REPORT
from the

INTERNATIONAL EXPERT- AND POLICY SEMINAR

Agri-environmental extension services around the Baltic Sea

Riga, Latvia, 6 – 7 December 2007

INTERNATIONAL EXPERT- AND POLICY SEMINAR

Agri-environmental extension services around the Baltic Sea

Riga, Latvia, 6 – 7 December 2007

Overall seminar co-ordinator
County Administrative Board of Stockholm

Latvian co-ordinator
Latvian Agricultural Advisory and Training Centre, Ltd.

in co-operation with
Baltic Farmers Forum on the Environment, Baltic University Program,
Latvian Agriculture University, Latvian Ministry of Agriculture,
Latvian Ministry of Environment, Swedish Board of Agriculture,
Swedish Federation of Farmers and World Wide Fund for Nature Sweden.

with financial support from
Ministry of Agriculture Sweden
Ministry of the Environment Sweden and
Baltic Sea Unit SIDA

Report compiled by
Sindre Langaas and Christian Weyer,
County Administrative Board of Stockholm
2007

COUNTY ADMINISTRATIVE
BOARD OF STOCKHOLM

Cover photo: SeaWIFS Project, NASA/GSFC, ORBIMAGE

Publishing year: 2007
ISBN: 978-91-7281-288-8
Printer: Intellecta DocuSys AB

This report can be ordered from:
Environment and Planning Department
The County Administrative Board of Stockholm
P.O. Box 22067
SE-104 22 Stockholm, SWEDEN

The report is also available from **www.ab.lst.se**

Preface

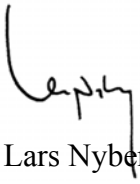
This report present the outcomes from the international expert- and policy seminar on Agri-environmental extension services around the Baltic Sea, held in Riga, Latvia, 6 – 7 December 2007.

The seminar aimed to increase the focus upon agri-environmental extension services as a cost-effective and voluntary instrument to minimise environmental – notably water – impact from the agriculture sector. The seminar was organised into three sessions. Session one provided a review of the scientific knowledge and international policy context for agri-environmental extension services in EU and the Baltic Sea Region. The second session gave a comprehensive overview of the national organisation and practises in agri-environmental extension services in eight countries surrounding the Baltic Sea. The third and final session was carried out as group and plenary discussions in which best national practices, challenges and obstacles and possible future joint activities were discussed. Together, the three sessions provided a joint knowledge basis and platform for intensified co-operation around the Baltic Sea in the near future.

The Swedish Minister of Agriculture, Mr Eskil Erlandsson, first announced the seminar at the Council of Baltic Sea States high-level meeting held jointly for Baltic Sea States ministries of agriculture and environment in Saltsjöbaden, Sweden, April 2007. There, the need for strengthened focus upon agri-environmental extension services was raised as an important step towards a healthier Baltic Sea.

The seminar was convened as a joint Swedish – Latvian venture. The Ministry of Environment Sweden and the Baltic Sea Unit SIDA sponsored the event. The County Administrative Board of Stockholm was the overall co-ordinator. The Latvian Rural Advisory and Training Centre provided Latvian in-country co-ordination. Several Latvian and Swedish Ministries and organisations contributed in various ways. Sindre Langaas and Christian Weyer, the County Administrative Board of Stockholm, compiled the meeting report.

Stockholm, December 2007



Lars Nyberg

Director Environment and Planning Department

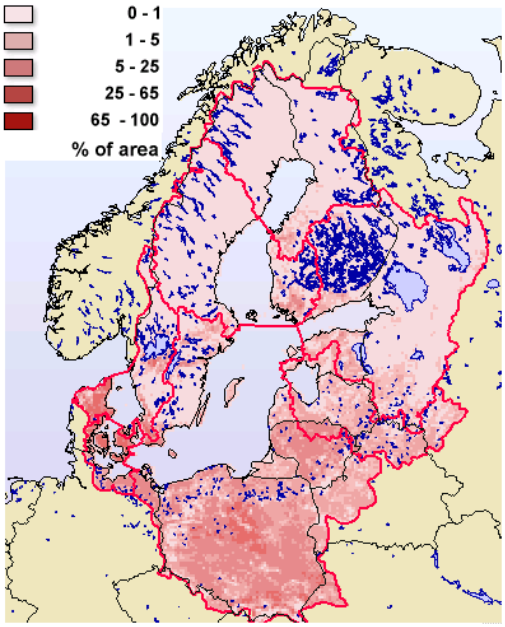
Content

Extended summary

In the extended summary we have chosen to reverse the sequence of the findings and outcomes relative to how they were dealt with at the seminar in its three sessions. This is done to highlight the future-oriented outcomes first, to which this report hopefully will contribute in a constructive and creative manner.

How to expand and enhance agri-environmental extension services in the Baltic Sea region

Agri-environmental extension services can be defined as the organized exchange of information and the purposive transfer of skills to farmers with the aim to reduce undesirable negative environmental impacts. The third session of the seminar adressed future needs and ideas for enhanced and expanded agri-environmental extension services nationally as wells as jointly within the Baltic Sea region. Focus was given to discussion of suggestions of proposals for national or international joint activities. Furthermore, the obstacles to achieving expansion and enhancement were discussed. During the discussions it was noted that the distinction between conventional extension service focus addressing production and economical issues in most cases neither could nor should be separated from agri-environmental issues. To the farmers and agricultural businesses this distinction is entirely artificial and will in most countries be environmentally counterproductive. To gradually improve environmental good agricultural practice, economic arguments are crucial. They can be driven by cross-compliance mechanisms, higher market prices, increased chances for environmental support for infrastructure investments, such as manure storage or wetland reconstruction, reduced costs for fertiliser or pesticides



Distribution of arable land in the Baltic Sea Region. Source: http://maps.grida.no/baltic/

The session was primarily organised as group discussions. Each group was composed with an aim to achieve a good blend of nationalities and gender. A chairman and a rapporteur were nominated for each group. The group

discussions were followed by a plenary part in which the results from the groups were presented and discussed.

The discussions confirmed the impression that had been conveyed during session 2 on the considerable national variation within the Baltic Sea region concerning the awareness of and emphasis given to agri-environmental extension services. While the discussions to a large extent reflected national perspectives on matters – notably obstacles, needs and prospects, it was also quite obvious that international dimensions and commonalities existed. In the following summary, emphasis is given to those issues with relevance for possibly joint future activities.

Possible joint future activities

- Exchange of competence and experience among countries

Just as the current seminar provided ample opportunities to gain insight into alternative ways of organising, funding and giving priority to agri-environmental extension services, the group discussions revealed a keen interest in continued activities aimed to exchange competence, experience and practice on different levels. Such exchange could target different beneficiaries ranging from the national (and international) policy and strategic levels down to advisors, individual farmers and agricultural companies. Depending upon the target groups the format of such exchange activities could be designed in different ways ranging from conferences, seminars and workshops to more informal study trips and tours.

- Development of joint extension toolboxes/training modules and/or "cookbooks" of best practice in the area of agri-environmental extension services

Another range of possible joint activities discussed at some length was the possibility to develop a common, documented "pool" of activities that could be applied throughout the region based upon the type of agricultural activity carried, its socio-economic context out and its undesirable environmental impact created. This line of joint activities could clearly benefit from, on the one hand a strong interface with the agricultural research and higher educational community in the region, to, on the other hand, a strong connection to the joint policy and support frameworks, such as the Baltic Sea Action Plan the EU Rural Development Program and it cross-compliance mechanisms. These toolboxes/training modules/"cookbooks" could address on-farm advisory services as well as alternative approaches. As an example, such tools can vary from hands-on tools such as common methods for farm-gate-nutrient balances and calculation methods for evaluation of manure to courses for training and the establishment of demonstration farms and targeted pilot projects..

- Awareness-raising targeting various societal groups

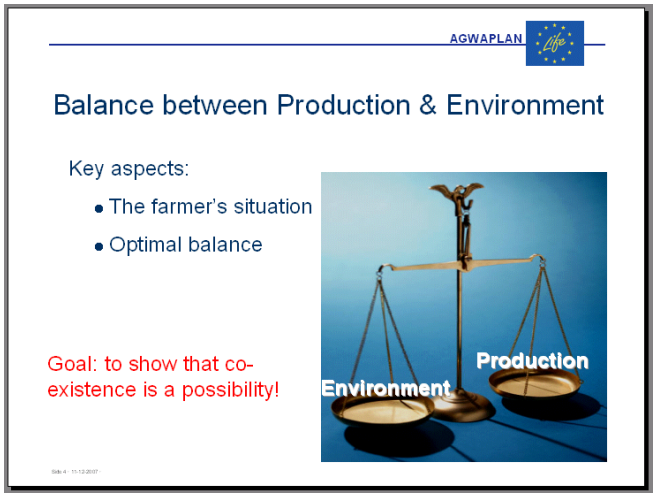
Awareness-raising was also discussed as a feasible range of activities within a possible joint framework. Essentially, such activities could be separated into two parts. One part would address the issue within the agricultural sector itself, trying to explain and exemplify to agricultural senior and policy persons in the strong interconnectedness between the agricultural sector and the environmental impact, ways to reduce the impact and the need for strengthened focus upon raising the knowledge base – on all levels - within the sector itself as a way for the sector to take its reasonable societal share of environmental responsibility. The other part would try to demonstrate to the society the positive on-going developments and positive activities carried out, such as agri-environmental extension services but also the rapid development of agri-environmental infrastructure, such as slurry storage facilities, to demonstrate how the agricultural sector is proactively addressing its environmental impact. This would involve outreach and media activities.

- Networking activities

In order to build upon the momentum created by the seminar, a most logical future activity would be further develop and maintain of network of key actors from various countries concerned about information and advisory services as a key instrument to improve environmental performance within the agricultural sector, both nationally and internationally. This line of possible activities could entail regular communication (email based), annual or bi-annual meetings and a secretariat for development of joint project proposals, such as EU Interreg or LIFE projects.

National systems and practices in agri-environmental advisory services and related activities

The second session aimed to give a comprehensive, yet condensed overview of how agricultural extension services and in particular agri-environmental extension services currently are organised in the various Baltic Sea region countries. Further, contextual information were provided to better understand the prevailing circumstances. Presentations were given for Norway, Sweden, Finland, Russia, Estonia, Latvia, Lithuania and Denmark by senior managers. In order to facilitate comparisons among the countries the national speakers had been provided with a set of suggested key points to



From the Danish presentation

address in their presentations. These points were:

1. Describe briefly how the agri-environmental extension services in your country are organised.
   (a) What are the goals of the services?
   (b) Are there any specific goals related to environment, for example use of/leakage of nutrients (phosphorous and nitrogen) or use of pesticides?
   (c) What are the costs of these services? How are the services funded?
   (d) Have the agri-environmental extension services been evaluated? If yes, which conclusions were drawn?

2. Describe briefly the state of nitrogen (N) and phosphorous (P) leakage from agricultural activities in your country. What data are the figures based on?

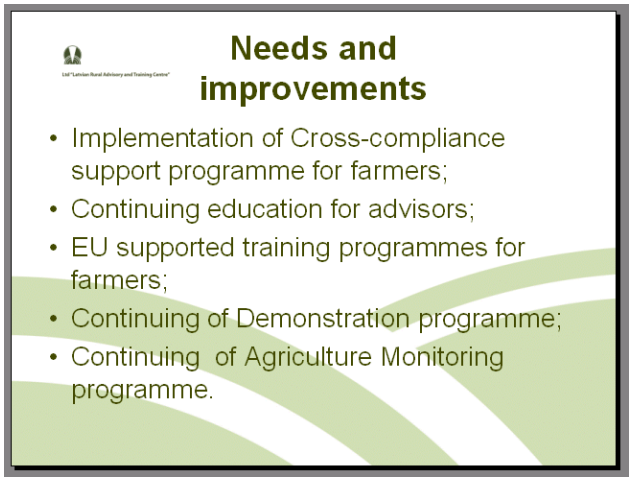
3. Describe if and in which way the current national farm advisory systems address N and P leakage and pesticide contamination?

4. To improve the national agri-environmental extension services, please provide examples of needs and possible improvements.

The presentations addressed these points to a larger or smaller extent. The reader is directed to Appendix 2 for the presentations with details for each country. Additionally, a complementary background report had been prepared for Estonia, Latvia, Lithuania and Poland on agri-environmental extension services.

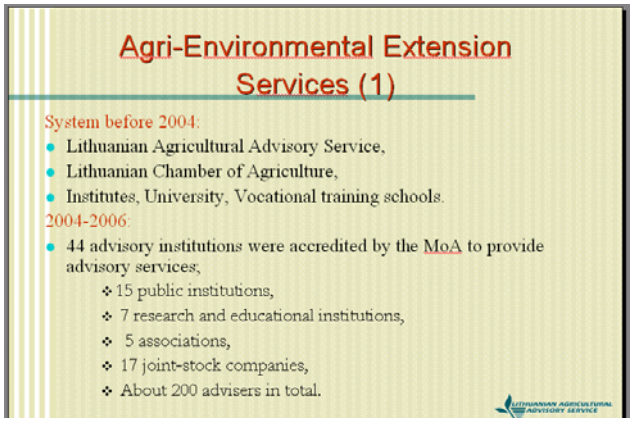
From the Norwegian presentation

From the Swedish presentation



From the Latvian presentation

This report, commissioned by the County Administrative Board of Stockholm and partners was prepared by the consultant Annika Henriksson, Agellus Consultants, in close co-operation with national expertise in the four countries concerned.



From the Lithuanian presentation

In short, the presentations, the background report and bi- and multi-lateral discussions during the seminar revealed a considerable diversity in how much emphasis that was given to agricultural advisory services in general, and in agri-environmental extension services in particular. There is a clear gradient from West to East in the emphasis given to such instruments to minimise environmental impact, relative to legislative and economic instruments. In the eastern EU countries much resources and focus are currently devoted to support economically and legally enforce appropriate manure storage solutions where missing. Such facilities are generally available in the older EU countries and Norway. Yet, most presentations stressed that there is an obvious logic in strengthening efforts in the area of agri-environmental extension services, even in countries with absence of relevant infrastructure and less perfect agricultural practice. Also in such cases increased awareness and knowledge is crucial for proper on-farm management of nutrients. Further, increased awareness and knowledge will also increase the acceptability of implementation of various EU directives and economic instruments such as the recent cross-compliance mechanisms. Thus, the EU countries are through the regulations of the Rural Development Program enforced to offer agri-environmental advisory services, even though they from the farmers' perspective are voluntary. In general, it was felt that agri-environmental extension services in most countries would gain most from being blended with production - and economic (conventional) oriented advisory services, and not as a separate advisory track.

From the Russian presentation

Most countries offered ideas and suggestions for needs and improvements in the agri-environmental extension services could be enhanced and expanded.

Background and justification

The first session aimed to provide the seminar context. Mr. *Arvids Ozols*, Deputy State Secretary. Ministry of Agriculture, and Mr. *Martins Jirgens*, Parliamentary Secretary of the Minister of the Environment welcomed the participants on behalf of the Latvian government. They both expressed a strong adherence to the significance in more closely bridging the gap between the agricultural sector and the proponents of an improved water environment. Thus, the awareness building and knowledge transfer between both categories were important, they stated. Mr. Jirgens also highlighted the recently signed HELCOM Baltic Sea Action, and the need to also involve upstream countries like the Belarus in the co-operation. The chairman of the Program Committee, Mr. *Markus Hoffman*, Federation of Swedish Farmers (LRF) and Secretary General of the Baltic Farmers Forum on the Environment (BFFE) introduced the aim and purpose of the seminar. While being a "firm believer" in agri-environmental extension services, Hoffman stressed the need for the "believers" to be able – despite methodological difficulties - to provide evidence and good examples on the achievements and cost-effectiveness of agri-environmental extension services in meeting EU, HELCOM and national societal goals in raising awareness, building competence and in the end yielding a better water quality.

One of the truly regional – on the international level – action oriented efforts to improve water quality is the recently signed HELCOM Baltic Sea Action Plan (BSAP). BSAP uses an ecosystem approach and has four thematic areas structured according to ecological quality objectives. Ms. *Baiba Zasa*, Ministry of Environment Latvia, on behalf of the HELCOM community gave a comprehensive introduction to the part of the BSAP addressing eutrophication - The Baltic Sea unaffected by eutrophication. In particular, Mrs Zasa highlighted the role of the agricultural sector in achieving this. The BSAP is recognised as a pilot effort for the forthcoming EU Marine Strategy Directive. It has been agreed to have a coordinated position of the HELCOM countries being also EU Member States in the process of reviewing of EU Common Agriculture Policy. Within the given deadline a joint submission stressing the need to integrate better the specific environmental concerns of the Baltic Sea, and the need to adopt additional and targeted agricultural measures in particular to reduce eutrophication of the Baltic Sea will be submitted.

