contracting Parties pursuant to the provisions of this Convention shall cooperate on fundamental water management issues and take all appropriate legal, administrative and technical measures, to at least maintain and improve the current environmental and water quality conditions of the Danube River and of the waters in its catchment area and to prevent and reduce as far as possible adverse impacts and changes occurring or likely to be caused;

recalling further Paragraph 2 b of Article 5 of the Danube River Protection Convention in which the Contracting Parties shall separately or jointly adopt legal provisions providing for requirements including time limits to be met by waste water discharges;

recalling further Paragraph 1 of Article 7 of the Danube River Protection Convention in which the Contracting Parties taking into account the proposals from the International Commission shall set emission limits applicable to individual industrial sectors or industries in terms of pollution loads and concentrations and based in the best possible way on low- and non-waste technologies at source.

Where hazardous substances are discharged, the emission limits shall be based on the best available techniques for the abatement at source and/or for waste water purification;

recalling further Part 1 of Annex 1 of the Danube River Protection Convention in which the term “best available techniques” is defined;

recommends to the Contracting Parties of the Danube River Protection Convention that the following measures should be applied:

1. Technical In-Plant Measures for the Reduction of Waste Water Volume and Abatement of Pollution load

Waste water from agro-industrial units (manure like slurry, solid manure or urine, compost etc.) should only be discharged if waste water volume and pollution load are minimised by application of manure on farmland according to the principles of good agricultural practice and by in-plant measures using best available techniques, i.a.

- Priority of application of manure on farmland over treatment and discharge into surface waters;
- Set up of a “Manure Management Plan” considering the annual amount of manure, the nutrient content, the maximum annual limits on nutrient application, the necessary minimum storage capacity for manure, the required and the available areas of land keeping free not suitable areas and buffer zones along all water courses.
- Energy recovery through anaerobic pre-treatment;
- Prohibition of direct discharge of manure into groundwater;
- Separate collection and treatment of solid and liquid manure (except deep bedding);
- Automatic control of storage of liquid manure and of treatment processes;
- Installation of safety mechanisms to prevent overfilling of liquid manure storage vessels;
- Priority of mechanical cleaning over cleaning with liquids;

- Use of vapour condensates for cleaning operations;
- Use of biodegradable cleaning agents;
- Use of peroxyacids instead of chlorine-containing cleaning agents and disinfectants (for control of epidemics), to avoid generation of hazardous chlorinated substances;
- Controlled discharge of waters containing disinfectants in order to protect subsequent biological treatment steps;
- Separate collection and disposal of disinfectant rests and used concentrates;
- Separate sludge treatment and control of sludge quality before application.

Waste water discharges and the application of manure on farmland should be in accordance with the relevant national and EU-regulations (Nitrates Directive 91/676/EEC, Integrated Pollution Prevention Control Directive 96/61/EC) and with the permits issued by the authorities.

2. Reduction of Pollution Load by End-of-Pipe Measures

After implementation of relevant measures listed under chapter 1 at least mechanical-biological treatment shall be ensured. Agro-industrial units which discharge more than 100 m³/d either directly into water bodies, or to municipal waste water treatment plants which have no mechanical-biological treatment yet, should meet the following requirements. The values for concentration or for the percentage of reduction shall apply alternatively.

BOD_5	50 mg/l	or 70 – 90 % reduction
COD	200 mg/ l	or 75 % reduction
tot-N	50 mg/l *)	or 70 – 80 % reduction
tot-P	10 mg/l	or 80 % reduction

*) for plants with a raw waste water load more than 100 kg/d tot-N (according to the standard N-values of annex 1) and if temperature in biological reactor is above 12 °C

BOD = BOD_5 = five-day biochemical oxygen demand consumption with suppression of nitrification

COD = COD_{cr} = chemical oxygen demand consumption using the dichromate method

Percentage of reduction = reduction in relation to the load of the influent
Internationally accepted standardised sampling (preferably 24 hour- or 2-hour sampling), analysing and quality assurance methods (e.g. CEN-standards, ISO-standards, DIN-standards and OECD-Guidelines) should be used whenever available.
Wherever possible concentration values should be complemented with specific production-orientated load values.

3. Environmental Management Improvement

To improve the environmental management and co-operation between the plant and the permitting environmental authority and other organisations/institutions, in order to implement this Recommendation, the following measures should be taken:

- the plant should provide a list with the number of animals per category (comparable to Annex 1) and the quantities and ecotoxicological properties (safety data sheet) of cleaning agents and disinfectants to the responsible environmental authorities;
- self-controlling of the plant and its reporting should be specified by the responsible environmental authority;
- the authorities should take into account the promotion of pilot projects in order to establish examples for other plants;
- development and exchange of information including the work of farmers associations and research should be intensified.

Recommends also that this Recommendation should be implemented from from 1 January 2006;

Recommends further that the Contracting Parties should report (see Annex 2) to the Commission on implementation of this Recommendation in 2008 and thereafter every three years.

