



## The Common Agricultural Policy post-2013: a Pathway to Regional Cohesion?

Lessons Learned in Implementing Agri-Environmental  
Measures in the Baltic Sea Region

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Stockholm Environment Institute  
Kräftriket 2B  
SE 106 91 Stockholm  
Sweden

Tel: +46 8 674 7070  
Fax: +46 8 674 7020  
Web: [www.sei-international.org](http://www.sei-international.org)

Head of Communications: Robert Watt  
Publications Manager: Erik Willis  
Layout: Richard Clay  
Author contact: Maria Osbeck  
[maria.osbeck@sei-international.org](mailto:maria.osbeck@sei-international.org)

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**BALTIC  
COMPASS**

## EXECUTIVE SUMMARY

The European Union's 2008 *Green Paper on Territorial Cohesion* identifies the Baltic Sea Region as one of several large and diverse regions in Europe where policy coordination and cooperation could build territorial cohesion to foster sustainable and "harmonious" development.

Within the BSR, agriculture is both a major economic sector that has strongly shaped the landscape, and the greatest contributor to water pollution from diffuse sources, leaching nutrients into ground and surface water. Historically, each country has grappled with these issues in a different way, but there is a growing recognition that agricultural and environmental policy integration would benefit the region.

This report is part of Baltic COMPASS, a project funded by the EU Baltic Sea Region Programme that aims to increase the legitimacy of adaptive governance processes in integrated agricultural-environmental policy development and deepen that integration in the BSR. As the European Commission considers proposed reforms to the Common Agricultural Policy for 2014 and beyond, this report identifies lessons from the current CAP implementation period (2007-2013), with an emphasis on the BSR as a macro-region of the EU. Our analysis draws on national-level studies of the implementability of the CAP and its environmental boundary conditions that included extensive consultations with public officials, farmer and advisory organizations, non-governmental organizations (NGOs) and research institutes. The goal of this report is to show some of the opportunities and risks that country-level actors may face as they move towards regional cohesion in their national responses to the EU reform.

### PROPOSALS FOR THE CAP POST-2013

The European Commission presented its legal proposals for the CAP post-2013 as a package of seven draft regulations issued in October 2011. The proposals draw on an analysis of three policy scenarios put forward in 2010 by the Commission to explore the range of options available in combining free-market approaches, voluntary and incentive-based measures, and regulations: adjustment, integration and refocus. The latter would have targeted direct payments solely on the delivery of public goods, but after a public and stakeholder consultation process, the approach chosen was integration, with a more limited reform of direct

payments to farmers. The stated goal is to "better target support to certain actions, areas or beneficiaries as well as to pave the way for convergence of the level of support within and across Member States".

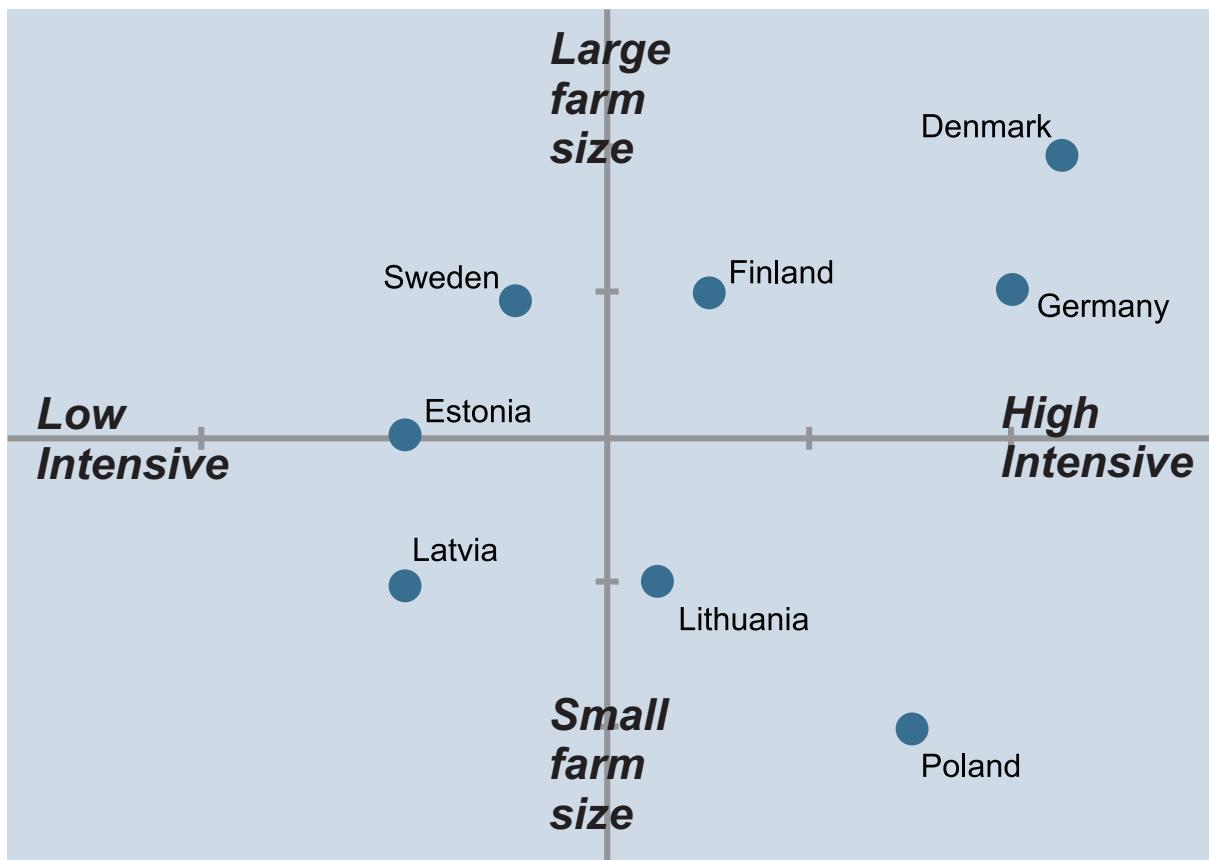
The proposed new regulation would replace the Single Farm Payment Scheme (SPS) with a "basic" payment starting in 2014; in addition, farmers could earn a supplemental payment of up to 30% of the national ceiling for "following agricultural practices beneficial for the climate and the environment", such as organic farming, crop diversification, and maintaining permanent pastures and ecological focus areas.

Like the SPS, the new basic payment would be subject to cross-compliance requirements, so farmers would have to meet EU environmental standards to qualify – and the policy explicitly aims to raise those standards. But while the reach of those requirements, under Pillar 1 of the CAP, would be greater, it is the "green payments", under Pillar 2, that offer the greatest potential from an ecosystem services and public goods perspective.

The green payments are to be provided uniformly across each region, but the current proposals do not prescribe how those regions should be defined by Member States. This means countries should be able to tailor the payments according to territorial criteria, and create ecological focus areas that take into account regional differences in farming systems (and their socio-economic situations) and environmental and bio-physical conditions. For best results, the creation of ecological focus areas needs to be integrated in spatially explicit approaches and strategies, linked with lower-level cross-compliance requirements and higher-level agri-environmental measures. Such concepts should also pay particular attention to group applications to generate landscape- and catchment-scale benefits for ecosystem services.

### EMBRACING DIVERSITY

The Baltic Sea Region is home to some 100 million people in 10 countries. Its agricultural systems are diverse and nested in different set of ecosystems, institutional arrangements and policy environments. This diversity is partially reflected in the many distinctions made when discussing agri-environmental governance in the region: extensive vs. intensive agricultural systems, EU members vs.



**Figure ES-1: Intensity and farm size matrix for BSR countries**

non-members, old vs. new EU members, Eastern vs. Western states, etc.

A look at farming systems in the BSR shows the great variability of ecosystem services under different modes of agricultural production, as shown in Figure ES-1. This report argues that the diversity of agricultural systems should be viewed as an asset, not a liability. Agriculture in the BSR is at a crossroads, and the choices made for the new CAP implementation period will shape the sector's future. Policy-makers should embrace the opportunity to support a more diverse agricultural sector that generates ecosystem services and other public goods. This, in turn, will require a more flexible payment scheme.

## LESSONS FROM THE 2007-2013 CAP PERIOD

Our national studies found an uneven playing field in the implementation of the CAP among EU Member States in the BSR. The countries have faced a number of similar or related challenges in the 2007-2013 CAP

period, but because they have different entitlements under the CAP, they have different options and resources available to them when using the CAP to comply with the EU's environmental directives.

We found a growing trend to employ CAP payments to boost national compliance, which happens at the expense of regional collective action around common water bodies such as the Baltic Sea. This means that the competitive nature of the national application of the CAP risks undermining the ambition of territorial regional cohesion as espoused under the Cohesion Policy.

A key challenge identified across the region was the lack of coordination between the agricultural and environmental sectors. It is also apparent that the construction and negotiation of robust and acceptable environmental boundary conditions (i.e. policy targets, regulatory requirements, etc.) is complicated by a lack of required data and information, and/or uncertainties in these data sets. This includes issues pertaining to data-sharing between riparians in transboundary

catchments (between Poland and Belarus, e.g.). Altogether, this highlights how national interpretation of EU obligations is frequently made in the face of intrinsic and irreducible uncertainties, which may include disagreement on the nature of the scientific models underlying target-setting.

The implementation of agri-environmental measures under Pillar 2 was seen to suffer from the fact that many measures do not have the expected impacts, or have unexpected or unintended consequences. Part of this problem may be due to measures not being well targeted from the outset. In most of the BSR countries, stakeholders reported a significant mismatch between the financial incentives available for agri-environmental measures and the operation of market forces that they are intended to influence.

The measures, which encompass both technologies and management interventions, have not been *adapted* adequately to the contexts in which they are being applied. This poor adaptation grows out a general sense that measures are based on data and models from “experts” rather than from sufficient *stakeholder involvement* via *participatory* processes. This problem is exacerbated by sectoral silos without due *coordination* across sectors. Owing to the poorly adapted and targeted agri-environmental measures, land users feel they receive *insufficient compensation* for the income forgone on account of reduced productivity in their farming systems. Moreover, the high transaction cost in terms of the *administrative hurdles* associated with gaining entitlements via the implementation of agri-environmental measures compounds the sense of being underpaid. This can lead to poor compliance with environmental boundary conditions.

The national reviews also found that many farmers contest the ways in which measures are monitored in their countries. Not only is there distrust amongst the recipients of payments (farmers, land owners), but equally a lack of confidence from civil servants, NGOs and private sector in the assumptions, indicators and calculations underlying these procedures. The lack of effective monitoring was a problem cited across the region.

## DIFFERENTIATED COMPENSATION FOR AGRI-ENVIRONMENTAL ACTIONS

Country respondents repeatedly raised concerns that agri-environment payments are providing insufficient compensation for measures. In Finland it was highlighted that the current agri-environmental

payments have not reduced nutrient discharge from agricultural sources. Other studies have found that farms’ debt levels and inadequate capital to adjust their structure in response to market forces are key reasons why agri-environmental measures often show positive impacts when implemented on a small scale, but fail to make such impacts on a large scale.

Discrepancies also exist within countries. The distribution of payments frequently benefits large-scale farming systems at the expense of small holdings, which in some countries results in a tension between entire regions (e.g. north vs. south in Sweden). Agri-environmental payments are also unevenly distributed on a spatial scale, covering only around 10% of the national utilized agricultural area (UAA) in some countries, while in others, such as Finland and Germany, they cover around 90% and 30%, respectively

## ADMINISTRATIVE HURDLES

Across the region, the national studies found that a broader stakeholder involvement, including the private sector and civil society, would improve the design and implementation of measures. The study of Germany, for example, found the current system prevents active involvement of farmers, because the defined management requirements at the national level include strict deadlines and documentation requirements, and sometimes require specific mechanization as well.

Low institutional capacity is also a significant problem that has hindered the implementation of environmental directives, in the BSR and across Europe. In fact, Member States’ record of implementing EU environmental legislation has been described as poor, at least when seen within the broader picture of the overall number of infringement procedures.

Moreover, there are inherent conflicts between the principle of national subsidiarity and the goal of transboundary collaboration. This is particularly evident in the extensive national and sub-national mandates affecting the design of rural development programmes. Those mandates reflect the underlying philosophy of agri-environmental measures – that they are meant to enable countries to meet national priorities – so it is not surprising that countries generally prioritize national targets at the expense of transboundary collaboration.

## POLICY RECOMMENDATIONS

Our research suggests that limited appreciation of regional diversity presently serves as a barrier to transboundary cooperation on agri-environmental issues in the BSR. Indeed, the data suggest that the implementation of actions to manage environmental boundary conditions at a national level can compromise the governance of boundary conditions at a BSR scale.

Differences in “compliance” with EU environmental directives across the BSR tend to be ascribed to higher or lower levels of “advancement” or capacity, but we find those differences must be seen in the context of the unequal playing field created by the EU’s CAP as an implementing instrument, which creates differentiated benefits between countries and within sub-national contexts.

Two key recommendations for post-2013 CAP implementation emerge from this study:

### **1. There is a need to change how the CAP is operationalized.**

We propose to promote a consolidation of Pillars 1 and 2 that treats environmental services as a core part of the value of farming. Thus environmental services would no longer be a precondition for CAP payments, but rather part of the package of benefits that those payments recognize, along with food security and rural development. This would also allow for a broader consideration of the multiple benefits that various payment approaches can support. For example, constructing wetlands not only contains nutrients, but can also increase biodiversity, protect from floods, and support ecotourism. A precondition for this change, given the proposal already on the table for the new CAP period, is linked to our second key recommendation:

### **2. The CAP should embrace diversity in agriculture and recognize stakeholders from different scales and sectors to reconcile differences and inequities and identify synergies and win-wins.**

In order to promote sustainable agriculture that recognizes the diversity in the region, the CAP should complement the existing technical measures with a new set of “soft measures” geared to supporting the diverse needs and preferences of different actors in the system. An example of a soft measure, in line with the EU Baltic Sea Region strategy, could be to support a dialogue between riparian countries on a joint target for nutrient reduction in the Baltic Sea. Other types of soft measures would be directed to facilitate negotiations between stakeholders on needs (e.g. nutrient leakage, food security, flooding, etc.) and actions in different systems linked to different benefits. Identifying context-specific solutions requires improved capacity and opportunities for bottom-up local governance approaches.

Here it is worthwhile to recall that EU policy has recently moved towards prioritizing such stakeholder-based “soft measures” to propel collective action. However, funding and human resources to support such innovations have largely been lacking. There is now an opportunity for the EU and its Member States to provide targeted payment schemes to launch such stakeholder negotiation platforms, for instance through the rural development programmes post-2013.

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## 1 INTRODUCTION

**W**ith the ongoing reform of the Common Agricultural Policy (CAP) of the European Union (EU), including its new Rural Development Regulations expected online from 2013, riparian countries in the Baltic Sea Region have an outstanding opportunity to reflect on and improve their national implementation of European policy, which consumes the highest amount of EU tax revenue and is the largest single source of public funding for the agricultural sector.

This report is part of the EU-funded project **Baltic COMPASS**, which aims to increase the legitimacy of adaptive governance processes in integrated agricultural-environmental policy development and deepen that integration in the Baltic Sea Region.<sup>1</sup> The report provides a synthesis of lessons from the current CAP implementation period (2007-2013) to show some of the opportunities and risks that country-level actors may face as they move towards regional cohesion in their national responses to the EU reform. The emphasis is on the Baltic Sea Region (BSR) as a macro-region of the EU and the two non-EU countries, Russia and Belarus.

There are different definitions of the BSR; in this report, the term refers to the area covered by the EU Baltic Sea Region Strategy, and specifically, the EU members within it: Denmark, Estonia, Finland, Latvia, Lithuania, Poland, Sweden and Germany. The EU *Green Paper on Territorial Cohesion* (European Commission 2008) identifies the BSR as one of the large and diverse regions in Europe where policy coordination and cooperation can build territorial cohesion to foster sustainable and “harmonious” development. The EU Baltic Sea Region Strategy, a flagship initiative by the European Commission, also prioritizes policy coordination as a way to strengthen EU cohesion. In close alignment with that strategy, the Baltic COMPASS programme works to support the policy coordination aims of the EU BSR strategy through its work on governance<sup>2</sup> across the BSR on environmental and agricultural issues.