From a scientific perspective, but still reflecting ongoing EU policy developments on the interface between the agricultural seector – environment sector, Mr. *Thomas Dworak*, Ecologic - Institute for International and European Environmental Policy, reflected on the role and significance of voluntary agri-environmental advisory services in

minimising water pollution. Inter alia he commented upon the extremely high diversity in European agriculture ranging from large, highly intensive and specialised commercial holdings to subsistence and semi-subsistence farming using mainly traditional practices, and the fact that the impact upon the environment may be both positive and negative. He also dwelled with the not so positive experiences with first generations environmental directives command-and-control attempts to reduce the environmental impact of agricultural activities. New governance approaches are emerging that involve voluntary co-operation between water suppliers, farmers and public authorities responsible for the sustainable management of water resources. These approaches are at the same time normally being more adaptive. Agri-environmental advisory services, he stated, could represent such a new approach, which also has the advantage of allowing for tailor made solutions, considering, for example, type/size of farm or region and other national or regional preconditions.

Mrs. *Inge Van Oost*, European Commission, DG Agriculture and Rural Development, provided a quite comprehensive introduction to the Farm Advisory System (FAS) as envisaged and regulated by various EU Policies and regulations. The Common Agriculture Policy (CAP) reform in 2003 made direct support for farmers dependent on compliance with requirements of public interest, so-called cross-compliance, compulsory. Much of the issues that are considered public interest are environmental and often related to water issues. The FAS is one the one hand an element of the 1st pillar of the CAP (direct support, common market organizations), while at the same time being fundable under the 2nd pillar, the Rural Development Program 2007 - 2013 currently under implementation in the EU countries. Since the 1st of January 2007 the EU-member states are obliged to offer some kind of Farm Advisory System, while to the farmers these FAS are voluntary. Yet, it is obvious there is a win-win situation in that to receive payments, the farmer has to respect both the statutory management requirements (SMRs) and the good agricultural and environmental condition (GAEC). If they do not respect these cross-compliances, it can result in possible reduction/exclusion from payments. Awareness-raising is the primary goal of the FAS in this respect. The three actors in the system are the adviser, the farmer and last but not least the controller. Advisers and controllers can be public or private bodies. A recent survey from the Joint Research Centre disclosed the most popular ways of offering FAS in the Member States. They were:

- One-to-one on farm
- One-to-one off farm (i.e. phone helpline, helpdesk for individual questions via website, consultation/"sitting days" of advisors in each region)
- Small group advice on farm
- Vocational training
- Workshops/meetings off farm

- Self-check from manuals
- Internet based (3 types: general info, interactive tailored to specific farm types, tailored to specific individual questions from the farmer)
- Publication based (paper copies)

Finally in session 1, mrs. *Christine Jakobsson*, the Baltic University Programme, a network of around 120 universities, presented an example of how higher agricultural education and research can contribute to enhanced agri-environmetal advisory services. In particular, the Baltic University Programme has over the last few years, in cooperation with the EnviroVet Baltic network, developed a new course package for university level called Ecosystem Health and Sustainable Agriculture – EHSA. This comprehensive course package is still under development and is expected to be ready in 2009. It will be composed of several modules, in which the three major ones will be dealing with Rural Development & Land Use, Sustainable Agriculture and Ecology and Animal Health, respectively.

Appendix 1. Program

Seminar Programme

Agri-environmental extension services around the Baltic Sea,
Riga, Latvia, 6 – 7 Dec 2007

Wednesday 5th of December

18.00 - 20.00	Registration Hotel Maritim Park
20.00 - 22.00	Icebreaker event Hotel Maritim Park

Thursday 6th of December

07.45 - 08.45	Registration Hotel Maritim Park
SESSION 1 **Background and justification**	
09.00 – 09.05	Seminar rationale, Mr. Sindre Langaas, County Administrative Board of Stockholm
09.05 - 09.20	Welcome remarks Mr. Arvids Ozols, Deputy State Secretary, Ministry of Agriculture, Latvia Mr. Martins Jirgens, Parliamentary Secretary of the Minister of the Environment, Latvia
09.20 - 09.30	Introduction to seminar, Mr. Markus Hoffman, Chairman of Program Committee
09.30 - 10.00	Modelling of nutrient fluxes into and in the Baltic Sea: The agricultural share. Prof. Fredrik Wulff, Stockholm University
10.00 - 10.30	The Baltic Sea Action Plan - The Baltic Sea unaffected by eutrophication and the role of the agricultural sector in achieving this. Ms. Baiba Zasa, Ministry of Environment Latvia
10.30 - 11.00	*Coffee- break & sandwich*
11.00 - 11.30	The role and significance of voluntary agri-environmental advisory services in minimising water pollution from the agricultural sector. Mr. Thomas Dworak, ECOLOGIC, Austria
11.30 - 12.00	EU agricultural policy on Farm Advisory Services. Ms. Inge Van-Oost, DG Agri Commission of the European Community

12.00 - 12.30	The role of higher agricultural education and research to enhance agri-environmental advisory services. Ms. Christine Jakobsson, Baltic University Program	
12.30 – 13.45	*Lunch*	
SESSION 2 **National systems and practices in agri-environmental advisory services and related activities**		
14.00 - 15.10	Introduction	
	Latvia:	Mr. Kaspars Zurins, Vice Director, Latvian Rural Advisory and Training Centre
	Sweden:	Mrs. Stina Olofsson, Project Manager, Swedish Board of
	Lithuania:	Mr. Rimtautas Petraitis, Deputy Director, Lithuanian Agricultural Advisory Service
15.10 - 15.40	*Coffee-break*	
15.40 - 17.00	Danmark:	Mr. Erik Jørgensen, Environmental Policy Officer, Danish Agriculture
	Finland:	Ms. Sari Peltonen, Senior Development Manager, ProAgria
	Norway	Mr. Einar Strand, Coordinator, Norwegian Agricultural Extension Service and BIOFORSK
	Russia:	Mr. Vladislav Minin, North-West Research Institute of Agricultural Mechanization & Electrification, St. Petersburg
17.00 - 17.15	*Leg-stretcher*	
17.15 - 18.00	Poland:	Mr. Mr. Marek Krystoforski, Agricultural Advisory Centre
	Estonia:	Mr. Hannes Aamisepp, Director, Rural Economy Research Centre and
	Summary of Session 1 and 2	
19.30 – 21.00	*Official Seminar Dinner*	
Friday 7th of December		
SESSION 3 **How to expand and enhance agri-environmental extension services in the Baltic Sea region?**		
09.00 - 09.15	Introduction to group discussions	
09.15 -11.15	Group Discussion (4 groups) incl. coffe-break	
11.15 – 12.00	Plenary discussions Seminar closing	
12.00 - 13.30	*Lunch*	

Appendix 2. Presentations

[Some of the following slides may be difficult to read. For those who would like to obtain more legible version, we suggest that the reader contact the author for alternative versions]

Organisers and Sponsors

Co-ordinator
- **County Administrative Board of Stockholm**

Local co-ordinator
- **Latvian Rural Advisory and Training Centre**

Sponsors
- **Ministry of Environment, Sweden**
- **Baltic Sea Unit SIDA**

Program Committee
Chairman:
Markus Hoffman,
Federation of Swedish Farmers (LRF)
Members:
Rolands Bebris,
Ministry of Environment Latvia
Lennart Gladh,
World Wide Fund for Nature Sweden
Christine Jacobsson,
Baltic University Program
Viestur Jansons,
Latvian Agricultural University
Sindre Langaas,
County Administrative Board of Stockholm
Stina Olovsson,
Swedish Board of Agriculture
Nina Rakstina,
Ministry of Agriculture Latvia
Lubova Tralmaka,
Ministry of Agriculture Latvia
Kaspars Zurins,
Latvian Rural Advisory and Training Centre

COUNTY ADMINISTRATIVE BOARD OF STOCKHOLM

Seminar justification

Increasing recognition of -
- the agricultural sector as a key determinant of the health status of fresh- and marine waters,

and thus
- the need to expand and enhance agri-environmental extension services

being reflected in -
- HELCOM Baltic Sea Action Plan
- EU Nitrate Directive
- EU Rural Development Program
- EU CAP and its cross-compliance mechanisms
- EU Water Framework Directive
- forthcoming EU Marine Strategy Directive
- CBSS/Baltic21 policy documents

COUNTY ADMINISTRATIVE BOARD OF STOCKHOLM

The target group

- Experts, managers and decision-makers in CBSS/HELCOM countries that are developing, providing and otherwise concerned with agri-environmental extension services from policy to strategic levels, predominantly on the national and international level

Modeling of nutrient fluxes into and in the Baltic Sea: The agricultural share

Fredrik Wulff
Stockholm University, Sweden

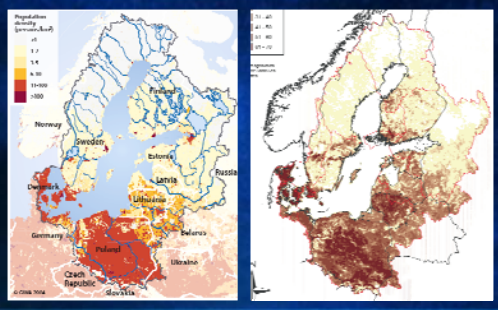
[This presentation was prepared for the seminar. Unfortunately, prof. Wulff was unable to attend the seminar. We have nevertheless decided to include it in the proceedings.]

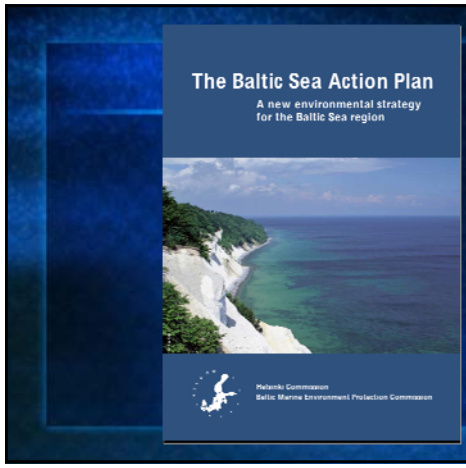
Agri - environmental extension services around the Baltic Sea, Riga, Latvia, 6 – 7 Dec 2007

Outline

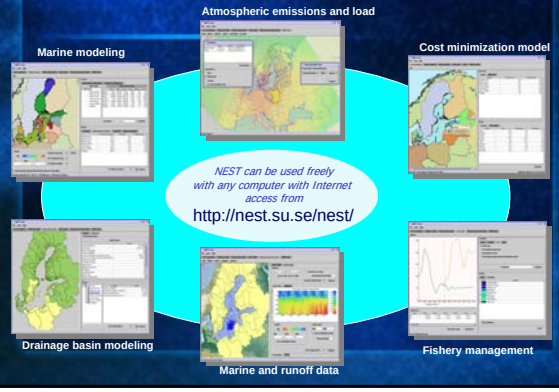
- The Baltic Sea Action Plan
  - Load reductions needed to reach a good environment
  - Country and source allocations
- Projections for the future
- Conclusions

Population and agricultural land



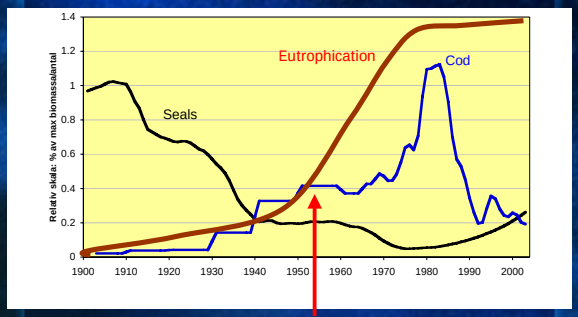


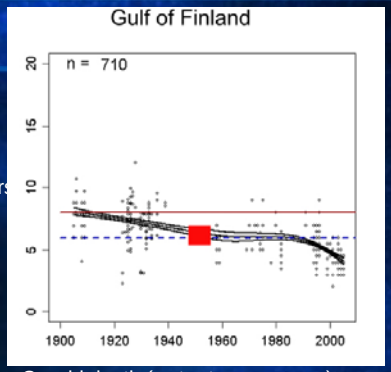
NEST now contains 6 Basic Modules



Scientific objectives

- How much should nutrient loads be reduced to reach a good marine environment?
- How should load reductions be allocated to countries?





The two step approach

- Based on data from countries, averaged 1997-2003
- Considers both the actual wastewater treatment levels in 2004 of the coastal countries as well as possible and potential measures to further reduce loads
- Leaves flexibility to choose the preferred reduction measures
- takes into account measures already implemented for sewage treatment and gives countries credit for these
- a simplistic approach that can be easily verified.

Reductions needed to reach environmental targets of the different sub basins

	Load 97-03		Needed reduction	
	N	P	N	P
BB	51,436	2,585	0	0
BS	56,786	2,457	0	0
BP	327,259	19,246	94,000	12,500
GF	112,680	6,860	6,000	2,000
GR	78,404	2,180	0	750
DS	45,893	1,409	15,000	0
KT	64,257	1,573	20,000	0
SUM	736,714	36,310	135,000	15,250

Transboundary loads

- The calculation assume that all nutrient reductions have to be implemented by the HELCOM Contracting Parties
- Transboundary land loads could be allocated to a common pool

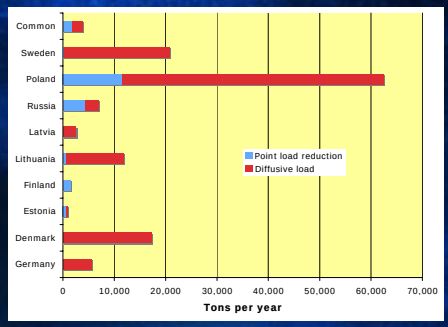
Allocation of load reduction to countries - A two step approach

- The quantity of load reductions achievable by improved waste water treatment - up to the existing HELCOM/EU levels by each contracting party is first calculated
- In the second step, the remaining load reduction, is allocated among the HELCOM countries based on a percentage proportional to countries' present inputs to each sub-region

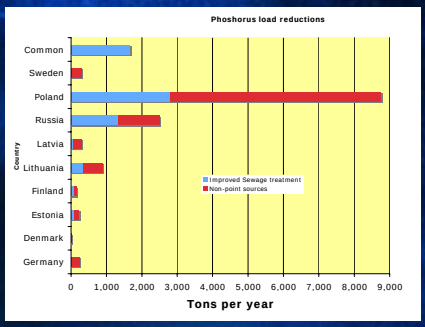
Additional reduction needs

	Phosphorus	Nitrogen
Germany	242	5,514
Denmark	16	17,207
Estonia	141	309
Finland	59	-297
Lithuania	545	11,104
Latvia	233	2,546
Russia	1,168	2,577
Poland	5,945	50,909
Sweden	291	20,485
Common	0	2,117
Total	8,641	112,471

Nitrogen



Phosphorus

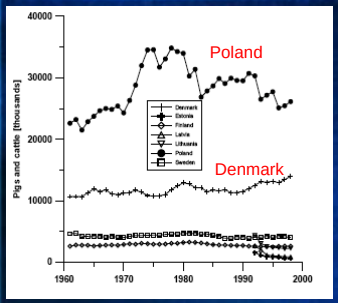


Other measures

- Reduce atmospheric N depositions (now 25% of total load)
- Reduce inputs from North Sea
- Emissions from shipping
- Nutrient trading

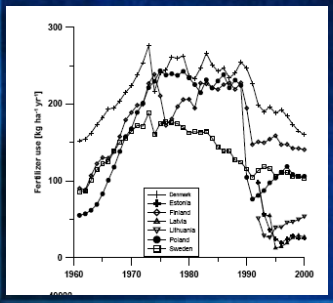
Options for the future

Development in agriculture



- Pigs and cattle in Baltic Sea countries (thousands)

Developments in agriculture



- Fertilizer use in Baltic Sea countries (kg/ha)

Living standards and meat consumption

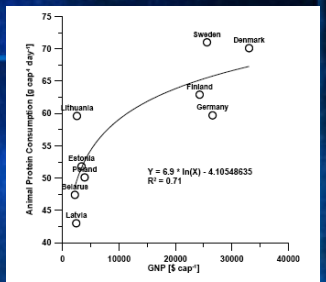
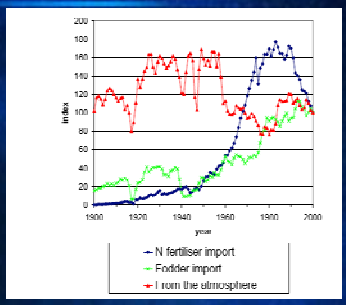


Fig. 3. Relationship between the gross national productivity per capita (GNP) and the animal protein consumption per capita for riparian Baltic Sea countries (Data from World Bank & FAO).