Annex 1

Animal Categories and Standard Values for N in Manure:

Category	***Subcategory***	***Standard N-values*** **(kg.animal^{-1} .year^{-1})**	***Subsidiary factors***
Dairy cows	Low N diet (2% N)	50	Liveweight, milk yield
	Medium N diet (2.5% N)	80	Liveweight, milk yield
	High N diet (3% N)	110	Liveweight, milk yield
Sows	With piglets <10 kg	18	N loss from manure
	With piglets - 25 kg	25	N loss from manure
Growing pigs	Normal feeding	10	N loss from manure
	Biphasic feeding	8	N loss from manure
Laying hens	Low N loss	0.7	Diet
	High N loss	0.4	Diet
Broilers	Occupancy -100%	0.4	N loss from manure
	Occupancy 75%	0.3	N loss from manure
Other poultry	Slaughter weight 0.2 kg	0.07	N loss from manure
	Slaughter weight 1 kg	0.18	N loss from manure
	Slaughter weight 5 kg	0.5	N loss from manure
	Slaughter weight 10 kg	0.8	N loss from manure
Ewes	Low N diet	10	Contribution lambs
	High N diet	20	Contribution lambs

Annex 2

Reporting Format for the Recommendation on Best Available Techniques at Agro-industrial Units

Country: _____ Year: _____

The following items have to be reported:

1. Number of plants which discharge more than 100 m³/d into water bodies or municipal sewers

2. Overall description of the situation referring to items 1 (in-plant measures) and 3 (Environmental management improvement).

3. The following data have to be reported for every plant which discharges more than 100 m³/d into water bodies:
   3.1. Name of the plant
   3.2. Name of water body and location of the plant (co-ordinates; indication if within a "vulnerable zone" according to the EU Nitrates Directive)
   3.3. Number of animals per category (comparable to Annex 1)
   3.4. Waste water volume (m³/d, m³/a)
   3.5. Discharge concentrations, loads, the mode of sampling (grab or 2h-, 8h- or 24h-sampling) and used methods of analysis

	Concentration mg/l (annual mean)	Method of sampling and analysis	Specific load kg/t product (if available)	Annual load (t/a)
COD				
BOD_5				
tot-N *)				
tot-P				

*) only for plants with a raw waste water load more than 100 kg/d tot-N (according to the standard N-values of annex 1).

Annex 20

Tasks for the Workshop Component 2

AGOIND BREZENI, ROMANIA

I. Presentation of National reports (RO, MD, UA) 2.

Each country will prepare and present at the workshop a short report (2 pages) on the use of BAP.

The report will assess the "knowledge gap" on the measures for the introduction of "best available techniques" and "best environmental practices" to achieve "good ecological" and "good chemical status".

The national report will have 3 chapters:

1. Use of BAT at agro industrial units and BAP at farms. Gaps in existing information sources
2. Results of previous World Bank projects
3. Options to address gaps.

II. Distribution to the farmers of the ICPDR Recommendation on the use of BAT at agro-industrial units and of the BAP concept of the UNDP GEF Danube Regional Project.

III. Design questionnaire and administer survey at the farm. The questions refer to the evaluation of the land use options and water quality management strategies facing the stakeholders in the selected farming community.

IV. Discuss results of the survey at the workshop with farmers.

V. Discuss options on how to create and made operational of an on line Information Dialogue Box.

VI. Preparation of evaluation report based on the workshop conclusions.

Annex 21

Presentation of the Project Component 2

Component 2, Adapting policy objectives and measures to WFD/CAP reform through awareness raising activities

Moldova, Ukraine and Romania will benefit from enhanced understanding on the impacts of the introduction of the Best Agricultural Practices at a selected farm. The ICPDR produced a Recommendation on the introduction of the BAT for agro-industrial units in the Danube countries. All countries are asked to implement it from January 2006 and report on its implementation. The UNDP GEF DRP has produced a concept on the BAP.

The farm AGROIND Berezeni, located in the Prut basin, has been selected where the concepts on BAT and BAP will be discussed. Experience accumulated in the World Bank project on controlling pollution from agriculture by Romania, Ukraine and Moldova will be very useful.

A methodology will be developed. Using an innovative framework of the "INFORMATION DIALOGUE BOX" will carry out assessment of the pertinence of the information available among farmers. An innovative "**REFLECTION MATRIX**," will be developed through an interview among farmers, farmers association and other involved stakeholders, to facilitate a multi-stakeholder multi-criteria scenario evaluation of the land use options and water quality management strategies facing the stakeholders in the selected farming community. Results will be discussed at a workshop organized at the farm location or at the Prut Water Directorate Iasi, then published and disseminated to farmer associations, governmental agencies, NGOs and research units.

The staff provided by CESEP, ECOS, MAFI Moldova, and AGROIND Farm Romania will ensure the implementation of this component.

Component 2: Adapting policy objectives and measures to WFD/CAP reform, through raising awareness

Activity	Indicator
Activity 3. Production of project documents for transboundary farm demonstration project to be implemented as part of the joint WFD/CAP reform implementation	
3.1. Develop project documents to address transboundary issues: diffuse pollution, excessive use of pesticides	• Project documents from each country
3.2. Assess the "knowledge gap" on the measures for the introduction of "best available techniques" and "best environmental practices" to achieve "good ecological" and "good chemical status".	• Gaps in existing information sources on the use of BAP and BAT at the selected farm identified • Options to address gaps assessed
Activity 4. Organize awareness raising campaign on the introduction of the BAT at selected farm AGROIND Berezeni, Prut basin	
4.1. Organize awareness raising campaign on the introduction of the BAT at Agro-industrial Units	• Published recommendation on BAT available. • Results of previous agricultural project compiled and disseminated • Input from stakeholders provided
4.2. Through the innovative "REFLECTION MATRIX," participate in a multi-stakeholder multi-criteria scenario evaluation of the land use options and water quality management strategies facing the stakeholders in the selected farming community.	• REFLECTION MATRIX designed • Multi-stakeholders multi-criteria scenarios designed considering nutrient reduction as the main objective. • Survey organized, face-to-face, with questionnaires designed, and results discussed in a report.
4.3. Assess the pertinence of the information from the survey using an innovative framework of the "INFORMATION DIALOGUE BOX".	• INFORMATION DIALOGUE BOX designed. • Indicators selected for the dialogue box: GIS maps, emission inventories, MONERIS model parameters, others.
4.4. Organize workshop in Romania, in the Prut basin, in May 2006. Prepare evaluation report based on the discussion.	• Report available for the component 2.

