

**UNDP/GEF Danube Regional Project**

**Policies for the Control of Agricultural Point  
and Non-point Sources of Pollution  
&  
Pilot Projects on Agricultural Pollution Reduction  
(Project Outputs 1.2 and 1.3)**

**Pilot Projects for  
Promoting Best Agricultural Practice  
(BAP) in the Central and Lower Danube  
River Basin Countries:  
Concept and Project Proposals**

**Project Output 1.3:  
Pilot Projects on Agricultural Pollution Reduction**

**Final Report  
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**GFA Terra Systems  
in co-operation with Avalon**





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Strengthening the Implementation Capacities for Nutrient Reduction and Transboundary  
Cooperation in the Danube River Basin

**Pilot Projects for Promoting Best Agricultural Practice (BAP)  
in the Central and Lower Danube River Basin Countries:  
Concept and Project Proposals**

Project Output 1.3:  
Pilot Projects on Agricultural Pollution Reduction

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## Preface

The UNDP/GEF Danube Regional Project supports through this Project Component the development of policies for the control of agricultural point and non-point sources of pollution and the development and implementation of pilot projects on agricultural pollution reduction in line with the requirements of the EU Water Framework Directive.

The Overall Objective of the Danube Regional Project is to complement the activities of the ICPDR required to strengthen a regional approach for solving trans-boundary problems in water management and pollution reduction. This includes the development of policies and legal and institutional instruments for the agricultural sector to ensure reduction of nutrients and harmful substances with particular attention to the use of fertilizers and pesticides.

According to the mandate of the Project Document:

**Objective 1** stipulates the “Creation of Sustainable Ecological Conditions for Land Use and Water Management” and under

**Output 1.2** is the “Reduction of nutrients and other harmful substances from agricultural point and non-point sources of pollution through agricultural policy changes”.

One of the main aims of Output 1.2 is to support the integration of measures for pollution control into the day-to-day management of crops, animals and land by farmers through the promotion of “best agricultural practice” (BAP).

The first phase of Output 1.2 is preparatory and is being undertaken by GFA Terra Systems (Germany) in co-operation with Avalon (Netherlands). The GFA Terra Systems/Avalon consultancy team consists of 6 international consultants and a network of 35 national experts in the 11 central and lower DRB countries eligible for UNDP/GEF assistance.

**Output 1.3** is the “Development of pilot projects on reduction of nutrients and other harmful substances from agricultural point sources and non-point sources”.

Following the inventory studies and developing the concept of *Best Agricultural Practice* (BAP) the network of national experts focused on the identification of approaches for promoting BAP through pilot projects strengthening the capacity of national agricultural advisory and extension service providers.

The present document introduces the concept of pilot projects and their role in the Danube Regional Project Phase II. The methodology and approach for identification and pre-selection is presented as well as recommendations for further implementation. Six draft pilot project proposals are annexed.

The Selection criteria, design principles and recommendations in the report are founded upon the review and analysis presented in other key documents produced within the framework of Output 1.2:

- *Inventory of Agricultural Pesticide Use in the Danube River Basin Countries*
- *Inventory of Fertilizer and Manure Use (with reference to Land Management Practices) in the Danube River Basin Countries*
- *Inventory of Policies for Control of Water Pollution by Agriculture in the Danube River Basin Countries*
- *Draft Concept for Best Agricultural Practice for the Danube River Basin Countries*

Furthermore, a review of the national agricultural extension service providers has been conducted analysing their capacity and experience to promote BAP. Results are summarized under the methodology chapter and basic information can be found in the annex.

The report draws upon conclusions of the international workshop held in Bucharest in January 2004 that brought together a comprehensive cross-section of involved consultants, policy-makers in agriculture and water resource management and representatives of agricultural extension service providers from seven central and lower DRB countries. During this workshop concepts, practical examples, project proposals and implementation of pilot projects have been discussed.



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## **Abbreviations & Acronyms**

<b>ACSA</b>	Agency for Consulting and Agricultural Extension Service, Moldova
<b>ANCA</b>	National Agency for Agricultural Consulting, Romania
<b>BAP</b>	Best Agricultural Practice
<b>BAT</b>	Best Available Techniques
<b>CAP</b>	Common Agricultural Policy
<b>DRB</b>	Danube River Basin
<b>DRP</b>	Danube Regional Project
<b>EC</b>	European Commission
<b>EU</b>	European Union
<b>GEF</b>	Global Environmental Facility
<b>GFP</b>	Good Farming Practice
<b>ICM</b>	Integrated Crop Management
<b>ICPDR</b>	International Commission for the Protection of the Danube River
<b>IPM</b>	Integrated Pest Management
<b>UNDP</b>	United Nations Development Programme
<b>WFD</b>	Water Framework Directive



## Executive Summary

### Introduction

Building the capacity of local, regional and national agricultural and extension services for the promotion of Best Agricultural Practice is a major challenge, especially in those countries dominated by small farms where the managerial skills of the farmers are at present still relatively poor.

Within Output 1.3 of the Danube Regional Project (DRP), seven countries of the central and lower DRB region have been identified as a priority for the development and implementation of pilot projects to promote the concept of Best Agricultural Practice. These are:

- the EU *Pre-accession* Countries - Romania, Bulgaria and Croatia
- the EU *Non-accession* Countries - Bosnia & Herzegovina (including Republica Srpska), Serbia and Montenegro, Moldova and Ukraine

The four May 2004 EU accession countries were excluded because they are more advanced with the introduction of EU legislation, including the implementation of EU co-financed rural development measures that provide direct funding for the introduction and improvement of agricultural extension and advisory services.

### Impact

The general objective of the pilot projects implemented in Phase II of the Danube Regional Project (DRP) will be to:

*“...demonstrate how improvements can be made in the capacity/effectiveness of agricultural advisers/extension services to provide appropriate information and advice that supports the highest level of pollution control practice by farmers according to local context”.*

The direct beneficiaries of the pilot projects will be the agricultural advisory/extension services in the priority DRB countries. The potential results of improving the effectiveness of agricultural advisers/extension services in the central and lower DRB countries is:

- raised awareness amongst farmers of pollution risks,
- increased avoidance of bad practice – including improved compliance with relevant legislation,
- increased adoption of good practice – including utilization of economic incentives.

### Implementation

The implementation of Pilot Projects in Phase II of the DRP will take place from 2004 to 2006 after selection of the most promising pilot projects and funding decisions of DRP management. Pilot project budgets are included in a separate document prepared for the DRP management.

It is recommended that pilot projects should follow a project cycle of three month project inception, eighteen to twenty-four month of implementation and three to six month of designated evaluation and dissemination. Partner contributions of local counterpart institutions and commitment of counterpart staff will be an important selection criteria.

During the **inception phase** the selected national counterpart institutions will have to further develop the existing pilot project proposals with detailed activity plans and defined outputs based on the Term of Reference published by the contracting authority.

**Implementation phase:** the pilot projects will be implemented over a limited time period and under direct responsibility and ownership of local counterpart institutions. To complement and support the beneficiaries DRP will provide technical assistance (TA) during preparation and implementation of country specific projects; assuring technical and financial standards and follow-up according to DRP management requirements, and; the monitoring of project results and quality control.

**Evaluation phase:** During the final phase the results of the pilot projects will be assessed and made available to relevant stakeholders, policy makers and the broader public. Successful results will be disseminated and replicated in the framework of local institutions.

## Methodology for Project Development

All pilot projects were developed within the projects basin wide concept for BAP. This concept is flexible to be adjusted to the regional conditions but gives a clear structure for designing policy instrument and implementing actual activities for reducing diffuse agricultural pollution. In this context the concept of Best Agricultural Practice can be defined as: “...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”

Through the network of national experts (in cooperation with key players in the national advisory and extension service sector) a “long list” of pilot project proposals was developed with two to three preliminary pilot project proposals submitted for each of the central and lower Danube River Countries.

National experts (with the support of the international expert team) were then invited to pre-select the most promising national pilot project proposal for presentation at the workshop on “Developing Pilot Projects for the Promotion of BAP in the Danube River Basin” in Bucharest in January 2004.

The workshop was designed to a) develop appropriate selection criteria, and b) apply these criteria to the selection of a “short-list” of pilot project proposals.

During the workshop it was agreed to develop selection criteria under three headings:

- pre-requisites (i.e. essential characteristics of a pilot project)
- value added selection criteria (i.e. competitive features) and
- guiding principles for the design of pilot projects.

It is particularly important to note that the workshop introduced cross-boundary cooperation as a key objective and much attention was given to the consolidation of project proposals in order to achieve a trans-boundary approach to specific pollution issues in specific catchments of the DRB.

The active participation of key stakeholders of the respective countries with representatives from Ministries of Agriculture, Water and Environment, Agricultural Advisory and Extension Services, and the consultant team greatly supported the consolidation – and in some cases the merger - of pilot project proposals to foster cross-border cooperation.

### “Consolidated” List

The participants of the workshop finally agreed on a consolidated list of multi-country pilot project proposals which have been taken forward and developed as follows:

1. Upland Manure Management in the Sava and Bosnia River Basin (Bosnia & Herzegovina, Serbia and Montenegro)
2. Non-chemical Weed Control in the Sava River Basin (Croatia, Bosnia & Herzegovina, Serbia and Montenegro)
3. Good Agricultural Practice in the Intensive Agricultural Region of Vojvodina (Serbia and Montenegro)
4. Improving Manure Management in the Danube River Flood Plain (Bulgaria, Romania)
5. Control of Agricultural Run-off for the Reduction of Nutrient Pollution in the Prut River Basin (Romania, Moldova)
6. Introduction of BAP in Odessa Oblast for Improving Nutrient Management (Ukraine)

Taking into account the limited financial capacities of the UNDP/GEF Danube Regional Project, it is assumed that up to three pilot projects can reasonably be implemented. For the remaining pilot projects other sources of financial support have to be identified. It is anticipated that priority will be given to trans-boundary projects with the highest effectiveness of agricultural advisers/extension services to achieve the expected results.

## Introduction

During the 1990s, land privatisation and restitution policies were implemented in the majority of central and lower DRB countries leading to a large increase in the number of agricultural holdings that are in private ownership. This now represents a major challenge to the promotion of BAP - both in terms of the enforcement of agricultural pollution control legislation and the dissemination of appropriate advisory messages regarding BAP to an agricultural community that consists of an extremely diverse set of actors with contrasting farm sizes, degrees of specialization and levels of education. The capacity-building of local, regional and national agricultural and extension services therefore remains a major challenge, especially in those countries dominated by small farms where the managerial skills of the farmers are at present still relatively poor. This challenge is accentuated by the further observation that in many countries:

- the level of usage of agricultural extension and advisory services is very low
- the advisory services are mainly focused upon technical issues and are less-oriented towards economic and environmental advice, and
- existing extension services do not yet have the capabilities and capacities to provide the expected quality of advice.
- “Best Agricultural Practice” itself 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.

## Rationale

The Project has identified major issues with an impact on non-point source pollution in the Central and Lower Danube River Basin countries. Correspondingly the consultancy team formulated recommendations for agricultural policy development and focal issues for intervention. While taking findings for agricultural run-off, use of agro-chemicals in plant protection and land management techniques as well as socio-economic factors for each country into account, the EU policy framework and its implication for the individual countries have been considered. Key issues for successful agricultural policy development and implementation are:

- How to transfer policy objectives into practical guidelines for farmers?
- And how to constantly monitor and refine policy objectives and tools?

In general three main sets of policy instruments are available to implement agri-environmental policy objectives, which are in brief:

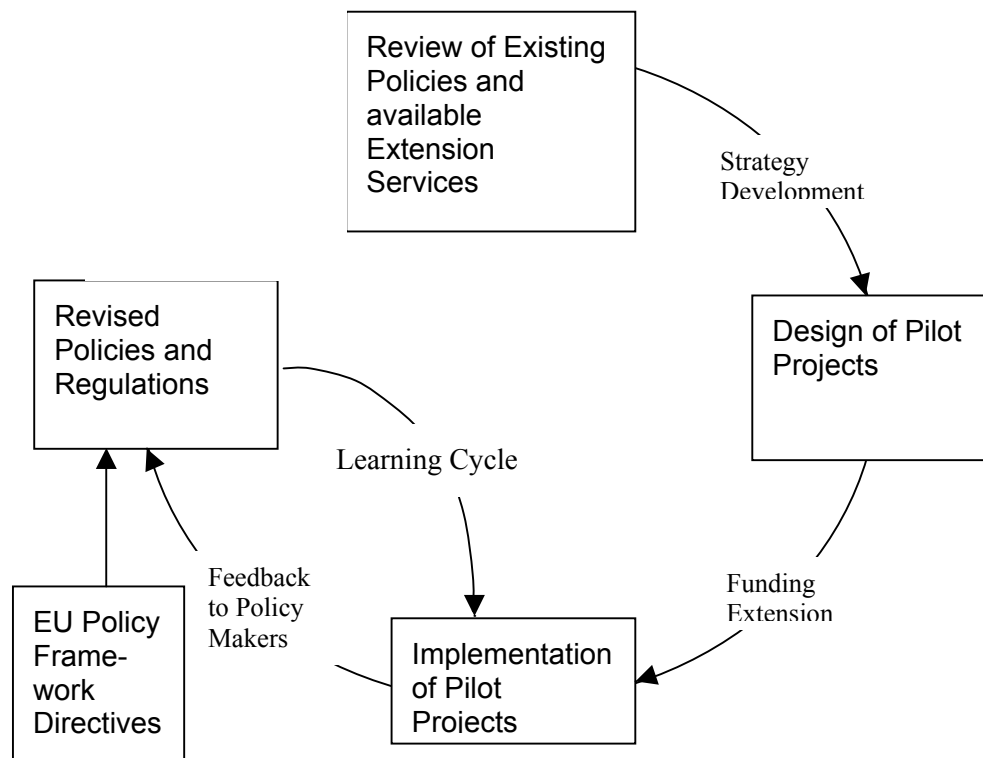
**Regulatory Instruments** – many of the main agricultural pollution issues are addressed by existing regulatory instruments in the DRB countries, with the most extensive coverage of issues in those countries preparing for EU accession in 2004. In most other countries, existing regulatory instruments tend to be rather general with relatively few specific regulatory instruments in place. Consequently there is much potential to prepare more targeted instruments to prevent water pollution through the control of specific farming practices – also to improve compliance and enforcement.