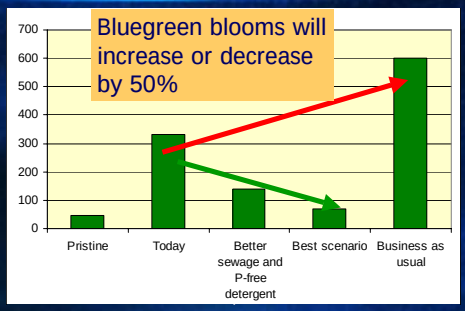
Humborg et al., 2007

Nitrogen balance in Danish agriculture



Dalgaard & Kyllingsbæk, 2003

Options for the future



Conclusions

- Scenarios not predictions
- Conditions will get worse if current intensification of agriculture continues
- It is possible to improve the Baltic
  - Different sub-basins and ecological criteria react differently to N and P loads
- Greatest potential to reduce loads for
  - P in eastern countries (better sewage treatment, detergents)
  - N in western countries (agriculture)

HELCOM BALTIC SEA ACTION PLAN

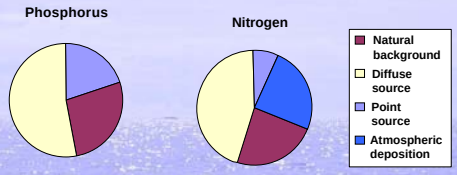
The Baltic Sea unaffected by eutrophication -

the role of the agricultural sector in achieving this

Baiba Zasa, Ministry of Environment Latvia

Agri-environmental extension services around the Baltic Sea
Riga, Latvia, 6 – 7 December 2007

Sources of Nutrients

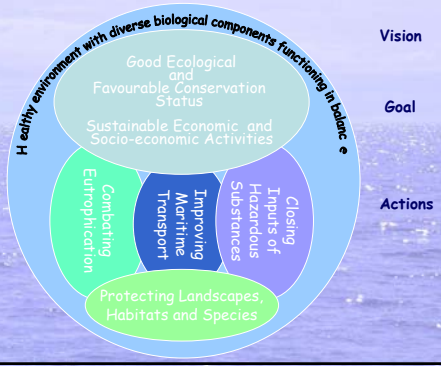


- Diffuse sources, especially agriculture biggest polluter
- Pollution from non-HELCOM countries significant

HELCOM Baltic Sea Action Plan - adopted 15 November 2007

- Development of plan started in 2005
- Based on regional application of **Ecosystem Approach**
  - as decided by HELCOM ministers in 2003
  - Follow up to Rio declaration 1992
- Encompasses and integrates four priority areas

HELCOM Baltic Sea Action Plan



Baltic Sea Action Plan STRATEGIC GOALS:

- Baltic Sea unaffected by eutrophication
- Baltic Sea life undisturbed by hazardous substances
- Favourable status of Baltic Sea biodiversity
- Maritime activities carried out in an environmentally friendly way

HELCOM Baltic Sea Action Plan Actions

- Tailor made measures in Contracting Parties (National Programmes)
- Joint measures by HELCOM Contracting Parties (HELCOM Recommendations)
- Measures in non-Contracting Parties
- Strong link to regional and global processes
  - E.g. proposed EU Marine Strategy and Maritime Policy
  - Joint input from HELCOM Contracting Parties within international fora to reach Baltic environmental objectives

Eutrophication segment
Baltic Sea unaffected by eutrophication

- Ecological objectives:
  - Clear water
  - Concentrations of nutrients close to natural levels
  - Natural level of algal blooms
  - Natural distribution of plants and animals
  - Natural oxygen levels
- Ceilings and country-wise reduction requirements have been defined by utilising models

Reduction and policy scenarios

- Identification of cost-effective measures
- Combination of pollution load and ecological models
- Scenarios on implication of different policies
  - Agriculture
  - Urban waste waters
  - Air pollution reduction
- Scenarios on required reductions to achieve targets

Maximum allowable inputs

	Maximum allowable nutrient input (tonnes)		Needed reductions	
	P	N	P	N
Bothnian Bay	2,580	51,440	0	0
Bothnian Sea	2,460	56,790	0	0
Gulf of Finland	4,860	106,680	2,000	6,000
Baltic Proper	6,750	233,260	12,500	94,000
Gulf of Riga	1,430	78,400	750	0
Danish straits	1,410	30,890	0	15,000
Kattegat	1,570	44,260	0	20,000
Total	21,060	601,720	15,250	135,000

Country-wise reduction requirements

	Phosphorus (tonnes)	Nitrogen (tonnes)
Denmark	16	17,210
Estonia	220	900
Finland	150	1,200
Germany	240	5,620
Latvia	300	2,560
Lithuania	880	11,750
Poland	8,760	62,400
Russia	2,500	6,970
Sweden	290	20,780
Transboundary Common pool	1,660	3,780
Total	15,000	133,00

Actions for eutrophication

- **Specific measures**
  - **Agriculture**: requirements for animal farms, manure handling
  - Waste waters from municipalities, scattered settlements and single family homes
  - P-free detergents
- **National programmes by 2010**
  - To reach the reduction requirements
  - Flexibility to include cost-effective measures
- **Transboundary inputs - jointly**
  - Bi- and multilateral projects
  - Involving also private initiatives
- Input to **other forums** to cater for **Baltic needs**

Agriculture - Amended Annex III of the Convention

- Permits for farms with intensive rearing of animals (poultry 40 00, pigs 2000, cattle 400)
- Simplified permit system or general rules for farms bigger than 100 a.u.
- Application rates for nutriens
  - Nitrogen 170 kg/ha
  - Phosphorus 25 kg/ha

Agriculture - actions

- Designation of relevant parts of agricultural land as nitrogen **vulnerable zones**
- Input to EU **CAP health check** in 2008 to integtrate better Baltic sea concerns
- Need to address also **other sources** and
- production of **energy crops**

Agriculture - actions

List of examples for measures to reduce P and N from agriculture
including effectiveness and costs of measure

- Land use
- Fertiliser and manure management
- Animal feeding
- Farm infrastructure
- Other

Implementation of the BSAP

- **Implementation Group**
  - Political guidance on implementation
  - Review and follow-up
  - Coordination and cooperation with other related work
- **Financial apsects important**
  - Pledging Conference in 2008
- **National programmes by 2010** to be evaluated at Ministerial Meeting in 2013

Conclusions
Recipe for success

- **Strong political commitment**
  - Determination to implement agreed actions
  - Backed up by the political level
- **Tailor made joint actions**
- **Stakeholder involvement**
- **Allocation of resources** for both development and implementation
- **Complementary Global, European and Regional policies**

THANK YOU!

Please contact:

Helsinki Commission
Secretariat
Katajanokanlaituri 6 B
FI-00160 Helsinki
Finland

http://www.helcom.fi

The role and significance of voluntary agri-environmental advisory services in minimising water pollution from the agricultural sector

Thomas Dworak

Ecologic

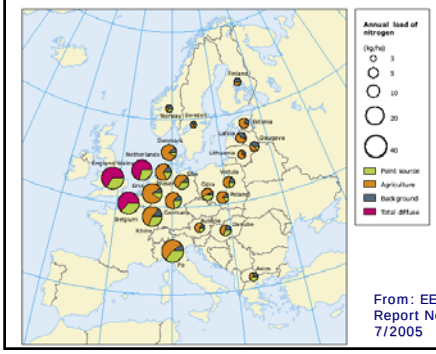
Study approach

- Several EU and national Projects on Agriculture and water protection
- 3 years of support to the Commission on linking Common Agricultural Policy and Water Framework Directive

→Farm advisory services are discussed from time to time

- Literature survey in the context of the Conference

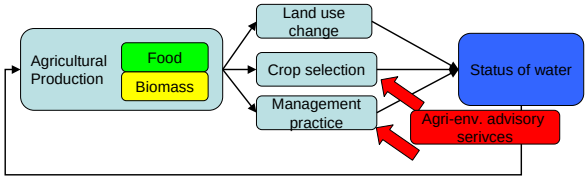
Nothing new and still there – Agricultural pollution



Similar picture can be drawn from the WFD ART 5 assessment

From: EEA Report No. 7/2005

How agriculture effects water



→European aim to protect water
→European aim to secure food and energy production

Why agri-env services (AES)?

- Command and control approaches do not always work…
- …agreed objectives on water quality have not always been achieved (e.g. N-Directive)
- →"New"/different approaches are needed

→Tailor made solutions are needed

- Conflicts between water mangers and farmers

→Create common understanding

Framework for AES

- Regulation 1782/2003 Cross Compliance: EU-MS had to set up mandatory AES by 1 January 2007. "the "advisory activity shall cover at least the statutory management requirements and the good agricultural and environmental conditions" (Article 13.2)
- Rural Development Regulation: Axis 1 (Art. 24) Use of advisory services
- Water Framework Directive: (Art. 11) Programs of measures
- Upcoming Marine Strategy: Programs of measures

Mandatory Farm advice – Status 2005

- In some MSs enough advisers to provide advice (AT, DK, GE, SE, SI, UK).
- Not enough advisers (CZ, EE, ES, GR, HU, IT, PL).
- Not enough advisers with training in environmental protection (EE, GR, HU, IT, PL, SI, ES).
- Not enough advisers for nature protection (AT, CZ, DK, EE, FR, GE, ES, GR, HU, IT).

- → What does this mean for voluntary services??

EEA- CIFAS study
http://ew.eea.europa.eu/cifas/

Impacts of AES on water pollution

- Many positive examples reported
- Address point and diffuse pollution
- AES are often reported to be cost effective

→but no large scale assessment was found

Obstacles related to AE services

- Access to funding provided by the administration
- Limitations of funding due to limits in budget
- Farmers are difficult to convince because of voluntary approach
- Sometimes information difficult to find

Factors affecting success of AES I

- Ensure easy access for farmers
- The design of a scheme has to reflect both the requirements that science demands and the practicability of the actual measure taken
- Individual advice is the most effective but the most expensive
- Geographical spread of AES
- Develop tailor made solutions (e.g. type/size of farm, region)
- A combination of AES and other tools (demonstration farms, help-lines, websites, booklets, field walks) is recommended

Factors affecting success of AES II

Farmers have various environ. obligations:

- Design of AES should follow an integrated approach (water, soil, biodiv.)
- Develop "all-round service" including:
  - Advice for financial support activities.
  - Communication-support if there are problems with environmentalist
  - Organizing actions together with nature-conservationists and other groups.

Further work

- Assessment on EU scale could be beneficial to:
  - Identify "best practice"
  - Clarify cost effectiveness
  - Improve administration
  - Optimize existing services by exchange various AES approaches

ecologic.de

Some links

- Database on examples of farm advisory tools http://cifas.ew.eea.europa.eu/fol099648/FATs-sources-final.xls/download
- Report on recommended farm advisory tools http://cifas.ew.eea.europa.eu/fol099648/CIFAS-final_report-recommFATs-final-forWEB.doc/download
- Rural Development programs and WFD http://www.ecologic.de/modules.php?name=News&file=article&sid=1369

ecologic.de

Thank you for listening.

Thomas Dworak

Hütteldorferstr 257c/3/24, 1140 Vienna, Austria
☎ +43 699 1813 64 88, 🖷 +49-30-86880-100

thomas.dworak@ecologic.eu, www.ecologic.eu

Agri-environmental extension services around the Baltic Sea, Riga, Latvia, 6 – 7 December 2007

The role and significance of voluntary agri-environmental advisory services in minimising water pollution from the agricultural sector

Thomas Dworak[1]

Background

As European agriculture is extremely diverse, ranging from large, highly intensive and specialised commercial holdings to subsistence and semi-subsistence farming using mainly traditional practices, the impacts on the environment vary in scale and intensity and can be either positive or negative.

However, pollution from different agricultural sources represents one of the key impacts on water bodies. In the national synthesis of the submitted Article 5 reports of the EU Member States, nutrient inputs and eutrophication in all categories of surface water are listed as the second most important pressure (WRc, 2005). In the past this pollution was mainly linked to food production, but due to the increasing demand of bio energy a new driver exists (Dworak, et al, 2007).

Command-and-control approaches such as the EU Nitrate Directive have achieved only limited success in controlling pollution from agriculture. New governance approaches are emerging that involve voluntary co-operation between water suppliers, farmers and public authorities responsible for the sustainable management of water resources (Brouwer et al., 2003). Agri-environmental advisory services (AES) can represent such a new approach, which also has the advantage of allowing for tailor made solutions, considering, for example, type/size of farm or region.

Legal framework

There are several possibilities to set up AES on the EU level; however, there is no limit at the national level to limit the activities to the legislation mentioned below:

- The implementation of the cross-compliance requirements and standards under Reg. 1782/2003 is a challenging task that needs to be supported via farm advisory systems. Member States had to set up advisory systems by 1 January 2007. According to Article 13.2, the "*advisory activity shall cover at least the statutory management requirements and the good agricultural and environmental conditions"*.
- Under the Rural development Directive (Art 24) AES shall cover at a minimum the requirements set out in Regulation 1782/2003. Based on these requirements, such advisory service could focus on water resources management.
- The Water Framework Directive (WFD) requires setting up programs of measures, which have to include cost effective measures to reduce water. AES could be included.
- The upcoming EU Marine Strategy will provide also programs of measures similar to those mentioned under the WFD.

Depending on the pressure, the content of such a service should be adopted specifically for each region or (local) river basin catchment.

AES in the Member States

According to the CIFAs Study (EEA, 2006) in 2005, AES can be classified as follows:

- In some MSs enough advisers to provide advice (AT, DK, GE, SE, SI, UK).
- Not enough advisers (CZ, EE, ES, GR, HU, IT, PL).
- Not enough advisers with training in environmental protection (EE, GR, HU, IT, PL, SI, ES).
- Not enough advisers for nature protection (AT, CZ, DK, EE, FR, GE, ES, GR, HU, IT).

However, it should be noted that due to the legal requirement to set up AES, the situation has significantly changed, especially during 2006, because massive training and staff recruitment took place in several Member States.

[1] Hütteldorferstr 257c/3/24, 1140 Vienna, Austria Tel: +43 699 1813 64 88, Fax: +49-30-86880-100
thomas.dworak@ecologic.eu, www.ecologic.eu

AES and water protection

It is widely reported that AES can have a positive impact on water protection and AES are recommended often. However, currently only some detailed case studies exist that clearly indicate an improvement of the water state due to these services. Furthermore, the cost-effectiveness of such services is often mentioned, yet no detailed study was identified when compiling this paper. In order to close these knowledge gaps a more detailed EU wide assessment is recommended.

Success factors for AES

When designing and setting up AES several issues should be considered to ensure a high uptake by the farmer's community. Main issues are:

- Ensure easy access for farmers. This also includes the issue of funding these services.
- The design of a scheme has to reflect both the requirements that science demands and the practicability of the actual measure taken.
- Individual advice is the most effective but the most expensive.
- Develop tailor made solutions (e.g. type/size of farm, region).
- A combination of AES and other tools (demonstration farms, help-lines, websites, booklets, field walks) is recommended. This is especially important in cases where such services are voluntary. So, if a farmer is not willing to participate in a AES, he at least can use other tools.

Furthermore, farmers have various environmental obligations which are sometime confusing and difficult to meet. Therefore, the advisory service should be designed as an "all-round service" including more than only advisory talks (Keufer, and van Elsen, 2003):

- Design of AES should follow an integrated approach (water, soil, biodiversity).
- Advice for financial support activities.
- Communication-support if there are problems with environmentalists.
- Organizing actions together with nature-conservationists and other groups.

Further Work

When compiling this short paper, it became obvious that no detailed assessment of AES with a focus on water protection is currently available on the EU. With the growing importance such services, it is recommended to carry out a study that could:

- Identify "best practice";
- Clarify cost effectiveness;
- Improve administration; and
- Optimize existing services by exchange various AES approaches.

Literature

Brouwer, F., Heinz, I. and Zabel, T. (2003): *Governance of Water-related Conflicts in Agriculture – New Directions in Agri-environmental and Water Policies in the EU*. Dordrecht: Kluwer Academic Publishers.

EEA (2006): Report on recommended farm advisory tools - CIFAS study report, available at: http://ew.eea.europa.eu/cifas

Dworak, et al, (2007): WFD and Bio energy production at the EU Level, A review of the possible impact of biomass production from agriculture on water

Keufer, Eva and van Elsen, Thomas (2003): Naturschutzberatung für den Ökologischen Landbau [Nature conservation advisory service for organic farming] in Freyer, Bernhard, Eds. *Beiträge zur 7. Wissenschaftstagung zum Ökologischen Landbau: Ökologischer Landbau der Zukunft, 24.-26. Februar 2003 in Wien*, Institut für Ökologischen Landbau, Universität für Bodenkultur Wien.

WRc, Water Research Centre (2005): *Review of the Article 5 Report for agricultural pressures, MS summary report*, on behalf of the Environment Directorate General of the European Commission, draft report, April 2005.

The Farm Advisory System FAS

(Art. 13-16 of Reg (EC) No 1782/2003)

Inge Van Oost
EC - DG Agriculture and Rural Development
Unit AGRI - D1 - "Soutien direct"

The Farm Advisory System

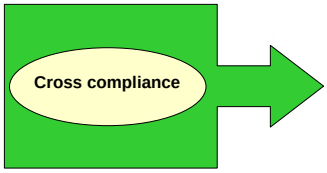
1. Common Agricultural Policy reform in 2003 made cross-compliance compulsory
2. The FAS is an element of the 1st pillar of CAP (direct support, common market organizations,…)
3. Farm advisory services can be financed under the 2nd pillar (Rural Development Programmes)

Cross-compliance

The 2003 CAP reform made direct support for farmers dependent on compliance with requirements of public interest

- Cross-compliance concerns regulations/directives in the field of environment, public and animal health, animal welfare, plant protection products and the maintenance of all agricultural land in good agricultural and environmental condition.