Annex 23

3rd Workshop, Chisinau Moldova
List of Participants

1	**Taiana Belous**	ECOS Director
2	**Dumitru Drumea**	ECOS
3	**Ruslan Melian**	Institute Acvaproject
4	**Iurie Senic**	Ministry of Agriculture and Food Industry
5	**Leonid Koniuhov**	Institute Acvaproject
6	**Balan Leonid**	Primar vil. Păpăuţi, r-n Rezina
7	**Vasile Vlas**	Primar vil. Chipeşca, r-n Şoldăneşti
8	**Parascovia Gincu**	Primar vil. Bulboaca, r-n Anenii-Noi
9	**Iurie Vintila**	Primar vil. Cărpineni, r-n Hînceşti
10	**Emilia Malai**	NGO "Environment and Health"
11	**Corneliu Mârza**	NGO "Ecosfera"
12	**Efim Sergentu**	NGO AGROECO
13	**Dragalin Mircea**	NGO Eco Albota
14	**Tarigradschi Valeriu**	NGO Pădurea Domnească
15	**Grosu Nicolae**	NGO Renasterea, vil. Talmaza, r-n Ştefan-Vodă

Annex 24

Feedback to the distributed material on the Component 3

Background

An informative package (UNDP GEF DRP report on the P-free detergents, UNDP GEF flyer on detergents, as well an informative note about the situation in the Prut countries on the subject) was prepared by the Project team. This was disseminated in Chisinau and Edinet and Nisporeni raional schools; environmental NGO's in Chisinau and Edinet, Falesti, Hincesti and Cahul raions situated in the Prut River basin; Moldovan (Chisinau) and Cahul state universities; Tiraspol Pedagogical University in Chisinau; Institute of Ecology and Geography, and Institute of Zoology of the Academy of Sciences of Moldova personally, by mail and by fax.

The presented paper was accompanied by the additional information related to Moldova, in particular, that there exists no developed comprehensive phosphate policy and standards for P concentration, in particular, in detergents; enforcement of existing environmental laws needs further improvement; fine system does not cover damage to environment and is weak to control properly water quality, and that environmental education concerning, in particular, problem related to nutrients in water and detergents is still poor.

In 2002 in Moldova there were produced 200 tones of synthetic detergents while in 2001 - 800 tones. Out of this precise amount of P-free detergents is unknown but if any, it is very small on the country's market.

In Moldova more than 90% of used detergents are imported; type of detergent use rather depends on financial abilities of consumers than on design of washing machine. On a small share of imported powder detergents the P-content is not indicated. During specific survey undertaken within ICPDR assignment there were not found P-free detergents on markets. Among 20 kinds of inspected detergents only one contained lower P content (5-15% vs. 15-30% indicated on other detergents). Within last year imports of P-containing detergents mostly from Romania, Turkey, Russia and Ukraine increased by 11,2%. To improve the situation the new legal acts limiting P-content in detergents; financial support from donors to subsidize P-free detergents prices are needed; tax policy in relation to P-free detergents has to be changed and public involvement has to be increased.

The feedback had been receiving by means of personal communication (face by face and telephone communication) form October 12 to October 19.

It should be noted that all recipients accepted the presented paper with great gratitude in advance since according to their opinion, acquaintance with it should had been undoubtedly raise their awareness about advantages of nutrient reduction measures including use of P-free and P-poor detergents for environment and respectively for their social life and economic activities.

According to obtained feedback, the people especially in rural areas, got to know many fairly interesting information concerning harmful effect of nutrients including phosphates on water environment that may result in algal blooms and consequently to fish death, reduction of biodiversity and the value of water uses for domestic, recreation and other purposes.

Many schoolchildren informed the project team that they also showed the paper to their parents, relatives and friends, and in some schools (in Edinet and Hincesti) raions the paper was also discussed at the regular meetings of school biological study groups.

The information presented in paper was also very useful for skilled in the domain of industry, agriculture and environment specialists because it provided them with some statistical and

scientific data discovered nutrient impact on environment and clearly outlined necessity to reduce nutrient loads including ones due to use of P-containing detergents.

Many people from target groups from Chisinau mentioned about occurred at the end July in Chisinau algal bloom in one of nicest and favourite recreation places in the city – Valea Morilor Lake which resulted in kill of all fish inhabited in the lake. That time concentration of dissolved oxygen due to algal blooms in various parts of the lake varied from 1,2 to 0,3 mgO_2/l. That sad event was a good example of necessity to control content of nutrients in water to avoid such a situation.

Specialists in domain of biology from the Institute of Zoology of the Academy of Sciences underlined the importance of introducing of technologies to produce P-free detergents because pphosphorus is the nutrient which most often limits growth in freshwater systems. In fact, excess growth of plankton has several unwanted effects. It reduces clarity and makes the water less desirable for swimming and inappropriate for drinking. At high plankton densities, the occurrence of toxic algae is more frequent. However, higher plankton productivity may increase the total fish yield and, at the same time, change the species composition, usually to less favored species when P concentrations are high.

Specialists in domain told us that in Moldova mostly imports and produced P-containing detergents.

Trade flows of detergents within Central European Countries have expanded during the last years, and amount of imported detergents is significant in Moldova. The brief analysis of the volume of trade shows that Moldova's import from EU countries is very limited in terms of volume and value.