Cohesion policy is rooted in the Treaty of Rome, but was first expressed in regulation in the Single

European Act of 1988. Danuta Hübner, who served as European Commissioner for Regional Policy from 2004 to 2009, has described cohesion policy as “the market’s visible hand which aims at balanced and sustainable development while fostering economic integration throughout the EU as a whole” (Hübner 2008). However, the regional dimension of cohesion has not been fully recognized in policy development and implementation to date.

Within the BSR, agriculture is both a major economic sector and the greatest contributor to water pollution from diffuse sources (see, for example, HELCOM 2011; HELCOM 2004, along with a long record of peer-reviewed literature). Undoubtedly, agriculture has strongly shaped the landscape and is a key driver of nutrient enrichment in ground and surface water throughout the region. Nutrient enrichment, in turn, is both an indicator and driver of several other key environmental issues, including eutrophication, soil erosion and the leaching of pesticides and other chemicals into water supplies. Regional agricultural outlooks also suggest that increasing demand for food and for bioenergy crops will intensify these issues (Graham and Powell 2012). At the same time, such impacts must be weighed against agriculture’s pivotal socioeconomic and environmental benefits for the region.

Given the regional nature of the water pollution and eutrophication problem, a coordinated response between countries and across sectors seems optimal, but there is no formal BSR-level institutional platform in place to facilitate it. To be sure, the Baltic Sea Action Plan from the Helsinki Commission (HELCOM) has been used to coordinate environmental targets, but those targets are voluntary (HELCOM 2007). And although the agricultural sector is crucial to meeting those targets, it is widely acknowledged among BSR stakeholders that the HELCOM platform has not, to date, inspired any significant commitment from the sector. That leaves the EU’s Common Agricultural Policy (CAP)<sup>3</sup> as the main available instrument for the Baltic nations to coordinate their policies and actions to address links between agriculture and the environment.

One important mechanism under the CAP is “cross-compliance”, which links direct payments to farmers under Pillar 1 of the CAP to requirements to meet

1 See <http://www.balticcompass.org>.

2 In recognition of the crucial roles played by the public sector, private sector and civil society as change agents in the BSR, Baltic COMPASS uses governance rather than policy as the preferred terminology.

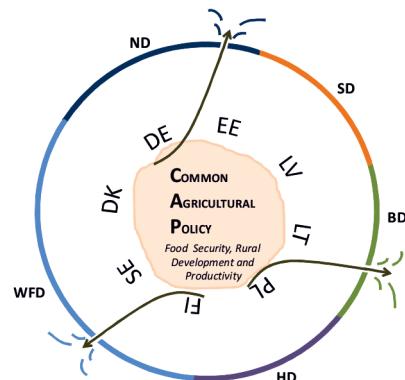
3 For detailed materials on the CAP, see <http://europa.eu/pol/agr/>.

basic environmental standards. These standards specify what in this report we call “environmental boundary conditions” for agricultural activities. These boundary conditions, which are defined by the EU environmental directives, also feature in Pillar 2 programmes under the CAP that compensate farmers for production forgone when they voluntarily implement agri-environmental measures.

Now, in preparation for the next CAP implementation period, beginning in 2014, extensive reforms to “green” the CAP are being considered. Many of those reforms are included in a package of legal proposals presented by the European Commission in October 2011.<sup>4</sup> The ongoing CAP reform process is a unique opportunity to strengthen territorial cohesion in the BSR by developing innovative pathways to better coordinate governance across the environmental and agricultural sectors at the sub-national, national and regional levels.

Thus, the objective of the regional analysis outlined in this report is to support BSR countries in responding to the agri-environmental aspects of the CAP reform proposals by outlining lessons about the institutional barriers and opportunities in the implementation process during the current CAP period.

In this context, one can think of the framework of European environmental regulations as a set of “environmental boundary conditions” for the CAP, manifested at both the EU and Member State levels. This is a central concept in this report, denoting both the actual bio-geo-physical conditions and the normative political boundaries (targets, regulative requirements, etc.) that are imposed to regulate and confine the impacts of agricultural activities (see section 3.5). Figure 1 below illustrates the interactions between the CAP and various EU environment directives in the context of the Baltic Sea Region, and the difficulties in implementing the Common Agricultural Policy within the boundaries set by the directives on environment.



**Figure 1: The Environmental Directives as boundary conditions for CAP implementation**

Acronyms: Nitrate Directive (ND); Water Framework Directive (WFD); Habitats Directive (HD); Birds Directive (BD) and Soils Directive (SD). The arrows penetrating the environmental boundary suggest (as will be elaborated below) that it is problematic for Member States to comply with the directives whilst pursuing the objectives of CAP.

## 1.1 STRUCTURE OF THIS REPORT

We begin by providing an overview of the CAP, including its post-war legacy, the mainstreaming of environmental considerations through the greening of Pillar 1, and the adoption of Pillar 2 agri-environmental measures. We outline the methodology and sources of evidence for this report, then offer an overview of farming systems, cropping structures, and production patterns in the BSR, to provide an appreciation of the diversity in the region, which must be kept in mind when discussing desirable policy/governance interventions.

The report then synthesizes key findings from national analyses of the implementability of the CAP and its environmental boundary conditions, identifying key challenges as well as opportunities. We then discuss how the implementation of the CAP may both undermine and contribute to regional cohesion and collective action among BSR riparians.

<sup>4</sup> See [http://ec.europa.eu/agriculture/cap-post-2013/legal-proposals/index\\_en.htm](http://ec.europa.eu/agriculture/cap-post-2013/legal-proposals/index_en.htm).

## 2 METHODOLOGY AND SOURCES OF EVIDENCE

In this section, we outline the methodology used to generate evidence for our report. The emphasis in the work has been on the BSR countries, including both EU and non-EU members. Results from the situation analysis (Section 4) suggest that transboundary coordination is inhibited by fundamental differences not only between the EU and non-EU legislative environments, but also in how different sectors are conceptualized. Environmental policy per se is less developed in Russia and Belarus, whereas EU countries that share the same water systems, such as Lithuania, have several important policy processes that target agri-environmental issues such as nutrient runoff. Russia and Belarus mainly target nutrients and runoff through public health policy avenues. However, given the emphasis in this report on the EU's CAP and its implications for BSR countries, the below sections will invariably focus mostly on EU members in the region. Furthermore, much secondary data is only available in the form of cross-EU comparisons and reviews, and we will therefore often make reference to larger European conditions in the absence of specific BSR-level analyses to substantiate our arguments.

### 2.1 INSTITUTIONAL ANALYSIS AND STAKEHOLDER CONSULTATIONS

In order to understand the institutional barriers faced by BSR countries in coordinating agri-environmental governance, Baltic COMPASS partners engaged in multi-stakeholder consultations in each country, focused on two questions:

- What are the challenges faced by the agricultural sector in attempting to comply with the boundary conditions defined by the environmental directives?
- What are the implementation challenges faced by the environmental sector in enabling compliance from the agricultural sector?

The consultations and subsequent analyses were undertaken during 2010, facilitated by the respective national COMPASS partners: Baltic Environmental

Forum (Lithuania), Latvian Farmers Parliament (Latvia), Institute of Technology and Life Sciences (Poland), State Agency for Agriculture, Environment and Rural Areas (Schleswig-Holstein, Germany), Swedish Board of Agriculture (Sweden), The Agrarian Institute of Economics (Belarus), and Stockholm Environment Institute (Estonia, Finland, Sweden, Denmark).

The process began with a background mapping of national and local designs of regulations and measures implemented in response to environmental EU directives and BSR level agreements, such as the Baltic Sea Action Plan (BSAP), with bearing on the issue of eutrophication (summarized in national proformas). The partners then consulted with stakeholders and reviewed core literature, including national strategies, position papers, research reports, and program evaluations. Special emphasis was given to the monitoring and mid-way reports from the Rural Development Plans (RDPs) in the countries and the action plans implementing the environmental directives. Consultations took the form of one-on-one conversations, focus groups, and telephone interviews, and involved a wide range of institutions, including public authorities, farmer and advisory organizations, non-governmental organizations (NGOs), and research institutes. The results of these national-level studies are outlined in a set of national reports and policy briefs, and are also summarized later in this report.<sup>5</sup>

For our regional analysis, we began by reviewing the country reports and conducting follow-up interviews with the authors and other contributors. Key implementability challenges were then aggregated and coded. A summary matrix was constructed, noting the presence or absence of a specific implementability challenge in each riparian state.

The draft national reports were shared and discussed with the contributors and other interested parties in order to consolidate the findings. This discussion took place in specially convened stakeholder workshops and so-called National Round Tables in each country organized by Baltic COMPASS. When required, the necessary approvals were also obtained from the responsible ministries before making the reports public.

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<sup>5</sup> The full collection of national reports and policy briefs is available at <http://www.balticcompass.org..>

### 3 THE CAP AND ITS ENVIRONMENTAL BOUNDARY CONDITIONS

#### 3.1 POST-WAR LEGACY

European agricultural policy began after World War II, with a focus on two pressing needs: to produce enough food within Europe to feed the population, and to keep farming economically viable. Progress on these goals would require increases in agricultural productivity and efficiency, and more stable markets. The general consensus among the signatories to the treaty establishing the European Economic Community was that agriculture was indeed a special case where liberal markets did not work “normally” and the consequences of market failures were potentially serious; thus the sector required special treatment. This view of agriculture has shaped the present Agricultural Policy in Europe and was enshrined in Article 39 of the EEC Treaty, which instructs that “due account” be taken of “the particular character of agricultural activities, arising from the social structure of agriculture and from structural and natural disparities between the various agricultural regions”.

Early negotiations proved too complex to include details in the EEC Treaty, so Article 39 limited itself to basic principles and four objectives: to ensure a “fair standard of living” for farmers, stabilize markets, guarantee regular supplies, and ensure “reasonable” prices for consumers. These goals would be pursued through active intervention in agriculture driven by a common agricultural policy. Thus the CAP was developed, negotiated and pieced together largely over the course of the first five years of the EEC. Its primary mechanisms were price supports and investments in infrastructure with the goal of modernizing European agriculture and improving its efficiency. The first production-related subsidies and other market interventions were set in place in 1962, and by early 1964, meat and dairy products, poultry and eggs, rice and grains, and other agricultural products were covered by a complex web of more than 300 EU regulations (Lucarelli 1999, p.53).

Since then, the CAP has been reformed to pay attention to rural development and environment. In the early years, under what is known as Pillar 1 of the CAP, payments were coupled with production volume, but this led to criticism, from the World Trade Organization and others, that the payments gave farmers an unfair competitive advantage. There were also concerns about market distortions and environmental unsustainability. In 2003, a Single Farm Payment Scheme (SPS) was introduced that “decoupled” most direct payments to

farmers from both production volume and product choice. Rather, they were calculated on the basis of the amount of land maintained in cultivatable condition. However, EU members were given considerable flexibility for implementation of the SPS, and were allowed to continue to couple some payments.<sup>6</sup>

#### 3.2 GREENING OF PILLAR 1 AND CROSS-COMPLIANCE REQUIREMENTS

The new scheme also marked the beginning of a “greening of Pillar 1” by introducing “cross-compliance” requirements.

To receive the SPS, farmers had to maintain their land in “good agricultural and environmental condition”, as defined by each Member State based on EU regulations, and meet EU standards relating to public health, plant and animal health, animal welfare and the environment. Failure to meet those requirements could result in the reduction or withdrawal of a farm’s payment. The goal was to ensure that some forms of public goods were provided by farmers in return for their direct payments (McVittie et al. 2009).

If implemented rigorously, cross-compliance could significantly improve farms’ environmental performance – but as Rollett et al. (2008) argue, the level at which the standards are set “has important implications”. In practice, cross-compliance has not been used as a tool for introducing substantive new obligations and was not the rationale for decoupling farm payments. The obligations are either based on pre-existing national legislation or reflect good farming practices that are already common. It is thus not surprising that Alliance Environnement (2007) found only limited evidence of impacts on cost of farming and on land management. Silcock and Swales (2007) found that cross-compliance had yielded some improvements in basic environmental management standards, but they were modest compared with the amount of subsidy provided.

To improve the environmental effectiveness of cross-compliance Bazzoffi and Bonelli (2011) argue that the mix of cross-compliance standards and measures “should be identified at territorial and/or farm level in order to i) ensure that all the objectives to be reached in

<sup>6</sup> For a full description of the 2003 reforms, see [http://europa.eu/legislation\\_summaries/other/l11089\\_en.htm](http://europa.eu/legislation_summaries/other/l11089_en.htm).

function of the farm and of the territory are met, [and] ii) act coherently with the standards simplification procedures, setting up the standards according to the needs of the single farm/territorial context...”.

Rollett et al. (2008) argue that because the cross-compliance standards set the “baseline” for environmental protection in farms, the level at which those standards are set will also affect farmers’ engagement with voluntary agri-environmental measures for which they can earn bonus payments. The balance between cross-compliance and voluntary measures thus requires “careful consideration” to ensure that farmers can clearly distinguish between the two and still find the more ambitious agri-environmental measures attractive and worth pursuing.

### 3.3 PILLAR 2 AND AGRI-ENVIRONMENTAL MEASURES

Another significant milestone for the CAP was the introduction in 2000 of Pillar 2, also known as the Rural Development Programme (RDP). Pillar 2 included four axes: 1) innovation and business development, 2) agri-environmental measures, 3) quality of life, and 4) local action groups (LEADER).<sup>7</sup> Member States were required to implement Axis 2, which provides payments to support the implementation of agri-environmental measures. Agri-environmental measures had originally been launched as a separate policy domain from the CAP in the 1980s, and they were first introduced into the CAP in 1987 as an optional instrument. In 1992 they were included under the Rural Development Regulation (EC/2078/1992), and they are now implemented under the current version of that regulation (EC/1698/2005).<sup>8</sup> In the current programming period, 2007-2013, Pillar 2 includes three axes: 1) improving the competitiveness of the agricultural and forestry sectors; 2) improving the environment and the countryside; and 3) improving the quality of life in rural areas and encouraging diversification of the rural economy.

The payments under Pillar 2 are implemented through multi-year programming of agri-environmental measures, which the countries compose from a list provided by the EU. The payments are made according to three principles: 1) to compensate for income forgone, 2) to cover the costs of the environmental measure, and 3) as an incentive to encourage farmers

to take part in schemes. Since 2010, these payments have been financed by the European Agricultural Fund for Rural Development (EAFRD). They are typically implemented under a 5- to 7-year voluntary contract between a public authority and a private beneficiary (a farmer or land manager). Member States prepare National Strategy Plans that outline their payment schemes, following the EU RDP Strategy. As with the direct payments under Pillar 1, Axis 2 beneficiaries under Pillar 2 are subject to cross-compliance requirements.

The Rural Development Regulation (1698/2005) specified the minimum share of funds that must be allocated to each axis: 10% for Axes 1 and 3, 25% for Axis 2, and 5% for Axis 4 (though new Member States were allowed to phase the latter in). The balance of funds between Pillar 1 and Pillar 2, meanwhile, is gradually shifting due to “modulation”, a policy introduced with the CAP reform of 2003 to progressively reduce direct payments under Pillar 1 and transfer the funds to Pillar 2 activities (European Commission 2012a). The reform stipulated that direct payments would decrease by 3%, 4% and 5% respectively for 2005, 2006, 2007 and the following calendar years – but with the first €5,000 received by each farmer exempted. The funds are divided among the Member States and allocated to measures supported by the EAFRD. Under Regulation No. 378/2007, Member States can opt to reduce direct payments even more (“optional modulation”) to finance rural development programmes.<sup>9</sup>

Under the 2009 Health Check reform, modulation was accelerated, to reductions of 7%, 8%, 9% and 10% for the budget years 2010, 2011, 2012 and 2013, respectively – again, with the first €5,000 exempt (European Commission 2012a). Payments that exceed €300,000 are to be reduced by another 4%. Modulation is not yet implemented in the newer Member States, but is supposed to be implemented in 2012/13 at a lower rate (3% vs. other EU members’ 10%). Modulation does not require EC co-financing and aims to shift support away from single large holdings to provide more resources for targeted measures promoting desired farming systems.

<sup>7</sup> See [http://ec.europa.eu/agriculture/rur/leaderplus/index\\_en.htm](http://ec.europa.eu/agriculture/rur/leaderplus/index_en.htm).

<sup>8</sup> Full text at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2005:277:0001:01:EN:HTML>.

<sup>9</sup> Full text at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:095:0001:01:EN:HTML>.