**Economic Instruments** - economic instruments may be incentives or disincentives and can be an important tool for modifying the management practices of farmers and reducing agricultural pollution. However, effective measures (or packages of measures) need to be well-designed and balanced – as well as successfully implemented. Not surprisingly, the economic instruments used in the DRB countries are mainly disincentives due to the lack of financial resources to introduce incentive schemes. Where economic instruments are in place they do not currently address all pollution issues in all countries. The number of incentive measures in the four acceding countries (Czech Republic,

Slovakia, Slovenia and Hungary) is expected to increase in 2004 with EU accession and the availability of EU co-financing for rural development measures, such as agri-environment programmes.

**Advisory/Information Instruments** - the transfer of knowledge and information to farmers via advisory/informative instruments can play a key role in changing the management practices of farmers and reducing agricultural pollution. However, the most frequent limitation upon this type of instrument for controlling agricultural pollution in the DRB is that the actions taken are too small with insufficient staff and financial resources. There is large potential to further develop advisory/information instruments in all countries.

**Figure 1** *Agricultural Extension – Policy Cycle*



The second phase of the DRP will support improving and harmonizing policy objectives and instruments for the central and lower Danube River countries. The best regulatory policy framework and even economic instruments can only work as good as they are understood and absorbed by the farming community. In particular with regard to environmental topics the farming community as well as agricultural advisory and extension service providers have little or no experience and limited capacity to implement improved management practices within the concept of BAP.

Furthermore, the key of successful implementation of policy objectives will be to link policy analysis and advice to the planned pilot projects (Figure 1). To enable policy makers to revise policies and to learn from pilot projects, an agricultural extension mechanism needs to be set up and funded for establishing a viable long-term process. Therefore, capacity building targeting agricultural advisory and extension services providers including a monitoring and feedback mechanism is crucial for the design of the pilot projects and the overall success of refining policy objectives and strategies.

## Objectives

Within Output 1.3 of the Danube Regional Project (DRP), seven countries of the central and lower DRB region (the EU Pre-accession Countries Romania, Bulgaria and Croatia; the EU Non-accession Countries - Bosnia & Herzegovina including Republica Srpska, Serbia and Montenegro, Moldova and

Ukraine) have been identified as a priority for the development and implementation of pilot projects to promote the concept of Best Agricultural Practice.

The direct beneficiaries of the pilot projects will be the agricultural advisory/extension services in the priority DRB countries.

The general objective of the pilot projects is to “...**demonstrate** how improvements can be made in the **capacity/effectiveness** of agricultural advisers/extension services to provide appropriate **information and advice** that supports the **highest level of pollution control practice** by farmers according to **local context**”.

The potential impact of improving the effectiveness of agricultural advisers/extension services in the central and lower DRB countries is:

- raised **awareness** amongst farmers of pollution risks,
- increased **avoidance of bad practice** – including improved compliance with relevant legislation,
- increased **adoption of good practice** – including utilization of economic incentives.

Most advisory services are traditionally concerned with agronomic advice and it was stressed that providing information and advice to farmers on the environmental impact of their farming activities is a notoriously difficult issue. Consequently, all advice/information provided for farmers must be communicated effectively in terms of content, format and delivery. Where possible, environmental messages about the need for reducing agricultural pollution should also appeal to the “self-interest” of farmers i.e. improved income/profit. There is also much potential for the development of more innovative approaches to working with farmers in areas of high pollution risk.

## Project Cycle

The implementation of Pilot Projects in **Phase 2** of the Danube Regional Project will take place from 2004 to 2006 after selection of the most promising pilot projects and funding decisions of DRP management. The pilot project should follow a project cycle of three month project inception, eighteen to twenty-four month of implementation and three to six month of designated evaluation and dissemination. Partner contributions of local counterpart institutions and commitment of counterpart staff will be an important selection criteria.

During the **inception phase** of up to three months the selected national counterpart institutions will have to further develop the existing pilot project proposals with detailed activity plans and defined outputs based on the Term of Reference published by the contracting authority. The interface for transboundary exchange of intermediate results and experiences throughout the project implementation will be determined. Joint transboundary activities such as workshops and study tours will be scheduled.

**Implementation phase:** the pilot projects will be implemented over a time period of 18-24 months under direct responsibility and ownership of local counterpart institutions. To complement and support the beneficiaries DRP will provide TA in the following areas:

- preparation of country/subject specific guidelines for project implementation;
- providing advice during project implementation;
- assuring technical and financial standards and follow-up according to DRP management requirements;
- monitoring of project results and quality control.

**Evaluation phase:** During a final phase of 3-6 months the results of the pilot projects will be assessed and made available to relevant stakeholders, policy makers and the broader public. Successful results will be disseminated and replicated in the framework of local institutions.



## Approach & Methodology

Within the inception phase of the first phase of the DRP the project team agreed with UNDP and ICPDR to identify pilot projects for seven lower and central DRB countries excluding the May 2004 EU accession countries. The four accession countries are in many ways advanced in introducing an agri-environmental policy strategy and policy instruments in line with the EU legislation. With the accession to EU these countries will have access to direct funds to improve and support their implementation structure.

Identifying focal topics and potential initial pilot project ideas were based on a range of reviews and studies. The project team updated inventories for fertilizer and manure as well as pesticide use, which came up with clear results and recommendation for pollution control issues from agricultural non-point sources. A separate review focused on the state of agricultural policy context regarding agricultural pollution control in eleven central and lower DRB countries.

Furthermore, the experience and capacity of national agricultural advisory and extension service providers for promoting BAP has been reviewed. Results supported to identify potential partner organisations for pilot projects and helped to define the scope and level of intervention and the need for capacity building activities.

All pilot projects were developed within the projects basin wide concept for BAP. This concept is flexible to be adjusted to the regional conditions but gives a clear structure for designing policy instrument and implementing actual activities for reducing diffuse agricultural pollution. In this context the concept of Best Agricultural Practice can be defined as: "...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"

Through the network of national experts national basic pilot project proposals were initiated in cooperation with potential national partner organisations. The international expert team supported the selection process with feedback and each country focused to present one proposal at the international workshop in Bucharest at 19/20 of January 2004.

The workshop had been designed to agree on a set of selection criteria and to discuss and consolidate presented pilot projects. While up to this point the pilot projects were developed in a national context the workshop introduced cross-boundary cooperation as a key objective. The active participation of key stakeholders of the respective countries with representatives from Ministries of Agriculture, Water and Environment, Agricultural Advisory and Extension Services, and the consultant team greatly supported the consolidation – and in some cases the merger - of pilot project proposals to foster cross-border cooperation. The participants of the workshop agreed on a consolidated list of multi-country pilot project proposals.

## Selection Criteria

The team of consultants proposed to develop selection criteria under three headings – pre-requisites (i.e. essential characteristics of a pilot project), value added selection criteria (i.e. competitive features) and guiding principles for the design of pilot projects.

### Pre-requisites

While identifying and developing the pilot project proposals at the national levels some clear pre-requisites had been identified for promoting individual pilot projects ideas.

1. Must be a counterpart prepared to accept responsibility for project implementation  
The counterpart organisation should share responsibility in the project implementation. This will include the sufficient provision of counterpart staff and office space. The existing institutional infrastructure should support the project implementation at field level.
2. Counterpart must have experience as service provider of agricultural advice and be acceptable/credible to agricultural community.  
Effective extension work can only be delivered if farmers have faith in the service provider's

expertise and capacity. A minimum of experience and access to potential clients has to be the basis to strengthen an organisation's capacity for promoting of BAP and innovative extension methods.

Ideally the counterpart/beneficiary has a mandate or represents a key player in providing advisory and extension services.

3. Should be compatible with the policy recommendation under the UNDP DRP output 1.2.  
The project team elaborated and presented policy recommendation which will be implemented in the project's second phase. Pilot projects have to be in line with the recommended objectives.
4. Pilot Projects should be considered favourably by national governments  
National government's approval should be sought prior to the implementation phase. The DRP workshop in Bucharest was conducted with active participation of governmental representatives to ensure compliance with national policies and their approval.

### Selection Criteria

1. Clearly defined activities targeted at capacity building/ activation of providers of advice to farmers
2. Limited to a specific geographical region and/or priority agricultural pollution issue - fertilisers, pesticides, manure handling or agricultural run-off.  
A limited and clearly defined geographical area will enable the pilot project to focus on developing appropriate extension messages and information materials in depth. Rather than having the pressure of countywide implementation emphasis should be on training and defining new concepts and approaches which can later on being replicated by the counterpart or other service providers.
3. Good potential for replication at regional, national and/or international level.
4. Responds to the comparative need of different countries.
5. Management practices that are promoted have good potential for reducing the risk of water pollution.
6. Must be an appropriate national policy environment.  
The pilot projects objectives and targets must not be in contradiction with the longer term policy strategy of a country or the EU. The policy environment should allow replication and extension of the project's objective and envisaged results.
7. Proposed activities must be participatory (bottom-up!).  
Potential national counterpart organisations have already been actively involved in the development of the pilot project proposals. Similar proposals should show a high potential for active participation of other stakeholder groups. Farmers and local governments as well as relevant NGOs have to be actively involved at an early stage of the project to participate in setting the project's activity plan. Active participation creates ownership which is vital for the projects effectiveness and success.
8. Project must be suitable for monitoring & evaluation.  
A feed back loop to national and regional policy makers is an essential part of all pilot projects. Feed back of experiences, effectiveness and lessons learnt to policy makers enables them to develop a policy strategy, adapt and fine tune policy instruments and to positively influence the policy implementation structure.  
Therefore the objectives, envisaged results and activities have to suitably relate to performance and impact indicators that can be monitored.

### Design Principles

1. Should be "experimental" – for example: "Testing the introduction of new principles and practices" or "Incubating/developing new and innovative approaches"
2. Promotes co-operation with existing international and bilateral donors where appropriate
3. Reinforcement of other existing interventions by UNDP/GEF Danube Regional Project



4. Includes trans-boundary co-operation where this is appropriate to specific pollution issues within specific catchments
5. Includes effective participation of all stakeholders, including relevant NGOs where appropriate
6. Should add value where possible in broader rural development context

### **National Agricultural Extension Services**

The team of consultants assessed the capacity of the national farm advisory structures in each target country (see Questionnaires in Annex B). The analysis has been based on a review of the national extension services through the network of national experts, existing work experience of the international consultant team and secondary sources. This assessment of actors in the public and private sector showed a variety of different states of development and national characteristics.

Mainstream and governmental advisory and extension services of all seven countries which have been reviewed show some common characteristics.

Public advisory and extension services have been found generally underfunded. This leads in particular to a lack of outreach capacity. The number of community level advisory is in most cases very limited and by far not all farmers can be reached. Simultaneously extension staff tend to receive low remuneration and have very limited access to infrastructure funds to support their activities.

Most public extension service providers successfully acquired support from multi-lateral and bi-lateral donor agencies to strengthen their technical and outreach capacity. Comparatively little support to extension services has been given to Ukraine and the former Yugoslavian states such as Serbia & Montenegro and Bosnia & Herzegovina. However, all of the existing public extension services are depending on additional external funding. Demand-driven extension planning and implementation with active participation of farmers is only now being considered as an important element of effective advisory work. There is no experience and currently little or no tendency to offer specific advice and services paid directly by farmers.

Throughout the region extension service staff of public providers have limited access to current knowledge and modern communication and extension methods. Limited training is offered through the institutions to update their technicians' expertise and capacity.

Public advisory and extension services have little or no experience with agri-environmental issues or the promotion of BAP. There is a general bias towards technical advice and aiming at improving yield levels with limited interventions in farm management and agri-environmental issues.

Public extension services in Serbia & Montenegro and Bosnia & Herzegovina broke entirely down during the conflicts in their countries. Only recently their structures are started to be re-established.

In addition to common characteristics of the public extension services specific features are summarized below for each country. More detailed information gathered by the GFA national experts is provided in the Annex.

#### **Romania**

The main public provider of agricultural advice and extension is the National Agency for Agricultural Consulting (ANCA). ANCA has been set up by Government Decree (G.D. no. 676/1998-09-30 and G.D. 676/1999) and is funded entirely by state budget. ANCA is a public sector institution directly subordinated to the Ministry of Agriculture and Food (MAF).

In total ANCA has access to a network of 1007 staff. At national level, 29 staff members are mainly developing extension strategy as well as being bound to administrative tasks. ANCA has representatives and technical staff in all counties amounting to 168 people and has extension staff in one third of the communes with about 810 technicians. ANCA aims to scale up their staff to 4,950 with fixed stations in 750 communes and sufficient outreach capacity for the 2,686 communes.