Zeolit-A is most commonly used in Moldova for replacing the water-softening properties of phosphates in detergents.

Awareness campaign findings

It is not possible to ban or restrict the import of P-containing detergents to Moldova, because of health problems. The Moldovan population uses half the amount of detergents per person than the population of other European countries. This from time to time may result in an increase in infectious diseases. Therefore, Moldova as a poor country does not restrict the import of cheap detergents, independent of their composition.

Besides, specialists form the Moldovan state university underlined the necessity to reduce phosphate inputs from municipal treatment plants by new and upgraded existing sewerage and wastewater treatment facilities because sewerage extension can cause a major increase of surface water P. This is because, in the case of septic tanks and pits, the total surface water P-load is less than in the case of linked sewerage, even when secondary treatment is foreseen. Without tertiary sewage treatment, surface water P-load can drastically increase. Depending on who is responsible for the exploitation of wastewater treatment plants (as usually for municipal WWTP's it is local authorities), covenants on their construction and operation could also be developed.

The asked people also said that in countries like Moldova introducing a system of P-control for the time being should be made on an ad hoc basis, with the donor countries starting negotiations with governments on conditions about P-removal for the financing of industrial plants in the most sensitive areas (if any).

Conclusions

On the basis of the discussion the project team made the following conclusions:

The major constraints and problems in relation to use of P-free or -poor detergents are the following fast changes to P-free detergents were reported by the consultants:

- *government agencies:* no comprehensive phosphate policy; the process of needed law-making is a very time-consuming process; fine systems are inefficient for water quality control; no standards for P content/concentration

- *detergent importers and producers*: concentrated detergents were not on the market; small amounts of P-free detergents on the market; P-free detergents are more expensive, etc.
- *others:* public information on environmental problems related to detergents is poor; P content is often not indicated on detergent products; public awareness of environmental matters is poor; there is no NGO activity for introduction of P-free detergents; high demand for low quality/low price products; consumers are mainly interested in the price of detergents; the contribution of P from detergents to the phenomenon of eutrophication is small, etc.

The recipients expressed the opinion that use of P-free detergents assuredly not to a sufficient extent will solve eutrophication problems as a single measure but can initiate a general decrease in phosphates in rivers, lakes and reservoirs in Moldova. The people asked for feedback totally agreed with importance of use of P-free detergents and appreciated very much the dissemination of the paper as a one of the first steps towards public awareness raise to understand it.

Annex 25

Use phosphate free detergents!

Phosphates contribute to water pollution by encouraging algae blooms, which result in the death of fish and other aquatic species.

Phosphates are found in detergents and fertilizers.

Phosphates are nutrients to all living organisms, but especially algae.

Phosphates contaminate our wastewater, which ends up in a natural or artificial body of water and allows the algae population to explode, turning the water green.

This leads to the death of other aquatic plants and fish because it starves them of oxygen.

Clean clothing, dirty river

You just washed three loads of clothing and hung it in the sun to dry. Family is thankful. You feel good and clean. Did you pollute?

Phosphates, or compounds with phosphorus (P), are added to some detergents to improve washing effectiveness. They soften the water in your machine, make it bubblier and help dissolve cleaning agents. That's good for your clothes, but bad for your river.

Excess volumes of nutrients, however, can cause massive algal blooms. Left unchecked, sub-surface life becomes deprived of oxygen and suffocates, killing fish, reducing biodiversity and reducing the value of many water uses.

Mismanagement of nutrients in the Danube River Basin (DRB) has led to severe ecological problems including the deterioration of groundwater resources and the eutrophication of rivers, lakes and the Black Sea. The upcoming DRB Management Plan will need to include measures to solve the Danube's nutrient problems.

Treatment and P-free alternatives

To reduce phosphate pollution, there are two main options. The first is more and better sewage treatment. The second is making detergents "P-free". The main alternatives for phosphates in detergents are called 'zeolites' which are neither toxic nor lead to eutrophication.

To date, Austria and Germany have virtually gone completely P-free. Slovenian use of detergents is about 75% P-free. Czech Republic P-free detergent use is about 50%. These four countries together account for about 28% of the total DRB population. Of the remaining DRB countries, only Hungary and Serbia and Montenegro use significant proportions of P-free detergents (about 50%), together accounting for a further 25% of the DRB population. The remaining seven DRB countries use little or no P-free detergents and make up almost half the entire DRB population.

Costs and industry

"Zeolites have been shown to be a cost-effective alternative for P-based detergents and there is no evidence of higher costs to consumers," says Helene Horth, an expert at WRc working as an independent consultant for the UNDP-GEF Danube Regional Project (DRP).

"It's hard to say," says Jaroslav Slunecko, a representative of a group of detergent producers in the DRB who are all members of the international Association for Soaps, Detergents and

Maintenance Products (AISE), the official representative body for detergent and cleaning product industries in the EU. "It's country and company dependent. Each company has a different supply chain and cost structure in each country. It's important to look at how and from where ingredients are supplied. Local tax structures and transportation costs also need to be considered when determining costs and prices." Each country also has consumers with different demands, he adds.

"Companies should be free to formulate detergents that fit best with a specific place's consumer preferences, economic conditions and environmental situation," says Slunecko. "The environment is one important factor, but not the only one."

The success of going P-free

"Industry believes that no long-term solution to the problem of eutrophication will be possible without a clear commitment of stakeholders to fully implement waste water treatment plants and best management practices in agriculture. Industry will support all measures designed to reduce phosphate emissions into surface waters, either through sewage treatment plants or the marketing of phosphate-free products, provided proven cost-effective and environmentally sound alternatives are defined, yielding a sustainable resolution of eutrophication."