### 3.4 PROPOSED TRAJECTORY POST-2013

The European Commission presented its legal proposals for the CAP post-2013 as a package of seven draft regulations issued in October 2011.<sup>10</sup> The proposals draw on an analysis of three policy scenarios put forward in 2010 by the Commission to explore the range of options available in combining free-market approaches, voluntary and incentive-based measures, and regulations. The three scenarios considered were adjustment, integration and refocus. The refocus scenario included an option of targeting direct payments solely based on the delivery of public goods (European Commission 2010). Yet after a public and stakeholder consultation process, it was the “integration” approach that prevailed; it was found to be “the most balanced in progressively aligning the CAP with the EU’s strategic objectives” (*ibid.*). This will limit the extent to which the targeting of direct payments post-2013 can be improved (Matthews 2011). The ability to better target public goods and ecosystem services through the CAP post-2013 will generally depend on the amount of flexibility retained and implemented in the new CAP and on the interpretation of the different Member States of the new legal policy framework.

These policy discussions will continue. The forthcoming CAP reform will be the first Directive which the European Parliament will co-legislate with the Council, in accordance with the Lisbon Treaty. The legal decisions on the proposals and the preparation acts and orders in the Council will likely take place between now and the spring of 2013. The new CAP regulations are expected to enter into force on 1 January 2014. Funding under Pillars 1 and 2 will be managed under a common framework with other EU funds, such as the structural cohesion funds, in alignment with the EU 2020 Strategy.

Table 1 summarizes the proposed reforms, which are further discussed below.

#### **3.4.1 Key aspects of the legislative proposal – Pillar 1**

The proposed new regulation for direct payments “seeks to better target support to certain actions, areas or beneficiaries as well as to pave the way for convergence of the level of support within and across Member States” (European Commission 2011c). To achieve this, the new legislative proposal suggests a “basic” payment to replace the SPS starting in 2014, and a supplemental payment of up to 30% of the national

ceiling for farmers “following agricultural practices beneficial for the climate and the environment”, such as organic farming, crop diversification, and maintaining permanent pastures and ecological focus areas.

The green payments are to be provided uniformly across each region. However, the current proposals do not prescribe how those regions should be defined by Member States. This implies that Member States could design regional uniform direct payments according to territorial criteria, taking into account regional differences in farming systems (and their socio-economic situations) and environmental and bio-physical conditions. The conditions attached to the “green payment” could also be tailored to regional conditions, e.g., with respect to the definition of ecological focus areas.

From an ecosystem services and public goods perspective, these green payments are the most important element in this proposal. The legislative language also suggests that each farmer who receives the base payment must also carry out the green measures (Matthews 2011). In other words, the currently existing cross-compliance requirements would be expanded through the environmental conditions attached to the green payment.

Although a more robust strategy would give a larger role to Pillar 2, universally applied Pillar 1 measures do have a place in “greening” the CAP, especially as a way to correct existing problems with cross-compliance. For example, although farmers are required to maintain land in “good agricultural and environmental condition” (GAEC), in practice that standard is not being met in some Member States (Alliance Environnement 2007). The “greening” measures thus provide a stronger means of ensuring a basic level of environmental management, especially in countries that have been less strict about cross-compliance, though the benefits will be hard to measure. The potential impact depends on the precise requirements that are put in place and how the measures are designed, implemented, monitored and evaluated. The details have yet to be decided and will only be adopted by the Commission as delegated acts once the negotiations on the main legislative texts have been concluded. However, at the EU level this does raise the question of the added value of measures compared to what is already required through cross-compliance, with associated issues of policy efficiency and cost-effectiveness.

Among the concrete proposals, one measure that has high potential for delivering additional environmental benefit is the “ecological focus area”. This requires

10 See [http://ec.europa.eu/agriculture/cap-post-2013/legal-proposals/index\\_en.htm](http://ec.europa.eu/agriculture/cap-post-2013/legal-proposals/index_en.htm).

**Table 1: Key aspects of the legal proposals for the Common Agricultural Policy after 2013**

Proposal	Reference
<b>Design of Pillar 1</b>	
<b>Mandatory</b>	
Basic Payment Scheme replacing SPS, moving to more uniform payment across areas within a MS (ending historical payment setting).	EC (2011a) Art. 15-22.
'Greening' of direct payments: 30% of direct payments are contingent on application of a package of 'green' measures (organic farms automatically receive this payment). The measures include:	EC (2011a) Art. 29-33.
Crop diversification on farm land (above 3 ha) not covered by grass or cultivated under water, with three crops, each covering between 5 and 70% of the total farm-land.	
Maintain permanent grasslands as per 2014 levels (reference area).	
Allocation of 7% of farm land for ecological focus areas (e.g. land left fallow, terraces, landscape features, buffer strips and afforested areas)	
Young farmer scheme: allocation of up to 2% of annual national ceiling to young farmers in their installation	EC (2011a) Art. 36+37.
Small farmers' scheme (<3 ha): Provide payments for small farmers;. Scheme shall set payments through either 1) allocation of up to 10% of annual national ceiling, or 2) amount corresponding to the national average payment per hectare multiplied by a figure corresponding to the number of hectares with a maximum of three. Exemption from 'green payments' requirement (see above).	EC (2011a) Art. 47-51
Progressive reduction and capping of the payment, a percentage deduction in the payment of 20-100% for tranches between € 150,000 and 300,000 Euro (the 'green payments' are exempted).	EC (2011a) Art. 11.
<b>Optional</b>	
Coupled support may be granted by MS to some sectors and products (e.g. cereals, milk products, fruits etc.), not exceeding 5%. This requires notification from the MS and approval by the Commission.	EC (2011a) Art. 38
Voluntary allocation of payment for areas with particular natural constraints, using up to 5 % of the annual national ceiling.	EC (2011a) Art. 34+35.
<b>Design of Pillar 2</b>	
Compulsory allocation of 25% of the EAFRD contribution to agri-environment-climate measures, organic farming measures, or areas facing natural constraints. Commitments must be beyond mandatory requirements. Measures shall be undertaken for periods of 5-7 years. Payments shall be granted annually and shall compensate beneficiaries for all or part of the additional costs and income forgone resulting from the commitments made.	EC (2011b) Art. 29
Creation of a measure for organic farming, based on ha of utilized agricultural area complying with Council Regulation (EC) No. 834/2007.	EC (2011b) Art. 30
Both agri-environment-climate and organic measures may cover transaction costs to a value of up to 20% of the premium paid for the commitments. Where commitments are undertaken by groups of farmers, the maximum level shall be 30%.	EC (2011b) Art. 29+30
Agri-environment-climate payments and organic farming payments are to be held within specified amounts per measure type (200-900 Euros per ha / livestock unit). These amounts and support rates may be increased in exceptional cases justified in the RDPs.	EC (2011b) Annex I
Member States shall ensure that all the rural development measures they intend to implement are 'verifiable and controllable'. This requires an assessment prior to implementation, as well as ongoing assessment measures.	EC (2011b)

that a share (7% is proposed) of a farm's eligible hectares (excluding land under permanent grassland) be managed for ecological purposes. Examples of the types of land that could count as ecological focus areas included in the proposed regulation are landscape features, buffer strips, fallow land or land afforested through rural development grant schemes. A full list of eligible types of land will be defined in delegated acts. In this context, Hart and Baldock (2011) highlight the need for suitable conditions (e.g., minimum widths for buffer strips or grass margins) and adequate enforcement in order to maximize ecosystem service benefits (e.g., with respect to pollinators, soil and water quality, and carbon storage).

The proposal would also set a minimum level of crop diversity, and this could bring modest benefits for the environment, particularly if it encourages greater rotation of crops, including the introduction of legumes or fallowing into the rotation. Benefits for biodiversity will largely be in relation to common and widespread species, due to improvements in soil biodiversity and overall invertebrate populations, whereas the most seriously declining species are unlikely to benefit significantly. As with all these measures, impacts will be context specific

It is important not to see the “greening” measures in isolation. Indeed, perhaps the greatest potential environmental benefit from these measures is the foundation they provide for building more focussed agri-environmental schemes under Pillar 2. By funding these basic measures through Pillar 1, a greater proportion of the current agri-environment budget should in principle be available to incentivise more tailored and targeted management activities and increase the extent of their coverage. The “greening” measures, in contrast, would reach a much larger proportion of farms, particularly those for which the agri-environmental payment levels have limited appeal, such as in extensive arable areas. To fully utilize the potential of ecological focus areas, their creation needs to be integrated in spatially explicit approaches and strategies, linked with lower-level cross-compliance requirements and higher-level agri-environmental measures. Such concepts should also pay particular attention to group applications to generate landscape- and catchment-scale benefits for ecosystem services.

Organic farms automatically qualify for the green payment, which suggests a stronger recognition of the ecological benefits from organic agriculture that have been highlighted in a number of studies (e.g., Nascimbene et al. 2012; Rundlöf et al. 2010)

whilst only a few studies have been carried out in Mediterranean agro-systems, such as vineyards, despite their economic importance. The main aim of the study was to test whether organic farming enhances local plant species richness in both crop and non-crop areas of vineyard farms located in intensive conventional landscapes. Nine conventional and nine organic farms were selected in an intensively cultivated region (i.e. no gradient in landscape composition). However, the separation of organic farming support from agri-environmental measures and the automatic green payment for organic farms should not lead to a reduced emphasis in the development of rural development strategies and programmes in the Member States.

Changes have also been made to cross-compliance that are positive for the environment: Member States will be required to develop GAEC standards for maintaining soil organic matter and for protecting wetlands and carbon-rich soils. Overall, the CAP proposals also emphasize advisory services, with the focus of the Farm Advisory System now expected to go beyond cross-compliance and include environmental issues under rural development policy as part of its minimum scope.

### **3.4.2 Key aspects of the legislative proposal – Pillar 2**

Under Pillar 2, programmes would become more flexible. The main change is a shift away from the current four-axis structure towards a set of six priorities: fostering knowledge transfer in agriculture and forestry, enhancing competitiveness of all types of agriculture and enhancing farm viability, promoting food chain organization and risk management in agriculture, preserving and enhancing ecosystems dependent on agriculture and forestry, promoting resource efficiency and the transition to a low carbon economy in agriculture and forestry, and realizing the jobs potential and development of rural areas (European Commission 2011d). “Caring for the environment” and “contributing to climate change mitigation and adaptation” are proposed as common goals, which all aspects of future rural development programmes must reflect adequately through their actions under all priorities.

There are no constraints on which measures can be used to deliver each priority, in recognition of the fact that measures often serve multiple objectives (*ibid.*). The change gives new incentives and flexibility to Member States to address these priorities creatively and use packages of measures tailored to the specific needs identified within their programmes.

The range of measures remains largely unchanged, but within the individual measures there also emerges a greater emphasis on flexibility, cooperation, innovation and the need to facilitate action beyond the holding level and promote delivery at a broader landscape scale.

A minimum budget allocation has been included for issues related to land management and climate change. At least 25% of the Pillar 2 budget should be allocated to agri-environmental/climate measures, organic farming and payments to areas facing natural or other specific constraints. While this broadly corresponds to the current minimum budget allocation of 25% to the second axis of the Rural Development Programme, the range of measures covered by the 25% seems to be more restricted. Natura 2000 payments (measures 213 and 224) and forestry-environment payments are not mentioned in the proposals. This would potentially increase the funding available for agri-environmental/climate, organic farming and natural handicap measures, but could also imply an even lower recognition of Natura 2000 payments and forest-environment payments in future rural development programmes. The extent to which this 25% earmarking of the budget represents a binding commitment, however, is questionable, since the reference to the minimum spend requirement is only included in a recital of the legislative text.

The proposals also include the option to create thematic sub-programmes focused on young farmers, small farms, mountain areas, short supply chains and restructuring agriculture in specific rural areas; they do not explicitly include environmental themes. The inclusion of environmental sub-themes would in principle provide Member States (or their regions) with the opportunity to develop thematic sub-programmes specifically targeting one or a set of ecosystem services in specific regions or across the whole Member States. Carbon sequestration, for example, could become the focus of a national thematic sub-programme integrating support from different relevant rural development measures.

The territorial approach is particularly suited to measures that pursue the provision of public goods and ecosystem services across the socio-cultural and environmental spectrums (Mantino 2011). Thematic sub-programmes could provide an administrative framework, combined with bottom-up approaches such as Leader, to stronger integrate territorial approaches in the CAP. More consideration of how to facilitate the use of measures in this way is needed to maximize these sorts of opportunities, building on examples of territorial approaches adopted in Member States, such

as the Integrated Territorial Intervention in Portugal and the Integrated Area Project in Italy (*ibid.*).

Agri-environmental measures often lack the consideration of delivering ecosystem service benefits at a landscape, catchment or even wider scale. The new proposal for Pillar 2 makes reference to synergies resulting from commitments undertaken jointly by a group of farmers which lead to higher environmental and climate benefits. It recognizes the higher transaction costs of group applications and suggests higher contributions to transaction costs of 30% of the premium paid for the agri-environmental/climate commitments. While the recognition of higher transaction costs of group applications is to be welcomed, more attention needs to be paid to integrating local governance into PES and rural development programme design and delivery and to further supporting self-governance of groups of land managers (Osbeck et al. 2012, Schwarz et al. 2008, Ostrom 2010).

Legislative requirements for payment approaches and calculations remained unchanged. Payment requirements still follow the WTO requirements, even though a more flexible interpretation of the WTO requirements is needed to allow payment designs to address the diversity in farming systems and the rural environment across the EU. Barnes et al. (2011) have stressed that there is room for alternative payment approaches. Outcome-based approaches, full-cost-of-management approaches and opportunity-cost approaches could be considered in the application of PES within the CAP to better target ecosystem service benefits provided by different farming systems under a wide range of different environmental and bio-physical conditions across the EU (Barnes et al. 2011, Schwarz et al. 2008).

Given the limited amount of funds available and the high opportunity costs for intensive and commercial farming systems that adopt agri-environmental measures, it appears that regulatory approaches such as the cross-compliance requirements in Pillar 1 are more effective to safeguard a certain level of ecosystem service provision than voluntary incentive mechanisms (Shucksmith et al. 2005).

A proposed new initiative, the European Innovation Partnership (EIP) for agricultural productivity and sustainability, creates new opportunities to promote the delivery of environmental services. The EIP aims, among other things, to “promote a resource efficient, productive and low emission agricultural sector, working in harmony with the essential natural resources on which farming depends”. It is intended as a policy

response to the challenges of increasing food demand, growing demand for land for biomass and bioenergy production as well as for nature conservation, pressures on resources and the environment, and the slow-down of productivity growth in European agriculture. One of its key aims is to integrate sustainability into all components of agricultural production:

- in land management that is both resource-efficient and protects public goods;
- in measures addressing the whole supply chain;
- in actions to improve recycling and the reduction of post-harvest losses; and
- in the development of new products.

Funding through rural development policy will allow new partnerships to be developed between researchers, farmers and investors to run innovative projects, with an overarching EIP network set up to foster cooperation and enhance communication between the different actions.

### **3.5 LEGACY OF THE 'ENVIRONMENTAL BOUNDARY CONDITIONS' FOR AGRICULTURE**

The integration of environmental considerations into other sectors such as agriculture can be traced back to requirements set out in the Single European Act (1986), which granted the first treaty-based competence on environmental questions by stating that environmental concerns “shall be considered” in European Community policy (Carson 2004). The 1998 Cardiff process sought to advance the principle of “environmental policy integration”, already an established idea within DG Environment, into other parts of the Commission and EU policy more generally. This Council-led process first started in 1998 and eventually involved nine sectors preparing strategies to integrate environmental protection into policy planning.

The contribution of the Sustainable Development Strategy in influencing the role of environmental considerations in rural development has been much debated. The Gothenburg European Council Conclusions stated that “the CAP and its future development should, among its objectives, contribute to achieving sustainable development by increasing its emphasis on encouraging healthy, high-quality products, environmentally sustainable production methods, including organic production, renewable raw

materials and the protection of biodiversity” (Council of the European Union 2001, para. 31).

In December 2009, the European Council reiterated its goal that “sustainable development remains a fundamental objective of the European Union under the Lisbon Treaty”. The 2009 EU Presidency report stressed that the strategy for sustainable development would continue to provide a long-term vision and constitute the overarching policy framework for all EU policies and strategies (Council of the European Union 2009, para. 21). The EU 2020 strategy charts a path towards sustainable growth and is intended to support a shift towards a resource-efficient, low-carbon economy. The roadmap issued by the Commission provides a framework for activities to be designed and implemented coherently. Importantly, it identifies gaps in performance in meeting targets in nature conservation, waste and water management. The roadmap proposes measures to enhance awareness and knowledge and better mobilize key actors to improve performance on environmental measures throughout the EU (European Commission 2011b).