ANCA's approach is mainly top-down driven and offers limited structures to feed back and reaction on farmers requirements. Operations are rather understood as delivering advice and extension messages as derived from national strategies and objectives.

At county level the agencies are double subordinated and receive tasks and instructions through the local governments, too. Inspection tasks, which are further administered to the community level advisors, occupy resources and often cause a direct conflict of interest. This leads to difficulties of building a trustful and good relationship to farmers.

Although most active advisors and extension staff have a formal education in agriculture or a related subject, lack of current knowledge and modern communication and extension techniques is evident.

ANCA has integrated BAP in their national strategy and developed a first edition of BAP guidelines in cooperation with several academic institutes and universities. Specific codes of good agricultural practice related to environmental protection have not yet been developed nor translated into extension messages for county and commune level advisors.

### **Moldova**

The Government of Moldova has established the National Agency for Consultancy and Training in Agriculture (ACSA) to react on the growing demand for farm advice after following the farm privatisation and restructuring process. The Agency is open for cooperation with all organisations interested in providing effective services for rural areas. It is financially supported by the World Bank (RISP, 50%), the European Commission (Takis FDMOL 9901, 40%) and the Soros Foundation (10%).

The agency is itself a non-governmental organisation that supports the creation and development of non-governmental rural extension providers. Currently, 35 rural extension providers with about 350 farm advisors have been sub-contracted to undertake specific extension activities. Rural extension providers are themselves part of networks of various NGOs comprising the Federation of Agro-Inform, the National Farmers Federation and others.

The supervisory board of ACSA includes representatives from various Ministries (Agriculture, Finance, Economy) and donor organisations (World Bank, USAID, EU, Soros, DFID). It is widely accepted as the hub of the development of an effective Agricultural Knowledge and Information System for private farmers.

ACSA realises an innovative approach of organising and delivering agricultural advice. It has the advantage of being market-driven, flexible, reacting to the needs of farmers, and cost efficient. ACSA gained first experiences in integrating environmental topics in their objectives by implementing soil erosion control projects in two western counties bordering Romania. However, a general strategy of promoting BAP in environmentally sensitive areas in Moldova needs to be developed by ACSA.

### **Ukraine**

Ukraine's former governmental extension service has deteriorate over the past decade. Though officially still in operation under the Ministry of Agrarian Policy their approach is very much top-down driven and limited to the oblast level.

There is limited outreach capacity for actual extension and advice to the commune and farm level. Staff at the agricultural regional departments are mainly occupied with administrative and inspection task, which often are in direct conflict to delivering advice to farmers.

The only public institution dealing with BAP is the State Technology Centre for Soil Protection, which has itself now extension infrastructure.

Various private sector companies and NGO's have been supported by international donor funding and their activities are still heavily depending outside funding.

### **Bulgaria**

The National Agricultural Advisory Service (NAAS) acts as the main service provider for advice and extension to the farming sector. NAAS is entirely governmental funded and has a structure of 28 Regional Agricultural Advisory Service (RAAS) offices. Each regional office usually has a team comprising agronomist, livestock specialist, agro-mechanical engineers and agricultural economists.

NAAS made considerable efforts to streamline its administrative body and to strengthen their organisations capacity to effectively deliver high quality advice. However a series of issues and constraints remain on NAAS' operations:

Limited financing from the State budget and difficulty in developing programmes that are self-financing. As a result, the total number of trained advisors is insufficient.

Lack of specialized and trained advisors, which everyday becomes more apparent as farmers themselves become more specialized.

Insufficient links between NAAS and research institutes like the National Centre on Agricultural Science.

Limited motivation among advisors to work directly with farmers since most advisors are fully paid by the Government with no performance oriented incentive scheme.

NAAS is however well aware of their shortcomings and pay great attention to further develop their structure and capacity. Their efforts have attracted three larger projects aiming to improve the agencies capacity. FAO is currently funding a technical assistance project "Capacity Building for Sustainable Delivery of Agribusiness Advice to Market-oriented Farmers" which will end in October 2004.

Traditionally NAAS has not yet dealt with agri-environmental issues or BAP. However NAAS is well aware of the diffuse pollution issues and the need to build capacity and pollution control and BAP within their own ranks. NAAS is open to cooperate with environmental NGOs on these issues.

### **Serbia & Montenegro**

Serbia has restructured its public Agricultural Extension Service (AES) in 1992. With ongoing political instability over the past decade the public AES is still in the process of restructuring, currently supported by technical assistance funded by the Netherlands and USAID. The current top-down structure is unlikely to be maintained. Donor support seeks to incorporate NGO's and demand oriented extension packages on a contract basis.

The public AES is currently financed entirely by the Government and has 34 regional county level offices with a total of 767 staff of which 395 staff member have no formal agricultural education. Despite an impressive number of staff the overall effectiveness is limited due to restrictive budget limitations and staff capacity. All advisory activities – except veterinary - are provided free of charge to farmers. Opportunities are not developed to offer paid services.

The public AES has almost no experience with environmental issues and BAP. On a national level the AES participates in the regional project on "Integrated Pest Management on Western Corn Rootworm in Eastern and Central Europe".

### **Bosnia & Herzegovina**

Republic of Bosnia and Republic of Srpska, two entities of Bosnia & Herzegovina, operate separate public agricultural extension services subordinated to the Ministry of Agriculture. Both organisations fully rely on governmental funding.

In Bosnia the public extension service is organised under the Agricultural Institute of Sarajevo with offices at canton level with 3-5 staff members. No fixed structures exist at the commune level and the outreach capacity is extremely limited.

In Republic of Srpska the public extension service is organised under a Regional Coordination Office in Banja Luka. Five regional branch offices and seven station at municipal level with a total number of 29 extension staff.

The extension service in Republic of Srpska was supported with technical assistance funded by the EU Phare Programme from 2000 to 2002. The project supported establishing the regional branch offices and municipality extension stations. Staff training on extension methods, communication skills and technical packages also focusing on agri-environmental issues and BAP was provided.

## Croatia

Croatia has the public agricultural extension service operating under the Ministry of Agriculture with 22 county offices staffed with 4 to 10 specialised advisors. The service is currently entirely state funded. The Ministry envisages to gradually restructure the existing agency under a yet to be established Chamber of Agriculture towards a self-funding service. However, these plans have not been formulated in detail.

The current budget available is limiting the outreach capacity at field level and there are limited structures to allow reacting on farmers demands.

The extension service had been supported by number of technical assistance projects supporting training of extension staff in extension and communication techniques and technical packages for economic tools and dairy production.

The agency has experience with developing some technical packages under BAP for crop production and Animal husbandry. Extension and information materials were developed for optimising fertilizer application, improving land cultivation techniques and timing, safety guidelines for handling and storing pesticides as well as a manual on application technology, timing and dosing application rates.

## Long List of Pilot Project Proposals

Based on the above explained concept of pilot projects the network of national experts in cooperation with key players in the national advisory and extension service sector submitted two to three preliminary pilot project proposals for each of the central and lower Danube River Countries.

## Romania

Title	Main Objectives
<b>Vocational Guidance on Promoting BAP of County Level Agricultural Extension Services</b>	<ul style="list-style-type: none"> <li>• Country-wide training programme on BAP ranging from the general concept of BAP, EU directives, manure and fertilizer handling, pesticide handling, livestock and grazing management, to irrigation and soil erosion control measures.</li> <li>• Development of extension messages and information materials for farmers on specific topics</li> <li>• Pilot demonstrations and training of farmers</li> </ul>
<b>Developing a distant learning course for BAP</b>	<ul style="list-style-type: none"> <li>• Developing extension messages and information modules for a distant learning system using internet technology</li> <li>• Information and training modules focusing on manure management, fertilizer handling and application, pesticide storing, handling and application, erosion control methods.</li> </ul>

**Moldova**

Title	Main Objectives
<b>Improving Manure Management of Small Livestock Holdings in the Prut River Basin</b>	<ul style="list-style-type: none"> <li>• Training of extension service staff in the Cahul Rayon and on manure management, storage facilities, communication and extension techniques.</li> <li>• Developing adapted extension messages and information material on manure management.</li> <li>• Establishing pilot farms and appropriate pilot manure storage facilities in three villages, Rosu, Crihana Veche and Cislita Prut.</li> <li>• Training and demonstration days for farmers in the pilot county.</li> <li>• Dissemination of training materials through ACSA to other relevant rayon level service providers.</li> <li>• Dissemination of extension and information documents to farmers in other relevant rayons through ACSA.</li> </ul>
<b>Controlling Agricultural Run-off in the Prut River Basin</b>	<ul style="list-style-type: none"> <li>• Training of extension service staff in the Edinet Rayon on extension and communication techniques as well as technical packages to control agricultural run-off:</li> <li>• Integrated cropping management, including crop rotations and strip cropping</li> <li>• Cover and green manure crop</li> <li>• Critical area planting</li> <li>• Vegetative filter strips</li> <li>• Grassed waterway</li> <li>• Developing training and extension materials.</li> <li>• Establishing demonstration sites and conduct training days for local farmer focusing on the villages of Horodiste, Gordinesti and Lopatnic.</li> <li>• Dissemination of training materials through ACSA to other relevant rayon level service providers.</li> <li>• Dissemination of extension and information documents to farmers in other relevant rayons through ACSA.</li> </ul>

**Ukraine**

Title	Main Objectives
<b>Introducing BAP in Odessa Oblast and Improving Nutrient Management</b>	<ul style="list-style-type: none"> <li>• Awareness raising among farmer and extension service staff on the environmental implications of agricultural run-off and nutrient losses.</li> <li>• Capacity building of extension service staff.</li> <li>• Promoting improved management practices:</li> <li>• Integrated cropping management: crop rotation and strip cropping</li> <li>• Cover crops and green manure</li> <li>• Establishing vegetative buffer strips</li> <li>• Soil nutrient testing and nutrient budgeting</li> <li>• No application/dumping of fertilizers and manures to wetland and floodplains</li> </ul>

**Bulgaria**

Title	Main Objectives
<b>Manure management in Danube River Floodplains</b>	<ul style="list-style-type: none"> <li>• Training of Extension Service Staff in the Rouse and Silistre Region on manure management, soil testing and nutrient budgeting. Introducing and adjusting computerized nutrient budgeting tools.</li> <li>• Establishing local partnership with extension service, county and communal government, NGOs and farmers.</li> <li>• Establishing demonstration farms and demonstration manure storage facilities.</li> <li>• Training and demonstration days in the pilot regions on organisation and technology of sustainable manure management, soil testing and nutrient budgeting.</li> </ul>
<b>Pesticide management project in Shabla and Kavarna Region</b>	<ul style="list-style-type: none"> <li>• Training of Extension Service Staff in the municipalities of Shabla and Kavarna on pesticide handling and storing, application technology, pesticide legislation and restrictions and non-chemical weed and pest control techniques.</li> <li>• Awareness raising campaign on the use of pesticides, pesticide restrictions and non-chemical weed and pest control.</li> <li>• Developing extension messages and information materials on pesticide use, storing and handling.</li> <li>• Developing guidelines (code of practise) for application rates, maintaining and handling spraying equipment, storing and handling.</li> <li>• Training and demonstration days in the pilot municipalities.</li> </ul>

**Serbia & Montenegro**

Title	Main Objectives
<b>Manure Handling for small-scale farming in Serbia</b>	<ul style="list-style-type: none"> <li>• Training of extension service staff in the Vojvodina and central Serbia Region on manure management.</li> <li>• Developing adapted extension messages and information material on manure management.</li> <li>• Establishing pilot farmers and appropriate pilot manure storage facilities.</li> <li>• Training and demonstration days for farmers in the pilot region</li> </ul>
<b>BAP for storing &amp; applying agrochemicals</b>	<ul style="list-style-type: none"> <li>• Training of extension service staff in the Vojvodina and central Serbia Region on fertilizer and pesticide storing handling and application.</li> <li>• Developing adapted extension messages and information material on agro-chemicals.</li> <li>• Developing certification guidelines for pesticide handling.</li> <li>• Training and demonstration days for farmers in the pilot region.</li> </ul>
<b>Harmonisation of Agri-environmental Legislation and BAP</b>	<ul style="list-style-type: none"> <li>• Developing recommendations for harmonising and strengthening national legislation with regard to agri-environmental issues.</li> <li>• Developing Codes of Good Agricultural Practices for specific topics.</li> <li>• Training of agricultural advisory and extension service staff</li> </ul>

**Bosnia & Herzegovina (Republic of Srpska)**

Title	Main Objectives
<b>Improving Manure Management of Small-scale Livestock Farming in Bosnia</b>	<ul style="list-style-type: none"> <li>• Training of extension service staff and development of extension and information material aiming to:</li> <li>• Raise awareness of all farmers with regard to agricultural pollution deriving from inappropriate manure storage and management.</li> <li>• Improve compliance with the existing regulations on the protection of water from diffuse agricultural nitrate pollution</li> <li>• Introduce soil and manure nutrient testing to strengthen the understanding of soil fertility improvements.</li> <li>• Encourage the adoption of best agricultural practices for manure storage</li> <li>• Promote concepts of nutrient budgets with emphasis on manure and introduce nutrient planning among agricultural producers</li> <li>• Preparation of Manure Management Plans for small-scale farmers in the target area</li> <li>• Establish communal manure storage facilities for small-scale farmers and establish functioning management associations including the collection and organisation the transport from small family farms to the manure storage platform</li> <li>• Improve handling and application techniques for solid and liquid manure</li> <li>• Farmer training and demonstration days in the pilot county.</li> <li>• Facilitate the exchange of experiences and know-how in manure management between agricultural advisers in Bosnia &amp; Herzegovina and Serbia &amp; Montenegro.</li> </ul>

**Consolidated Pilot Project Proposals**

For each country the most promising pilot project concept had been pre-selected by the project team prior to the workshop on “Developing Pilot Projects for the Promotion of BAP in the Danube River Basin” in Bucharest in January 2004. Pre-selection was based on a set of preliminary selection criteria. Pre-selection criteria also reflected upon specific priority pollution issues identified for each country.