CROSS-COMPLIANCE OBJECTIVES



- Incorporate basic standards of environment, health and food safety, animal welfare
- Reinforce legitimacy of the CAP and acceptance by consumers
- Promote sustainable agriculture
- Prevent land abandonment: maintain the land in good conditions

Cross-compliance: main elements

- A farmer receiving direct payments must respect the statutory management requirements (SMRs) and the good agricultural and environmental condition (GAEC)
- The competent national authority must provide the farmer with the complete list of statutory management requirements and the GAEC
- In case of non-respect: reduction or cancellation of the direct payments

Cross- Compliance (1st pillar): Legal bases

1. Council Regulation (EC) No 1782/2003: Title II, Chapter 1 (Articles 3 – 9)
2. Commission Regulation (EC) No 796/2004: Implementing rules (Articles 9, 41 – 48, 65 – 67)
3. National Implementation: Member State legislation

Statutory Management Requirements (SMRs)

- 19 Community legislative acts in the areas of environment, public, animal and plant health, and animal welfare (Annex III of R. 1782/2003)
- Directives apply as implemented by the Member States
- Respect of SMRs in old MS (+ MT and SI): obligatory in 3 steps: 2005 – 2006 – 2007
- Respect of SMRs in new MS: obligatory for new MS applying SAPS as from 2009

- SMRs from 2005: Environment and animal identification
  - Wild Birds Directive
  - Groundwater Directive
  - Sewage Sludge Directive
  - Nitrates Directive
  - Habitats Directive

Directive Identification and Registration of animals + 3 application Regulations for Identification and Registration of animals (bovines, ovines/caprines)

- SMRs from 2006: Public health, animal health, plant protection products, notification of diseases
  - Directive « placing on the market of plant protection products »
  - Directive « hormones »
  - Foodlaw Regulation
  - Regulation « Spongiform Encephalopathies "
  - 3 Directives « notification of diseases »
- SMRs from 2007: Animal welfare
  - 3 Directives

Good Agricultural and Environmental Condition (GAEC)

- Requirements for Good Agricultural and Environmental Condition (GAEC) are to be defined by MS, taking into account soil and climatic condition, existing farm systems, land use, crop rotations, farming practices and farm structures
- On the basis of the common framework set up in Annex IV of Council Regulation (EC) No 1782/2003 covering:
  1. Protecting soil from erosion
  2. Maintaining soil organic matter
  3. Maintaining soil structure
  4. Ensuring a minimum level of maintenance and avoiding deterioration of habitats
- Obligation to maintain land under permanent pasture

Good Agricultural and Environmental Condition: Annex IV

Issue	Standards 11
Soil erosion: Protect soil through appropriate measures	– Minimum coverage – Minimum land management reflecting site-specific conditions – Retain terraces
Soil organic matter Maintain soil organic matter levels through appropriate practices	– Standards for crop rotations where applicable – Arable stubble management
Soil structure Maintain soil structure through appropriate measures	– Appropriate machinery use
Minimum level of maintenance Ensure a minimum level of maintenance and avoid deterioration of habitats	– Minimum livestock stocking rates or/and appropriate regimes – Protection of permanent pasture – Retention of landscape features, including where appropriate, the prohibition of the grubbing up of olive trees – Avoiding the encroachment of unwanted vegetation on agricultural land – Maintenance of olive groves in good vegetative conditions

Cross- Compliance (2nd pillar) (I)

Legal basis: Council Regulation (EC) No 1698/2005 (Article 51)

- For certain Axis 2-measures (*) in case of non-respect on the whole holding of cross-compliance requirements:

Possible reduction or exclusion from the total amount of payments of these measures if cross-compliance requirements (SMRs + GAEC) are not respected as result of an action or omission directly attributable to beneficiaries

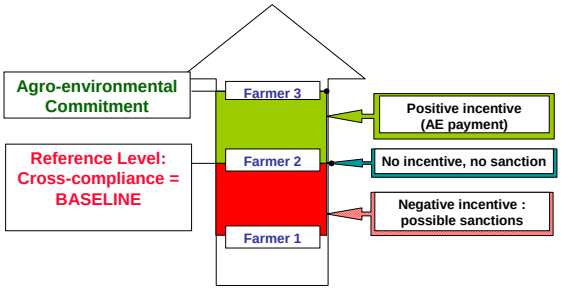
- For agri-environment measures reduction or exclusion also in case of non-respect of CC + minimum requirements for fertiliser and plant protection product use

Cross-compliance must be respected, if not: possible reduction/exclusion from payments can result from application of Art. 51 of R. 1698/2005 (*) for these axis 2 – measures:

(a) measures targeting the sustainable use of agricultural land through:
- (i) natural handicap payments to farmers in mountain areas;
- (ii) payments to farmers in areas with handicaps, other than mountain areas;
- (iii) Natura 2000 payments and payments linked to Directive 2000/60/EC;
- (iv) agri-environment payments;
- (v) animal welfare payments.

(b) measures targeting the sustainable use of forestry land through:
- (i) first afforestation of agricultural land;
- (iv) Natura 2000 payments;
- (v) forest-environment payments.

In practice …



The Farm Advisory System:
Art. 13-16 of R. (EC) No 1782/2003

- **The setting up of a FAS per MS is an essential part of the CAP reform, aiming to help farmers to comply with cross-compliance**
- **The initial proposal of the Commission (Mid Term Review) spoke of a system of farm audits**
- **The FAS does not replace the different existing advisory systems in the MSs but officialises a system with a clear goal: cross-compliance**

The Farm Advisory System (1st pillar): Legal basis

1. Council Regulation (EC) No 1782/2003: Title I, Chapter 3 (Articles 13 – 16)
2. Implementing rules possible: Art. 145(a) of Council Reg. (EC) No 1782/2003, but no need identified yet
3. National Implementation: Member State legislation

FAS: main elements (Art. 13 of R.1782/2003)

- **As from 1 January 2007, MS are obliged to establish a system of advising farmers on land and farm management (the *official* „*Farm Advisory System*“)**
- **„*The advisory activity shall cover at least the SMRs and the GAEC*“ (= including maintenance of permanent pasture)**
- **The field of the FAS advice is the whole cross-compliance but it is not limited to these cross-compliance standards**

FAS: goal (recital 8 of R.1782/2003).

- *„The farm advisory system should help farmers to become more aware of material flows and on-farm processes relating to the environment, food safety, animal health and welfare without in any way affecting their obligation and responsibility to respect those standards“*
- **Sensibilisation is the goal of the FAS.**

FAS must be clearly distinguished from controls on cross-compliance

FAS: responsabilities

Advisor	Farmer	Controller
Helps farmer with advice	**Responsible** for his actions, has to understand the requirements	Controls can lead to sanctions

- **The advisor has to play its role, explaining the requirements to the farmer and helping him to understand cross-compliance.**
  Advice and control must be separated, the farmer is responsible for his actions.

FAS: main elements (Art. 13 of R.1782/2003)

- **The FAS is to be operated by one or more designated authorities or by private bodies**
- **Community legislation left MSs the flexibility to choose public or private bodies as actors in the FAS**
- **The field of the FAS-advice is cross-compliance but it is not limited to cross-compliance standards: MSs can decide to enlarge it to other standards**

FAS: conditions (Art.14 of R.1782/2003)

- **Farmers may participate in the FAS on a voluntary basis**
- **MSs must give priority to the farmers who receive more than € 15000 direct payments per year (not excluding other MS-priorities)**
- **1st pillar regulation does not specify conditions as to the frequency of advice, the qualification of advisers, whether the advice has to be paid, etc.**

FAS: confidentiality of the advice (Art.15 R.1782/2003)

„…. Member States shall ensure that private bodies and designated authorities referred to in Article 13 do not disclose personal or individual information and data they obtain in their advisory activity to persons other than the farmer managing the holding concerned, except any irregularity or infringement found during their activity which is covered by an obligation laid down in Community or national law to inform a public authority, in particular in case of criminal offences.“

FAS: Perspective (Art.16 of R.1782/2003)

- *„By 31 December 2010 at the latest, the Commission shall submit a report on the application of the farm advisory system, accompanied, if necessary, by appropriate proposals with a view of rendering it compulsory.“*
- **In 2010, the Council will decide on the basis of a report of the Commission, whether the FAS will be made mandatory**

Support for FAS under the 2nd pillar

The FAS can be funded in two ways under Axis 1 (Improving the competitiveness of the agricultural and forestry sector) of Rural Development Programmes in the period 2007-2013: under Subsection 1 „Measures for promoting knowledge and improving human potential“

- **Financing the use of farm advisory services by farmers**
- **Financing the setting up of farm advisory services by MSs**

(1) Cofinancing of the use of fas by farmers
(Art.24 of R. 1698/2005)

*"As a **minimum** these advisory services to farmers must cover:*

*(a) the **SMRs and the GAECs***
provided for in Art. 4 and 5 of and in Annexes III and IV to R. (EC) No 1782/2003);

*(b) **occupational safety standards***
based on Community legislation
(not included into cross-compliance).

(1) Cofinancing of the use of fas
(Art.24 of R. 1698/2005)

"….to meet costs arising from the use of advisory services for the improvement of the overall performance of their holding"

- Limited to 80 % of the eligible cost per advisory service
- Maximum support amount is € 1500

(2) Cofinancing of the setting up of farm management, farm relief and farm advisory services
(Art.25 of R. 1698/2005)

- To cover costs arising from the setting up of these services
- Support must be degressive over a maximum period of 5 years from setting up (= phased out at the latest in year 6)

Implementing rules for support of fas in the new period 2007-2013
(1) Cofinancing of the use of fas

Art. 15 of the general application regulation R.1974/2006

- *"The authorities and bodies selected to provide advisory services to farmers shall avail of appropriate resources in the form of qualified staff, administrative and technical facilities and advisory experience and reliability with respect to the requirements, conditions and standards referred to in points (a) and (b) of the second subparagraph of Article 24(1) of Regulation (EC) No 1698/2005."*

- Le règlement développement rural permet le financement de la mise en place du SCA
- Rural development programming also foresees vocational training and information actions
- A coherent RD programme between measures for the use and for the setting up of farm advisory services and training programmes is very important!
- Coherence between RD programme and national cross compliance information actions under first pillar (Art. 3(2) of R.1782/2003) necessary

Support for FAS under the 2nd pillar in the programming period 2007-2013

- The scope of support for fas in rural development has been extended to an overall performance, going beyond the minimum requirements to cover cross-compliance and occupational safety standards.

Support for FAS under the 2nd pillar in the programming period 2007-2013

- Measure fiches provide guidelines for the use of fas:
  - general purpose,
  - possibility of prioritising certain target groups
  - conditions to grant aid,
  - the use of public or non-public advising bodies,
  - the determination of availability of appropriate resources (staff qualification, administrative and technical facilities, advisory experience and reliability),
  - and the selection and supervision of the bodies .

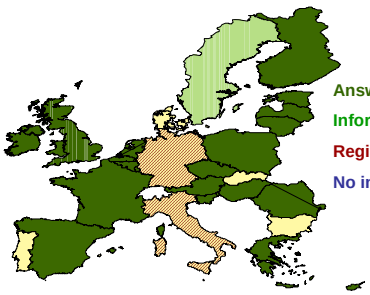
The JRC questionnaire - June 2007

Areas of interest:

Organisation of FAS
FAS operating bodies
Targeted farmers' population & communication
Funding
Way of providing advice to farmers 2007
Farm Advisory Tools
Criteria for advisers 2007
Performance and evidence of FAS implementation 2007
Quality control
Concerns 2007

http://agrifish.jrc.it/conferences.htm

Monitoring FAS implementation



Answer received:	23
Information not updated:	1
Regional competences:	2
No information:	5

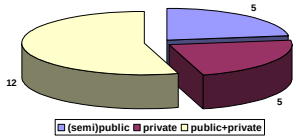
Organisation of FAS

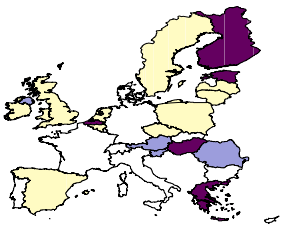
Coordination	Mostly Ministry of Agriculture, 2 Chambers of Agriculture (EE, LU)
Certification of advisory bodies	Not in all MSs Mostly Ministry of Agriculture EL: Geotechnical Chamber LT: MA + Training Centre ES, FR: regional level
Control	Mostly Ministry of Agriculture, *but also* Advisory Centres (PL, CZ, HU) Economic Chamber (EE) Paying Agency (RO) ES, FR: regional level

FAS operating bodies

Public authorities (MoA, agencies and services of Ministry),
Chambers of agriculture
Advisory Centres
Research and training centres
Private deliverers
Individual advisors (CZ, FI)
Paying Agency (RO)

FAS operating bodies





Often 1 designated authority + many private bodies
National and regional level
Currently only (semi) public in AT, CY, SI, RO, UK-NI
Accredited procedure not completed yet (FR, LU, PL, BE-WA, HU, LV)

FAS operating bodies

Public advisors vs private advisors: some concerns

How can private and public advisors coexist?
If only public advice is free for farmers (or subsidised): not equal market conditions

What kind of advice do public and private advisors deliver?
Developing two types of advisor: CC and technical/economic

Targeted farmers' population

Mainly 15.000 Euro/y + other priorities
No priorities in 6 MS (BE-FL, BE-WA, CY, FR, PL, UK-SC)
RO and UK-WA put the threshold down to 10.000 euros
AT defined different priorities
UK-EN defines priorities every year

Priorities: Environmentally sensitive areas (AT, EE, ES, EL, SI)
Young farmers (EE, ES, LT)
High stocking density (AT, SI)
Agri-environmental support (EE, ES)
Natura 2000 support (EE)
Large farms (RO, SI)
Women farmers (ES)
Quality production systems (ES)
New entrants (UK-WA)

Way of providing advice to farmers

What can be considered as a real advice?
… it depends on Ways of advising/Tools

SMRs/GAECs can be

self-explanatory (e.g. burning stubbles)

requiring additional information (e.g. slope, protected species)

requiring complex decisions by the farmer/advisor (e.g., storage facilities, nutrients balance)

Way of providing advice to farmers

- **One-to-one on farm**
- One-to-one off farm (i.e. **phone** helpline, **helpdesk** for individual questions via website, **consultation**/"sitting days" of advisors in each region)
- **Small group advice on farm**
- Vocational training
- Workshops/meetings off farm
- Self-check from manuals
- Internet based (3 types: **general** info, interactive tailored to specific **farm** types, **tailored to specific individual questions from the farmer**)
- Publication based (paper copies)
- Others

Way of providing advice to farmers

Holdings expected yearly for each way of delivery

MS (holdings subsidied)	CZ 21.000	EE 18.000	FI 68.000	HU 200.000	LT 210.000	PL 1.480.000	SI 80.000	UK-EN 110.000	UK-NI 40.000	UK-SC 21.000	UK-WA 18.000
One-to-one at the farm	1.500	500	3.000	12.000	2.000	70.000	7.400	10.000		11.400 (off farm incl.)	300
Helpdesk for ind. quest. via website	4.000	2.000		5.000	5.000	10.000		500		5.000 (phone)	X
One-to-one off farm (general)		500		7.000			10.000				
Small group advice on farm	2.000	1.000			4.000	10.000		10.000	300	2.000	1.152 (off farm included)
Vocational training				10.000	5.000						
Workshop/meeting off farm	8.000	5.000				25.000	1.000		4.500	1.000	1.152 (on farm included)
Self-check from manuals			70.000		2.000						
Internet based (general info)			15.000						X		
Internet based (tailored to farm types)	60.000	50.000			20.000			110.000			18.000
Int.based (individual quest.)						50.000					
Publication based	300.000	20.000	70.000	200.000	250.000	500.000	65.000	110.000	40.000	10.000	18.000

Way of providing advice to farmers

One-to-one on farm

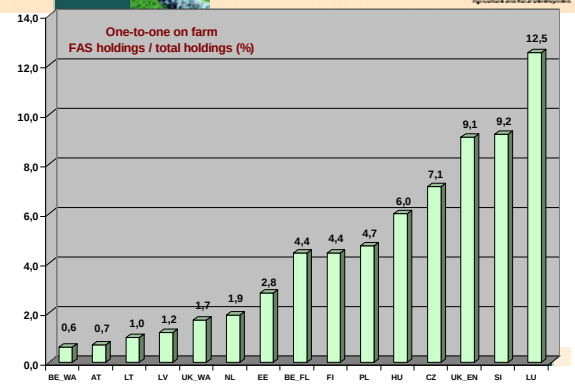
In all MSs (except UK-NI)