The roadmap can be viewed as an effort to implement the policy coherence strategy linked to sustainable development. Unlike the Directives, however, implementing the strategy is voluntary. However, the various Directives and policies that comprise the environmental policy framework in Europe can be used to help leverage the kind of actions required for the roadmap to be successful.

Important efforts have been made as well to examine the relationship between environment and EU Cohesion Policy.<sup>11</sup> The interconnectedness of these areas is increasingly apparent, as emphasized in the 2010 White Paper on Cohesion Policy, where the EU places greater emphasis on the role of regional diversity and policy coherence as a prerequisite for sustainable development.

Given the important interactions between agricultural land use and environmental processes, appropriate environmental management in the sector is crucial to achieving EU environmental policy targets. This requires not only legislation but also changes in policies that affect the sector directly, in particular the EU Common Agricultural Policy (CAP).

The regional dimension of this issue has historically received weaker recognition in policy development and implementation. However, developments of the

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<sup>11</sup> See, for example, EEA (2010d) and Baltzar et al. (2009).



**Figure 2: Nitrate vulnerable zones in EU Member States in the Baltic Sea Region**

Source: European Commission Joint Research Centre, <http://fate.irc.ec.europa.eu/elisa-viewer>.

past several years suggest a different trend might be taking hold, with investments in environmental protection serving to support social, economic, and territorial cohesion. Nearly one-third of the investments planned or already paid out under the Cohesion Policy in the 2007-2013 period are linked to strengthening performance on EU environmental goals.

EU Member States in the BSR often differ in their interpretations of the environmental directives. Take, for example, the Nitrates Directive, which has still not been fully implemented in all BSR EU Member States, mainly relating due to insufficient designation of nitrate vulnerable zones and non-conformity of action programmes (European Commission 2011a). In the BSR, Denmark, Germany and Finland have opted

for nationwide action programmes, designating 100% of their territory as a nitrate vulnerable zone. Poland, meanwhile, designated only 1.49% of its land area as nitrate vulnerable during the second implementation period, 2008-2011. Other BSR countries have criticized Poland for this, but Poland has argued that most farms are too small for efficient management of proposed measures to reduce nitrogen.

There are many possible synergies in the implementation of EU directives. For instance, the Water Framework Directive has incorporated several aspects of the Nitrates Directive in its provisions, such as designating nitrate vulnerable zones as protected areas and incorporating nitrate measures in River Basin Management Plans. Several Member States are

integrating nitrate monitoring in monitoring networks established under the Water Framework Directive. For the present reporting period, 50% of the monitoring stations from 10 Member States are the same in the Nitrates Directive and Water Framework Directive databases (European Commission 2011a).

Along with the mandates under the environmental directives, there are a number of “soft” legal initiatives that can affect activities under the CAP. For instance, the EU Sustainable Development Strategy, which is believed to have helped DG Environment when seeking to “green” proposals from DG Agriculture, is also seen as an especially powerful driver of agri-environmental measures (Pallemaerts 2007). Other initiatives with similar effects include the Sixth Environment Action Programme (2002-2012), which provided medium-term guidance for EU environmental policy in both substantive and political process-related terms) and the EU Biodiversity Strategy, amended in 2011, an integral part of the Europe 2020 Strategy that is aimed at reversing biodiversity loss and speeding up the EU’s transition towards a resource-efficient and green economy.

Furthermore, CAP programmes are likely to be influenced by the anticipation of new environmental directives, such as the Marine Strategy Framework Directive, which obliges Member States to “take the necessary measures to achieve or maintain good environmental status in the marine environment by the year 2020 at the latest”.<sup>12</sup> Given the transboundary nature of the sea, the directive notes, Member States “should cooperate to ensure the coordinated development of marine strategies for each marine region or subregion”. Also relevant is the Floods Directive, which requires Member States to complete a preliminary flood risk assessment by December 2011, then identify the highest-risk areas, develop flood risk and flood hazard maps, and create flood risk management plans.<sup>13</sup>

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12 Full text at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32008L0056:EN:HTML>.

13 Full text at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:288:0027:01:EN:HTML>.

## 4 FARMING IN THE BALTIC SEA REGION: A BROAD SPECTRUM

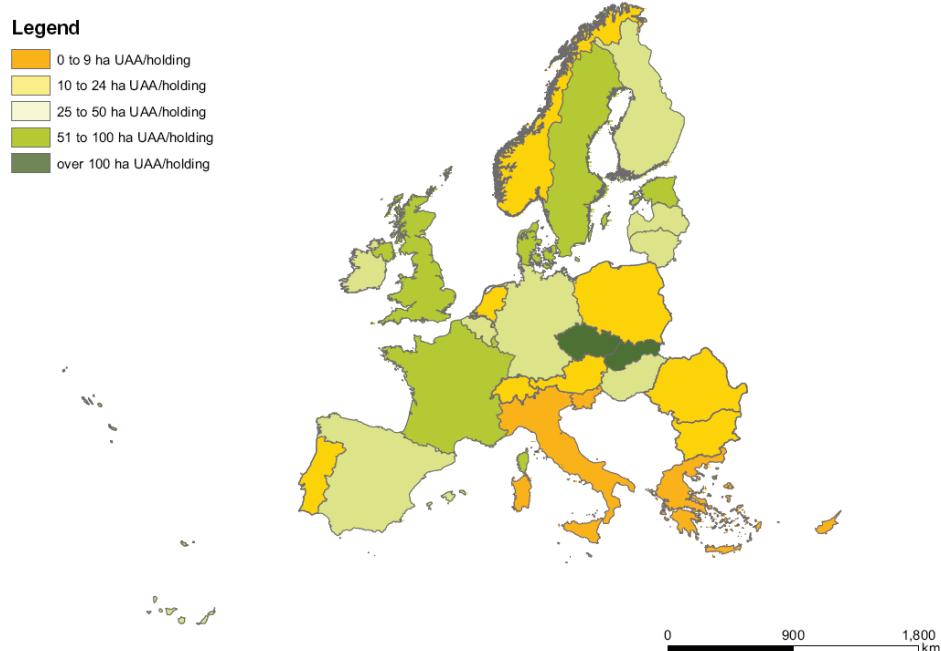
The Baltic Sea Region is home to some 100 million people in 10 countries. Its agricultural systems are diverse and nested in different set of ecosystems, institutional arrangements and policy environments. This diversity is partially reflected in the many distinctions made when discussing agri-environmental governance in the region: extensive vs. intensive agricultural systems, EU members vs. non-members, old vs. new EU members, Eastern vs. Western states, etc. In this section we describe the current status of farming systems, food security and agriculture-environment links in the EU, with a focus on the BSR.<sup>14</sup>

### 4.1 FARMING SYSTEMS: STRUCTURE, CROP PARAMETERS, AND DEMAND FOR FARM LAND

The average size of an agricultural holding (utilized agricultural area, or UAA) in the European Union is 22 hectares (data for EU-27). However, as Figure 3 shows, average farm sizes vary greatly amongst Member States. Small-scale farming prevails in many of the Eastern European countries,

which also happen to be new EU members, such as Bulgaria, Romania, Poland, and Hungary. In the BSR, Poland has the greatest concentration of small farms, with more than a million holdings (about 44% of the country's total) smaller than 2 ha. Still, these small farms cover only 5% of the total agricultural land in the country, whereas holdings with more than 100 ha cover 17% of the total agricultural land. At the other end of the scale, 69% of Estonia's farms are larger than 100 ha (see Table 2 and Figure 4).

The number of agricultural holdings has significantly declined across the EU, but the amount of agricultural land has not declined proportionally. The number of holdings dropped by 8.8% between 2003 and 2007, while agricultural land decreased by only 0.2%, suggesting that the average farm size in the EU is growing. For the Baltic States (Estonia, Latvia and Lithuania), the disappearance of small-scale farms has been significant; in Latvia, for example, the share of total UUA taken up by farms smaller than 10 ha declined by 24 percentage points between 2000 and 2007, from more than half to just over a quarter (see Figure 5).



**Figure 3: Average farm size in EU countries (in usable agricultural area per holding)**

Source: Eurostat (2010)

14 For a more comprehensive illustration of European-level data, see Andersson and Powell (2011).

**Table 2: Number of farms and total UAA of each farm size category (2007)**

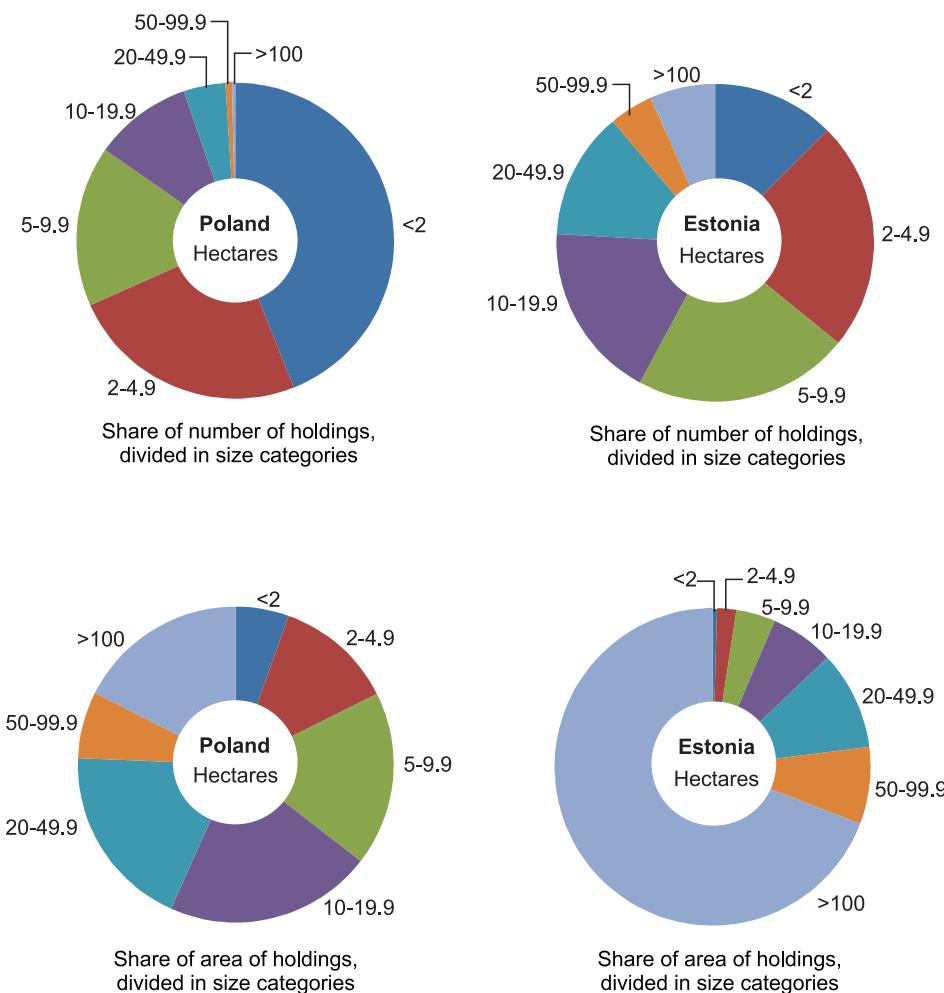
Member state	Size categories							
	<2 ha	2-4,9 ha	5-9,9 ha	10-19,9 ha	20-49,9 ha	50-99,9 ha	>100 ha	
<b>Denmark</b>	Number	510	750	8 780	8 430	10 470	7 090	8 180
	Area (ha)	410	2 780	63 260	121 420	337 190	509 530	1 628 010
<b>Germany</b>	Number	23 560	58 730	50 950	68 670	81 940	53 380	31 980
	Area (ha)	20 110	196 930	371 150	1 025 170	2 723 960	3 742 270	8 852 300
<b>Estonia</b>	Number	2 900	5 440	5 120	4 180	3 020	1 040	1 550
	Area (ha)	3 890	17 990	36 410	58 730	91 410	71 400	626 990
<b>Latvia</b>	Number	18 500	25 290	27 060	20 760	10 780	2 880	2 210
	Area (ha)	17 440	85 210	193 010	287 800	319 890	197 230	673 260
<b>Lithuania</b>	Number	31 740	107 530	46 390	24 670	12 980	3 910	2 980
	Area (ha)	46 010	335 340	321 640	338 990	389 760	269 430	947 790
<b>Poland</b>	Number	1 046 210	580 230	389 400	239 270	101 370	15 790	7 850
	Area (ha)	843 160	1 880 880	2 764 190	3 292 260	2 930 540	1 058 350	2 707 800
<b>Finland</b>	Number	1 730	4 540	8 540	14 790	24 180	10 940	3 170
	Area (ha)	1 160	17 170	63 840	218 520	783 390	747 050	461 160
<b>Sweden</b>	Number	700	9 740	13 170	14 140	16 470	10 050	7 890
	Area (ha)	500	34 360	95 760	203 230	532 910	712 900	1 538 340

Source: Based on data from Eurostat, <http://appsso.eurostat.ec.europa.eu>.

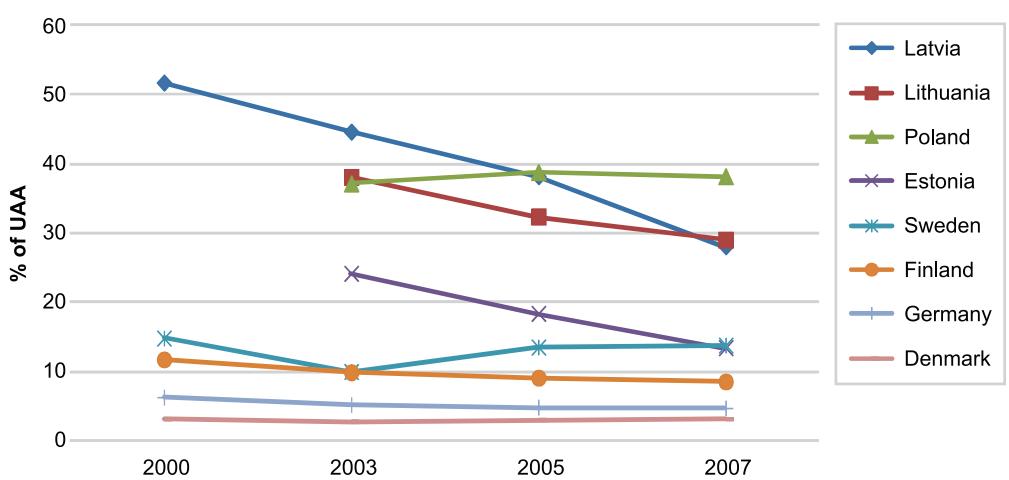
According to Eurostat data, the BSR countries have similar arrays of farm types, though the share of each varies from country to country. As shown in Figure 6, the most common farm activities in BSR countries are growing specialty cereals, oilseed and protein crops, raising dairy and beef cattle, or combining various crops and livestock.

Figure 7 shows the share of utilized agricultural area devoted to crop fodder production and grassland. There are significant variations across the region. Most countries have a high share of grassland, while just a few countries, such as Finland and Sweden,

have a higher percentage of crop fodder production. Fodder production patterns may provide insights into environmentally important trends, since permanent grasslands are generally considered crucial from a landscape and nature conservation perspective. However, this is generally true only for permanent grasslands that are extensively managed. Some countries, such as Denmark, have very low share of UAA in fodder and grassland, but with very high livestock production. This gives an indication of the high level of dependency on animal feed import, which is discussed below.