During the workshop six pilot projects the long list of national project proposals has been consolidated responding to a specific pollution issue and allowing in most of the cases a trans-boundary approach.



**Table 1 Consolidated List of Pilot Project**

Project Title	Pilot Area	Country							BAP Topics, Management Practices of ...			
		HR	BA	CS	BG	RO	MD	UA	Fertilizer	Manure	Pesticide	Agricultural Run-off
<b>1. Upland Manure Management in the Sava and Bosnia River Basin</b>	Hadzici and Ilijas Municipalities on tributaries of the Bosnia River (BA), Region, Sava River Catchment of Central Serbia (CS)		●	●						✓		✓
<b>2. Non-chemical Weed Control in the Sava River Basin</b>	Zagreb Region (HR), Vojvodina & Central Serbia (CS), Lower Vrbas River (BA)	●	●	●							✓	
<b>3. Good Agricultural Practice in the Intensive Agricultural Region of Vojvodina</b>	Srem area in Vojvodina Region (CS)			●					✓	✓	✓	
<b>4. Improving Manure Management in the Danube River Flood Plain</b>	Rousse/Silistra County (BG), Calarasi County (RO)				●	●				✓		
<b>5. Control of Agricultural Run-off for the Reduction of Nutrient Pollution in the Prut River Basin</b>	Vaslui County (RO), Edinet Rayon (MD)					●	●					✓
<b>6. Introduction of BAP in Odessa Oblast for Improving Nutrient Management</b>	Odessa Oblast (UA)							●	✓	✓	✓	



## Recommendations for Phase II

Due to land privatization and restitution policies, the 1990s witnessed a huge increase in the number of farm holdings in the DRB region creating an extremely diverse set of actors with contrasting farm sizes, degrees of specialization and levels of education. This represents a major challenge to both agricultural extension/advisory services and to environmental enforcement agencies. Local capacity-building of these services and agencies remains a major challenge and demands the commitment of substantial resources at a national level – political commitment to the provision of these resources must be encouraged and supported.

Taking into account the limited financial capacities of the UNDP/GEF Danube Regional Project, it is assumed that up to three pilot projects can reasonably be implemented. For the remaining pilot projects other sources of financial support have to be identified.

It can be anticipated that priority will be given to trans-boundary projects with the highest effectiveness of agricultural advisers/extension services to achieve the expected results that are:

- raised awareness of pollution risks amongst farmers
- increased avoidance of bad practice – including improved compliance with relevant legislation
- increased adoption of good practice – including utilization of economic incentives.

Farmers are economically-motivated and it is important to link the promotion of BAP to economic benefits such as improvements in yield and savings in the cost of agrochemical inputs – the development of appropriate agricultural advisory messages is therefore essential, including well-written and appropriate advisory materials, demonstration plots/farms, training for advisors and other capacity building of agricultural extension services.

The finally selected pilot projects for introduction of BAP should demonstrate the practical implementation of revised agricultural policies at the farmers' community level and the technical and economic feasibility of proposed agricultural practices for fertiliser and manure handling, use of pesticides and run-off control to reduce water pollution from agricultural activities while improving the economic situation of farmers.

For effective project implementation the following points should be considered:

**Specific concepts and outlines for the implementation of selected pilot projects** should be developed in consultation with the stakeholders concerned (farmers' community) and in cooperation with related Government institutions and extension services. Further, relevant ToR and scope of work for international assistance and national project management should be prepared;

**Competent extension services** should be identified, having the required experience as service provider and being accepted by the agricultural community as well as by Government;

**Financial support** should be made available for project implementation in particular to facilitate the work of national extension services and to promote awareness raising in the farmers' community;

**International assistance** should be contracted to provide technical advice in introducing BAP adapted to the local or regional context and to assure follow-up on project activities that includes (i) regional coordination of pilot project activities, (ii) dissemination of results, (iii) organization of training workshops, and (iv) cooperation with other projects of bilateral, EU and international assistance in related subjects (agri-environmental policy development, introduction of BAP, farm advisory capacity building, and other measures for nutrient reduction from agricultural non-point sources of pollution).

In implementing the BAP pilot projects of the UNDP/GEF Danube Regional Project, particular attention should be paid to assuring effective coordination with other UNDP/GEF project activities (Black Sea) as well as with EU projects in EU accession countries, in the Balkan countries and in NIS countries aiming to reinforce national capacities and to adapt national legislation in line with EU requirements (EU Water Framework Directive and other related directives for nutrient reduction and priority substances) and to create the appropriate mechanisms for compliance.

Pilot project budgets are included in a separate document prepared for the Danube Regional Project.



**Annex A:**  
**Outline Pilot Project Proposals**



## Proposal 1: Upland Manure Management in the Sava and Bosnia River Basin

### Participating Countries

Bosnia & Herzegovina (Rep. Srpska), Serbia & Montenegro

### Problem/Issue

Due to land privatization and restitution policies the region experienced a huge increase in the number of small-scale livestock farms.

Many small livestock farmers remove the manure from the stable to the field during the autumn months. Manure often is dumped on the field over the winter and spring period. In these periods with high precipitation surface run-off and leaching of nutrients and pollution of surface and ground waters are inevitable consequences. Besides negative environmental impacts manure offers considerably reduced economic benefit, when applied to arable crops in the subsequent season.

The majority of small scale farms have little experience in manure management and lack storage facilities. Often part-time farming entrepreneurs have little inherit knowledge of the valuable assets of manure and the negative impact of nutrient leaching from dumped manure.

### Relevance to Policy Recommendations Under Output 1.2

<b>Aim 1:</b>	<b>To Reduce Pollution from Mineral Fertilisers and Manure</b>
Objective 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 Fertiliser and Manures
<b>Aim 5:</b>	<b>To Develop the Capacity of Agricultural Extension Services for Agricultural Pollution Control</b>
Objective 9:	Develop the capacity of agricultural extension and advisory services for the promotion of BAP
	9.3 Training for Extension Workers/Advisors.
	9.4 Develop Appropriate Advisory Messages for the Promotion of BAP
Objective 10:	Develop and support pilot projects for the promotion of BAP by agricultural extension and advisory services
	10.1 Develop and Implement BAP Pilot Projects

### Project Aim

To introduce best agricultural practice in manure management to prevent water pollution (surface water and ground water), including:

- the elimination of direct discharges of manure and slurry to surface water,
- improved storage of manure and
- improved manure and slurry application technologies

### Project Objectives

- Raise awareness of all farmers with regard to agricultural pollution deriving from inappropriate manure storage and management.
- Improve compliance with the existing regulations on the protection of water from diffuse agricultural nitrate pollution

- Introduce soil and manure nutrient testing to strengthen the understanding of soil fertility improvements.
- Encourage the adoption of best agricultural practices for manure storage
- Promote concepts of nutrient budgets with emphasis on manure and introduce nutrient planning among agricultural producers
- Preparation of Manure Management Plans for small-scale farmers in the target area
- Establish communal manure storage facilities for small-scale farmers and establish functioning management associations including the collection and organisation the transport from small family farms to the manure storage platform
- Improve handling and application techniques for solid and liquid manure
- Facilitate the exchange of experiences and know-how in manure management between agricultural advisers in Bosnia & Herzegovina and Serbia & Montenegro.

### Geographical Scope

BA	CS
<b>Hadzici</b> municipality situated in the catchment of the Zujevina River a tributary of the Bosnia River and,	Central Serbia – Kolubara catchment near Valjevo)
<b>Ilijas</b> municipality in the catchment of the river <b>Ljubina</b> and <b>Misoca</b> , both tributaries of the Bosnia River.	

Note that demonstration areas have been proposed by the project. However accurate identification of pilot areas will be identified during preparation and early implementation phase with in participatory way with local farmers and stakeholders.

### Counterparts/Partners

Co-responsibility for implementation and advisory experience:

BA	CS
Bosnia Agricultural Extension Service of the Agriculture Institute of Sarajevo	Serbian Agricultural Extension Service

### Direct Beneficiaries

BA	CS
Bosnia Agricultural Extension Service of the Agriculture Institute of Sarajevo	Serbian Agricultural Extension Service

### Related Stakeholders

BA	CS
Local authorities, MoAFW & MoE (of Federation and RS), NGOs, scientific community and rural development agencies, pilot demonstration farms	Institute Semo (NGO) University of Belgrade, Faculty of Agriculture Local Farmers Associations Local administration



**National Activities****Preparation Phase**

Operational planning, Preparation of activities, Budgeting, Contractual arrangements, etc.

**Implementation Phase**

Year 1

Training of trainers and advisors in the topics such as manure storage requirements, construction of storage facilities for solid and liquid manure, composting, cost benefit considerations  
Development of guidelines for fertilizer and manure management and nutrient budgeting.  
Establishment of demonstration sites.

Year 2

Practical training of advisors  
Demonstration days (open day) for pilot area farmers  
awareness raising via media (TV, radio, agricultural newspapers),  
National stakeholder workshops to exchange experiences;

**Evaluation Phase**

Identification and dissemination of lessons learned from pilot projects implementation with particular reference to policy reform for promotion of BAP

**Trans-boundary Activities**

- Harmonisation of methodology, monitoring and extension materials and approach
- Study tours for trainers, advisors and pilot farmers to visit other country's demonstration sites
- Joint workshops for advisors; Joint evaluation and communication of results

**Opportunities for Replication**

In both countries the objectives are highly relevant in other counties and communities and can be replicated by the involved agricultural extension services.



## **Proposal 2: Promoting Non-chemical Weed Control in the Sava River Basin**

### **Participating Countries**

Croatia, Bosnia & Herzegovina (Rep. Srpska), Serbia & Montenegro

### **Problem/Issue**

Maize represents one of the most important arable crops in Bosnia and Herzegovina (BH) and Serbia & Montenegro. In BH maize is grown on about 200,000 ha of which 150,000 ha are planted in Republic of Srpska in the catchment of the Sava River. Bordering Croatia equally has intensive crop production within the Sava River's catchment

Atrazine is heavily used in maize production to combat of wide-leaf weeds. Maize growers experience the increasingly negative effects. Broad leaf weeds build up persistence against Atrazine and are increasingly difficult to control with conventional chemical methods. This often triggers farmers to even heavier dosing of up to 10 litres per ha due to the lack of alternatives. Simultaneously grass weeds are infesting the crops using their temporary competitive advantage and further diminishing the effect of using Atrazine.

Atrazine is banned in most EU member countries for good reasons. Residues of Atrazine build up in the soil's organic matter. Heavy application of Atrazine leads inevitably to spray drift and washing into water courses and ground water. EU classification (R50/53) regards Atrazine as "very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment". White fish furthermore accumulate Atrazine in brain, gall bladder, liver, and guts.

Non chemical weed-control for maize (as well as for potatoes and other cereal crops) are particularly well developed and economically competitive. A model for non-chemical weed control by mechanical control and using rotations as well as cover and side crops had been successfully established on a pilot farm near Zagreb and has been visited during the UNDP DRP Workshop "Promoting Best Agricultural Practice in the Danube River Basin" in Zagreb during 6/7 October 2003.

### **Relevance to Policy Recommendations Under Output 1.2**

<b>Aim 2:</b>	<b>To Reduce Pollution from Pesticides</b>
Objective 3:	Reduce the levels of harmful active substances used for crop protection by prohibiting and/or substituting the most dangerous priority pesticides with safer (including non-chemical) alternatives
	3.2 Pesticide phase-out.
Objective 5:	Encourage the proper use of pesticides by farmers and other operators
	5.1 Raise Awareness about Pesticide Misuse
<b>Aim 5:</b>	<b>To Develop the Capacity of Agricultural Extension Services for Agricultural Pollution Control</b>
Objective 9:	Develop the capacity of agricultural extension and advisory services for the promotion of BAP
	9.3 Training for Extension Workers/Advisors.
	9.4 Develop Appropriate Advisory Messages for the Promotion of BAP
Objective 10:	Develop and support pilot projects for the promotion of BAP by agricultural extension and advisory services
	10.1 Develop and Implement BAP Pilot Projects

## Project Objectives

To introduce new practices for weed control in production of maize and other crops through BAP Pilot Projects to prevent water pollution (surface water and ground water) from herbicides (in particular Atrazine used in Maize and Potatoes).

## Estimated Results

- Raise awareness of all farmers with regard to agricultural pollution deriving from inappropriate weed control in particular in maize.
- Improve compliance with the existing regulations on the protection of water from pesticides pollution.
- Establish pilot farms adapting non-chemical weed control technologies to the local conditions and serving as training and demonstration farms.
- Information & extension material for non-chemical weed control technology available for the local farming community
- Facilitate the exchange of experiences and know-how in non-chemical weed control in Croatia, Bosnia & Herzegovina, and Serbia and Montenegro.