According to recent investigations in the Czech Republic, the phosphorus from detergents creates 23% of total phosphorus discharged to municipal wastewaters, says Doubravka Nedvedova from the Czech Ministry of Environment's Water Protection Department. This is why plants with more than 10,000 PE are equipped or will soon be equipped with phosphorus removal technology. "Considering that nutrients (phosphates and nitrogen) enter the water not only from municipal but also from agricultural sources, the measure (eliminating phosphates from detergents) is one of many others that we have to apply to remove nutrients from waters."

Pushing the switch

In the DRB, two options exist for getting industry to switch to P-free production and sales -- voluntary agreements or regulation through legislation. The Czech Republic started with a voluntary agreement with a group of detergent producers. Partial success was achieved with total phosphate content in detergents almost halved between 1994-2003. However, non-members to the agreement increased their market share resulting in increased phosphate levels in 2005, and the government reacted by enacting new legislation.

"The Czech lesson appears to apply to many former Central and Eastern European countries (CEE) in the Danube Basin," says Horth. "It's difficult to make voluntary agreements with industry work without legislative back-up. They prefer to wait for legislation."

The goal of the DRP's detergent project is to develop recommendations for reducing phosphorus in detergents. "To date, we have found many challenges to using voluntary agreements," says Horth. "For example, without legislation, even if agreements can be made

between national governments and industry, the field is left wide open for others to produce or import P-detergents."

A new EU Regulation on detergents entered into force October 8 2005. Its Article 16 says: "…by April 2007, the Commission shall evaluate, submit a report on and, where justified, present a legislative proposal on the use of phosphates with a view to their gradual phase-out or restriction to specific applications."

"Any EU decision should be based on science," says Slunecko. "I can't say whether the EU should enact legislation to ban P-based detergents or not. Let's wait and see. Industry will respect the EC's decision. We are committed to cooperating with local and national bodies and the ICPDR to find the best solutions."

As for Horth: "We hope that the 2007 review will support a phase-out of detergent phosphates, as we now have the curious situation where several EU countries have contributed significantly to combating eutrophication by reducing the use of P-detergents, either through national legislation or voluntary agreements, while others have not. Another step in the right direction will be to make consumers more aware of the problem and choices available to them. NGOs can be a big help here."

Paul Csagoly is a communications specialist for the UNDP/GEF Danube Regional Project, and a writer on European environmental issues since 1996.

Pullout:

"True progress will only be made in the DRB if the EU enacts legislation banning phosphates in detergents", says Helene Horth, an expert working with the UNDP-GEF Danube Regional Project (DRP). "This is not an alternative to improved sewerage connection and treatment, or good agricultural practice, but a necessary complementary action to counteract eutrophication."

Caption:

Studies in Switzerland and the USA show the greatest benefits (70% to 90% reductions in phosphorus loads) to lakes and rivers resulted where a combination of reduced detergent phosphorus and improved wastewater treatment was implemented. Credit: Csagoly

Annex 27

Detergent Use in Danube River Basin (DRB) Countries

Individual Country Detergent Policy and Use

Country name	**Ukraine**
Consultant responsible for the questionnaire	**Dr. Victor KARAMUSHKA**
Contact details	**12 Chornobylska Street, Ap. 47** **03179 Kyiv, Ukraine** **phone: +380-67-403-53-45** **fax: +380-44-450-98-16**
Completion date	**August 12, 2005**

Summary

1. In Ukraine, production and selling of detergents for domestic and industrial purposes is growing up by 15-20 % annually and represents one of the most rapidly developing business sector. The sector includes sufficient part of “shadow economy” contribution.
2. Most of products comprise surface active substances and phosphate compounds in amounts, which cause harmful impact on the environment and human health.
3. National statistics does not provide reliable data concerning phosphate containing detergents production and use in household and industrial sector.
4. Environmental policy and legislation are lacking regulatory instruments providing effective regulation of production, import/export, usage of detergent and protection of water sources against pollution by detergent-containing wastes
5. Raising awareness, increasing knowledge and understanding of the impact of P-containing detergents on environment and human health among producers, policy / decision makers and broad public should be considered as a priority urgent measures aimed at the prevention of environmental pollution by nutrients.
6. Experience of EU countries in this area, particularly in the field of legal regulation and management, would be helpful for development of national policy and regulation.

Existing and planned policies, legislation and voluntary commitments

1.1 Status of EU legislation

Please identify progress with transposal into national legislation of the following Directives and Regulations, and adoption of the Recommendations:

Directive/ Regulation/ Recommendation No.	Title	Ministry or national body responsible for implementation	Status in 2000 (as stated in Annex 8.2) Transposal or adoption (year)	Present status (2005)	Comments Non-EU countries: Proposed progress towards approximation
Directive 73/404/EEC as amended	Biodegradability of detergents				The Law of Ukraine On the State Program of Adaptation of the Legislation of Ukraine to EU Legislation (N 1629-IV of 18.03.2004): environmental sector was determined as one of priority sectors for approximation of national legislation to the EU legislation. National legal acts in this area will be harmonised with EU by 2008. No specific measures undertaken
Recommendation 89/542/EEC	Labelling of detergents				The same as above
Regulation 648/2004/EC	On detergents (degradability and labelling) - brings together and replaces 73/404/EEC as amended, and 89/542/EEC - enters into force 8. October 2005)				The same as above