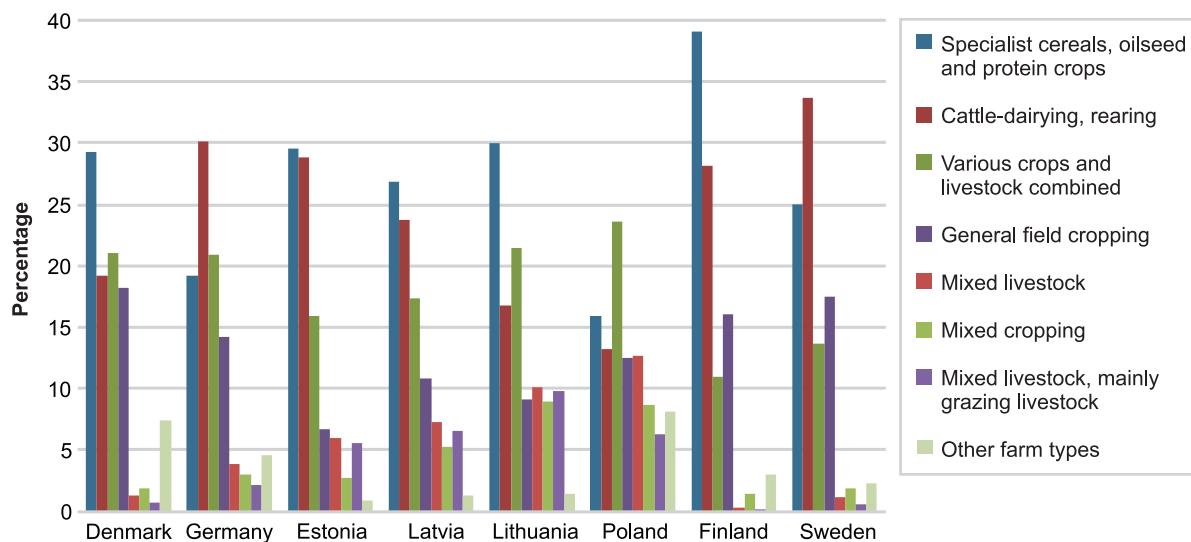


**Figure 4: Share of number of farms and total UAA of each farm size category, Poland/Estonia (2007)**



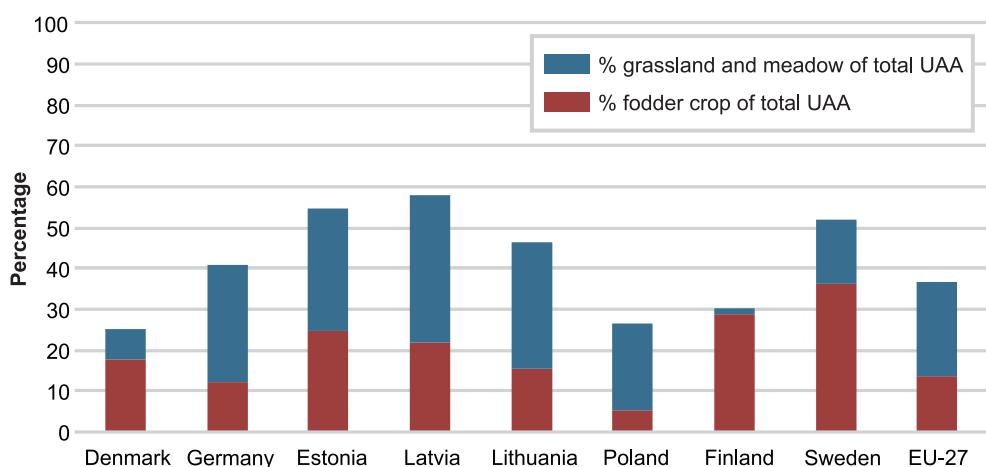
**Figure 5: Share of total agricultural land used by farms smaller than 10 ha, 2000-2007**

Source: Based on data from Eurostat, <http://appsso.eurostat.ec.europa.eu>.



**Figure 6: Agricultural holdings by main type of farming activity, Baltic Sea Region, 2007 (% of total)**

Source: Based on data from Eurostat, <http://appsso.eurostat.ec.europa.eu>.



**Figure 7: Share of UAA devoted to fodder crops, grassland and meadow, EU members in BSR, 2010**

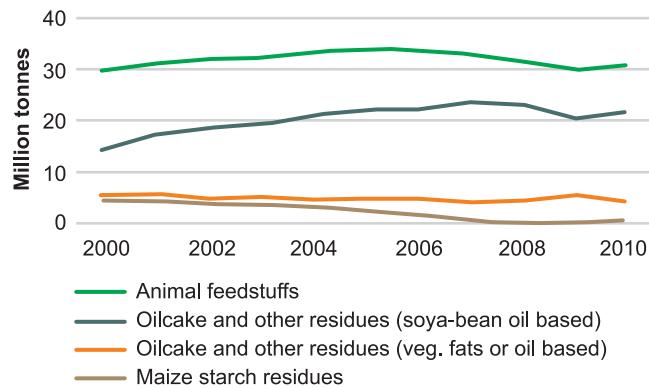
Source: Based on data from Eurostat, <http://appsso.eurostat.ec.europa.eu>.

Animal feed represents an important commodity within European agriculture. Common types of raw material for so-called protein feed are soybeans, sunflower and rapeseed. The EU-27 imports more than 30 million tonnes/year of animal feed (see Figure 8), 73% of it from Argentina and Brazil alone (Eurostat 2011b).

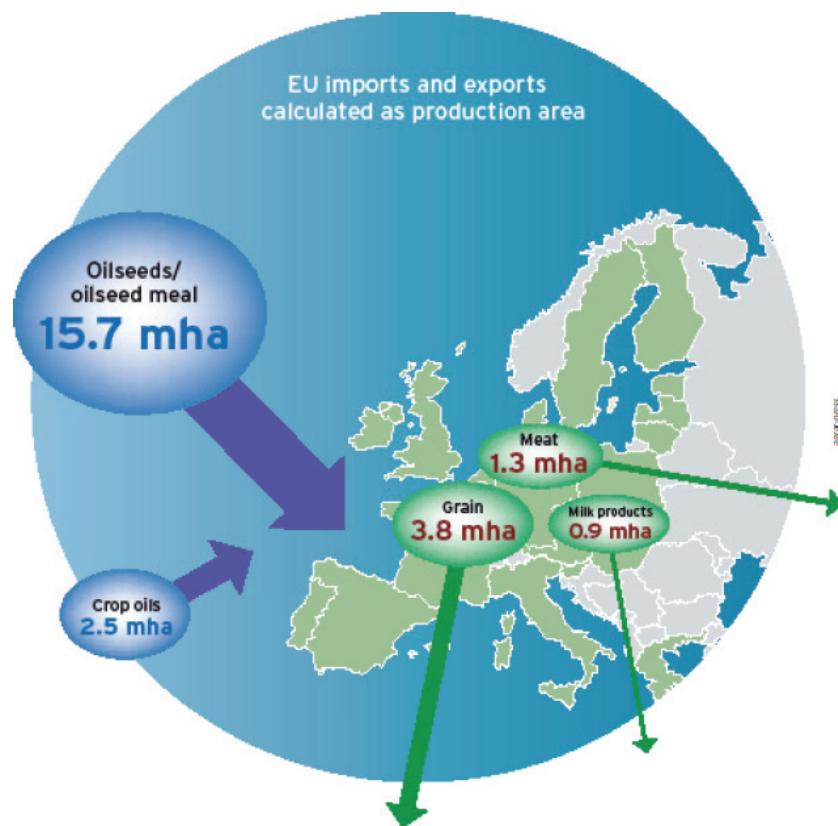
The dependency on imported feed means that European meat production has environmental impacts outside Europe; feed production may also compete with food security objectives in the source countries.<sup>15</sup> The total

trade balance for European agriculture shows an estimated deficit of 14.5 million ha, corresponding to the production area required outside the EU (Bickert 2011). In comparison, the utilized agricultural area of Germany is 16.9 million ha (see Figure 9 for the calculated land requirement outside of the EU for key traded goods). This import also represents an external input of nutrients that generally is not considered in nutrient management.

15 This suggests yet another type of policy coherence that should be considered in CAP reform: with EU development policy.

**Figure 8: Imports of animal feedstuffs from outside the EU**

Source: Eurostat (2011b).

**Figure 9: EU imports and exports calculated as production area**

Source: Bickert (2011).

## 4.2 FOOD SECURITY AND PRODUCTION CAPACITY

The European Commission and the European Parliament have made food security a key theme for the post-2013 CAP reform. The most widely accepted definition of food security, agreed upon at the 1996 World Food Summit, says food security exists when “all people, at all times have access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life” (see FAO 2003, Chapter 2, for a history and discussion of this definition). In a key communication, the Commission identifies three “strategic aims” for CAP reform, and the first one is to “preserve the food production potential on a sustainable basis throughout the EU, so as to guarantee long-term food security for European citizens and to contribute to growing world food demand” (European Commission 2010).

This concern for long-term “food security” has been used as a powerful political argument by some stakeholders calling for the protection of EU agriculture through continued subsidies. However, the European food supply is widely considered to be secure. EU citizens and businesses have strong purchasing power when considered in a global context, and are

sufficiently well connected to international markets that at least in the short to medium term, their supplies are not in doubt – even if they have to pay more for them. Yet the continued viability of food production in some areas within the EU is in doubt, and while this does not jeopardize EU food supplies, it raises other legitimate concerns. Figure 10 shows the balance of food imports and exports for the EU.

To the extent that production provides an indirect measure of food security, the Eurostat figures suggest that the EU is self-sufficient in meat and dairy products, but not in fish and most vegetables. Self-sufficiency in cereals in the EU depends on seasonal variations, with a mostly positive trade balance in the last five years. At the country level, the differences in self-sufficiency are considerable, as illustrated in Figures 11 and 12. Among BSR countries, production does not typically exceed domestic demand by very much, and often it is far lower; one significant exception is pork production in Denmark, which is more than six times the level of domestic demand. Sweden and Latvia are the only countries that do not reach self-sufficiency levels for main meat types, while the whole region is self-sufficient in cereals. Poland is the only country that achieves self-sufficiency levels for vegetables.

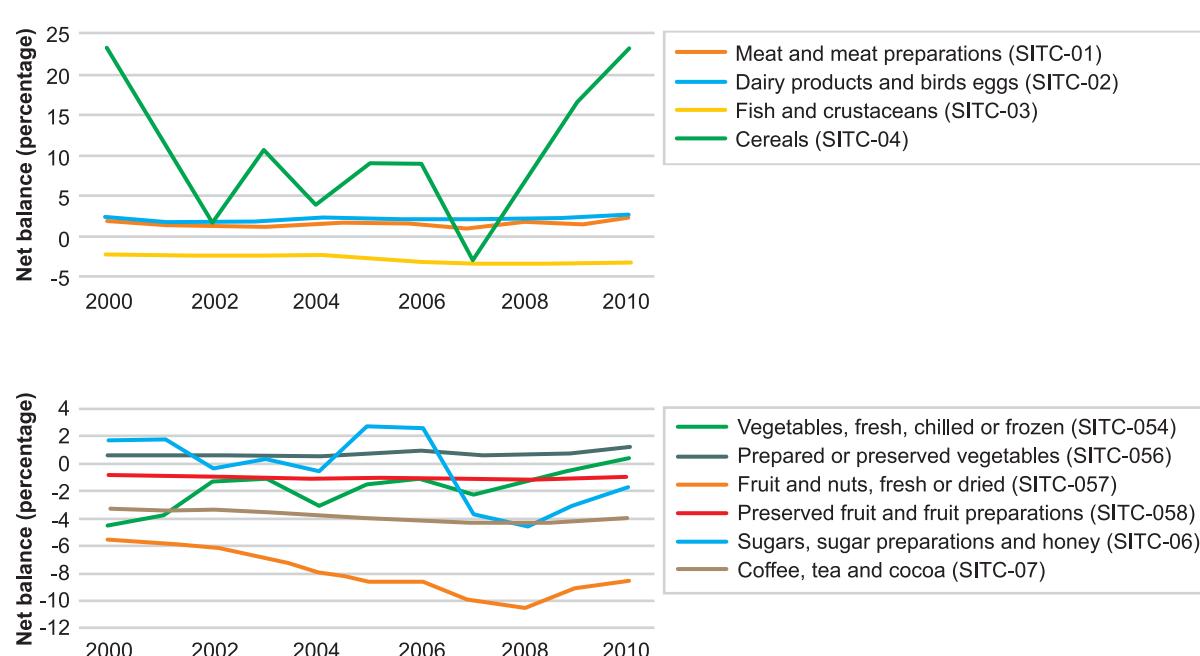
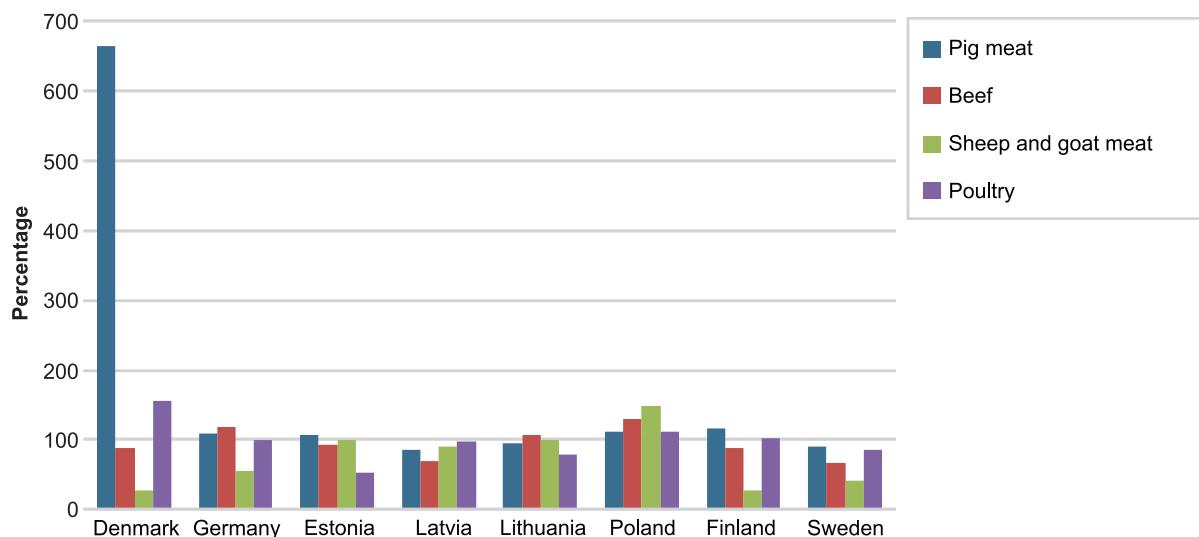
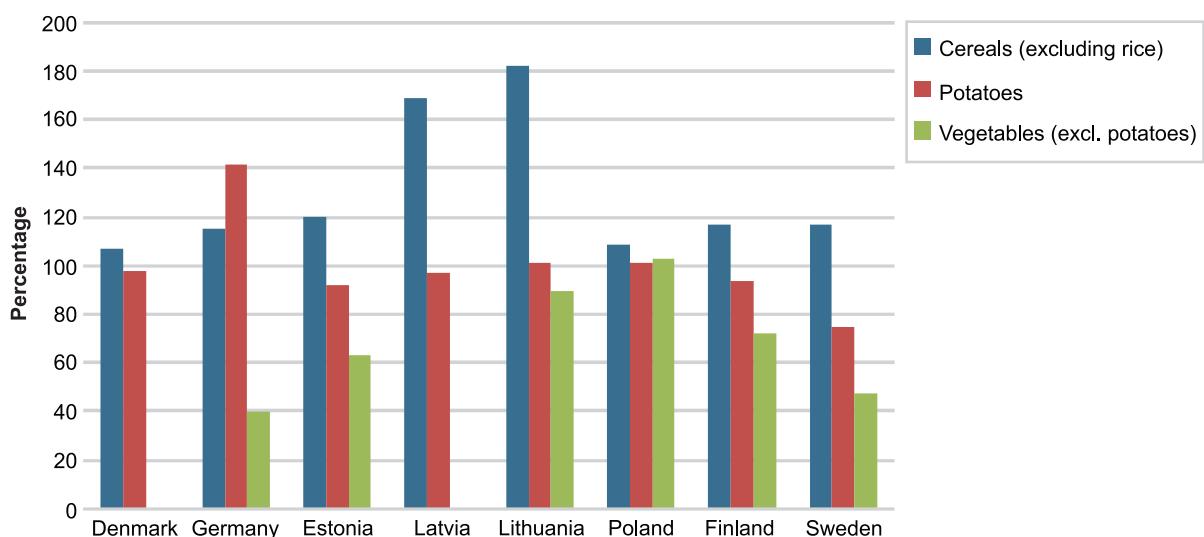


Figure 10: EU trade balance (% net balance) for major food categories

Source: Eurostat (2011b).

**Figure 11: BSR countries' meat production as a share of domestic demand (%)**Source: Based on data (2005-2009) from Eurostat, <http://appsso.eurostat.ec.europa.eu>.**Figure 12: BSR countries' cereal, potato and vegetables production as a share of domestic demand (%)**Source: Based on data from Eurostat, <http://appsso.eurostat.ec.europa.eu>.