## Geographical Scope

HR	BA	CS
<i>still to be decided</i> (Lonja sub-catchment on central Sava e.g. near Krizevci).	Upper catchment of Bosna river (Ilias municipality near Sarajevo).	Central Serbia – Kolubara catchment near Valjevo)

Note that demonstration areas have been proposed by the project. However accurate identification of pilot areas will be identified during preparation and early implementation phase with in participatory way with local farmers and stakeholders.

## Counterparts/Partners

Co-responsibility for implementation) and Their Advisory Experience:

HR	BA	CS
Faculty of Agriculture in Zagreb	Agricultural Institute of Sarajevo,	NGO

## Direct Beneficiaries

HR	BA	CS
Faculty of Agriculture Zagreb; Farmers and Extension Service, local communities (hygiene)	Agricultural Institute of Sarajevo; farmers and extension services, local communities (hygiene)	NGO; Agricultural Faculty, Extension Services, local communities (hygiene)

## Related Stakeholders

HR	BA	CS
Local authorities, MoAFW, MoE, Agricultural NGOs, scientific community and rural development agencies	Local authorities, MoAFW & MoE (of Federation and RS), Agricultural NGOs, scientific community and rural development agencies	Local authorities, MoA, MoE, Agricultural NGOs, scientific community and rural development agencies

**National Activities****Inception Phase**

Operational planning, Preparation of activities, Budgeting, Contractual arrangements

**Implementation Phase**

Training of trainers and advisors

Identifying pilot farms for testing and demonstration sites.

Developing training and extension materials for non-chemical weed control and adapting it to each of the countries special needs.

Conducting training for pilot farmer and provide on the job advice.

Develop a participatory monitoring system with the pilot farms.

Demonstration and training days (open day) for pilot area farmers;

Awareness raising via media (TV, radio, agricultural newspapers)

National stakeholder workshops to exchange experiences

**Evaluation Phase**

Identification and dissemination of lessons learned from pilot projects implementation with particular reference to policy reform for promotion of BAP

**Trans-boundary Activities**

- Harmonisation of methodology, monitoring and extension materials and approach
- Study tours for trainers, advisors and pilot farmers to visit other country's demonstration sites
- Joint workshops (for three countries) for advisors
- Joint evaluation and communication of results;



## **Proposal 3: Good Agricultural Practice in the Intensive Agricultural Region of Vojvodina**

### **Participating Countries**

Serbia & Montenegro

### **Problem/Issue**

Srem in the Vojvodina Region is characterized by very intensive agriculture. The cultivation of arable crops comprise maize, wheat and barley and formerly sugar beet often cropped in monoculture. High levels of fertilizer and manure are used in these systems associated with high levels of nutrient leaching in to the ground water. The Srem area drains directly into the Danube River with ground water level between one and two meters.

The area also has intensive livestock production, mainly dairy and pig enterprises. These highly specialized livestock farms often have poor manure storage facilities and insufficient agricultural land attached to the farm. Black water run-off from livestock barns and manure depot discharges directly into small water courses. With stocking rates far exceeding the agricultural area of farms manure of often dumped at excessive rates which causes run-off and ground water leaching.

### **Relevance to Policy Recommendations under Output 1.2**

The implementation of this pilot project will be relevant to the following policy recommendations for implementation in Phase II of the Danube Regional Project (2004 – 2006):

<b>Aim 1:</b>	<b>To Reduce Pollution from Mineral Fertilisers and Manure</b>
Objective 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 Fertiliser and Manures
<b>Aim 5:</b>	<b>To Develop the Capacity of Agricultural Extension Services for Agricultural Pollution Control</b>
Objective 9:	Develop the capacity of agricultural extension and advisory services for the promotion of BAP
	9.3 Training for Extension Workers/Advisors.
	9.4 Develop Appropriate Advisory Messages for the Promotion of BAP
Objective 10:	Develop and support pilot projects for the promotion of BAP by agricultural extension and advisory services
	10.1 Develop and Implement BAP Pilot Projects

### **Project Aim**

To introduce best agricultural practice in fertilizer and manure management in intensive agricultural systems to prevent water pollution (surface water and ground water), including:

- the elimination of direct discharges of manure and slurry to surface water,
- improved nutrient budgeting
- improved timing and techniques of fertilizer and manure

### Project Objectives

- Raise awareness of all farmers with regard to environmental problems related to agricultural run-off and nutrient losses
- Promote following management practices:
- Integrated cropping management: crop rotation and strip cropping
- cover crops and green manure crops
- Establishing vegetative buffer strips
- Soil nutrient testing and nutrient budgeting
- No application of fertilizers and manures to wetland and floodplains

### Geographical Scope

Srem are of the Vojvodina Region east of Novi Sad.

### Counterparts/Partners

Serbian Agricultural Extension Service

### Direct Beneficiaries

Serbian Agricultural Extension Service,  
Agricultural Advisory NGO (Contact: Ivana Dulic, Goran Topisirovic)  
Local pilot farmers

### Related Stakeholders

University of Belgrade, Faculty of Agriculture  
University Novi Sad, Faculty of Agriculture  
Institute for Crop Science in Novi Sad  
Institute for Maize in Belgrad  
Local Farmers Associations  
Local administration

### National Activities

Preparation Phase
Operational planning, Preparation of activities, Budgeting, Contractual arrangements, etc.

Implementation Phase
Year 1
Training of trainers for local advisors of the public extension service and NGOs Development of methodology and extension techniques. Development of guidelines and information materials on manure and slurry storage, fertilizer and manure management and nutrient budgeting. Identifying and establishing pilot farms Training and coaching of pilot farms



Year 2

Development of guidelines and information materials on manure and slurry storage and management.

Awareness raising campaign

Framer training and demonstration days

Dissemination of Extension Messages and Information Materials

Monitoring of economic and environmental impact

**Evaluation Phase**

Identification and dissemination of lessons learned from pilot projects implementation with particular reference to policy reform for promotion of BAP



## **Proposal 4: Improving Manure Management in the Danube River Flood Plain**

### **Participating Countries**

Bulgaria and Romania

### **Problem/Issue**

Water pollution caused by inappropriate manure management and storage.

After the restructuring of Bulgarian agriculture, farm structure was changed and a lot of family farms appeared. Most of these farms are subsistence or semi-subsistence farms. According to the statistics provided in the Annual Report of the Ministry of Agriculture and Forestry for 2003, 90 to 97% of the livestock farms have between 2.1 and 6.4 livestock units. More than 56% of the cattle is raised in households with 1-2 livestock units. Although there was a decrease in the livestock numbers, the new farmers do not possess the necessary skill and funds to manage manure properly. For example, there are usually no manure pits or platforms; the liquid organic wastes are not treated and used in any way; the thickness of the soil surface where the hard wastes are stored is often less than 0.5 m, and; manure is not always applied during the periods recommended by guidelines on good agricultural practice.

Recognizing the necessity for the proper management of manure, MAF has put as eligible expenditure the creation of manure (waste treatment) facilities in SAPARD measure Investment in agricultural holdings. However, this will not solve the environmental problems caused by small farms. Small farmers should be trained how to use and manage the manure, how to store it and what are the best agricultural practices in this field.

Romanian agriculture remains an important source of pollution with negative impacts on the quality of the environment leading to degradation or even destruction of some ecosystems. One of the common environmental problems caused by agriculture that is observed in both Bulgaria and Romania is water pollution caused by inappropriate manure management. Even though the number of livestock has decreased, a lot of animals are kept by small farms who do not have any facilities for manure storage as well as knowledge on environmentally-friendly management.

### **Relevance to Policy Recommendations Under Output 1.2**

The implementation of this pilot project will be relevant to the following policy recommendations for implementation in Phase II of the Danube Regional Project (2004 – 2006):

<b>Aim 1:</b>	<b>To Reduce Pollution from Mineral Fertilisers and Manure</b>
Objective 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 Fertiliser and Manures
<b>Aim 5:</b>	<b>To Develop the Capacity of Agricultural Extension Services for Agricultural Pollution Control</b>
Objective 9:	Develop the capacity of agricultural extension and advisory services for the promotion of BAP
	9.3 Training for Extension Workers/Advisors.
	9.4 Develop Appropriate Advisory Messages for the Promotion of BAP
Objective 10:	Develop and support pilot projects for the promotion of BAP by agricultural extension and advisory services
	10.1 Develop and Implement BAP Pilot Projects

### Project Aim

To introduce best agricultural practice in manure management to prevent water pollution (surface water and ground water), including:

- the elimination of direct discharges of manure and slurry to surface water,
- improved storage of manure and
- improved manure and slurry application technologies

### Project Objectives

- Raise awareness of all farmers with regard to agricultural pollution deriving from inappropriate manure storage and management.
- Improve compliance with the existing regulations on the protection of water from diffuse agricultural nitrate pollution
- Introduce soil and manure nutrient testing to strengthen the understanding of soil fertility improvements.
- Encourage the adoption of best agricultural practices for manure storage
- Promote concepts of nutrient budgets with emphasis on manure and introduce nutrient planning among agricultural producers
- Preparation of Manure Management Plans for large scale farmers in the target area
- Establish communal manure storage facilities for small-scale farmers and establish functioning management associations including the collection and organisation the transport from small family farms to the manure storage platform
- Improve handling and application techniques for solid and liquid manure
- Facilitate the exchange of experiences and know-how in manure management between agricultural advisers in Bulgaria and Romania

### Geographical Scope

Bulgaria	Romania
Demonstration and farm level training will focus on the two municipalities of Slivopole (Rousse County) and Tutrakan (Silistra County)*	Calarasi and Giurgiu municipalities (just opposite to the Bulgarian areas)

Note that demonstration sites have been proposed by the projects, but should be confirmed by local farmers

### Counterparts/Partners

Co-responsibility for implementation and advisory experience:

Bulgaria	Romania
Advisory service - National Agricultural Advisory Service (NAAS) and private/NGO advisory service The National agricultural advisory service (NAAS) has 28 regional offices – one in each administrative center. There are 4 advisors in each office and for the moment they are most of all offering advice on conventional farming practices. Although the concept for	National Agency of Agricultural Consulting (NAAC) NAAC was created in 1998 with the support of a Phare Project working under MAWFE coordination and including its territorial network of specialists at the communal and county level. Advisors did not receive training on environmental issues connected to agriculture and no advice on these issues is

environmentally-friendly agricultural practices and activities is not new for the advisors, they do not possess the necessary knowledge to offer specific advice in the field of manure management and best agricultural practices.	given.
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**Direct Beneficiaries**

Bulgaria	Romania
NAAS private/NGO advisory service Training will also be offered to relevant NGOs, research institute staff and relevant regional staff of governmental bodies.	NAAC local advisors from Calarasi and Girgiu working with NAAC AE specialists (advisors) working under local authorities The WB Agricultural Pollution Control Project

**Related Stakeholders**

Bulgaria	Romania
local authorities, regional inspectorates of the MoEW, MoAF, regional Danube Basin Directorate, MoEW, MoAF, agricultural NGOs, WB project co-ordination units, protected area administrations	local authorities, County Environmental Agencies, Directorate of Water Management, Research and Development Institute for Agriculture Fundulea Calarasi, MoAFWE, agricultural NGOs (interested in animal husbandry), WB project co-ordination units

**National Activities**

Bulgaria	Romania
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**Preparation Phase**

Operational planning, Preparation of activities, Budgeting, Contractual arrangements, etc.
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**Implementation Phase**

Year 1	
Theoretical training of trainers and advisors in the topics such as manure storage requirements, construction of storage facilities for solid and liquid manure, composting, cost benefit considerations	Theoretical training of trainers (NAAC advisors + local authority advisors) in the topics such as manure storage requirements, construction of storage facilities for solid and liquid manure, composting, cost benefit considerations
Development of guidelines for manure management and development of software for preparation of farm manure management plans	Development of guidelines for manure management and development of software for preparation of farm manure management plans
Establishment of demonstration sites	Establishment of demonstration sites

Year 2	
Practical training of advisors	Practical training of advisors (in established sites + in research institutes)
Demonstration days (open day) for pilot area farmers	Demonstration days (open day) for pilot area farmers

<b>Evaluation Phase</b>
Identification and dissemination of lessons learned from pilot projects implementation with particular reference to policy reform for promotion of BAP

### Transboundary Activities

- Exchange of lecturers in the framework of theoretical courses
- Common workshops (in both countries) for both country's advisors
- Study-tours for trainers and advisors to visit the partner country's demonstration sites
- On-going exchange of information, experiences and know-how via e-mail, telephone and other media

### Opportunities for Replication

The project approach and its topics are relevant for other regions and could directly be replicated in three municipalities of Silistra Region (Glavinica, Sitovo, Silistra) and six municipalities of Rousse Region (Rousse, Biela, Babuvo, etc) on the riverside.

## **Proposal 5: Control of Agricultural Run-off for the Reduction of Nutrient Pollution in the Prut River Basin**

### **Participating Countries**

Moldova and Romania

### **Problem/Issue**

Over 90% of the agricultural land in the Prut River Basin in Moldova and North-east Romania is situated on slopes and has suffered a long history of de-afforestation followed by intensive cultivation with:

- poor matching of crops, relief and soil types;
- inappropriate crop rotations;
- old machinery and equipment;
- excessive transformation of hilly pastures and meadows to arable land with no attention to relief, and;
- regular cultivation of slopes.