Directive/ Regulation/ Recommendation No.	Title	Ministry or national body responsible for implementation	Status in 2000 (as stated in Annex 8.2) Transposal or adoption (year)	Present status (2005)	Comments Non-EU countries: Proposed progress towards approximation
Recommendation 98/480/EC	Good environmental practice for household detergents				The same as above
Directive 91/271/EEC	Urban Waste Water Treatment Directive				There are few national regulations in this area, which are not harmonised with Directive 91/271/EEC (Resolution of the Cabinet of Ministers "On the approval of the Rules of the protection of surface waters against pollution by return waters" (25.03.1999 N 465-99); Rules of taking-up the waste waters of enterprises into communal and sectoral sewerage systems of settlements of Ukraine (approved by the State Committee on Housing and Communal Service of Ukraine, 19.02.2002 N 37; registered by the Ministry of Justice 26.04.2002 N 403/6691; Resolution of the Cabinet of Ministers "On the procedure of development and approval of norms maximum allowable discharge of polluting substances and list of substances to be regulated during discharge" (11.09.1996 N 1100-96); Resolution of the Cabinet of Ministers "On the approval of the Rules for the determination of normative fees for pollution of the natural environment and collection of these fees" (01.03.1999, No 347, and others)

Directive/ Regulation/ Recommendation No.	Title	Ministry or national body responsible for implementation	Status in 2000 (as stated in Annex 8.2) Transposal or adoption (year)	Present status (2005)	Comments Non-EU countries: Proposed progress towards approximation
Directive 2000/60/EC	Water Framework Directive	Ministry for Environmental Protection of Ukraine			The Directive is translated in Ukrainian; the provisions of the Directive are taking into account during development of new legal acts and regulation

1.2 Overview of national legislation and policies

Please complete and update this information with details of the measures – existing and planned - specifically addressing the reduction of phosphate in laundry detergents (focus on domestic laundry detergents)

There is no legal or regulatory act specifically aimed at the reduction of the phosphates in detergents. National standards restrict content of phosphates laundry in detergents by 22%. Some laws and policy documents provide general and/or specific provisions for the control and protection of water sources against pollution (including nutrients). The list of such acts presented in the table below.

Existing legislation and policies

Name	Main aims/issues addressed by policy/legislation (with particular reference to phosphate in detergents)	Is this still in force? Is a review planned? Provide details	Additional information / comments
Law on Environmental Protection (1991)	Framework law , which determines, among others: -Objectives and principles of environmental protection -Competencies of central, regional and local governmental authorities -Mechanisms of prognostication, monitoring and information in the field of environmental protection; -Obligatory requirement of environmental expertise for any activities influencing the environment; -Ecological standards and norms; -Control and supervision of environmental protection; -Regulation of nature resources usage; -Economic mechanism of environmental protection 9incl pollution control); -Mechanisms of environmental emergency response; -Liability for violation of environmental legislation and regulation;	The Law is in force. Its provisions were detailed in many other laws and sublegal acts.	
Water Code of Ukraine (1995)	The Code constitutes legal framework for -management of water protection -rational use of water for the population and economic activities -restoration of water resources -protection of waters from pollution, littering and depletion -prevention of accidental water pollution and floods and elimination of their consequences -improving the condition of water bodies -protection of rights of enterprises, institutions, organisations and citizens.	Some Articles of the Water Code correspond to the EU regulation (e.g., The Code introduces the Basin principle of water management.) but in general the Code is not harmonised Amendments to the Code have been approver by number of laws during 1996-2004	Related EU Directive: Principles of the EC Water Policy (draft, 4/12/96)

Name	Main aims/issues addressed by policy/legislation (with particular reference to phosphate in detergents)	Is this still in force? Is a review planned? Provide details	Additional information / comments
Law on Drinking Water and Drinking Water Supply (2002)	The Law is to provide legislative, economic and organisational framework for the sustainable operation of the drinking water supply system aimed at the ensuring the population with needed quantity and quality of safe drinking water. Centralised water supply system and its components are not available for privatisation.		Related EU Directive: On water Quality for Human Consumption (80/778/EEC)
The Law on the State Program "Drinking Water of Ukraine" for 2006-2020 (03.03.2005)	The Program determines set of provisions aimed at the improvement of water supply for population in terms of adequate quality and quantity; reconstruction and development of the water supply / sewage network; rehabilitation, protection and sustainable use of the water sources.	Recently approved National Program, which complemented and to some extend replaced relevant parts of other national programs approved in the past.	
The Program of Development of Water Supply and Sewerage Sector (Resolution of the Cabinet of Ministers № 1269 of 17.11.1997)	The Program is aimed at the rehabilitation and improvement of an effectiveness of water supply / sewerage system.		Related EU Directives: Pollution Caused by Certain Dangerous Substances, Discharged into Water Bodies (76/464/EEC); Urban Wastewater Treatment (91/271/EEC)
Main Directions of State Policy on the Environmental Protection, Utilization of Natural Resource and Environmental Safety (1998)	Defines key priorities of Environmental Policy and Practical Actions, includes obligations to nutrient pollution reduction	As a policy document , it is still valid but some provisions are outdated and require revisions	

Name	Main aims/issues addressed by policy/legislation (with particular reference to phosphate in detergents)	Is this still in force? Is a review planned? Provide details	Additional information / comments
On the State Program of the Development of Water Economy (17.01.2002)	The Program is aimed at the implementation of national policy concerning the improvement of qualitative water supply to population and national economy, resolution of environmental and water-resources problems, establishments of the conditions for sustainable functioning of water economy complex.	The Program envisages practical implementation of the basin principle of water management.	
Law on sanitary and epidemiological Security of the Populations (1994)	The Law: -determines the rights and duties of governmental authorities, enterprises, organisations and citizens in the field of sanitary-epidemiological regulations; - establishes the procedures and state surveillance of sanitary-epidemiological services; -Introduces the licensing of all activities with potential impact of human health (including those in water sector).	Not harmonised with EU regulations	
On the approval of State Program of Protection and Rehabilitation of the Environment of the Black and Azov Seas (2001)	The Program (adopted by Law) is aimed at the development of the policy, strategy and action plan to prevent anthropogenic damage of the Black and Azov Seas environment, rehabilitate the Biodiversity and natural resources, and promote sustainable development of the region.	ICZM and pollution control of coastal and marine environment are among key components of the programs	