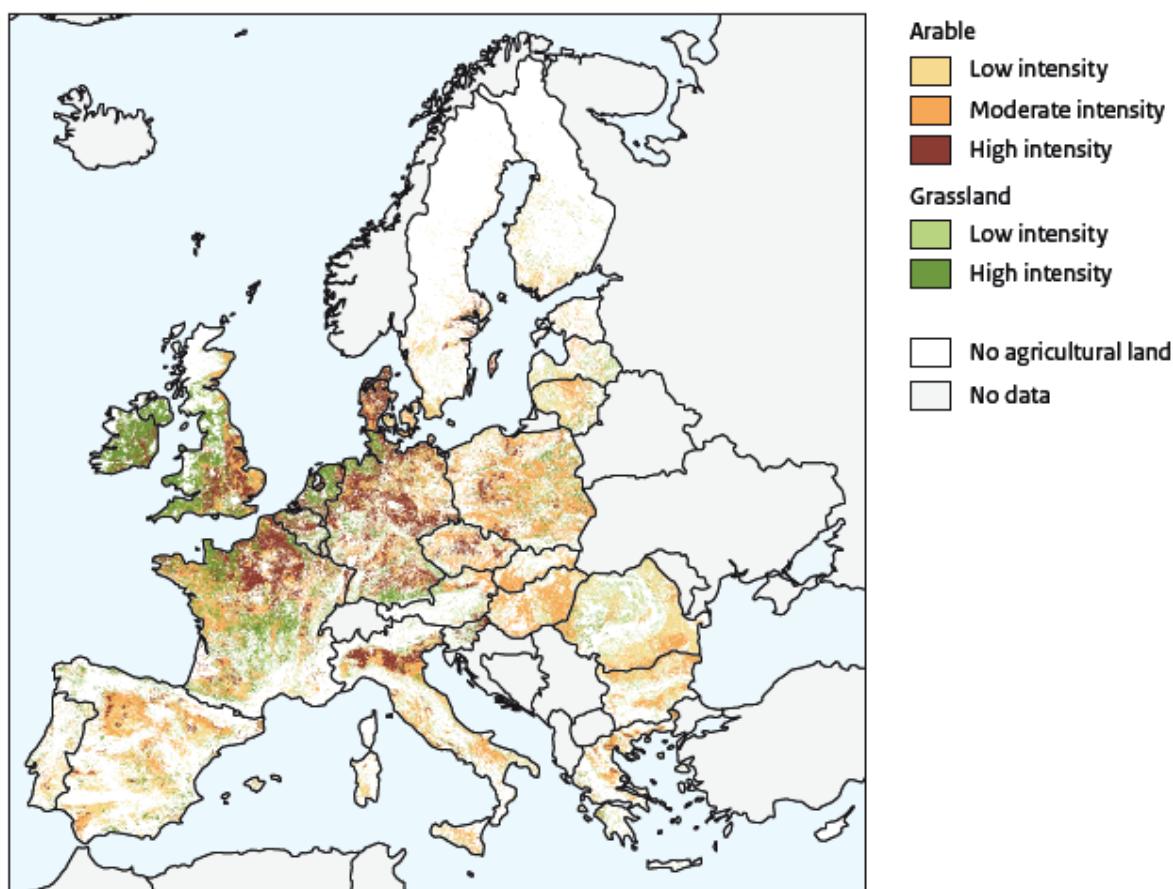
### 4.3 PRODUCTION SYSTEMS – INTENSITY LEVELS AND ORGANIC FARMING

Agricultural production is often associated with significant impact on the environment (GHG emissions, soil, air and water pollution, etc.). On the other hand, agriculture can also provide important ecosystem services and help maintain species-rich habitats and the regulation of water flows. In this regard, different farming practices have different impacts and different benefits.

Intensive farming maximizes yields per hectare, but requires substantial inputs in the form of labour, capital, external resources (fertilizers, pesticides), and often a high degree of mechanization. Intensification

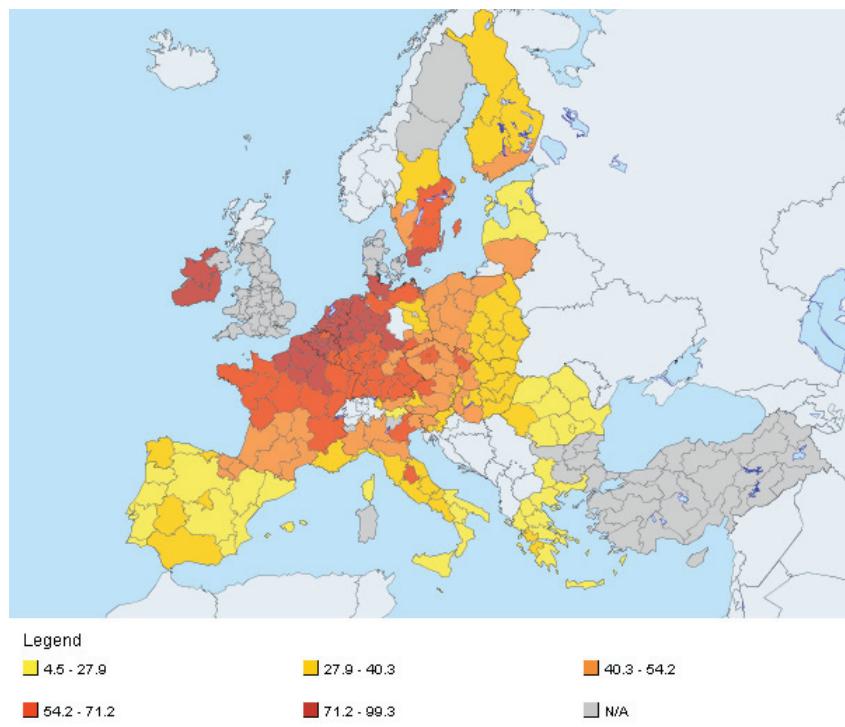
may increase local pressures on soil, water and air, but on the positive side, due to the enhanced yield, it can reduce the immediate area needs for agricultural production. Intensive agricultural land use is prevalent in the west-central Europe (see Figure 13), both in the form of arable land and grasslands production systems. In general, the distribution of intensive production corresponds to higher production yields (see average yields of wheat in Figure 14).

Another measure of agricultural land-use intensity is the density of livestock population, which can be a key factor in determining the environmental impact of livestock farming, especially if effective agri-environmental measures are not in place. Figure 15 shows livestock densities within the EU-27.



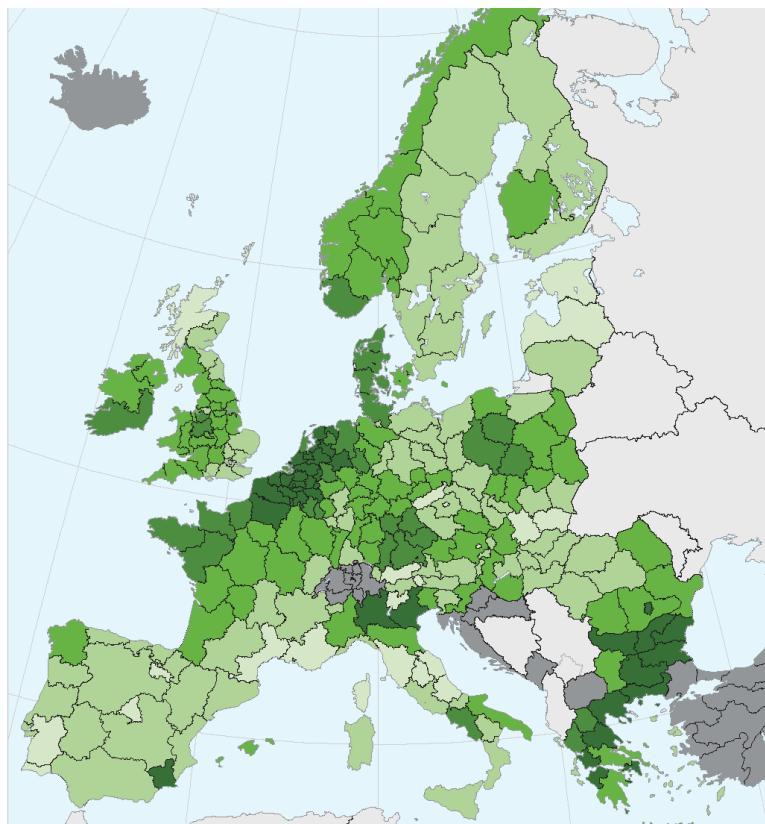
**Figure 13: Agricultural land use intensities, 2005**

Source: van Zeijts et al. (2011) , Figure 2.1.



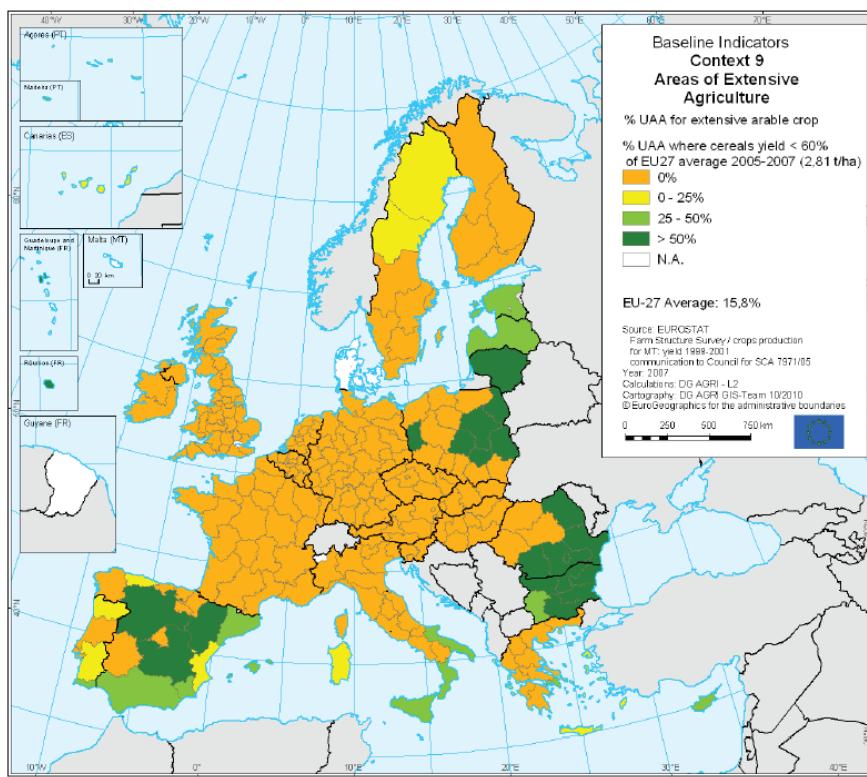
**Figure 14: Average yield of wheat (100 kg/ha), by NUTS 2 regions**

Adapted from Eurostat, <http://appsso.eurostat.ec.europa.eu>.



**Figure 15: Total livestock density (LSU/ha) at regional level, 2007**

Source: Eurostat (2011a), Figure 4.1.8.

**Figure 16: Extensive arable crops as a % of UAA, EU-27**

Source: DG Agriculture (2010), Map 2.2.4.3.1.

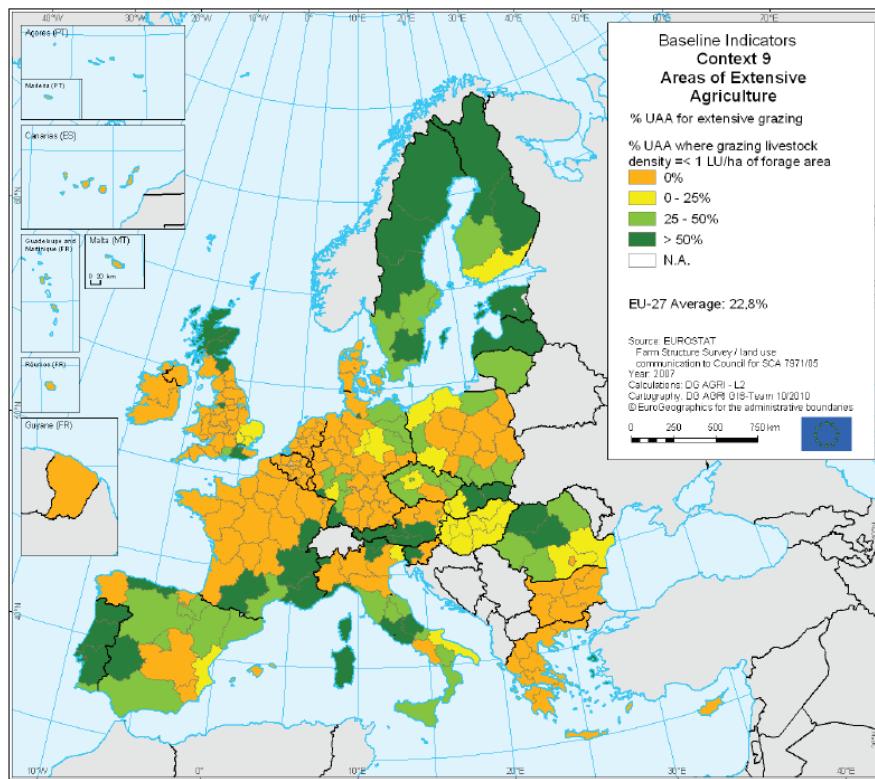
Extensive agriculture is distinguished from intensive agriculture primarily by the lower input of resources. Hence, the yield from extensive agriculture depends primarily on the natural fertility of the soil, the terrain, the climate, and the availability of water. According to DG Agriculture (2010), extensive farming covers, on average, 15.8% of arable cropland and 22.8% of grazing areas in the EU-27; it is most prevalent in southeastern and northern Europe. The BSR has more extensive farming, on average, than the EU as a whole. Figures 16 and 17, shows the distribution of extensive agriculture across the EU-27. Extensive agriculture dominates agricultural systems in the new EU member countries. The extensive and less extensive agricultural systems around the Baltic Sea demonstrate the diversity in the Baltic Sea Region.

The definition of organic farming generally depends on international or regional agreements and rules, and is also associated with legal frameworks. In the EU, organic farming is considered one of several approaches to sustainable agriculture, combining best environmental practices, a high level of biodiversity, conservation of natural resources, and high animal welfare standards (European Commission 2012b). It includes the production of crops and animals without the use of synthetic inputs (such as manufactured

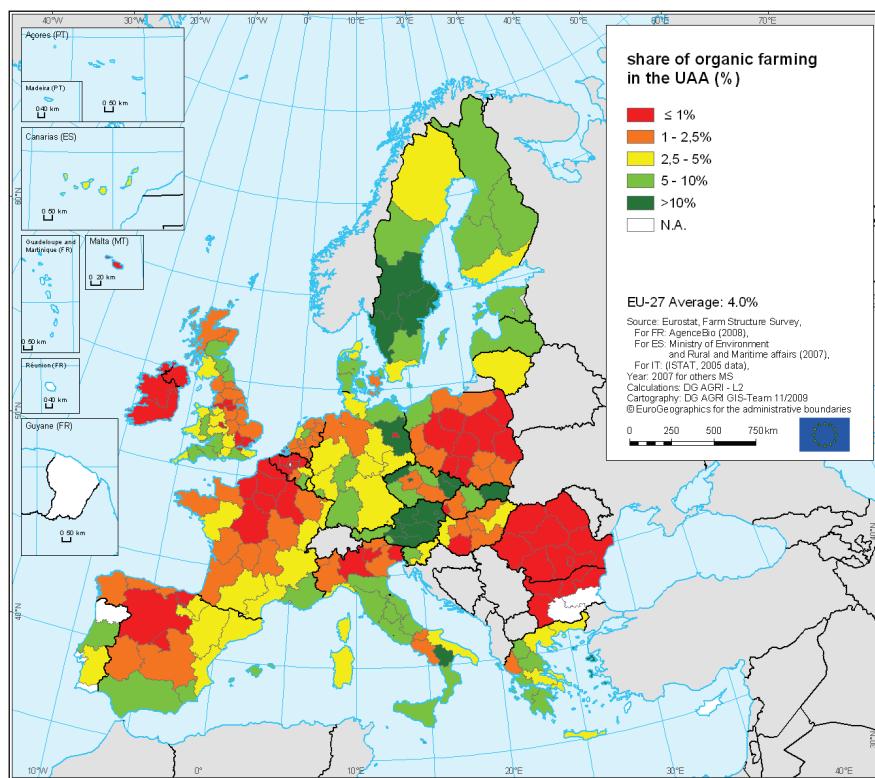
pesticides and artificial fertilizers) and without genetically modified organisms.<sup>16</sup> Avoiding chemical inputs will render benefits for quality of soil, groundwater and surface water; however, it is also generally associated with lower yields (Directorate General for Agriculture and Rural Development & European Commission 2010).