Combined with the nature of the soils, patterns of rainfall and emphasis upon short-term production targets during the Soviet period, this has resulted in excessive agricultural run-off and the loss of large amounts of topsoil during heavy rainfall carrying nitrogen and phosphorus into local surface waters.

Currently, more than 400,000 hectares of the land managed by private farms and farming associations is moderately or highly degraded with an estimated 10 million tons of fertile soil washed away annually. From the Prut River basin alone, approximately 12.5 thousand tons of nitrogen and 1.5 – 2.0 thousand tons of phosphorus are being discharged each year.

### **Relevance to Policy Recommendations under Output 1.2**

The implementation of this pilot project will be relevant to the following policy recommendations for implementation in Phase II of the Danube Regional Project (2004 – 2006):

<b>Aim 1:</b>	<b>To Reduce Pollution from Mineral Fertilisers and Manure</b>
Objective 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 Fertiliser and Manures
<b>Aim 5:</b>	<b>To Develop the Capacity of Agricultural Extension Services for Agricultural Pollution Control</b>
Objective 9:	Develop the capacity of agricultural extension and advisory services for the promotion of BAP
	9.3 Training for Extension Workers/Advisors.
	9.4 Develop Appropriate Advisory Messages for the Promotion of BAP
	9.5 Develop Alternative/Innovative Approaches to Working with Farmers
Objective 10:	Develop and support pilot projects for the promotion of BAP by agricultural extension and advisory services
	10.1 Develop and Implement BAP Pilot Projects

### Project Aim

To reduce the nutrient runoff into surface and ground water and protect long-term fertility of soil by introducing best agricultural practice in control of agricultural run-off.

### Project Objectives

- Raise awareness of all farmers with regard to environmental problems related to agricultural run-off
- Promote following management practices:
  - Integrated cropping management: crop rotation and strip cropping
  - Growing cover and green manure crop
  - Establishing vegetative filter strips
  - Grassed waterways
  - Contour farming
- Facilitate the exchange of experiences and know-how in prevention of agricultural run-off between agricultural advisers in Moldova and Romania

### Geographical Scope

The Prut River catchment area – involving trans-boundary co-operation between Moldova and Romania

Moldova	Romania
The Edinet Rayon with the demo sites: Horodiste, Gordinesti and Lopatnic – total of 3 villages	Vaslui County – demo sites at Husi (the Lohan tributary), Perieni (the Tutova tributary), and the third one located along the Vaslui tributary to be further selected.– total of approx. 10 villages

Note: The demo sites were selected based on the existence of three tributaries, in each country – differences in the size of pilot areas are clearly justified on the basis of different size of national territories within the Danube catchment. All pilot areas are within the Prut River catchment area, but are NOT geographically adjacent

### Counterparts/Partners

Co-responsibility for implementation and advisory experience:

Moldova	Romania
<p>Agency for Consultancy and Training in Agriculture (ACSA)</p> <p>ACSA is the implementing agency of the Rural Extension Services. ACSA has 35 Service Providers (regional centers), one of which is situated in Edinet rayon. All Service Providers have a team of 2 or 3 regional consultants, located in the rayonal center, and around 10 local consultants, situated usually in the village mayoralties. ACSA local consultants are also present in the three selected villages for the proposed project: Horodiste, Gordinesti and Lopatnic.</p>	<p>National Agency of Agricultural Consulting (NAAC)</p> <p>NAAC was created in 1998 with the support of a Phare Project working under MAWFE coordination and including its territorial network of specialists at the communal and county level. Advisors did not receive training on environmental issues connected to agriculture and no advice on these issues is given.</p>



**Direct Beneficiaries**

Moldova	Romania
ACSA (the extension service)	NAAC and associated network of advisory providers

**Related Stakeholders**

Moldova	Romania
local authorities, target farmers' groups, Research and Educational Units, MoA, EPA, The Moldovan Waters Consortium, Environmental NGOs (Danube Environmental Forum member organizations if existing in the area), Farmers' Associations, the Prut River Basin Committee	local authorities, target farmers' Groups, Research and Educational Units, MoAFWE, County Environmental Agencies, Environmental NGOs (Danube Environmental Forum member organizations if existing in the area), The "Romanian Waters" National Authority, Farmers' Associations, The Prut River Basin Committee

**National Activities**

Moldova	Romania
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**Preparation Phase**

Operational planning, Preparation of activities, Budgeting, Contractual arrangements, etc.
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**Implementation Phase**

Year 1	
Development of methodology and extension techniques.	Development of methodology and extension techniques.
Development of guidelines and info materials	Development of guidelines and info materials
Awareness raising and demonstration activities	Awareness raising and demonstration activities

Year 2	
Awareness raising and demonstration activities	Awareness raising and demonstration activities
Training of trainers, local advisors, and demonstration site farmers	Training of trainers, local advisors, and demonstration site farmers

**Evaluation Phase**

Identification and dissemination of lessons learned from pilot projects implementation with particular reference to policy reform for promotion of BAP
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**Transboundary Activities**

- Exchange of Information Programme
- Joint study-tours (field trips) for trainers and advisors
- Common workshops
- Exchange of lecturers
- Results' dissemination on the occasion of the international topic related events
- Development of guidelines and supporting info materials.

## **Proposal 6: Introduction of BAP in Odessa Oblast for Improving Nutrient Management**

### **Participating Countries**

Ukraine

### **Problem/Issue**

Currently Ukrainian part of Danube catchment area faces serious pollution problems but among the most critical is soil and water nutrition pollution. Results of “Monitoring of water pollution by nutrients in Danube catchment area in Odessa oblast”, undertaken by Odessa state center of soil protection have proved that situation is quit serious and obviously bad agriculture practice is one of the key factors of pollution. Some of the results are shocking: for example, level of nutrients in lakes and rivers in Reni rayon is 60 times higher than required level (See map attached)

The more careful research is still required but one can state among major factors that led to this situation are the following: bad quality of fertilizers and wrong application, applying fertilizers to wetlands and frozen ground, wrong spread pattern and bad equipment, absence of monitoring crop nutrient status, unsuitable crop rotation etc.

Ukrainian landownership structure have changed dramatically in the last few years – agriculture land is being privatized and distributed among people who live in rural area and as a result thousand of new farms and plots has been set up. These new farmers very often lack even basic knowledge on agriculture practice and mainly fight to satisfy their basic needs for living. Without information and advisory support they will not be able to handle environmental-friendly technologies. Another huge problem is that after collapse of Soviet agriculture support system advisory service is not well developed and in order to function efficiently needs strengthening with all support available.

### **Relevance to Policy Recommendations under Output 1.2**

The implementation of this pilot project will be relevant to the following policy recommendations for implementation in Phase II of the Danube Regional Project (2004 – 2006):

<b>Aim 1:</b>	<b>To Reduce Pollution from Mineral Fertilisers and Manure</b>
Objective 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 Fertiliser and Manures
<b>Aim 5:</b>	<b>To Develop the Capacity of Agricultural Extension Services for Agricultural Pollution Control</b>
Objective 9:	Develop the capacity of agricultural extension and advisory services for the promotion of BAP
	9.3 Training for Extension Workers/Advisors.
	9.4 Develop Appropriate Advisory Messages for the Promotion of BAP
Objective 10:	Develop and support pilot projects for the promotion of BAP by agricultural extension and advisory services
	10.1 Develop and Implement BAP Pilot Projects

### **Project Aim**

To introduce best agricultural practice in fertilizer and manure management to prevent water pollution (surface water and ground water), including:

- the elimination of direct discharges of manure and slurry to surface water,
- improved nutrient budgeting
- improved timing and techniques of fertilizer and manure

### **Project Objectives**

- Raise awareness of all farmers with regard to environmental problems related to agricultural run-off and nutrient losses
- Promote following management practices:
  - Integrated cropping management: crop rotation and strip cropping
  - cover crops and green manure crops
  - Establishing vegetative buffer strips
  - Soil nutrient testing and nutrient budgeting
- No application of fertilizers and manures to wetland and floodplains

### **Geographical Scope**

The Danube catchment area is located on south-western part of Odessa oblast with five administrative rayons, among them are: Izmail, Kiliysk and Reni. One of the most ecologically unfavorable is the region of Kiliysk.

### **Counterparts/Partners**

Co-responsibility for implementation and advisory experience:

- The Odessa Agricultural Advisory Service had been set-up with support of the DIFID funded Rural Development Project in 1999. Currently the Agency has 16 full time advisors and branch offices in five rayons with more than 200 private farm clients. Although the organisation is relatively young their staff have build relevant experience in promoting nutrient and manure management techniques.
- The Odessa Centre for Soil Protection responsible for monitoring water pollution from agricultural sources will cooperate for training on soil nutrient testing, nutrient budgeting and fertilizer application. The Odessa Centre for Soil Protection operates under the National Centre for Soil Protection, which is an active member of the national working group for agri-environmental legislation.

### **Direct Beneficiaries**

Odessa Agricultural Advisory Service

### **Related Stakeholders**

Odessa Centre for Soil Protection

Odessa Association of Farmers

Odessa State Administration and Local Authorities

Odessa Ecological Unit

Odessa Agricultural University

NGOs

Agricultural and environmental media

**National Activities****Preparation Phase**

Operational planning, Preparation of activities, Budgeting, Contractual arrangements, etc.

**Implementation Phase**

Year 1

Development of methodology and extension techniques.

Development of guidelines and info materials

Awareness raising and demonstration activities

Year 2

Awareness raising and demonstration activities

Training of trainers, local advisors, and demonstration site farmers

**Evaluation Phase**

Identification and dissemination of lessons learned from pilot projects implementation with particular reference to policy reform for promotion of BAP



## **Annex B:**

### **Basic information on National Advisory and Extension Services Relevant to “Best Agricultural Practice”**

The following questionnaires were designed to quickly review a) the status of advisory & extension services in your country and b) their involvement in the promotion of, or support for, “best agricultural practice”. Organisations of relevance may include state advisory services, NGO initiatives, farmer associations or organisations attached to research institutes.

National experts were asked to complete the following questions for all extension organisations operating in their country – including those working on specific issues or in local regions.





## Ukraine

### Organisation

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Is there an agricultural extension and advisory services operating in your country?

There are three types of advisory services operating in Ukraine:

1<sup>st</sup> type – newly set up private advisory services – experience of western countries was used and, in most cases, funded by donor projects

2<sup>nd</sup> type – former agricultural regional departments of Ministry of Agrarian Policy were called “advisory services” according to the latest fashion with unclear functions but rather administrative and monitoring

There is also one other state organization with regional network under Ministry of Agrarian Policy which has some functions of advisory services and the only one specifically working with issues related to BAP – State Technological Centre for Soil Protection

3<sup>rd</sup> type – research centers of National Academy of Agrarian Science called by different names with some function of advisory services

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Main contact address?

1<sup>st</sup> type – Kiev, Syvorova 9, t. (38044) 451 44 56

2<sup>nd</sup> type – Kiev, Khreschatik, 24, t. (38044) 229 60 68

3<sup>rd</sup> type – Kiev, Syvorova 9, t. (38044) 267 84 49

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Is it governmental or privately organised?

1<sup>st</sup> type – privately organised

2<sup>nd</sup> – governmental

3<sup>rd</sup> – governmental, but through national Academy of Agrarian Science

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How is the extension service funded? (e.g. government funding, services paid by farmers or a mixture of these)

1<sup>st</sup> – mainly supported by donor projects and very little by agricultural producers

2<sup>nd</sup> – government funding

3<sup>rd</sup> – government plus mixture of others

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Does the advisory and extension service have separate offices/units working at different administrative levels (national, district, county, commune, village)? What are the typical tasks and number of staff at the various levels?

1<sup>st</sup> – works on regional (oblast) level and have National Coordination Centre

2<sup>nd</sup> – national and oblast levels

3<sup>rd</sup> – national and oblast level

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Is the advisory and extension service divided into branches/units dealing with different fields of technical expertise (e.g. crop production, animal husbandry, management & investment, buildings, machinery, soil and water protection etc). Which departments have the greatest capacity and are of greatest importance?

Very much depends on the specific region situation, but in most cases they divided into different units

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### **Operational Effectiveness**

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Is the advisory and extension service operating fully and effectively?

1<sup>st</sup> – probably most efficient type but rather with potential for the future development, now in the very beginning of their development or setting-up

2<sup>nd</sup> – inefficient “soviet type”

3<sup>rd</sup> – has some scientific capacity, but in many cases were theoretical or old soviet management and professors

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If not, what are the main constraints upon the organisation:

a) Budget and number staff?

For 2<sup>nd</sup> and 3<sup>rd</sup> it is one of the main constraints

b) education and technical capacity of staff at various levels?

Mostly for 3<sup>rd</sup> type

c) access to new and relevant information?

For 2<sup>nd</sup> and 3<sup>rd</sup>

d) extension and communication techniques?

For all types

e) institutional structure and organisation?

It might be a case as well

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### **Relevance to BAP and Environmental Protection Issues**

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Does the advisory and extension service deal with issues relevant to the reduction of agricultural pollution or promotion of BAP? If “yes”, which activities can be identified?