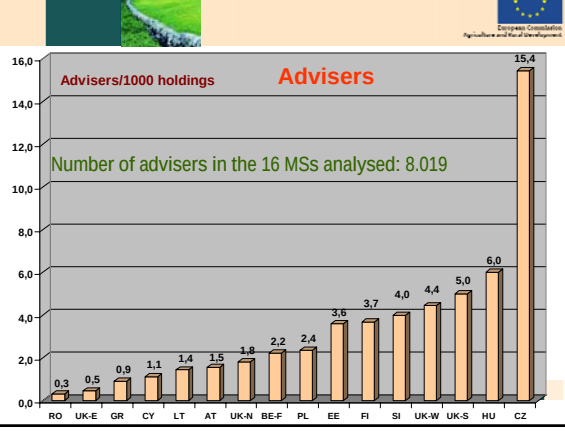
It covers all SMRs and GAECs

Free for farmers in AT, CY, RO, SI, UK-EN, UK-SC

Totally paid by farmers in FR and IE

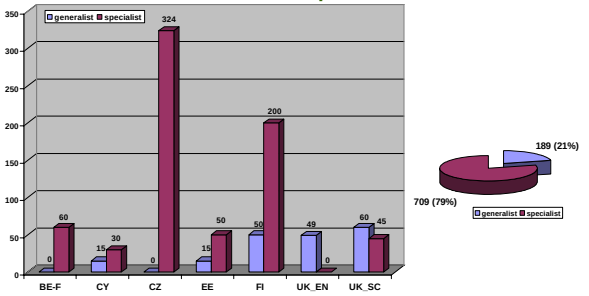
It is generally co-funded via the RDP

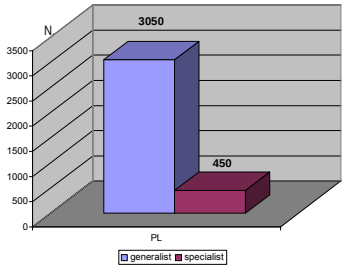




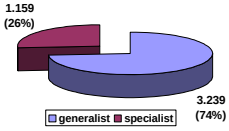
Advisers

Generalist vs. Specialist





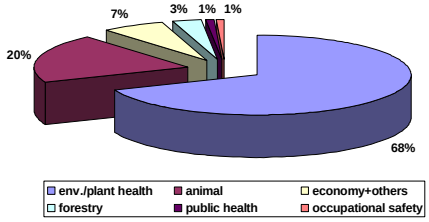
Total with Poland



Poland

Advisers

Specialist advisers by field of activity



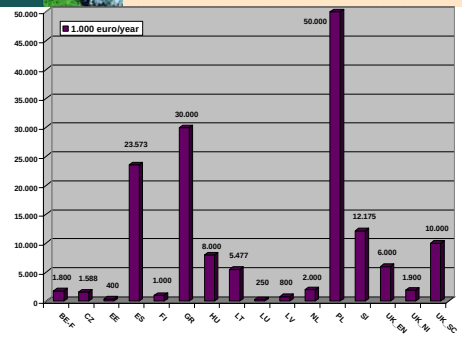
FAS funding

1. Use of FAS

Almost all MSs (21/23) fund the use of FAS (all but FR and IE)

7 MS will use only national funds (AT, BE-W, FI, SI, UK-EN, UK-SC, UK-NI)

Funding the use of FAS



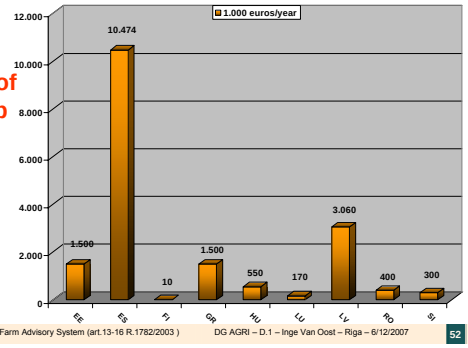
FAS funding

2. Setting up of FAS

Only 12/23 MSs fund the setting up of FAS

4 MS will use only national funds (AT, BE-W, LU, NL)

Funding of setting up of FAS



Concerns of FAS implementation

Lack of advisers (9/19): e.g. difficulty in recruiting suitably-qualified advisers, lack of expertise of advisory service in CC, lack of advisers due to money constraint

Difficulty in reaching some farms (9/19): e.g. small farms, poultry and horticulture sectors

Lack of money (4/19): especially for one-to-one delivery

Farmers awareness (3/19)

Other concerns: coordination among different advisory bodies, poor IT infrastructure on farm

Inge Van Oost
EC - DG Agriculture and Rural Development
Unit AGRI - D1 - Soutien direct

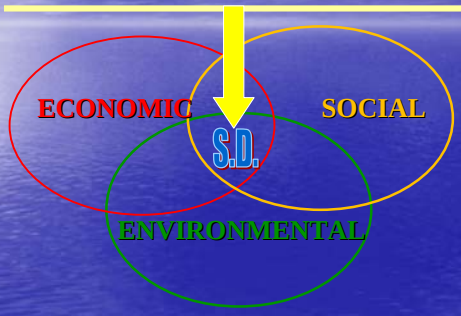
Envirovet Baltic

The role of higher agricultural education and research to enhance agri-environmental advisory services

Agri-environmental extension services around the Baltic Sea, Riga, Latvia, 6 – 7 Dec. 2007

Christine Jakobsson
Director
Baltic University Programme
Uppsala University

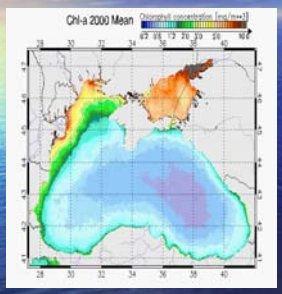
SUSTAINABLE DEVELOPMENT



The Baltic Sea & eutrophication

- N or P?
- Coastal areas
- Nitrogen fixation in the sea
- P in organic material e.g. manure, plant material, is very reactive
- Algal blooms
- Waste water treatment plants
- Agriculture

Algal bloom



Goals for sustainable agriculture

Agriculture contributes significantly to the society of the future. Sustainable agriculture is the production of high quality food and other agricultural products / services in the long run with consideration taken to economy and social structure, in such a way that the resource base of non-renewable and renewable resources is maintained. Important sub-goals are:

1. *the farmers income should be sufficient to provide a fair standard of living in the agricultural community*
2. *the farmers should practise production methods which do not threaten human or animal health or degrade the environment including biodiversity and at the same time minimise the environmental responsibilities that future generations must assume*
3. *non-renewable resources have to gradually be replaced by renewable resources and that recirculation of non-renewable resources is maximised*
4. *sustainable agriculture will meet societies needs of food and recreation and preserve the landscape, cultural values and the historical heritage of rural areas and contribute to create stable well developed and secure rural communities*
5. *the ethical aspects of agricultural production are secured*

Baltic 21 - An Agenda 21 for the Baltic Sea Region

The Baltic 21 Agriculture Sector priority actions:

• Education and training

- Create demonstration watersheds with demonstration farms in a network in the different countries (part of joint action 3)
- Develop a "Virtual Research Institute" for sustainable agriculture based on the already existing NOVABOVA in the Baltic Sea Region.
- Elaborate and implement agro-environmental legislation and policies

Envirovet Baltic

New Course Package II

Ecosystem Health & Sustainable Agriculture

- **New course package on SD & agriculture & ecosystem health** for university level
- Developed in cooperation with ***BUP*** & the ***Envirovet Baltic*** network
- Countries: **Belarus, Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Kaliningrad & St. Petersburg in Russia, Slovakia, Sweden, Ukraine & the USA**
- **Part of HELCOM and GEF's Baltic Sea Regional Project in NW Russia (Sida financed)**
- **Baltic 21 Lighthouse project**
- **4 seminars in St. Petersburg in 2007-2008**
- **4 seminars in Kaliningrad in 2007-2008**
- **1 seminar in Tartu, 1 in Kaunas, 1 in Jelgava, 1 in Rogow**

Unique cooperation

- Agronomists,
- Veterinaries,
- Animal scientists,
- Nature geographers,
- Biologists,
- Wildlife biologists,
- Chemists
- Economists
- Rural development specialists
- Public health professionals etc.
- Gender specialist and social experts
- New concept on sustainable agriculture & its part in the rural ecosystem;
- sustainable agriculture covered from the different aspects represented by the above mentioned professions;
- substantial knowledge on land use & rural development, ecosystem health & the interactions between the wild & the domestic population, poverty alleviation, legislation, control measures.

Non-sustainable issues of present day agriculture

Production

- Contaminants and residues in food
- Unfavourable market conditions for agricultural production
- Excessive livestock density
- Changing climate, temperatures, water availability, storms

Natural resources

- Dependence on fossil energy
- Low efficiency of energy use in agricultural production
- Dependence on non-renewable phosphorus deposits
- Lack of water and of high water quality
- Nutrient losses (N and P) to the environment
- Decrease in soil fertility (acidification, carbon content, nutrient status, structure, compaction, salinisation)
- Erosion
- Pesticide residues in soil, water and non-target organisms
- Accumulation of heavy metals and nuclides
- Soil contamination with persistent organic and inorganic substances
- Loss of biodiversity and genetic resources
- Air pollution (NH_3, CH_4, N_2O, pesticides)

Non-sustainable issues of present day agriculture

Human and animal welfare

- Occupational threats to farmers & consumers health
- Dependence on growth promoters & antibiotics in animal production
- Unfavourable animal welfare & threats to animal health
- Diseases that can spread from animals to humans e g BSE, avian influenza

Socio-economic criteria

- Unfavourable economical profitability of farming
- Lack of food security & food production security
- Unfavourable social infra-structure in rural areas
- Lack of preservation of nature & historical values
- Urbanisation

Competence- Education

- Lack of education, information & management skill

Ecosystem Health & Sustainable Agriculture

Modules

2. Rural development and land use

3. Sustainable agriculture

4. Ecology and animal health

3 books for university teaching

Module 2. Rural Development & Land Use

A. The rural landscape
B. The Rural society
C. Human perspectives on values of the landscape
D. Planning, management and assessment
E. Policy instruments and governance

Module 3.
Sustainable Agriculture

A. Definition of sustainable & unsustainable issues in agriculture
B. Reduce the nutrient losses from agriculture
C. Reduce the risks connected with the use of plant protection products
D. Protection of ground & surface water for drinking water purposes in agricultural areas
E. Improve efficiency of energy & transports
F. Improve efficiency of raw materials usage for high quality agricultural productivity
G. Combating soil degradation

Module 3.
Sustainable Agriculture cont…

H. Production of high quality products & balanced feeding
I. Animal welfare
J. Occupational health
K. Maintain & promote biodiversity
L. Promote balanced land use & improve landscape diversity
M. Recycling of nutrients in bio-solids(sewage sludge, compost, organic materials) human urine, by-products from industries;
N. Counteract climate effects

Module 4.
Ecology and Animal Health

A. Stewardship of biodiversity
   A.1. Terrestrial
   A.2. Aquatic
B. Monitoring for diseases in wildlife populations
C. Preventing transmission of infectious diseases among wildlife, domestic animal, and human populations
D. Prevention & reduction of impacts of chemical contaminants on ecosystems
E. Food Safety

Module 4.
Ecology and Animal Health ….

F. Differences in North American, EU and Russian Perspectives
G. Impact of Climate Change on Wildlife, Domestic Animal, Human, and Ecosystem Health: Preparing for global warming

Course material

Three books

One version for both regions (BSR & GLR)

As food is a global issue today, we should learn from the each other. The same principals govern ecosystem health and sustainable agriculture both in Europe & North America.

Interaction

- ***Between different groups of advisors, different countries, seminars***
- Between different study groups using internet telephone communication, internet for pictures & internet video telephone.
- Between student groups in the GLR & the BSR
- Distance learning
- EHSA homepage – updating, additional reading, quizzes, teachers help

Discussion on course material

Films, DVD

10 educational films of a length of 5 - 15 minutes

Suitable topics

- extreme cases
- good examples
- landscape fragmentation,
- soil erosion,
- zoonatic diseases,
- coastal zone destruction,
- deforestation,
- flooding,
- good agricultural practice,
- how to use manure properly,
- happy animals,
- wildlife, beavers and wolves.
- cases from both the Baltic Sea Region and the USA e.g. M74; early mortality syndrome on salmon, masculinisation.

EHSA Activities

- ***Stakeholders LFA planning Meeting**, 10-12 Sept. 2005, Kaunas, Lithuania*
- *Identifying local coordinators 2006*
- ***Kick-Off Meeting**, 27-29 Nov. 2006,Tallinn, Estonia*
- ***Homepage** started in December 2006*
- ***Newsletter** start in Spring 2007*
- ***Editors meetings** Oct 2007 modules 2,3; April -08 module 4*
- ***Authors meeting**, 25-26 June 2008, Klaipeda, Lithuania*
- ***Planning meeting with Russian coordinators** 14-16 Nov 2007*
- ***Seminar /training course** (1st of 12) 13-14 Dec. 2007 & the rest during 2008*
- ***Film production** in 2008 (if financing is secured)*
- ***Editing conference** in Autumn 2008*
- *Layout &printing of books Autumn/Winter 2008/2009*
- ***Teachers conferences** in 2009*

Local Coordinators

Kaliningrad: Nikolay Belov, Elena Ashurkina, Immanuel Kant Russian State University

St. Petersburg: Nikolay Poliansky, Eleena Korneva, Marina Efremova, St. Petersburg State Agrarian University & Alexandra Izosimova, Academy of Management and Agribusiness of Non-Chernozem Zone of Russian Federation

Estonia: Arvo Ital, Tallinn Technical University, Institute of Environmental Engineering

Latvia: Maira Dzelzkaleja, Head of bureau, Farmers' Parliament in cooperation with Viesturs Jansons, Latvia University of Agriculture

Lithuania: Angelia Buciene, Kleipeda University

Poland: Jozef Moseij, Warsaw Agricultural University

Planning of seminars December 2007 & Spring 2008

- Module 2
  - St. Petersburg, 11-13 February 2008
  - Kaliningrad, 14-16 February 2008
  - Kaunas, 18-20 February
- Module 3
  - St. Petersburg, 13-15 December (Week 50)
  - Kaliningrad, 14-16 January 2008 (Week 3)
  - Tartu, 6-8 February 2008 (Week 6)
- Module 4
  - Week 10 and 15, St. Petersburg, Kaliningrad, Jelgava

EHSA & agri-environmental advisory service

- Substantial holistic knowledge on ecosystem health & sustainable agriculture based on research & experience. Written by well-known experts within the BSR & the Great Lakes region.
- Suitable for continuing education for advisors
- University education to provide advisors with a solid background
- Large multiplying effect after the project ends, as the educational package will be offered to all universities & interested parties within the BSR & GLR
- Good platform for future cooperation & research

Agri-Environmental Advisory Services in Latvia

Kaspars Zurins, board member of Latvian Rural Advisory and Training centre
6-7 December 2007, Riga

Agri-Environmental Extension services

- Farmers associations;
- Advisory organisations;
- Vocational schools;
- University of agriculture;
- Research institutes.

Latvian Rural Advisory and Training Centre

Main objective:

- Promote rural development by increasing the professional and economic knowledge of rural entrepreneurs;
- Ensure organisation of consulting and training in all districts of Latvia;
- Increase the competitiveness of rural population in the European Union

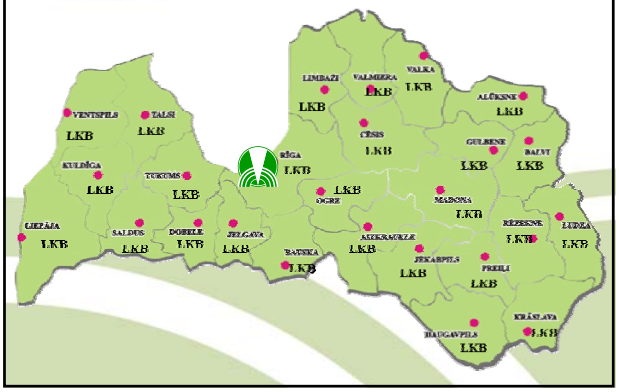
What is LRATC?

- Company Latvian Rural Advisory and Training Centre (LRATC) was established in 1 February 1991.
- 1% of share capital is owned by the Farmers' Federation of Latvia
- 99% of share capital is owned by the State

Work directions

- Accounting and Finance
- Crop farming
- Cattle-breeding
- Economics
- Continuous education
- Information
- Project and Development Unit
- Deputy Director – Rural Development

RAOs in districts



Cattle-breading

- Farm demonstration programme
- Elaboration of feeding plans
- Cutting service
- Silage competition
- Diagnostic of milking equipment
- Designing and reconstruction of agricultural buildings

Crop farming

- Consulting on crop farming, gardening and organic farming;
- Visiting of the fields of farms and giving of recommendations on crop management, etc.;
- Organising of seminars dedicated to crop farming, gardening and organic farming;
- Organising of demonstration programme;

Planning of field fertilization

- Planning of field fertilization;
- Planning of plant protection;
- Establishment of field history;
- Preparation of crop change;
- N and P balance calculations

Topics of training programmes

- Plant farming;
- Livestock farming;
- Manufacturing of agricultural produce in especially protected areas;
- Basics of agriculture;
- Demands of good agricultural practice and its implementation (Nitrate directives);
- Plant protection;
- Methods of biological agriculture;
- Organization of livestock supervision;
- Planning of company management;

Implemented projects for improvement of environmental management

- ***"The Baltic See Regional Project/BSRP"***

Objective – strengthen the technical capacity of local and regional institutions concerning the management of marine resources and ensure the sustainability of the ecosystem of the Baltic Sea.

- **INTERREG IIIC project** *"Hansa Network for Water Framework Directive"*

Objective – foster introduction of the EU Water Framework Directive in the agriculture of Latvia in connection with international results and the exchange of experience.