Within the EU, organic farming is generally increasing, but it still involves a relatively small proportion of agricultural holdings (4.7% of total UAA, or close to 200,000 holdings across the EU27, per Eurostat 2011b). Figure 18 shows the breakdown across Europe; Figure 19 shows the share of UAA used for organic farming over the last several years in the BSR. The region has a higher-than-average share of organic agriculture. Sweden is the leader in this regard, with 13% of its UAA classified as organic farming, up sharply from about 7% in 2006. Estonia and Latvia

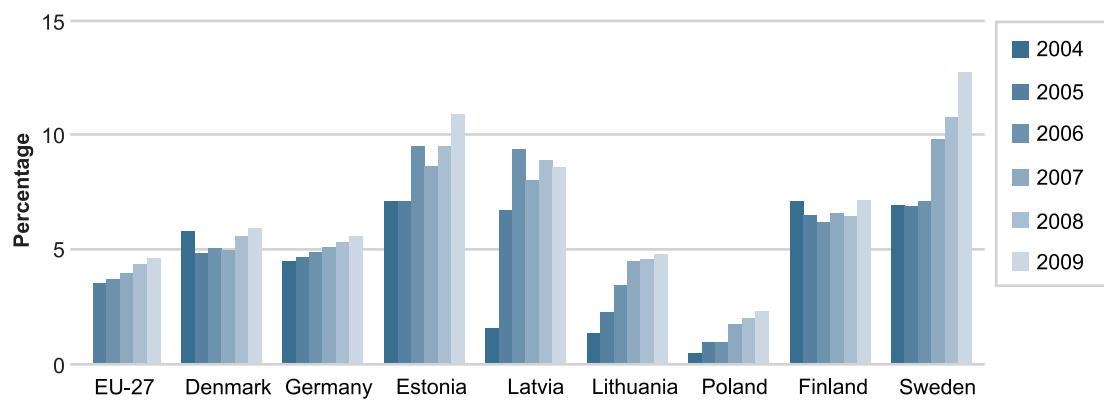
<sup>16</sup> As defined in Council Regulation 834/2007, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2007R0834:20081010:EN:HTML>. For a more detailed overview of organic farming, including relevant EU regulations, see the DG Agriculture website: [http://ec.europa.eu/agriculture/organic/organic-farming/what-organic\\_en](http://ec.europa.eu/agriculture/organic/organic-farming/what-organic_en).

**Figure 17: Extensive grazing as a % of UAA, EU-27**

Source: DG Agriculture (2010), Map 2.2.4.3.2.

**Figure 18: Share of the organic area in the total UAA in 2007 at regional level (%) in EU-27**

Source: DG Agriculture (2010), Map 2.2.4.15.

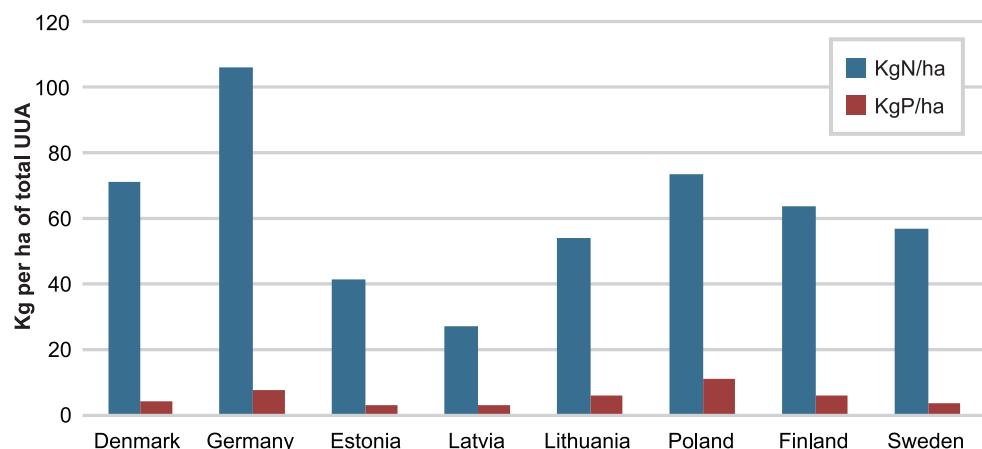
**Figure 19: Share of UUA farmed organically (%) in BSR countries, 2004-2009**Source: Based on data from Eurostat, <http://appsso.eurostat.ec.europa.eu>.

also show rather high organic shares (9% and 11%, respectively), while Poland has the lowest share in the BSR (about 2%, but growing).

Since only a small share of BSR farms are organic, it seems relevant to also examine the levels of external inputs to gauge farms' environmental impact. Relevant indicators include consumption estimates of manufactured fertilizers and pesticides; for example, one can measure the nitrogen and phosphorus consumption per hectare of agricultural land. Figure 20 shows this measure for the BSR countries; clearly, application levels vary significantly across the region; Germany, the top consumer, uses about 80 kg more manufactured nitrogen fertilizer per hectare than Latvia, the lowest consumer.

#### 4.4 CAPTURING VARIABILITY: INTENSITY AND FARM SIZE

In an attempt to capture the wide diversity of BSR agriculture, we mapped the situation of EU Member States in the region along two continua: intensity and farm size; Figure 21 shows the results. Different factors related to the production systems have been used to weigh the countries along the intensity axis. Farm size shows hectares used in agricultural holdings to differentiate large-scale and small-scale farms. the parameters considered in the mapping are cereal crop yield; grazing livestock density; pig and poultry production; manufactured nitrogen, phosphorus and pesticide input; and share of organic production (see Annex 1 for definitions). It should be noted that because

**Figure 20: Estimated consumption of manufactured nitrogen and phosphorus fertilizers (kg per ha of total UUA), 2010**Source: Adapted from Eurostat, <http://appsso.eurostat.ec.europa.eu>.

pig and poultry production mostly occurs in site-specific concentrated populations, its intensity cannot be easily measured based on utilized agricultural area. Since this is still an important aspect of agriculture in the BSR, we use the ratio between the domestic production per capita and the average EU consumption as a proxy, knowing its limitations, as a rough indication of the scale and intensity of production.

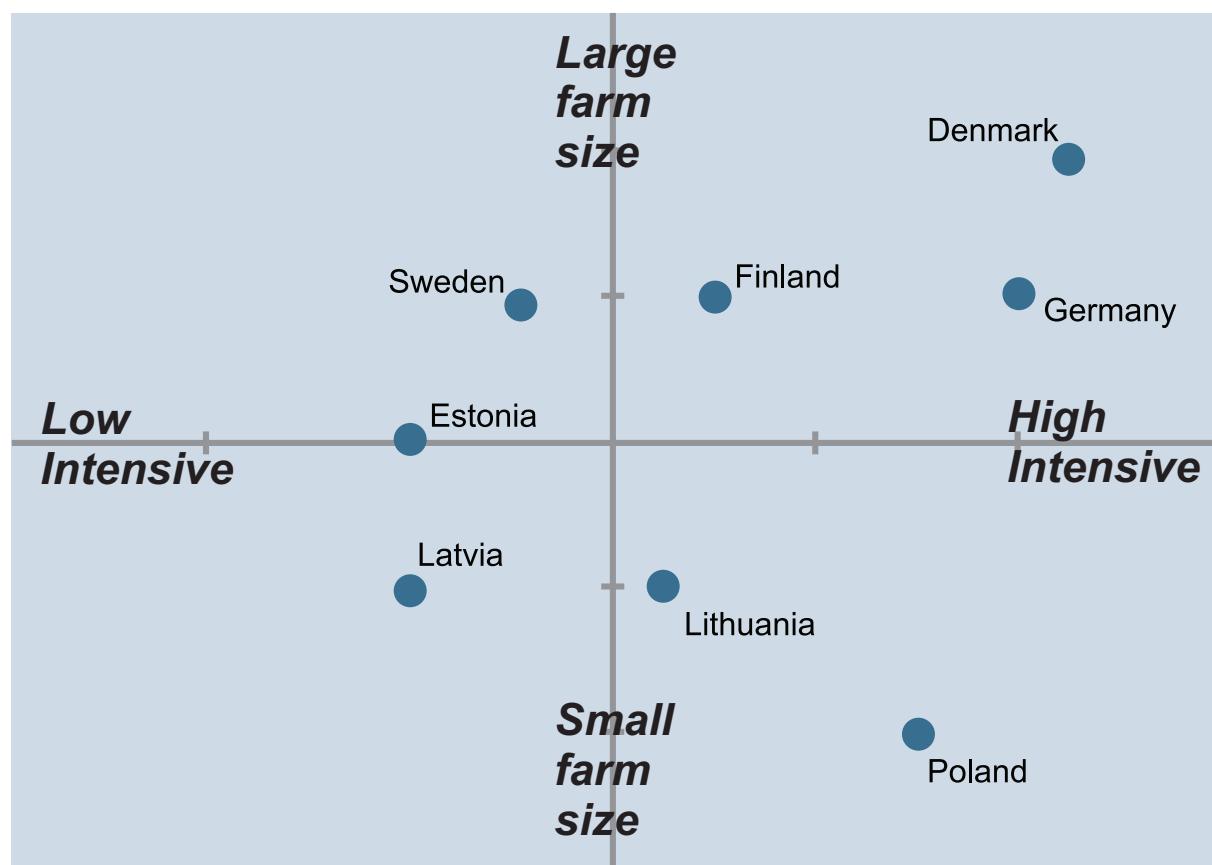
In order to weigh the different parameters according to the same scale of magnitude, the above proxies were used and ranked between 0 and 3. The country average weights were used to map the countries in a matrix with the two continua as axes (proxies and calculation methods are described further in Annex 1). Figure 21 shows the results.

According to this figure, Denmark and Germany have large shares of farming with high intensity, while Estonia and Latvia are on the opposite side of the spectrum, with low intensity (i.e. more extensive farming practices). Furthermore, Poland, Latvia and Lithuania have high share of small farms, while

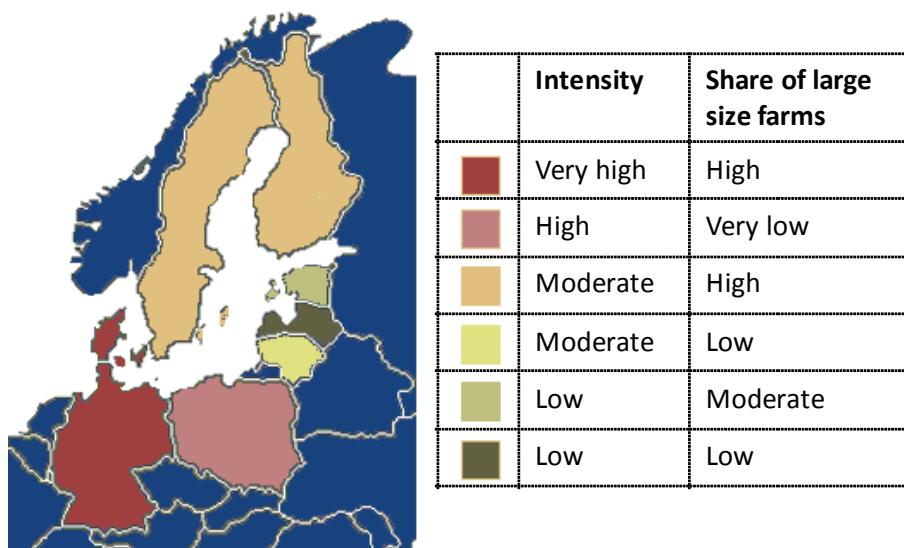
Denmark, Germany, Finland, and Sweden have higher share of large farms. Clearly, farming systems in the BSR are very diverse, with significant differences in farm sizes and intensity. This presents one of the biggest challenges in developing a program of measures applicable across the region. Figure 22 shows how all the BSR countries rate along the intensity-size matrix.

#### 4.5 LINKS BETWEEN AGRICULTURE AND ENVIRONMENT

Biodiversity is inextricably linked to the health of ecosystems and is therefore critical for the support of human life and well-being. Agricultural practices affect biodiversity; the European Environment Agency has identified intensified agriculture as one of the main threats – in particular, less diverse crops, simplified cropping methods, homogenization of landscapes, and use of fertilizers and pesticides (EEA 2010a). The latter two also exert pressure on air and water quality, affecting many non-agricultural habitats. DG Agriculture notes that many valuable habitats in Europe are maintained



**Figure 21:** Intensity and farm size matrix for BSR countries



**Figure 22: BSR countries, classified by farming intensity and farm size**

by extensive farming, and a wide range of wild species rely on this for their survival.<sup>17</sup> For example, in areas of Type 1 High Nature Value (HNV) farmland, the semi-natural vegetation may be grassland, scrub or woodland or a combination of different types, used for raising livestock. These areas are generally very species-rich, and by definition require extensive agriculture for their maintenance of habitats with high conservation value (EEA 2009). Figures 23 and 24 show the distribution of HNV and species richness across Europe.

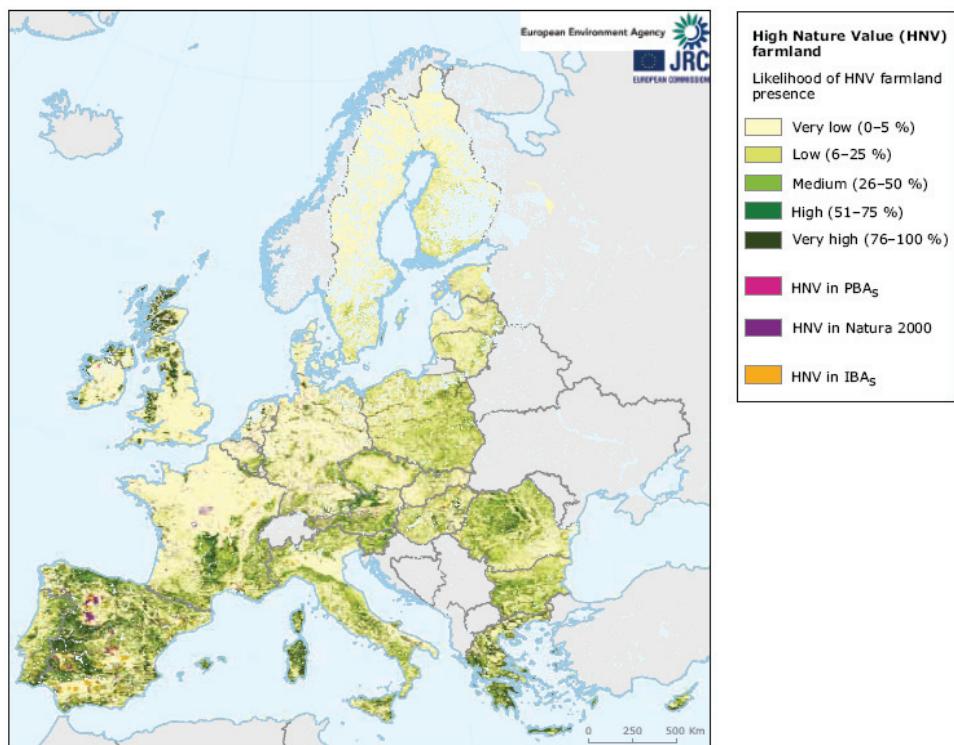
Considering the respective benefits of intensive and extensive farming systems, it is important to consider the trade-offs between maximizing productivity and reducing environmental pressures. There is also an issue of land allocation and market organization. Concentrating agriculture in the most productive areas could reduce the area requirements and could potentially increase overall efficiency related to nutrient and water use, but would also imply longer distribution chains and associated energy needs. The concentration of agriculture needed also depends on at what scale we seek to achieve food security. The vulnerability of our food system will certainly change if we change the focus from the national to the regional or even international scale.