There are very little activities related to BAP in which all types of advisory services are involved. Among the main reasons is low culture and technical capacity of staff and lack of finance

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If no activities relevant to the reduction of agricultural pollution or promotion of BAP are implemented, what are the main reasons/constraints:

a) Budget and number staff:

b) education and technical capacity of staff at various levels:

c) access to new and relevant information:

d) motivation and attitude

e) extension and communication techniques

f) institutional structure and organisation

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**Related projects currently conducted or planned**

Has the extension and advisory service benefited from any projects/donor assistance designed to improve its capacity and effectiveness? If “yes”, please briefly list the projects with their main objectives, activities and donor? Please identify any relevant to pollution control or BAP

1<sup>st</sup> type of advisory services was set up/or benefited from various donor projects or organizations. Among them EU (Takis) funded advisory services projects, DFID rural project, Canadian and German funded projects.

To our best knowledge these projects have not included any significant components or activities related to pollution control or BAP.



## R o m a n i a

### Organisation

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Is there an agricultural extension and advisory services operating in your country?

*Yes: National Agency for Agricultural Consulting (ANCA)*

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Main contact address?

*Str. Smardan, No.3, Sector 3, Bucharest, ROMANIA, tel/fax: 4021.3124620,  
e-mail: consultanta@anca-maap.ro*

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Is it governmental or privately organised?

*Governmental*

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How is the extension service funded? (e.g. government funding, services paid by farmers or a mixture of these)

*Government funding*

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Does the advisory and extension service have separate offices/units working at different administrative levels (national, district, county, commune, village)? What are the typical tasks and number of staff at the various levels?

*Yes, at the national, county, commune level. Provision of technical assistance to the farmers from target groups and others by request. It is free of charge. 1007 persons totally, from which 29 at the national level, 168 at the county level and 810 at the commune level.*

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Is the advisory and extension service divided into branches/units dealing with different fields of technical expertise (e.g. crop production, animal husbandry, management & investment, buildings, machinery, soil and water protection etc). Which departments have the greatest capacity and are of greatest importance?

*Not yet but will be in the future.*

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### Operational Effectiveness

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Is the advisory and extension service operating fully and effectively?

*No*

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If not, what are the main constraints upon the organisation:

a) Budget and number staff?

*Yes*

b) education and technical capacity of staff at various levels?

*Yes, majority of them have background in agriculture*

c) access to new and relevant information?

d) extension and communication techniques?

*Yes. Not proper endowment (computers, phones, s.o)*

e) institutional structure and organisation?

*Yes, double subordination at the county level*

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### **Relevance to BAP and Environmental Protection Issues**

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Does the advisory and extension service deal with issues relevant to the reduction of agricultural pollution or promotion of BAP? If “yes”, which activities can be identified?

*Yes, partially, by training courses, booklets elaboration, seminars, with technical support assured by the Research Institutes and Agricultural Universities, unfortunately not at the necessary level due to the straitened circumstances (lack of financial resources)*

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If no activities relevant to the reduction of agricultural pollution or promotion of BAP are implemented, what are the main reasons/constraints:

- a) Budget and number staff:
  
  - b) education and technical capacity of staff at various levels:
  
  - c) access to new and relevant information:
  
  - d) motivation and attitude
  
  - e) extension and communication techniques
  
  - f) institutional structure and organisation
- 

### **Related projects currently conducted or planned**

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Has the extension and advisory service benefited from any projects/donor assistance designed to improve its capacity and effectiveness? If “yes”, please briefly list the projects with their main objectives, activities and donor? Please identify any relevant to pollution control or BAP

- *Project “Supporting of Agricultural Services” financed by World Bank has three components under the coordination of National Agency for Agricultural Consulting:*
    - *Impact Rapid Program (3 pilot counties: Timiș, Mureș and Călărași),*
    - *Radio Local Program,*
    - *Farm Management Handbook.*

*This program is still in force.*
  
  - *4 projects have been selected and promoted as part of strategic partnership between Romania and SUA. They will be negotiated by Prime Minister with American officialties.*
  - *2 projects have been elaborated and submitted for evaluation to Delegation of European Commission. These projects are in partnership with ANDA, Institute for East Europe Studies from France and AFC Consultants from Germany.*
  - *One project has been approved and implemented in partnership with French Government, Office for international emigrations for labour reconversion, in Satu Mare County.*
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## B u l g a r i a

### Organisation

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Is there an agricultural extension and advisory services operating in your country?

**National Agricultural Advisory Service**

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Main contact address?

**136, Tzar Boris III Blvd., 1618 Sofia, Bulgaria.**

**Phone: (+359 2) 917 6068**

**Fax: (+359 2) 917 6072**

**E-mail: [office@naas.government.bg](mailto:office@naas.government.bg)**

**<http://naas.government.bg>**

**Dr. Margarita Nikolova**

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Is it governmental or privately organised?

**Governmental**

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How is the extension service funded? (e.g. government funding, services paid by farmers or a mixture of these)

**100% Government funding**

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Does the advisory and extension service have separate offices/units working at different administrative levels (national, district, county, commune, village)? What are the typical tasks and number of staff at the various levels?

The National Agricultural Advisory Service (NAAS) is a legal entity with its own budget, operating as a subsystem of MAF with a national office in Sofia and 28 regional offices known as the Regional Agricultural Advisory Services (RAAS). Its primary duty was to provide technical advice to registered producers in the agriculture sector.

The NAAS is organized under the regulations of the State administration. It employs about 149 staff, whom are mostly government officials.

It consists of two types of administration – general and specialized.

The general administration is organized as the Finances and Property Management Directorate. And the specialized administration is organized as the Agricultural Advisory Directorate with management responsibilities for the 28 regional advisory offices (RAAS) located in the regional administrative centers.

The major functions of the Agricultural Advisory Directorate are to:

provide support for the application of scientific approach in the agribusiness;

provide support for training of farmers and advisory specialists;

provide assistance in setting up specialized producers' groups -- by product, functional or regional principles;

establish and maintain linkages with other governmental and non-governmental organizations and with private entities in the agribusiness sector;

analyze free of charge soil, water, plant and fodder upon request from registered producers;

clarify activities under implementation of the National Plan for Agricultural and Rural Development, as well as consult with farmers who are preparing applications for the SAPARD Program<sup>1</sup>.

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<sup>1</sup>. Special Accession Program for Agriculture and Rural Development.

Under the supervision of both the Executive Director and the General Secretary, NAAS provides policy education -- explaining governmental policy directives --, and identifies regional requirements for extension activities in accordance with stated priorities in close co-operation with regional offices of the MAF and the different governmental organizations connected to agriculture.

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Is the advisory and extension service divided into branches/units dealing with different fields of technical expertise (e.g. crop production, animal husbandry, management & investment, buildings, machinery, soil and water protection etc). Which departments have the greatest capacity and are of greatest importance?

**The NAAS currently is not divided into separate units dealing with specific technical expertise. On regional level, each Regional advisory office run by a team leader and included an agronomist, a zoo-engineer, a mechanical engineer and an agro-economist.**

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### **Operational Effectiveness**

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Is the advisory and extension service operating fully and effectively?

MAF has taking various steps to improve extension's administrative structure and promote its capacity to achieve independent status as an institution. Although reasonably successful, NAAS is nonetheless currently confronting a number of problems, including:

Limited financing from the State budget and difficulty in developing programs that are self-financing. As a result, the total number of trained advisors is insufficient.

Lack of specialized and trained advisors, which everyday becomes more apparent as farmers themselves become more specialized. Also agronomists and animal specialists are often called upon to provide advice in farm economics, and they are unprepared in this subject.

Advisors who are left to their own initiatives to find appropriate knowledge that will help farmers. Lacking is any informational infrastructure or even informal linkages between the National Agricultural Advisory Service and the National Centre of Agricultural Sciences.

Minimum motivation among advisors to work directly with farmers since most advisors are paid 100 % by the Government. Thus, opportunities are lost that might promote profitable activities, development of better business plans, or participation by farmers in Rural Development Municipality Plans, Vocational Training, and Free Laboratory Analyses.

The most serious problem is development of the agricultural knowledge and information network. The knowledge/information complex is not oriented enough to the needs of the society, nor is it aimed at finding solutions to emerging problems. There are few incentives for developing Agricultural Knowledge and Information Systems.

The extension service is also not sufficiently client-oriented. As a result, it is unable to provide information to all interests groups on the issues of joining the EU.

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If not, what are the main constraints upon the organisation:

a) Budget and number staff?

b) education and technical capacity of staff at various levels?



- c) access to new and relevant information?
  - d) extension and communication techniques?
  - e) institutional structure and organisation?
- 

### **Relevance to BAP and Environmental Protection Issues**

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Does the advisory and extension service deal with issues relevant to the reduction of agricultural pollution or promotion of BAP? If “yes”, which activities can be identified?

**Currently, no.**

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If no activities relevant to the reduction of agricultural pollution or promotion of BAP are implemented, what are the main reasons/constraints:

- a) Budget and number staff:
  - b) education and technical capacity of staff at various levels:
  - c) access to new and relevant information:
  - d) motivation and attitude
  - e) extension and communication techniques
  - f) institutional structure and organisation
- 

### **Related projects currently conducted or planned**

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Has the extension and advisory service benefited from any projects/donor assistance designed to improve its capacity and effectiveness? If “yes”, please briefly list the projects with their main objectives, activities and donor? Please identify any relevant to pollution control or BAP

**Since the foundation, the NAAS is benefited from 3 Phare programme funded projects in 1995, 1998, 2001. All these project related to capacity building, technical assistance, training of staff and etc.**

**Now, a new project “Capacity Building for Sustainable Delivery of Agribusiness Advice to Market-oriented Farmers” funded by FAO is in process started in July 2003 to October 2004. These project is oriented mostly to agricultural economics.**

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## Serbia and Montenegro

### Organisation

Is there an agricultural extension and advisory services operating in your country?

Yes, there is.

Main contact address?

Each republic (Serbia and Montenegro) has its own extension and advisory services. As DRB is mostly at the territory of Serbia Republic, the Serbian extension and advisory services is more relevant for the "Best Agricultural Practice" in DRB. Republic extension and advisory services in Serbia are situated in The Institute for Science Application in Agriculture. Contact address is the following:

Mr. Milan Bulj / director

The Institute for Science Application in Agriculture

29. Novembra 68b, 11000 Belgrade, Serbia, Phone: +381 11 750-386; Fax: +381 11 751935;

E-mail: [ipn@yubc.net](mailto:ipn@yubc.net)

Montenegro has its own Republic Extension Services, which has been recently established as one department within the Ministry of Agriculture.

Contact person and phones are following:

Mr. Veselin Vuletic, director of Agricultural Extension Services Department

Phones: +381 81 206710; +381 81 206711; +381 81 206712; +381 81 206713.

In the following part of this Questionnaire it is not included Montenegro Republic as it is mostly in Adriatic River Basin.

Is it governmental or privately organised?

It is governmental one.

How is the extension service funded? (e.g. government funding, services paid by farmers or a mixture of these)

Government funding (budget) + some services paid (mainly laboratory, not for advisory / extension services)

Does the advisory and extension service have separate offices/units working at different administrative levels (national, district, county, commune, village)? What are the typical tasks and number of staff at the various levels?

See attached table with detailed data on activities of Serbian extension services as well as map in Serbian language under the title "Number of chosen farms and number of extension agents in Agricultural Extension Services of Serbia Republic" (The first number represents number of chosen farms in each regional station out of 1774 in total under special support and monitoring, while number in parentheses represent extension agents in each regional station. Beside number of 1774 (total number of farms in Serbia under special program of support, it is number (22) which represents number of staff specialists in The Institute for Science Application in Agriculture (Republic Extension Services).

Is the advisory and extension service divided into branches/units dealing with different fields of technical expertise (e.g. crop production, animal husbandry, management & investment, buildings, machinery, soil and water protection etc). Which departments have the greatest capacity and are of greatest importance?

Service is divided in 2 main groups (livestock and plant production) with subgroups for each type of production + crop protection

### **Operational Effectiveness**

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Is the advisory and extension service operating fully and effectively?

No, operating is not fully and effectively.

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If not, what are the main constraints upon the organisation:

a) Budget and number staff?

Budget and number staff should be increased

b) education and technical capacity of staff at various levels?

To be improved

c) access to new and relevant information?

To be improved

d) extension and communication techniques?

To be improved

e) institutional structure and organisation?

To be improved. At the moment it is under the process of reform with support of Netherlands government and USDA, as well as some NGOs.

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### **Relevance to BAP and Environmental Protection Issues**

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Does the advisory and extension service deal with issues relevant to the reduction of agricultural pollution or promotion of BAP? If "yes", which activities can be identified?

Yes, but to a small extent. Regular advisory services + Project "Integrated Pest Management on Western Corn Rootworm in Eastern and Central Europe"

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If no activities relevant to the reduction of agricultural pollution or promotion of BAP are implemented, what are the main reasons/constraints:

a) Budget and number staff:

Could be improved by additional sources of funding

b) education and technical capacity of staff at various levels:

To be improved

c) access to new and relevant information:

To be improved

d) motivation and attitude

To be improved.

e) extension and communication techniques

To be improved.

f) institutional structure and organisation

To be established.

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### **Related projects currently conducted or planned**

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Has the extension and advisory service benefited from any projects/donor assistance designed to improve its capacity and effectiveness? If "yes", please briefly list the projects with their main objectives, activities and donor? Please identify any relevant to pollution control or BAP

Netherlands government and USDA, as well as some NGOs (e.g. Agromreza) are working on the new concept and reorganization of Extension Services in Serbia.