Planned legislation or policies

Name	Main aims/issues addressed by policy/legislation (with particular reference to phosphate in detergents)	Proposed dates for implementation	Additional information/comments
Law On Integrated Coastal Zone Management	The law sets up the methodological approach to define the coastal zone(s) and specifies legislative, scientific and other practical measures aimed at the integral management of marine coastal zones. Draft law is based on EU provisions in this area of regulations. ICZM includes pollution prevention and control of water sources	2006	The draft Law is developed by the Ministry for Environmental protection of Ukraine and circulated among other ministries for consideration in 2005
Regulation on detergents production and use	Regulation of the content of phosphorus and surface active substances as well as bio degradability of detergents		
Regulation on the protection of the water bodies against organic pollution from agricultural sources	Privation of the water pollution by nutrients		

Personal comments: there are no draft legal and / or regulatory acts in the field of regulation of nutrients pollution and phosphate-free detergent in the current lists and work plans of the Ministry for Environmental Protection of Ukraine and the Committee on Environmental Policy of the Parliament of Ukraine

Voluntary Commitments

Please provide details of any existing or planned voluntary commitments, incentives or other initiatives dealing with the reduction of phosphate in laundry detergents. Please also provide details of any other voluntary commitments dealing with general environmental issues, if available.

As for July, 2005 there is no available data on voluntary commitments of producers regarding reduction of phosphates in laundry detergents in Ukraine.

1.3 Barriers on the implementation of voluntary agreements

Please provide your views on what the current or future barriers are to establishing voluntary agreements and how you think these can be overcome in order to implement a successful agreement for the reduction of phosphate in detergents. ***Please indicate whose views these are*.**

Question	Response
If a voluntary agreement has been made in the past – Has it been successful? What have the benefits been?	No voluntary agreements were concluded in the past
If no voluntary agreement has been made – What has prevented this? For example: • Institutional barriers? • Socio-economic barriers? • Have relied on legislative measures or other initiatives (such as incentives)? • You do not feel that voluntary agreements are effective? • Lack of support for establishing agreements? • Insufficient understanding and knowledge on the issue? • Other reasons (please state).	Environmental Voluntary agreements as a tool of co-regulation, which is complementary to the traditional command-and-control approach, are not used in Ukraine. Possible reasons are: - Environmental issues in reality are not on the top of governmental priorities due to domination of the goals of economic recovery and growth; - Current legislation and regulation (first of all, economic mechanisms) do not promote voluntary commitments (implementation of such commitments requires additional financial implications); - Institutional constrains (no association of producers of laundry detergents established in Ukraine, lack of co-operative relations with corresponding governmental bodies) - Lack of knowledge and understanding on such instruments among producers and governmental bodies ; - Lack of encouraging incentives from the Ministry for Environmental Protection and other relevant governmental institutions
What do you think is needed in your country for an effective voluntary agreement to be established? For example: • Capacity building of the institutions? • Improvement in the legal system dealing with environmental issues? • Better internal (i.e. ministry) communication? • Ministerial reform? • Assistance from ICPDR? • Training workshop? • Other? Please state	To introduce Voluntary agreements practice in Ukraine the following measures would be helpful: - Improving communication and establishing mutually beneficial (or at least working) relations between producers and relevant ministries (first of all, with the Ministry for Environmental Protection) - Appropriate informational campaign to raise awareness, share knowledge and increasing the understanding of the benefits from such instruments for both sides (including producers and governmental regulating institutions); in this regard, any assistance from experienced institutions of EU countries (in form of training, workshops etc.) would be helpful; - Revision of appropriate legal and regulation acts in order to provide legal support of voluntary incentives

Please state the source of information for each reply (or table), e.g.

(1) National government statistics
(2) Detergent industry / association statistics
(3) Independent market research organisation statistics

1.4 Overall detergent use

Year to which data applies	2004

Laundry detergents (domestic and in launderettes)

Total laundry detergent usage (tonnes/year)	219873 tons* (official data); 250000 (expert estimation with correction for the shadow segment of economy)
% of detergent that is phosphate free (<5% P)	No data available. Assessment of the available data result in conclusion that the portion of the phosphate free detergents is negligible in total amount of detergent used in the country
Total population (million)	47,319 mln (as of December 1, 2004)** ***Population in Ukrainian Oblasts of Danube region: Odesa - 2 469 057 (total, including territory out of Danube basin) Ivano-Frankivsk - 1 409 760 Zakarpattia - 1 258 264 Chernivtsy - 922 817
Total number of households (million)	14 mln (estimation)
Average use of laundry detergent (g/person/day)	12,7 g/household/day (4,65 kg/person/year)
Average use of laundry detergent (g/household/day)	40,1 g/household/day (14,66 kg/household/year)
% of households with washing machines	81 %
% of households with washing machines of the top loading design	5 % (machines "automatic")
Is there a difference between top and front loaded machines, in terms of the type of detergent used or the amount? Please describe. Any types of detergents can be used for both types of machines but front loaded machines represent modern types of machines with improved parameters and require improved washing powders "automate" (according to estimation, consumption of "automate" powders is 2 000 t annually)	

*data of the Institute VNDIXIMPROEKT; other published data refer to the State Standards Committee provide

** Data from the "Population of Ukraine" site http://www.gmdh.net

*** Statistic data of National Census (2001)

Industrial detergents

There are no statistic data regarding detergents used for industrial purposes. Available data do not differ detergents sold / used in the country for household and industrial purposes

1.5 Manufacturers and suppliers of laundry detergents

Note: if the information is more easily available in terms of percentage market share (for the whole country), this information and the total use can be used instead to estimate the amount of each brand.