- **INTERREG IIIC project** *"Hansa Network for Water Framework Directive"*

Objective – foster introduction of the EU Water Framework Directive in the agriculture of Latvia in connection with international results and the exchange of experience

National projects

ELVGF

- Project "Development of Farm advisory system"

Objective – promote the development of rural areas and the agricultural activities, further restructuring of agricultural sector and its competitiveness as well as environmental protection.

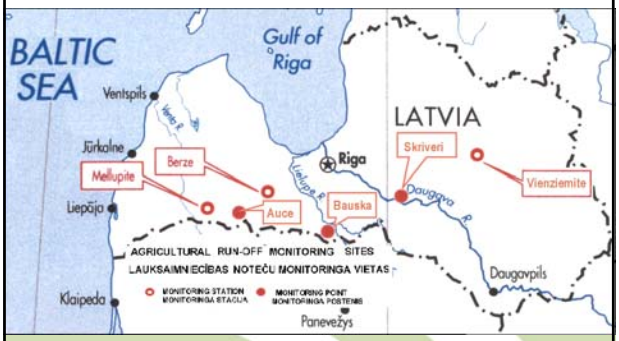
Project was developed in accordance with the EU legislation in order to help farmers to introduce the management requirements set forth in Regulation (EC) 1782/2003 and the good agricultural and environmental conditions regarding the environmental protection, hygiene and animal welfare

Monitoring system

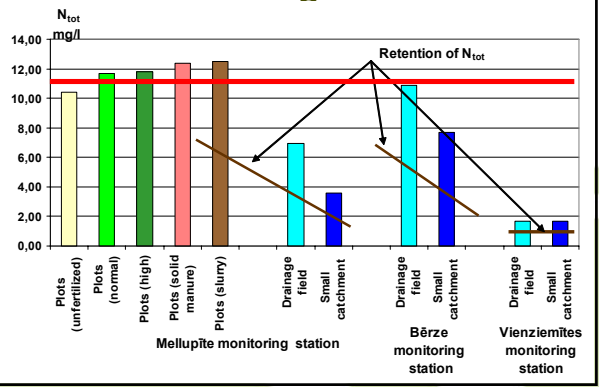
Monitoring of agriculture runoff in the plot scale, draynage field scale and small catchments scale was implemented

- 1994- 2006 in tree monitoring stations by Latvia University of Agriculture as part of National water monitoring programme
- from 2007 financing of agriculture monitoring by Latvian Environment Geology and Meteorology agency has been cancelled

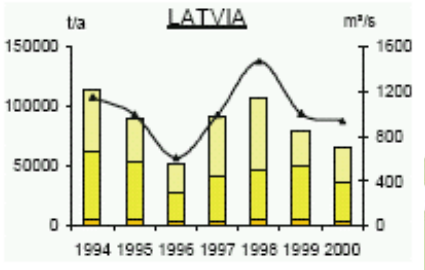
Monitoring system



Monitoring results

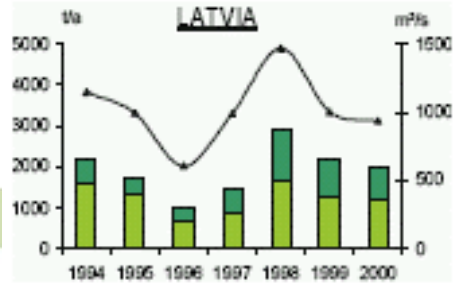


N load to Baltic Sea



Data: Finnish Environment Institute SYKE

P load to Baltic Sea



Data: Finnish Environment Institute SYKE

Needs and improvements

- Implementation of Cross-compliance support programme for farmers;
- Continuing education for advisors;
- EU supported training programmes for farmers;
- Continuing of Demonstration programme;
- Continuing of Agriculture Monitoring programme.

Agri-environmental extension service in Sweden

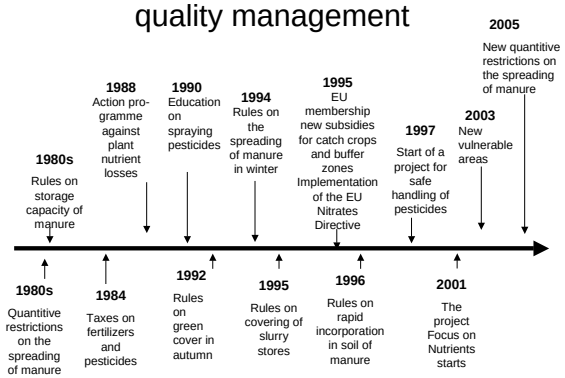
Stina Olofsson, Swedish Board of Agriculture and
Markus Hoffmann, Federation of Swedish Farmers
2007-12-06

greppa näringen

An action programme for reducing plant nutrient losses was drawn up at the end of the 1980s

- The measures in the programme are implemented through:
  - Legislation
  - Economic incentives -taxes and subsidies
  - Extension service and information
  - Research and development

Time axis for Swedish agricultural water quality management



List of results for less eutrophication from Swedish agriculture

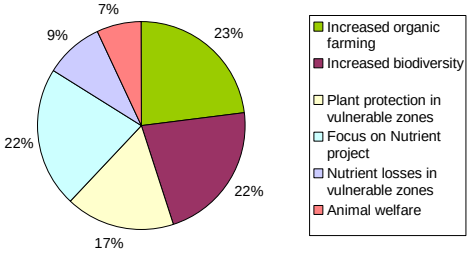
	Results	**Results**	**Source**
Nitrogen leaching	- 20 000 tons from 1985 to 1995 (root zon)	- 5 000 tons from 1995 to 2005	*Swedish EPA*
Phosphorus losses		- 9% from 1995 to 2005	*Swedish EPA*
Ammonia emissions		- 18% from 1995 to 2003	*Statistics Sweden*

greppa näringen

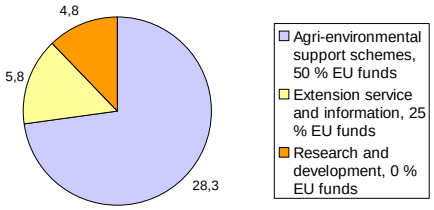
Nitrate vulnerable zones in Sweden according to the EU Nitrates Directive

greppa näringen

Agri-environmental extension service and information financed by society in year 2006, 18 million Euro



Costs of the action programme for reduced nutrient losses from agriculture in year 2006, million Euro



Objectives for the Swedish work on nutrient losses from agriculture

*National environmental quality objectives
*EU directives (The Nitrates Directive, IPPC-Directive; National Ceilings Directive)
*CLRTAP
*The Helsinki Convention and OSPAR Convention

Objectives for ammonia losses from agriculture

- By 2010 emission on ammonia in Sweden will have been reduced by at least 15 % compared with 1995 levels.
- The target in the action programme is to reduce emissions from agriculture by 7,300 tons from 1995 to 2010

Objectives for nitrogen leaching from agriculture

- By 2010 Swedish waterborne anthropogenic emissions of nitrogen compounds into sea areas south of Åland Sea will have been reduced by at least 30 % compared with 1995 level.
- The target set for agriculture within the action programme, is a reduction of the root zone leaching of nitrogen by 7,500 tons from 1995 to 2010.

Objectives for phosphorus losses from agriculture

- By 2010 Swedish waterborne anthropogenic emissions of phosphorus compounds into lakes, streams and coastal waters will have decreased by at least 20 % from 1995 levels. The largest reductions will be achieved in the most sensitive areas.
- Since the models for calculating phosphorus losses have not been well developed it is hard to estimate what effect the measures in agriculture has.

In 5 years 25 000 farm visits have been carried out in the project Focus on Nutrients

Advisors are plant- and soil specialist from the ordinary extension service organisations like the Rural Economy and Agricultural Society

In 5 years 25 000 farm visits have been carried out in the project Focus on Nutrients

Advisors are animal feeding and housing specialist from the ordinary extensions service organisations

The Focus on Nutrients project is characterized by

*The average farm covers 115 hectares of arable land
*Voluntary participation
*Repeated farm visits by advisors
*Farm-specific measures are identified
*Follow-up on each farm

The project Focus on Nutrient

- Has reached 5 800 farmers with repeated visits and 1000 farmers with advices on constructing wetlands
- Farmers on farms with at least 25 animal units or 50 hectares of arable land are in the target group
- Around 230 advisors are yearly involved in the extension services with approx. 25 visits each/year
- Repeated visits have been carried out on farms that represent more than 25 % of the Swedish arable land, in the county Scania in the most southern part, as much as 65 % of the arable land.

Make the farmers proud of their environmental progress – invite media to farms!

Agri-Environmental Extension Services – Situation in Lithuania

Rimtautas Petraitis,
Lithuanian Agricultural Advisory Service,
6-7 December 2007, Riga

Current Situation in Agriculture

- About 1/3 of Lithuania's population live in rural areas;
- About 14 % of population are employed in agriculture;
- About 270 thou. of agricultural holdings, 4/5 farm size is less than 10 ha;

Facts About Agriculture (1)

- About 198 thou. applications for direct payments were obtained, ~2.5 mill. ha declared;
- About 100 thou. applications for farming in unfavourable areas;
- About 3000 applications for participation in Natura 2000 and Lanscape management measures;
- About 2340 organic farms (102 thou. ha, average farm 41 ha).

Facts About agriculture (2)

- Number of cattle – 859 thou. (-4.6 % compared with 2006);
- Number of dairy cows – 421 thou. (-4.0 %);
- 142 thou. cow holders; average dairy farm size – 2.95 cows
- Number of pigs – about 1 mill./year

Agri-Environmental Extension Services (1)

System before 2004:

- Lithuanian Agricultural Advisory Service,
- Lithuanian Chamber of Agriculture,
- Institutes, University, Vocational training schools.

2004-2006:

- 44 advisory institutions were accredited by the MoA to provide advisory services;
  - 15 public institutions,
  - 7 research and educational institutions,
  - 5 associations,
  - 17 joint-stock companies,
  - About 200 advisers in total.

Agri-Environmental Extension Services (2)

During 2007 – 2013, accreditation will be needed for:

Measure of Rural Development Programme "Use of Advisory Services"

- Advisory services in meeting the statutory management requirements and good agricultural and environmental conditions that are laid down in Articles 4 and 5 and Annexes III and IV of Regulation (EC) No 1782/2003 as well as in meeting the Community's occupational safety standards, based on the Community's legislation;
- Advisory services on agri-environmental issues for farmers who intend to participate in agri-environmental measures;
- Already 17 advisory institutions accredited, in total 173 advisers (7 public inst., 5 JSC, 2 voc. training schools, 3 other).

Agri-Environmental Extension Services (3)

Services and Other Activities:

1. Training and informational activities, "face to face" consultations (legislation, practical issues);
2. Technological services:
   - Planning activities: fertilization, crop protection plans, soil sampling, nutrient balance, etc.
   - Farm evaluation: manure, pesticide, fertilizer storages, animal welfare, etc.
   - Design services: design of manure storages, documentation for construction, environmental substantiation, etc.
3. Economical services:
   - Preparation and filling in of applications for state and EU support;
   - Business plans for agro-environmental investments;
   - Project implementation and supervision.
4. Advices for implementation of the Cross-Compliance requirements on farmers' farms. Challenge!

Costs of Services

- Information activities – 100 % subsidized by the MoA, EU funds. Commercial training courses available.
- Technological services – partly subsidized (80 % by the MoA). Non subsidized price – approx. 30 EUR/hour.
- Design, economical services – not subsidized. Commercial price (hourly rate, etc.).
- Cross compliance advices – 80 % EU subsidy, max. 29 EUR/hour (max. 1500 EUR per 2007-2013).

LITHUANIAN AGRICULTURAL ADVISORY SERVICE

Lithuanian Agricultural Advisory Service *FOUNDERS:*

- ⇨ Lithuanian Ministry of Agriculture
- ⇨ Lithuanian Farmers' Union
- ⇨ Lithuanian Association of Agricultural Companies

Prioritized Activity Tasks

- Consulting and information for farmers on the issues of Rural Development Policies.
- Assistance to farmers to achieve EU production standards consulting on updating of technological processes with the emphasis on all issues related with environment, food safety, animal welfare, employee safety and health and suitable condition of land.
- Provision of individual services for those about to participate in rural development programmes (farm evaluation, filling in applications, preparation and supervision of investment plans for farm development;

Activities of Lithuanian Agricultural Advisory Service

Educational Activities

Courses, seminars, training sessions
Field days, demonstrational trials
Work with farmer groups
Publications (magazine „Mano ūkis", internet news „Žinios"), leaflets, distribution of information in press

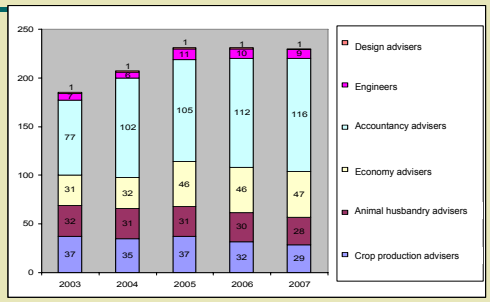
Technological services

Taking samples of soil and feed
Supervision over quality of soil tillage, sowing and other operations
Assessment of crop phytosanitary condition and recommendations
Management of pasture renovation, seeding and grazing
Preparation of cattle feeding, reproduction and wintering plans
Adjustment of agricultural machinery
Preparation of production buildings reconstruction plans and designs
Preparation of safety at work instructions

Economy services

Keeping of books and accounting (double entry)
Filling in VAT declarations
Analysis of farm activities
Preparation of business plans and applications to obtain EU and national support
FADN activity

Number of Advisers



Nutrient Load to Baltic Sea, thou. t

(Source: Monitoring Data of Lithuanian Joint Research Centre)

Year	NH4-N	NO3-N	PO4-P
1990	2.51	6.99	1.40
1992	2.23	13.15	0.74
1994	3.82	15.62	0.84
1996	1.49	5.64	0.28
1998	2.70	18.75	0.56
2000	5.14	12.96	0.28
2002	7.93	17.82	0.51

Pollution of Surface Waters

- The average concentration of the total nitrogen exceeded the maximum allowable concentration in 52 % of monitored sites and rivers;
- Total phosphorus – 42 %;

Drinking Water Pollution

- About 300 000 shallow wells, about 950 000 users;
- Approx. 60 % unconformable to hygiene standards;
- In approx 37 % of the wells nitrate concentration exceeds maximum allowed levels (50 mg/l).

Advisory Activities to Reduce Pollution

- Training activities for farmers (training programmes “Manure Handling”, “Agroenvironment in Agriculture”, “Cources for Pesticide Users”, etc.)
- On-farm advices – evaluation and recommendations for manure handling, crop protection and fertilization plans, etc.
- Design of manure storages, applications and business projects for agroenvironmental investments.

Possible Needs

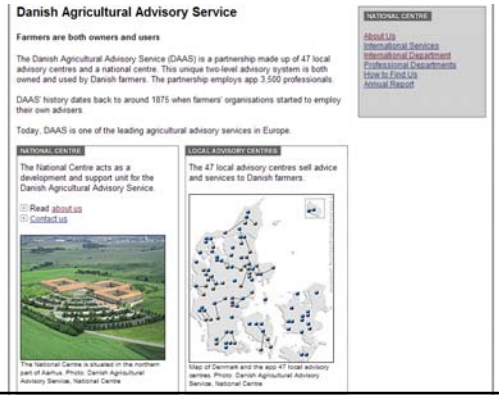
- Well trained, experienced advisers;
- Consistent support from the Government;
- Good relationship between advisers, scientists and state institutions;
- Raising the awareness;
- Demonstration of good agroenvironmental practice (local and foreign);
- Support available for farmers and advisers as well

Thanks for your attention!

Rimtautas Petraitis
Lithuanian Agricultural Advisory Service
E-mail:; rimtautas.petraitis@lzukt.lt; info@lzukt.lt
Tel. +370 347 37870, +370 610 15119

Integrated Protection of Surface and Groundwater in Agricultural Regions

Erik Jørgensen
Danish Agriculture



The Challenge

- The WFD and Natura 2000 will cover lots of land
- It is not only valleys but presumably all land
- For that reason **AGWAPLAN** became a reality

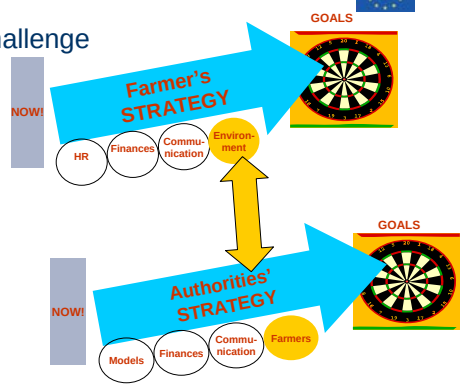
Balance between Production & Environment

Key aspects:

- The farmer's situation
- Optimal balance

Goal: to show that co-existence is a possibility!

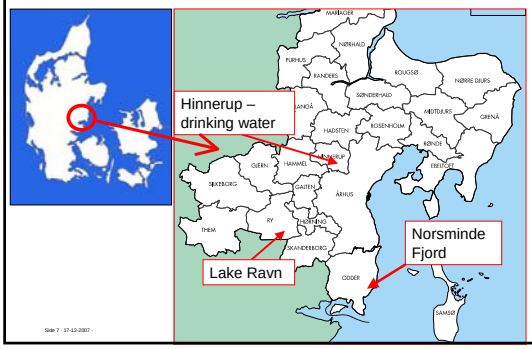
The challenge



How can we achieve good environmental status with success for society and farmers?