There is no any project relevant to pollution control or BAP.

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## **Bosnia & Herzegovina (Federation of BiH)**

### **Organisation**

Is there an agricultural extension and advisory services operating in your country?

Yes.

Main contact address?

Entity Federation of B&H: Agricultural Institute Sarajevo, Butmirska cesta 40, 71000 Sarajevo, Contact person Dr. Nezir Tanovic, Coordinator of Extension services at Cantonal level in Federation of B&H, phone: ++ 387 33 637 087, mobile phone: ++ 387 61 139 485

Entity The Republika Srpska: Extension Service Banja Luka, Krajiskih brigada 155, 78000 Banja Luka, phone: ++ 387 51 241 181

Is it governmental or privately organised?

It is governmental organised.

How is the extension service funded? (e.g. government funding, services paid by farmers or a mixture of these)

100 % governmental funding.

Does the advisory and extension service have separate offices/units working at different administrative levels (national, district, county, commune, village)? What are the typical tasks and number of staff at the various levels?

Yes. They work on entity level covered by Entity Ministry of Agriculture, Forestry and Water Management and in each entity there are cantonal (Federation B&H) or regional (The Republika Srpska) extension services. In the Republika Srpska also exist municipality level of extension services. Each cantonal or regional extension service has 3-5 staff and they cover all tasks in agriculture domain.

Is the advisory and extension service divided into branches/units dealing with different fields of technical expertise (e.g. crop production, animal husbandry, management & investment, buildings, machinery, soil and water protection etc). Which departments have the greatest capacity and are of greatest importance?

Partly. Three persons in an extension service cover all agriculture fields, and usually they divided in sector livestock production, crop production, fruit production.

### **Operational Effectiveness**

Is the advisory and extension service operating fully and effectively?

No

If not, what are the main constraints upon the organisation:

a) Budget and number staff?

Yes (main constrain)

b) education and technical capacity of staff at various levels?

Yes

c) access to new and relevant information?

Partly

d) extension and communication techniques?

Partly

e) institutional structure and organisation?

Yes

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**Relevance to BAP and Environmental Protection Issues**


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Does the advisory and extension service deal with issues relevant to the reduction of agricultural pollution or promotion of BAP? If “yes”, which activities can be identified?

No

If no activities relevant to the reduction of agricultural pollution or promotion of BAP are implemented, what are the main reasons/constraints:

a) Budget and number staff:

Yes

b) education and technical capacity of staff at various levels:

Yes

c) access to new and relevant information:

Yes

d) motivation and attitude

Partly

e) extension and communication techniques

Partly

f) institutional structure and organisation

Yes

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**Related projects currently conducted or planned**


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Has the extension and advisory service benefited from any projects/donor assistance designed to improve its capacity and effectiveness? If “yes”, please briefly list the projects with their main objectives, activities and donor? Please identify any relevant to pollution control or BAP

No now. But till two years ago European Community (PHARE Program) implemented project whose main goal was to establish sustainable extension services in Bosnia and Herzegovina. Effects of this Project are very low because Government did not support fully operational network and also did not continue with further development according to initial goals. Some of yang educated persons left job in extension services because of no adequate treatment. This situation is very characteristic for Federation of B&H.

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## Bosnia & Herzegovina (Republic of Srpska)

### Organisation

Is there an agricultural extension and advisory services operating in your country?

Yes

Main contact address?

Petra I Karadjordjevic 135

78000 Banjaluka

Bosnia and Herzegovina

Tel: +38751322930

<mailto:extenrs@blic.net>

Is it governmental or privately organised?

Governmental

How is the extension service funded? (e.g. government funding, services paid by farmers or a mixture of these)

Government funding

Does the advisory and extension service have separate offices/units working at different administrative levels (national, district, county, commune, village)? What are the typical tasks and number of staff at the various levels?

ADMINISTRATIVE LEVEL	ORGANIZATION	NUMBER AND TASKS OF EMPLOYEES
Country	Ministry of Agriculture, Forestry and Water Management of Republic of Srpska	
Country	Coordination Office Banjaluka	<ol style="list-style-type: none"> <li>1. Director of Extension service</li> <li>2. Media coordinator</li> <li>3. Coordinator for education</li> <li>4. Farm business management specialist</li> </ol>
Country	Advisory Board	7 members
Regional	Banjaluka Region	<ol style="list-style-type: none"> <li>1. Spec. for livestock</li> <li>2. Spec. for crop cultivation</li> <li>3. Spec. for fruit production</li> </ol>
Regional	Trebinje Region	<ol style="list-style-type: none"> <li>1. Spec. for livestock</li> <li>2. Spec. for livestock</li> <li>3. Spec. for fruit production</li> </ol>
Regional	Bijeljina Region	<ol style="list-style-type: none"> <li>1. Spec. for crop production</li> <li>2. Spec. for crop production</li> <li>3. Spec. for livestock</li> </ol>

Regional	Doboj Region	1. Spec. for crop production 2. Spec. for livestock 3. Spec. for fruit production
Regional	Sokolac Region	1. Spec. for livestock 2. Spec. for crop and plant protection 3. Spec. for control and processing agricultural products
Municipal	Laktasi	2 extensions
Municipal	Gradiska	2 extensions
Municipal	Kotor Varos	2 extensions
Municipal	Prijedor	2 extensions
Municipal	Novi Grad	2 extensions
Municipal	Prnjavor	2 extensions
Municipal	Kozarska Dubica	2 extensions

Is the advisory and extension service divided into branches/units dealing with different fields of technical expertise (e.g. crop production, animal husbandry, management & investment, buildings, machinery, soil and water protection etc). Which departments have the greatest capacity and are of greatest importance?

Different branches among the extension service do not exist as separate departments, but each office has a specialist for different fields of technical expertise, where the crop production and animal husbandry have greatest importance. In special fields as management and investment, soil and water protection, etc., technical support is given from Central Office Experts.

### **Operational Effectiveness**

Is the advisory and extension service operating fully and effectively?

We can say **YES**, but if we observe wider (whole) territory of RS also I (M.Markovic) can say **NO**.

I say no, because there, where 3 specialists are in one Region, they can not cover all needful activities with all farmers. There, where exist specialist on Municipality level, the situation is better and I think there they can do more, in the field.

If not, what are the main constraints upon the organisation:

a) Budget and number staff?

In accordance with above-mentioned reasons if we can find the additional budget (especially during promotion of BAP, I think that the extension service can solve all needful activities on terrain). Firstly, I think in Municipalities Laktasi and Gradiska (area of Lijeve polje, where is the most intensive agricultural production-vegetable,...with a lot of farms). This area is in Sava river catchment and connected with my Proposals for Pilot BAP Projects.

b) education and technical capacity of staff at various levels?

c) access to new and relevant information?

d) extension and communication techniques?

e) institutional structure and organisation?



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**Relevance to BAP and Environmental Protection Issues**

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Does the advisory and extension service deal with issues relevant to the reduction of agricultural pollution or promotion of BAP? If “yes”, which activities can be identified?

Yes

Regarding issue of pollution control or BAP, there have been organised educational trainings for farmers and agronomists concerning:

- using of pesticides and storage of contaminated material
- sprayer use under requirements of BAP (calibration, dose, quantity and concentration )
  - supported with printed materials (brochures, leaflets)
- management of pastures
- fodder production under requirements of BAP
- running demonstration trays (wheat, triticale, barley, corn, soy been, alfalfa and grass mixtures)
- production of healthy food
- all topics supported with printed materials (brochures, leaflets)

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If no activities relevant to the reduction of agricultural pollution or promotion of BAP are implemented, what are the main reasons/constraints:

a) Budget and number staff:

b) education and technical capacity of staff at various levels:

c) access to new and relevant information:

d) motivation and attitude

e) extension and communication techniques

f) institutional structure and organisation

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**Related projects currently conducted or planned**

Has the extension and advisory service benefited from any projects/donor assistance designed to improve its capacity and effectiveness? If "yes", please briefly list the projects with their main objectives, activities and donor? Please identify any relevant to pollution control or BAP

OBJECTIVES	ACTIVITIES	DONORS
Establishing extension service	<ul style="list-style-type: none"> <li>• Establishment of municipal level Extension Offices in (1998-2000)</li> <li>• Employment of 14 Agronomists in seven pilot municipalities of Banjaluka Region</li> <li>• Additional education of new Extensions               <ul style="list-style-type: none"> <li>- Communication Skills</li> </ul> </li> </ul>	EU Phare
Developing of extension service on the country level	<ul style="list-style-type: none"> <li>• Establishment of Regional level Offices across of Republic of Srpska (2000-2002)</li> <li>• Employment of 16 Agronomists in Coordination and Regional Offices</li> <li>• Additional trainings:               <ul style="list-style-type: none"> <li>- Extension Methods (preparation, implementation and analysis of extension work)</li> <li>- Farm Business Management (making business plans)</li> <li>- Technical Packages</li> <li>- Communication Skills</li> <li>- Media Role in Extension work</li> <li>- Language and PC Training</li> </ul> </li> </ul>	EU Phare

## Croatia

### Organisation

Is there an agricultural extension and advisory services operating in your country?

Yes

Main contact address?

Kačićeva 9/III, 10000 Zagreb, Croatia; e-mail: hzpss@hzpss.hr

Is it governmental or privately organised?

Governmental

How is the extension service funded? (e.g. government funding, services paid by farmers or a mixture of these)

Government funding

Does the advisory and extension service have separate offices/units working at different administrative levels (national, district, county, commune, village)? What are the typical tasks and number of staff at the various levels?

National level (2000): Head-master's office with three assistants: (1) for coordination, planning and work control, (2) for publishing and professional improvement and training, (3) for areas of the special state care; and eight managers of different programs: (1) plant-growing, (2) plant protection, (3) fruit-growing, vineyards, grape and wine production, (4) livestock breeding, (5) fishery, (6) agricultural economics, (7) agricultural mechanization and (8) rural tourism.

Local level (2000): 21 head + 106 consultants + 16 associates in 99 regional offices.

National level (2003): Head-master's office with two assistants (also managers of two departments): (1) for coordination, planning and professional work control and (2) for publishing and professional training; and ten managers of different departments (for legal, personal and accounting work; fruit, vineyards, grape and wine production; plant-growing; ecological production; mechanization; agricultural economics; livestock-breeding; fishery; plant protection; rural development. Local level (2003): 22 county offices with 4-10 employees, regarding the size of the county.

Is the advisory and extension service divided into branches/units dealing with different fields of technical expertise (e.g. crop production, animal husbandry, management & investment, buildings, machinery, soil and water protection etc). Which departments have the greatest capacity and are of greatest importance?

Extension service is not divided into branches by different fields of technical expertise. In each county office there are consultants of different professions, regarding the requirements of the specific region. Professional structure of the employees is as follows:

Profession	Number of employees (2000)
Fruit, vineyards, grape and wine production.	44
Plant growing	39
Livestock breeding	35
Plant protection	24
Agricultural economics	8
Fishery	1
Agricultural mechanization	3
Horticulture	3
Other	5

### **Operational Effectiveness**

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Is the advisory and extension service operating fully and effectively?

There are some constraints in the work of the Extension service.

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If not, what are the main constraints upon the organisation:

a) Budget and number staff?

Budget is insufficient for the effective work and there is a plan for gradual transformation of financing system toward the self-financing. There is still lack in the number of agricultural advisers (especially young), and need for their specialization.

b) education and technical capacity of staff at various levels?

The structure of the advisors according to their specialization is not adequate – in some regions the number of the advisors is insufficient, or their specialization doesn't satisfy the needs of the region (according to agricultural characteristics).

c) access to new and relevant information?

...

d) extension and communication techniques?

Since 2001 all regional offices have the possibilities for electronic reporting on the advisors' work. They work in offices or in the field. There is still need for improving their work (computers, vehicles)

e) institutional structure and organisation?

There is a plan for re-organization of the Extension Service according to the re-organization of the agricultural sector and the foundation of new Chamber of Agriculture.

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### **Relevance to BAP and Environmental Protection Issues**

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Does the advisory and extension service deal with issues relevant to the reduction of agricultural pollution or promotion of BAP? If “yes”, which activities can be identified?

Yes, there are free leaflets and brochures for farmers (and web-site) giving advices for best agricultural techniques in arable crop growing (suggesting optimal periods for land cultivation, fertilizing, stuffs for plant protection, harvesting periods etc.), animal husbandry, and special advices refer to the plant protection issues (protection equipment and outfit, precautions, aid in the cases of poisoning; correct use of plant protection stuffs, their storage and correct use and environmentally acceptable waste removal)

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If no activities relevant to the reduction of agricultural pollution or promotion of BAP are implemented, what are the main reasons/constraints:

a) Budget and number staff:

b) education and technical capacity of staff at various levels:

c) access to new and relevant information:

d) motivation and attitude

e) extension and communication techniques

f) institutional structure and organisation

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**Related projects currently conducted or planned**

Has the extension and advisory service benefited from any projects/donor assistance designed to improve its capacity and effectiveness? If “yes”, please briefly list the projects with their main objectives, activities and donor? Please identify any relevant to pollution control or BAP

Farmer Support System Project – in 1996, the Croatian Government received the World Bank loan for the project FSSP (development of the family farming production systems).

Technical assistance of the Duch Government through the STOAS (working organization, consulting methods, dairy production improvement, mass-media)

Technical assistance of the Danish Agricultural Advisory Centre (especially for the agricultural economics issues)

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