Year to which data applies	2004

Used in the country

Name of manufacturer/ supplier	Country of manufacture	Phosphate free (<5% P)		Phosphate based		
		Brand name	Amount used (t/year)	Brand name	Amount used (t/year)	P content (%)
Procter & Gamble	Ukraine, Russian Federation, Hungary, Bulgaria and others			Ariel, Tide, Dax, Bonux, Gala	No statistic data available	>12%
CUSSONS Polska	Poland			E	No statistic data available	15 – 30%
Unilever	International			OMO, Surf	No statistic data available	>12%
Benckiser	International			Dosia, Lanza	No statistic data available	>12%
Henkel	Ukraine, Austria			Persil, Losk, Dixan	No statistic data available	>12%)
Havat Chemical Industry Co	Ukraine, Turkey			Test	No statistic data available	12 – 17%
Unal-ABC Chemical Industry	Ukraine, Turkey			Test	No statistic data available	12 – 17%
Olvia-Beta	Ukraine, Turkey			Gala	No statistic data available	>12%

The part of products provided for market by purely Ukrainian enterprises (no foreign partners and capitals) amount few percents.

Made in the country and exported to non-Danube countries

In 2004, Ukraine has produced 155217 t packed and 1852 t non-packed detergents and cleansers; 70-75% of them – washing powders. Detergents produced in Ukraine cover 65% of Ukrainian market. 14852 t of detergents produced in Ukraine (14460 t packed and 392 t non-packed) were exported to Russian Federation, Moldova, Byelorussia and other countries. At the same time, in 2004 Ukraine has imported 77656 t detergents and cleansers (71424 t packed and 6232 t non-packed). Suppliers are: Russian Federation (54000 t or 69% of imported products), Jordan (4800 t), Poland (3500 t), Hungary (3400 t), Bulgaria (3300 t), and Turkey (1300 t).

Available data on the production of phosphate free detergents in Ukraine is very restricted; that means that Ukraine production of such items represents very small part of detergents.

1.6 Brand descriptions and prices

Year to which data applies	2005

The leading brands of detergents in Ukraine

Brand name	Phosphate free (<5% P) yes/no	Phosphate based (% P)	Type / purpose[1]	Price range[2] Euro/kg
Losk (Hankel)	No	>12%	Universal (all type of fabric), different types for hand and machine washing	1.3 – 1. 8
Persil (Hankel)	No	>12%	Universal (all type of fabric), different types for hand and machine washing	1.5 – 2.0
REX (Hankel)	No	>12%	Universal (all type of fabric), different types for hand and machine washing	0.9 – 1.3
Ariel (Procter & Gamble)	No	>12%	Universal (all type of fabric), different types for hand and machine washing	1.7 – 1.9
Tide (Procter & Gamble)	No	>12%	Universal (all type of fabric), different types for hand and machine washing	1.3 – 1.7
Gala (Procter & Gamble)	No	>12%	Universal (all type of fabric), different types for hand and machine washing	1.0 – 2.3
DAX (Procter & Gamble)	No	>12%	Universal (all type of fabric), different types for hand and machine washing	0.7 – 0.9
Bonux (Procter & Gamble)	No	>12%	Universal (all type of fabric), different types for hand and machine washing	1.0 – 1.3
E (Cussons)	No	15 – 30% (according to labelling data)	Universal (all type of fabric), different types for hand and machine washing	1.5 – 1.6

Brand name	Phosphate free (<5% P) yes/no	Phosphate based (% P)	Type / purpose[1]	Price range[2] Euro/kg
TEST (Havat Chemical Industry)	No	12 – 17% (according to labelling data)	Universal (all type of fabric), different types for hand and machine washing	0.9 – 1.7

Note 1. For example 90°C wash, coloured wash, hand wash

Note 2. Typical shop prices

Exchange rate local currency to Euros	1 Euro = 6.1 UAH
How were the price ranges estimated? Direct search and assessment of most presented brands in Kyiv shops	

Annex: Additional questions for the detergent manufacturers:

1. What is the percentage difference between the production costs for phosphate free (<5% P) and phosphate containing detergents?
2. What are the reasons for any difference in costs (e.g. raw material costs, processing costs, production volume – please specify which and the significance of each in %)?
3. Would the unit cost decrease to that of phosphate containing detergents if the production volume increases to the current production of phosphate containing detergent?
4. Is there a difference in selling price for the phosphate free (<5% P) and phosphate containing detergent for the same application and if yes what are the reasons for any difference in price between phosphate free (<5% P) and phosphate containing detergents?
5. Have you discovered a difference in washing performance of domestic laundry between the use of front loaded and top loaded machines for phosphate containing and phosphate free (<5% P) detergents? If yes, what are the differences?
6. Are any investment costs required to move from phosphate containing detergents to alternative builders, e.g. zeolite? If yes what is the approximate cost per tonne of detergent produced?

Ukrainian market is practically free of no-P detergents, so that any assessment and answers will be of virtual nature.