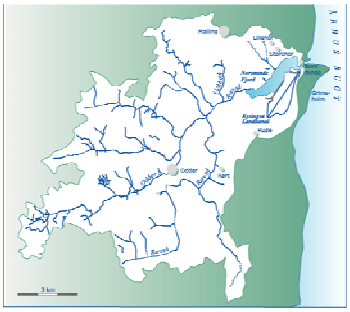
- The farmer need to understand the environmental challenge for the farm
- Involve the farmers from day 1 and through the whole process
- Use a holistic process where production, water, (nature, air and soil) are dealt with at the same time
- Co-operation creates cost effective benefits for environment

Three Pilot Areas in AGWAPLAN



Catchment of Norsminde Fjord

- Approx. 100 ha per farm
- 1.2 LU / ha
- Intensively farmed area



Background – scene of play

- 78 pct of Nitrogen from catchment originate from farming activities
- Catchment analysis in Norsminde: A need for approx. 50 % reduction in N-load in order to achieve environmental objectives
- Action Plan: Plans for farms and for catchment worked out in close cooperation: Recommendation of initiatives and tools

Integrated Advisory Concept

- Environmental management plans
  - Plans for single farms
  - Includes data on farm level
  - Builds on individual plans for production and development
- Catchment Area Plans
  - Sets up general environmental objectives and measures for the catchment area
- Combination of scopes for production and environment
  - Creates a common consensus and commitment between farmer and authorities to help implement the necessary measures

Integrated Advising

- Farmer consultation - Environmental Management Plans
  - Participants: consultant, municipal specialist, farmer
  - Draft plan is written during the meeting, including examples of measures and consequences
  - Final plan is made by consultant and commented by farmer and municipal specialist

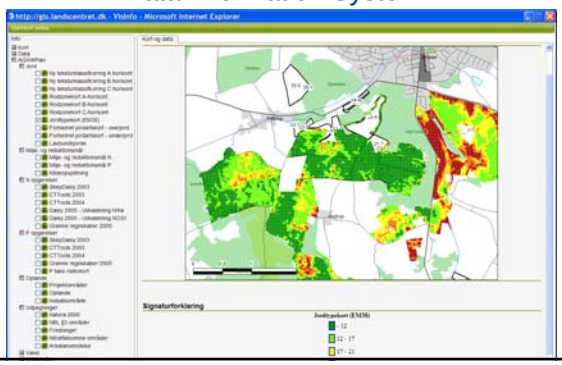
Tools and instruments

Concept for Integrated Advising on farm level and on catchment level

GAP (Good Agricultural Practice manual)

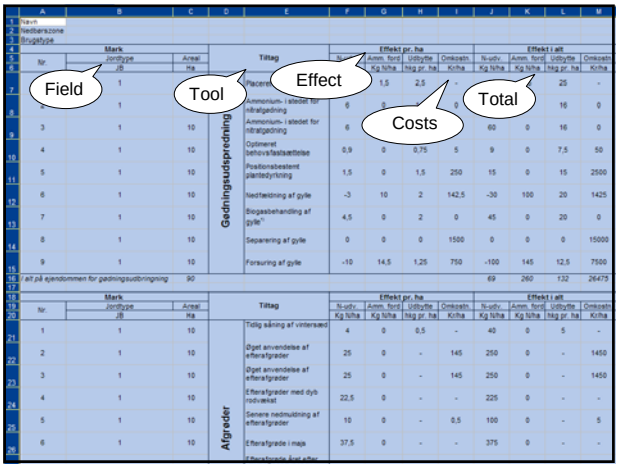
DIS (Data Information System)

Data Information System



GAP

- GAP catalogue of measures developed in co-operation between agriculture and authorities
- Examples of what the farmers can do:
  - Reduction of Nitrogen load in specific areas
  - Change in crops - catch crops
  - Non-cultivated zones
  - Wetlands
  - Technology



Proces on Catchment Level

- Catchment Area Plans
  - Environmental Management Plans are integrated
  - Implementation of measures introduced where most cost-effective
  - Calculation of economical consequences
  - Environmental protection measures are subsequently situated in areas/processes with the least impact on production

Outcome & Benefits

Experience from the AGWAPLAN project can be included in future process of WFD

- Securing or improving environmental conditions
- Cost-effective implementation of measures
- Reduce the impact on overall agricultural production
- High degree of dialog between all participants
- Personal interest and commitment by involved farmers
- Awareness and acknowledgement of efforts made by farmers

More information on www.agwaplan.dk

Agri-Environmental Advisory Services in Finland

Sari Peltonen
Senior Development Manager
ProAgria Association of Rural Advisory Centres

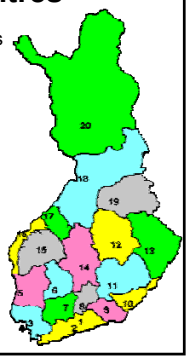
ProAgria Rural Advisory Centres

The 16 + 3 ProAgria Rural Advisory Centres in Finland offer the rural entrepreneur consulting services in

- management,
- planning,
- monitoring and
- development

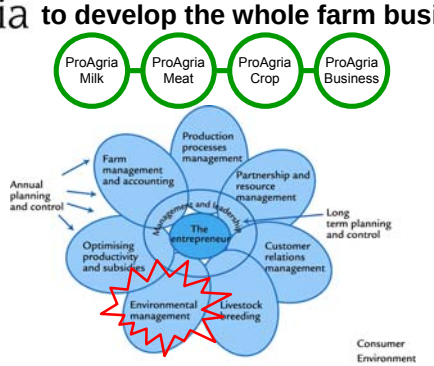
The services cover basic agricultural and new business development

ProAgria Rural Advisory Centres are the largest provider of quality and environmental training in Finland and the largest rural development organisation



Advisory services in ProAgria to develop the whole farm business

ProAgria Milk — ProAgria Meat — ProAgria Crop — ProAgria Business



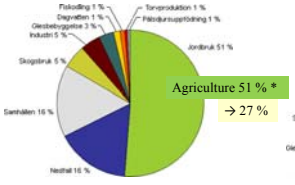
GOALS OF THE AGRI-ENVIRONMENTAL

Goals	Actions
Sustainable use of inputs (fertil. & pestic.)	Cultivation planning Training days for farmers
Decline of nutrient runoff	N and P balance calculations Management of manure
Enhancement of biodiversity and maintenance of landscape	Buffer zones and biotopes Organic farming

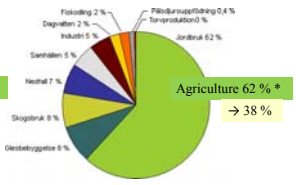
The development of farm activities based on planning and follow-up of results

THE N AND P LEAKAGES IN FINLAND, share of agriculture

Nitrogen



Phosphorus



*OBS! Natural leaching is not included in calculations

Source: Finnish Environment Institute

AGRI-ENVIRONMENTAL MEASURES IN FINLAND RELATED TO EU-REGULATION

1. Cultivation planning and soil analyses
2. Fertilization limits
3. Filter strips along the field edges near water regimes
4. Maintenance of biodiversity and landscape

Voluntarily e.g.:

5. Plant coverage outside the growing season
6. Adjustment of nitrogen fertilization by soil N measurements
7. Use of nutrient balance calculation to adjust fertilization
8. Enhancement of crop rotation
9. Manure spreading during the growing season
10. Use of under-crops or catch crops

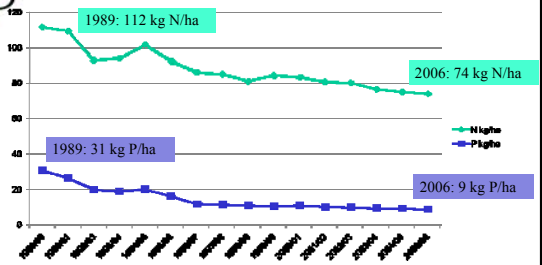
Photo: Syke

MAIN ADVISORY ACTIVITIES
CONCERNING WATER PROTECTION

1. Farm-based planning of cultivation
   - crop rotation
   - soil analyses (e.g. pH value)
   - **fertilization plan** (especially nitrogen and phosphorus)
   - effective use of animal manure
   - crop protection

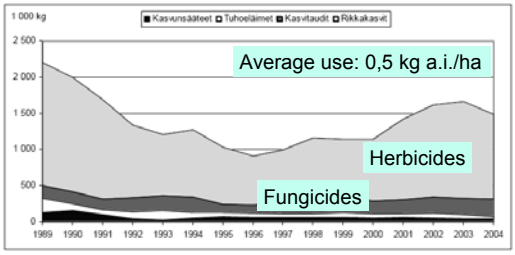
2. Calculation of the result
   - nutrient balances (input – output)
   - factors affecting (limiting) the yield and economical outcome

USE OF NUTRIENTS HAS BEEN DECLINED SIGNIFICANTLY



Source: Commercial fertilizers / Agricultural statistics

USE OF PESTICIDES ACCORDING TO THE NEED



Source: Peltoviljelyn tulevaisuuden linjaukset Suomessa. MMM työryhmämuistio 2005:15

MAIN ADVISORY ACTIVITIES
CONCERNING WATER PROTECTION

3. Soil quality test
   - to find out the problems in the soil structure and drainage systems
   - to find out reasons for yield declines
   - to prevent surface runoff of nutrients

MAIN ADVISORY ACTIVITIES
CONCERNING WATER PROTECTION

4. Plant coverage outside the growing season
   - development of tillage practices (direct seeding)
     → to prevent erosion

Advisory service to crop farms: "ProCultivation"

- **Cultivation planning service**
  - strategy planning and evaluation of crop production
  - planning the next period of growth
- **Consultation during the growing period**
  - field consultation
- **Profit analyses and evaluation**
  - analyses of production methods, repairing actions, profit analyses, evaluation of strategy
  - benchmarking tools in the web, comparison results to other farms
- **Quality management tools for continuous development**

EMPHASIS IN AGRI-ENVIRONMENTAL SERVICES IN THE FUTURE (1)

- adjustment of fertilization input based on the yield potential of the field
- general increase in the yield levels
- use of nutrient balance calculations more actively in crop planning
- more careful feeding planning in dairy farms
- adjusted use of phosphorus in dairy farms (no surface spreading to grasses)

EMPHASIS IN AGRI-ENVIRONMENTAL SERVICES IN THE FUTURE (2)

- more careful planning when using cattle manure
- developing the spreading techniques of manure (avoidance of the surface spreading)
- other management techniques of manure (separation, biogas)

EMPHASIS IN AGRI-ENVIRONMENTAL SERVICES IN THE FUTURE (3)

- avoidance of erosion and surface runoff (fertilization and tillage practices, plant coverage outside the growing season, catch- or under crops)

Calculation and follow-up of own results
→ targeted, farm-based actions

Agri-environmental extension services in Norway

Einar Strand
Project manager / Coordinator Cereals

Norwegian Inst. For Agric. And Environmental Research, BIOFORSK
The Norwegian Agricultural Extension Service, LFR

The Norwegian Agricultural Extension Service

- 69 extension groups located throughout the country
- Approx. 25 000 farmers as members
- Each group is owned and controlled by its members
- Each group has its own extension agents, enabling easy access to advice and counselling
- The main task is to provide updated advisory services to its members, based on scientific results from Bioforsk, UMB and from local field trials

What can The Agricultural Extension Service offer?

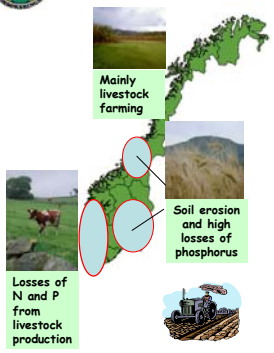
- Crop production advisory services, based on the conditions and needs of each individual farm
- Fertilizer management plans and soil sampling
- Improvement of product quality and farm economy
- Improved utilization of farm resources
- Advisory service in organic/environmentally sound agriculture
- Management and ecology of the cultural landscape
- Farm visits, professional seminars, study tours, courses, demonstrations etc.
- Crop-growing manuals, research reports, newsletters for members

Funding

• Members fee	30 %
• Service charges	22 %
• Local authority funding	6 %
• Project funding	16 %
• Field trials	5 %
• Agricultural Agreement (government)	21 %

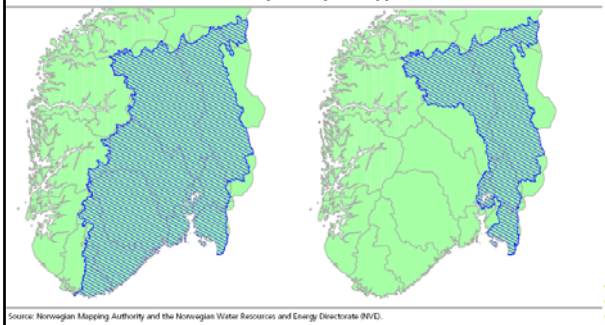
Total budget 19 000000 Euros

Differentiated challenges

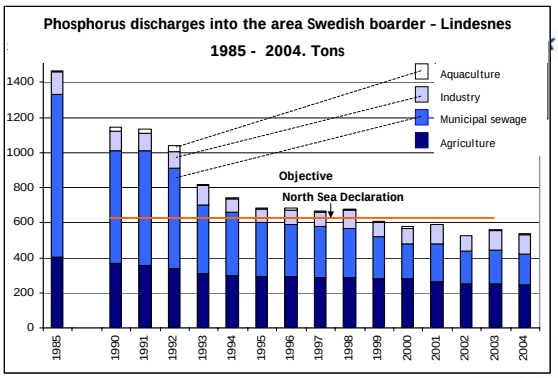


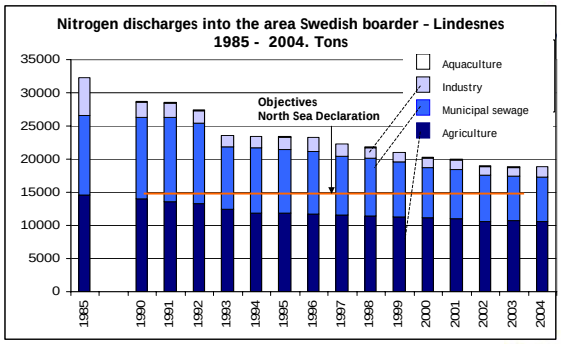
- Regionalised production structure according to natural conditions and economic incentives.
  - Livestock production in South-Western and Northern parts
  - Cereals and arable crops in south-Eastern and central parts
- Specific conservation problems linked to
  - Livestock production
  - Arable crops and soil erosion

Regions in Norway affected by the North Sea Declarations (sensitive area for phosphorus - left map) and the Nitrate Directive (sensitive areas for nitrogen - right map)



Source: Norwegian Mapping Authority and the Norwegian Water Resources and Energy Directorate (NVE).





Reductions in soil and nutrient losses from agriculture

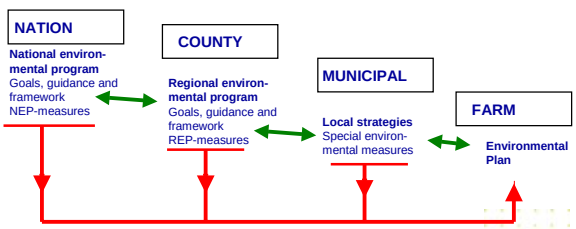
Reduction calculated by Jordforsk (BIOFORSK) for catchment which drain to the vulnerable part of the North Sea from 1985 – 2003

Erosion	40 %
Losses of phosphorus	39 %
Losses of nitrogen	27 %

Important components of the conservation strategy i Norway

- Co-operation between Norwegian Agricultural Authority, County governors office, Norwegian Institute for Agricultural and Environmental Research and Norwegian Agricultural Extension Service
- Targeted research activities for policy support and for the implementation of cost-efficient measures
- An integrated package of economic, legislative and regulatory instruments
- Targeted information campaigns and individual support through the extension services

Strategy in agri-environmental policy in Norway



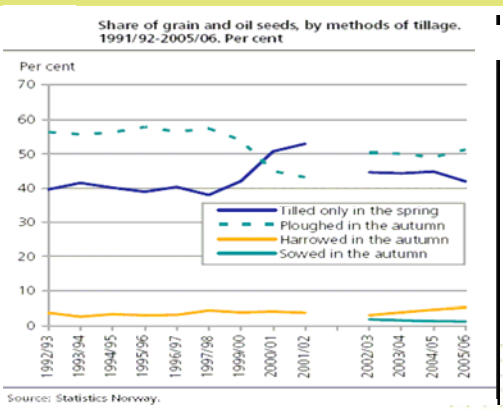
Erosion control measures supported by economic instruments

County

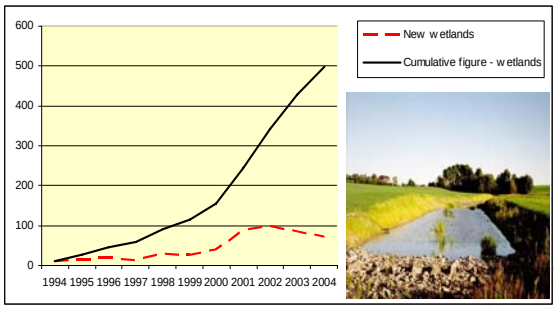
- Conservation tillage
- Catch crops
- Buffer strips
- Grassed waterways
- Vegetation zones
  - Permanent zones with plantings
  - Grassed waterways and grassed bufferstrips

Municipal

- Hydrotechnical measures
- Constructed wetlands
  - Sedimentation ponds with biological filters



Number of new constructed wetlands created in Norwegian agriculture 1994 - 2004



Environmental plan on all farms

- Environmental plan (EP) The EP is a holistic approach to the environmental challenges on the farm, regarding erosion, nutrient run off, pollution, cultural landscape, biodiversity etc. It is a Code of good agricultural practice, and includes :
  - Fertilizer plan and log of the pesticides used and spraying details
  - Inventory of the environmental conditions on the farm
  - Farm map showing e.g. areas of environmental importance
  - Plan for environmental challenges that need to be followed up
  - Documentation of achieved goals

FORWARD ENVIRONMENTALLY FRIENDLY AGRICULTURE IN LENINGRAD REGION

- Dr. Vladislav Minin

- The International Association on
- Mechanization of Field Experiments

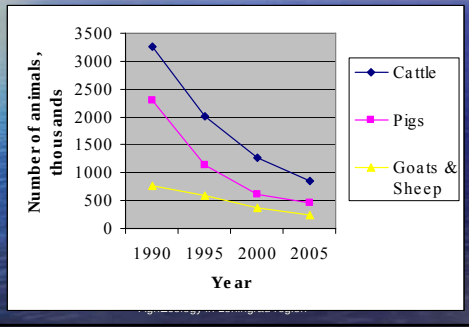
- North – West Research Institute of Agricultural Mechanization and Electrification

Few data about Leningrad region

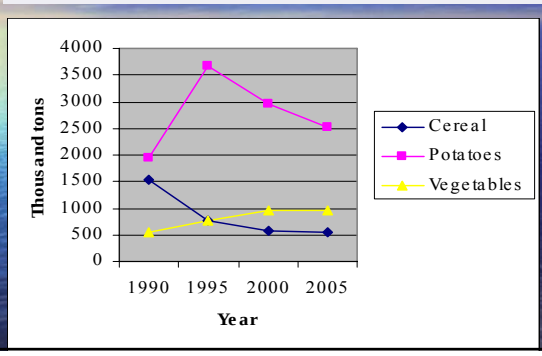
- The population of St-Petersburg without suburban - 4 million 387 thousands.
- The population of whole St. Petersburg + Leningrad Region is nearly 6.5 millions.
- What quantity of food is needed for whole population?
- The main task of the Regional Agriculture is to supply citizens by food products.

Total area of the Leningrad region is 85.9 thousands square kilometers
Agricultural lands occupy 645.7 thousands hectares and include 397.2 thousands hectares of arable land

Number of domestic animals in North-West region of Russia



Agricultural production in the North-West region of Russia



Types of Agricultural Farms in Leningrad Region

Type of agricultural producers and land owner	Number of units	Average area of agricultural land	Average area of arable land
Agricultural Production Companies (Joint stock companies, state production farms, experimental farms)	261	2400 ha	1500 ha
Private farmers	5905\950	9,30 ha	
Summer residence with cultivated plots	**568.1 thousands**	1000 sq. m	
Private gardens	**219.6 thousands**	670 sq. m	

Total Amount of Agricultural Animals in Leningrad region in 2006 (thousands units)

- Cattle, including cows 188,5
- Cows 86,5
- (average yield is 6570 kg)
- Pigs 62,0
- Goats and sheep 20,6

Leningrad region *is* characterized by intensive poultry farming *and the region* has leading position *in egg and poultry meat production of Russia*.

- *On territory of Leningrad region there* are big 17 poultry farms, *owned by* joint-stock companies of various type. From them 11 are for egg production and 4 *for broiler breeding*.
- Two poultry farms are for breed reproduction and one facility is engaged in manufacture of eggs and meat of broilers.

Nearly 2,2 *billion eggs* and 115 thousand tons of poultry *meat were produced in Leningrad region in 2006*.

- In the common balance of manufacture of animal protein, the protein part of poultry-farming production makes about 65 % in Leningrad region .
- The *total amount* of hens for egg production *is* 6553 thousand heads, and quantity of the growing broilers about 10 million heads per one year.

Fertilizers Application for Crop Production in Leningrad region, 2006

Type of crop	Total area under crop, thousands of ha	Application of mineral fertilizers, kg active sub.\ha	Application of organic fertilizers, t\ha
Cereals	26,1	87,4	11,6
Potatoes	5,9	192,8	48,4
Vegetables	3,1	386,2	45,6

Ways for Manure Utilization at Farms

Type of farm	Method of utilization	Remarks
Cattle	As organic fertilizer for application at own fields	That farms have enough land
Pig	As fertilizer, if it is not big amount of pigs and enough lands	Problem – if amount of pigs will increase
Poultry	Testing different methods, including drying and burning	Poultry farms have not land and they have great population of hens and broilers – big amount of dung

Tendency

- More interests of Government and Investors are concentrated on agriculture
- Many farm building are renovated now
- Number of cows will increase slightly
- New and old farms for pig intensive rearing are renovated or under construction or planed

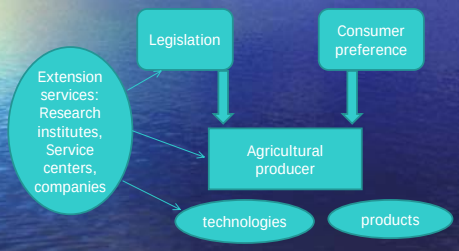
So, regional agriculture will developed

- And agricultural impact on Environment may increase!

Mainstream in Russian Agriculture

- There are two main processes that impact the agriculture and related areas.
- First of them turns farmers to more intensive, more concentrated and more profitable (but not environmentally friendly) agriculture.
- Second process is more weak but it constantly develops.
- Citizens of countryside more and more interested in good environment, especially agrotourists and persons who are working with them. Consumers began interested in food quality and it origin.
- More and more information concerning ecology and well being are accessible for Russian people.

Motivation of the Agricultural Producer



International projects and cooperation

- They have important task – they present new, interesting and useful information for Russian researchers, farmers, teachers, businessmen and children, they establish examples of environmentally friendly issues on local basis and they turn authorities environmentally friendly thinking. And they may speed the Second group of processes.

Russian - Swedish project

- Agriculture and Environment of Leningrad region 2004 - 2006
- The Baltic Sea Program for Leningrad region 2006 - ...

Russian – Finnish projects

- Code of Good Agricultural Practice
- Part 1 (Cattle rearing and feed production)
- Part 2 (Poultry)

Plans for nearest future 2008 - 2010

- **Legislation**

1. Regional Law Development of Leningrad Regional Agriculture
   Regional Program Development of Leningrad Regional Agriculture
   Regional Program Conservation of Soil Fertility

2. Regional Bill Environmentally Friendly Agriculture at Leningrad region
   Regional Program Forward Environmentally Friendly Agriculture at Leningrad region

Continue - Plans for nearest future 2008 - 2010

- **Research**

1. List of Best Available Practices and Technologies and Protocols of Assessment
2. New Types of Fertilizers and New Methods of Crop Nutrition
3. New Methods of Animal Nutrition

Continue - Plans for nearest future 2008 - 2010

- **3. International projects**

The Baltic Sea Program for Leningrad region 2006_Continuation

The Code of GAP. Third Part – Crop Production

Safely manure handling

Assessment of bird migration through Baltic Sea region

Others

Toward Rural Sustainable Development in the Baltic Sea region – Together !!!

National systems and practices in agri-environmental advisory services and related activities

Hannes Aamisepp

Rural Economy Research Centre, ESTONIA

Organisation and significance of the agricultural sector (1)

The value of agricultural production was BEEK 8 in 2006.
Livestock (53,7%) and crop (34,6%) production account for the bulk of total agricultural production in terms of value.
The value added by agriculture was 11,7%

Agriculture employed 23 400 persons in 2005, which is 3,9% of the national employment.

According to the 2005 structural survey data, there were 27 747 agricultural holdings in Estonia. Of those, less than **7000** are professional farms that earn more than 37 550 EEK (bigger than 2 ESU) a year.

Organization and significance of the agricultural sector (2)

The total output of the food industry was BEEK 14,9 in 2006 and it accounted for 17% of the total value of industrial output. The dairy industry (28%), beverages industry (21%) and meat industry (18%) had the largest shares in the food industry's total output.
The value added by the food and beverages industries was BEEK 2,77 in 2005 and the sector accounted for 1,6% of GDP. Fish processing formed 9,4% of the food industry.

Agricultural product and products accounted for 7% of total export and 7,3% of total import of goods in 2006. The value of agricultural exports and imports was BEEK 8,37 and BEEK 11,80 respectively.

The organization of the independent agricultural extension service in Estonia (1)

The private **advisory system** applied in Estonia formally operates since 2005, when 15 advisory centres were approved under the CAP Implementation Act.

Advisory system has to be regarded as a link between research, organisation of studies and active agriculture, where through advisers the results of studies and research have to reach active farmers and food handlers. Through advisers, the problems of active agriculture also have to reach the organisers of research and training.

To ensure the **quality** of advice, certification of agricultural and rural development advisers has been organised and the system of the attribution of adviser's vocation is under organisation. At the moment, there are 104 certified agricultural advisers in Estonia.

The organization of the independent agricultural extension service in Estonia (2)

In 2004, the **concept of county advisory centres** was launched, in order to ensure better possibilities for the retraining of agricultural advisers, for the dissemination of information about research and national matters, for the collection and communication of producers' feedback, as well as for the quality of advice and the appearance of new advisers in the market.

As a result of the competition called in 2005, the minister of agriculture certified 15 county advisory centres.

In 2007, an advisory service **coordinating centre** was established. In addition to the duties of an advisory centre, it also has to ensure the unification of the level of information given by advisory centres, training and in-service training of agricultural advisers, and to organize the communication to advisory centres.

The organization of the independent agricultural extension service in Estonia (3)

Support is granted for making individual advisory service available for agricultural producers and private forest holders in the following fields:

- advice for meeting the statutory management requirements and good agricultural and environmental conditions, provided in Articles 4 and 5 and Annexes III and IV of Council Regulation (EC) No **1782/2003**;
- advice to an enterprise in the field of meeting the requirements proceeding from the Community **occupational safety** standards and of bringing an enterprise in conformity with those standards;
- advice for improving the **general performance** of an agricultural holding or a private forest holder with the information about scientific data on different technologies, incl. for changing or restructuring the main activity, or advice for the maintenance of biological diversity.

The organization of the independent agricultural extension service in Estonia (4)

Advisory centres are funded as follows:

NDP (National Development Plan) - Advisory Subsidy

2006	1,87 million EEK
2007 prognosis	4 million EEK

NDP - 3.8 information days

2006 applications	3,2 million EEK
2007 applications	1,95 million EEK

From the State Budget

Extension (information distribution), divided to advisory centres

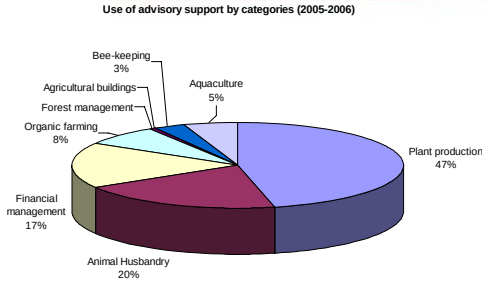
2006	3,2 million EEK
2007	2,8 million EEK

Advisory coordination

2006	3,1 million EEK
2007	9,3 million EEK

MAAMAJANDUSE INFOKESKUS

Advisory service related to the agricultural products



MAAMAJANDUSE INFOKESKUS

Thank you!

MAAMAJANDUSE INFOKESKUS

Appendix 3. List of participants

Thomas Dworak, ECOLOGIC, Austria, thomas.dworak@ecologic.eu
Erik Jörgensen, Danish Agriculture, Danmark, ejo@dansklandbrug.dk
Hannes Aamisepp, Rural Economy Research Centre, Estonia, hannes@maainfo.ee
Hanna Kreen, Ministry of Agriculture, Estonia, hanna.kreen@agri.ee
Diana Laur, Ministry of Agriculture, Estonia, diana.laur@agri.ee
Katrin Rannik, Ministry of Agriculture, Estonia, katrin.rannik@agri.ee
Eneli Viik, Agricultural Research Centre, Estonia, eneli.viik@pmk.agri.ee
Inge Van-Oost, DG Agri Commission of the European Community, EU, inge.van-oost@ec.europa.eu
Kaj Granholm, HELCOM, Finland, kaj.granholm@helcom.fi
Sari Peltonen, ProAgria, Association of Rural Advisory Centres, Finland, sari.peltonen@proagria.fi
Helena Ålgars, Svenska lantbruksproducenternas centralförbund (SLC), Finland, helena.algars@slc.fi
Evisa Abolina, Ministry of Environment, Latvia, evisa.abolina@vidm.gov.lv
Rolands Bebris, Ministry of Environment, Latvia, rolands.bebris@vidm.gov.lv
Linda Bucena, Integretas Audzesanas Skola SIA, Latvia, linda.bucena@iaskola.lv
Martins Cimermanis, Latvian Rural Consulting and Education Centre, Latvia, martins.cimermanis@llkc.lv
Anita Diebele, Latvian Rural Consulting and Education Centre, Latvia anita.diebele@llkc.lv
Agita Gancone, Latvian Environment, Geology, and Meteorology Agency, Latvia agita.gancone@lvgma.gov.lv
Ingrida Grantina, Latvian Rural Consulting and Education Centre, Latvia, ingrida.grantina@llkc.lv
Viesturs Jansons, Latvian Agricultural University, Latvia, viesturs.jansons@llu.lv
Martins Jirgens, Ministry of Environment, Latvia, martins.jirgens@vidm.gov.lv
Daina Ozola, Ministry of Environment Latvia, daina.ozola@vidm.gov.lv
Arvids Ozols, Deputy State Secretary of Ministry of Agriculture, Latvia arvids.ozols@zm.gov.lv
Nina Rakstina, Ministry of Agriculture, Latvia, nina.rakstina@zm.gov.lv
Andris Roska, State Environmental Service, Latvia, andris.roska@vvd.gov.lv
Ingmars Sniedze, Farmers Parlament, Latvia, ingmars.sniedze@zemniekusaeima.lv
Lubova Tralmaka, Ministry of Agriculture, Latvia, lubova.tralmaka@zm.gov.lv
Astrida Zarumba, Ministry of Agriculture, Latvia, astrida.zarumba@zm.gov.lv
Baiba Zasa, Ministry of Environment, Latvia, baiba.zasa@vidm.gov.lv
Kaspars Zurins, Latvian Rural Consulting and Education Centre, Latvia, kaspars.zurins@llkc.lv
Rimtautas Petraitis, Lithuanian Agricultural Advisory Service, Lithuania, rimtautas.petraitis@lzukt.lt
Einar Strand, Norwegian Agricultural Extension Service, Norway, einar.strand@lfr.no
Ludmila Filatova, Department of the federal service for supervision in the field of nature use Russia, alan@dsc.nw.ru
Vladislav Minin, North-West Research Institute of Agricultural Mechanization & Electrification, Russia,
otdel9@sznii.ru, tamara11@yandex.ru,
Inna Slesareva, Department of the federal service for supervision in the field of nature use Russia, alan@dsc.nw.ru

Artur Granstedt, The Biodynamic Research Institute, Sweden, arturgranstedt@jdb.se

Annika Henriksson, Agellus, Sweden, annika.henriksson@agellus.se
Markus Hoffman, Federation of Swedish Farmers (LRF) and the Baltic Farmers Forum on the Environment, Sweden, markus.hoffman@lrf.se
Christine Jakobsson, The Baltic University Programme, Uppsala University, Sweden christine.jakobsson@balticuniv.uu.se

Helena Jonsson, Federation of Swedish Farmers, Sweden, helena.jonsson@lrf.se
Maria Källming, County Administrative Board of Östergotland, Sweden, maria.kallming@e.lst.se
Sindre Langaas, County Administrative Board of Stockholm, Sweden, sindre.langaas@ab.lst.se

Nina Munthe, WSP Group Sweden, Sweden, nina.munthe@wspgroup.se

Stina Olofsson, Swedish Board of Agriculture, Sweden, stina.olofsson@sjv.se

Ingrid Rydberg, Swedish EPA/Naturvårdsverket, Sweden, ingrid.rydberg@naturvardsverket.se
Christian Weyer, County Administrative Board of Stockholm, Sweden, christian.weyer@ab.lst.se

This report present the outcomes from the international expert- and policy seminar on Agri-environmental extension services around the Baltic Sea, held in Riga, Latvia, 6 - 7 December 2007. The seminar aimed to increase the focus upon agri-environmental extension services as a cost effective and necessary instrument to minimise environmental – notably water – impact from the agriculture sector.

The seminar was financially supported by the Baltic Sea Unit SIDA and
the Ministry of Agriculture and the Ministry of the Environment, Sweden.

Sida
BALTIC SEA UNIT

REGERINGSKANSLIET
Government Offices
of Sweden