Many areas in Europe face water scarcity, particularly in the south, where there is a critical combination of scarcity and high demand for water (EEA 2010b). The situation is more favourable in the BSR. The Water Exploitation Index (WEI) is a relatively straightforward indicator of the pressure or stress on freshwater

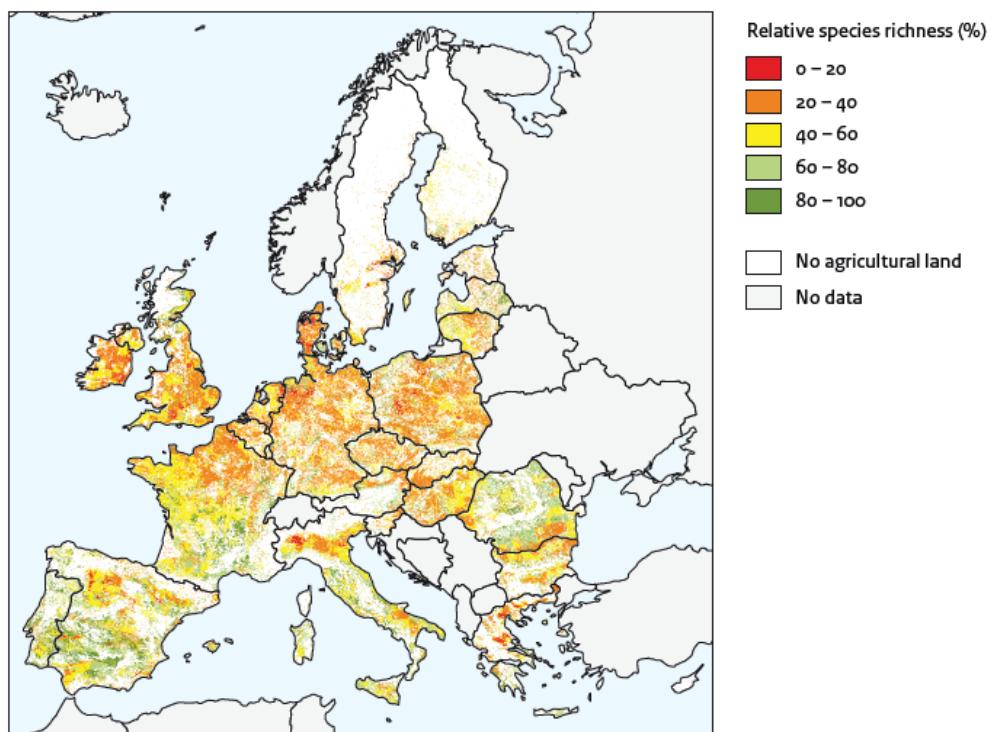
resources representing total freshwater withdrawn annually as a share of total available renewable resources (see Figure 25). A WEI above 20% implies that a water resource is under stress, and more than 40% indicates severe stress and a clearly unsustainable use of the resource (EEA 2010b). By this measure, in the BSR, only Germany currently suffers from water stress, while Poland has reduced its vulnerability and moved out of water stress during the last decades. The irrigation need in the region varies significantly on a sub-national level. Using Poland as an example, irrigation plays an important role in mitigating the effects of drought on crop production locally, where dry spells are common and lead to substantial losses in yields; in extremely dry years (e.g. 1992 and 2000) up to 40% of the country area is affected by drought, with an estimated decrease in crop yield of 10–40% compared with a normal year (Łabędzki 2007)

Despite improvements in some regions, pollution generated by agriculture remains a major pressure on freshwater in Europe, according to the EEA (2010b). Nutrients (from fertilizers, e.g. nitrogen and phosphorus), pesticides and organic material are discharged to water sources mainly through diffuse pathways (see Figure 25). Available data suggest that agriculture contributes 50% to 80% of the total nitrogen load to freshwater in Europe (EEA 2010c).

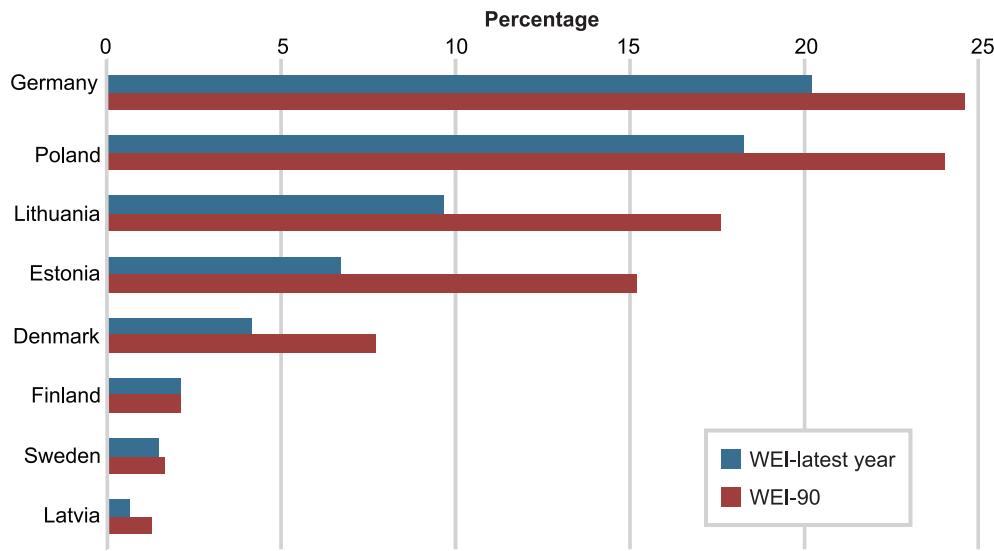
<sup>17</sup> See [http://ec.europa.eu/agriculture/envir/index\\_en.htm](http://ec.europa.eu/agriculture/envir/index_en.htm).

**Figure 23: Likelihood of presence of HNV farmland, EU**

Source: EEA (2009), Map 3.1.

**Figure 24: Relative species richness in agricultural areas, 2005**

Source: van Zeijts et al. (2011), Figure 2.3.



**Figure 25: Sustainability of water use in the BSR, by Water Exploitation Index**

Based on data from EEA (2010c). Note: Values are given for 1990 (WEI-90) and for the latest year available (1998–2007).

## 5 CAP IMPLEMENTABILITY CHALLENGES IN THE CURRENT PERIOD

Rural Development Programmes are implemented through multi-year programming of agri-environmental measures, which the countries compose from a list provided by the EU. In compliance with the WTO (DG Agriculture 2005), the payments are made according to three principles: 1) equivalence to income forgone, 2) to cover additional costs of the environmental measure, and 3) as an incentive to encourage farmers to take part in schemes. Agri-environmental payments are typically implemented through contracting between a public authority (Management Body) in a Member State and a private beneficiary, e.g. farmer or land manager. The contract is generally for 5-7 years and is voluntary. National Strategy Plans are prepared by Member States observing the EU RDP Strategy, and thus serving as reference tools in preparing their respective RDPs for EAFRD programming. Below follows a summary capturing the key insights generated by the national reviews conducted by the COMPASS partners in the respective countries.

### 5.1 LESSONS FROM THE NATIONAL REVIEWS

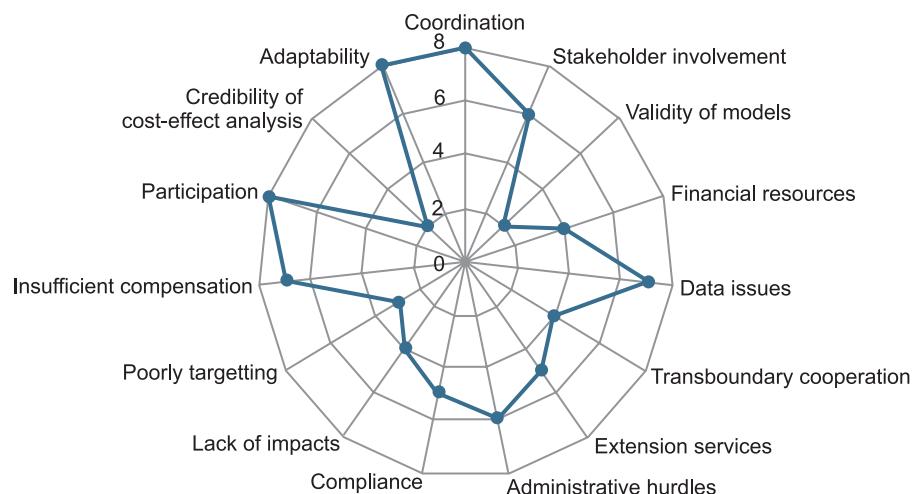
The BSR country reviews highlighted challenges connected to the implementability of agri-environmental measures in three core areas: 1) the construction and basic enforcement of environmental boundary conditions, 2) the use of CAP Pillar 1

(cross-compliance) as a means of implementing those boundary conditions, and 3) the use of Pillar 2, the Rural Development Programmes. Figure 26 shows the major themes that arose in discussions with implementing agencies in the BSR countries; Table 3 describes them in more detail.

These results point to a widespread lack of coordination between sectors and inadequate stakeholder involvement in policy processes. Particularly, lack of coordination between the agricultural and environmental sectors were shared as key challenges across the region. Many actors expressed a challenge in aligning different bundles of European policy and different national objectives which may conflict with one another. There are disconnects between the Water Framework Directive and Nitrates Directive, between marine and terrestrial initiatives, and between nitrogen and phosphorus reduction targets and social policies on employment, work conditions and labour rights.

Some countries, such as Poland and Lithuania, reported that they faced great challenges here, in some cases even resulting in legal conflicts that are undermining implementation (Poland). Other countries reported much smoother processes of sectoral coordination (e.g. Denmark, Sweden), but that the inclusion of non-state actors in policy processes was problematic.

Further, it is apparent that the construction and negotiation of robust and acceptable environmental



**Figure 26: Key challenges for agri-environmental measure implementation in BSR countries**

Note: Challenges are based on concerns raised by implementing agencies in BSR countries. The weighing represents how many countries registered a specific challenge as significant.

**Table 3: Explanation of the key challenges cited by BSR implementing agencies**

<b>Challenge abbreviation</b>	<b>Explanation</b>
Coordination	Poor coordination between agencies/sectors
Stakeholder involvement	Insufficient or problematic process of stakeholder participation
Validity of models	Acceptability and validity of models for setting targets
Financial resources	Lack of financial resources and/or manpower
Data issues	Lack of data and/or data on required format
Transboundary cooperation	Limited transboundary cooperation leading to poor harmonization of policies
Extension services	Capacity constraints in extension service
Administrative hurdles	Heavy bureaucracy, administrative hurdles and complicated procedures
Compliance	Lack of compliance
Lack of impacts	Reduced or unexpected impacts of AE measures
Poorly targeting	Poorly targeted measures
Insufficient compensation	Insufficient financial compensation/incentives
Participation	Low-level participation in some measures
Credibility of cost-effect analysis	Lack of credible cost-effect analysis for selection of measures
Adaptability	Constraints to adapting measures to local ecology and social context

boundary conditions (i.e. policy targets, regulatory requirements etc.) is complicated by lack of required data and information, and/or uncertainties in these data sets. This includes issues pertaining to data-sharing between riparians in transboundary catchments (e.g. between Poland, Belarus, etc). Altogether, this highlights how national interpretation of EU obligations frequently is made in the face of intrinsic and irreducible uncertainties, which may include disagreement on the nature of the scientific models underlying target-setting. Discomfort among country respondents regarding weak assumptions and/or procedures in target-setting (and possibly coupled with a sense of exclusion, as discussed below) was likely to carry over into a lack of buy-in and acceptance of procedures and measures under CAP Pillars 1 and 2. In Estonia it was highlighted that requirements of environmentally friendly management support should be reviewed and scrutinized in the next RDP period.

With regard to cross-compliance (Pillar 1), five countries reported challenges in getting farmers to meet the requirements. Such problems may be related to other problems cited around Pillar 1, such as administrative hurdles, complicated bureaucracy and capacity constraints in extension services, spilling over into low

awareness regarding rules and procedures amongst beneficiaries. In terms of such capacity constraints, a pattern emerged that respondents in countries such as Denmark and Finland typically considered their extension services well developed, while respondents in countries such as Poland and Estonia saw a greater need for capacity-building in this area.

The implementation of agri-environmental measures under Pillar 2 was seen to suffer from the fact that many measures do not have the expected impacts, or indeed lead to unexpected or unintended impacts. Part of this problem may be due to measures not being well targeted from the outset. Above and beyond, the employment of agri-environmental measures was reported to be undermined by a significant mismatch between the financial incentives available and the operation of market forces in which they are intended to make a difference (seven countries). It is very likely that this challenge is one of the explanations for problems observed in terms of low participation of farmers in voluntary measures (eight countries), and/or problems in adapting generic measures to local/sub-national ecological and social/institutional contexts (eight countries). Importantly, respondents in several countries said local adaptation of measures

was constrained by EU regulations, which prevented country governments from designing rural development programmes which could adequately cater to their farms' diverse needs. Further, there was a lack of trust around decision-making procedures, particularly around methods for prioritizing agri-environmental measures, such as cost-effectiveness analyses.

In sum, we see a clear story-line emerging: The measures, which encompass both technologies and management interventions, have not been adapted adequately to the contexts in which they are being applied. Moreover, to a lesser extent these measures are frequently *poorly targeted*. This poor adaptation grows out a general sense that measures grow out of expert data and models from "experts" rather than from sufficient *stakeholder involvement* via *participatory processes*. This problem is compounded by sectoral silos without due *coordination* across sectors. Owing to the poorly adapted and targeted agri-environmental measures, land users consider that they receive *insufficient compensation* for the income forgone on account of reduced productivity in their farming systems. Moreover, the high transaction cost in terms of the *administrative hurdles* associated with gaining entitlements via the implementation of agri-environmental measures further compounds the sense of insufficient compensation. This can lead to poor compliance with environmental boundary conditions.

Poor stakeholder involvement and coordination across sectors is manifest at different scales. At the EU level, BSR Member States argue that their views are not sufficiently reflected in the definition and implementation of the environmentally bounded operating space and in the crafting of the CAP as an instrument to support the maintenance of the boundaries. At the regional level, there is inadequate participation of different stakeholder groups and sectors in the development and implementation of the BSAP. Civil society groups, from the agricultural sector in particular, have repeatedly complained that they are excluded from Baltic Sea Action Plan (BSAP) relevant platforms.

Altogether, this struggle, nested within inherent ambiguities and legacies in sub-national, national and EU governance levels, has led to significant territorial imbalances and inequities. This, in turn, threatens the rigour of the European approach to regional territorial cohesion.

## 5.2 AMBIGUITIES IN THE PLANNING, MONITORING AND EVALUATION OF MEASURES

The national reviews expressed concern that agri-environmental measures are internally contradictory and sometimes poorly targeted, and suggested the links between measures and the environmental challenges they are meant to address could be much clearer. As regards monitoring, there is significant contestation in several countries regarding the national/sub-national procedures. Not only is there distrust amongst the recipients of payments (farmers, land owners), but equally a lack of confidence from civil servants, NGOs and private sector in the assumptions, indicators and calculations underlying these procedures. The lack of effective monitoring was shared across the countries. In Finland it was suggested that agri environmental payments should be based on the value of environmental services provided, rather seeking to compensate farmers for the costs incurred, as the current CAP does. Such a shift would re-conceptualize the payments: costs would become investments, and rather than being compensated for lost income, the farmers would be paid for goods they produce.

One of the key challenges for the future is to ensure an appropriate balance between the supply of provisioning services such as food, fibre and fuel, and non-provisioning ecosystem services such as regulating, cultural and supporting services. Given that there are no markets for the non-provisioning services, these are often undersupplied, and incentive payments are needed to secure their delivery beyond that which is required through legislation such as the cross-compliance requirements. Current payment approaches in the EU include mainly agri-environmental payments – i.e., action-based payments for ecosystem services (PES) – but alternative designs of PES, such as outcome-based PES, as well as other mechanisms, such as habitat banking, are gaining attention.

These observations of challenges associated with adoption, targeting and adapting of generic agri-environmental measures in sub-national contexts are consistent with the findings of previous reviews. Notably, the European Court of Auditors (2011) concluded in a recent analysis of the Member States' agri-environmental payments that the effectiveness of agri-environment schemes was difficult to assess in view of the diverse and too-loosely-defined targets and inadequate monitoring data. The Court of Auditors points to significant ambiguities in the structure of the RDPS undermining stringent selection, design and monitoring procedures, including 1) unclear

formulation of objectives in the RDPs and the expected effects of measures, and that results often are not amenable to verifiable monitoring, 2) absence of clear relationship between agri-environmental measures and the environmental risks they are expected to address, and 3) unreliable monitoring data from Member States to comply with the EU common monitoring and evaluation framework.

In Lithuania, state environmental monitoring data are not used in identifying and developing measures. This is illustrated by the lack of concrete actions on relevant measures contributing to biodiversity targets.

Similarly, in an evaluation of measures to foster organic farming, the UK National Audit Office (2010) concluded that it was not possible to quantify and monitor the environmental benefits. At the EU regional level, challenges to stringent and trustworthy monitoring at the level of each country are multiplied, given the ambiguities in the design and selection of measures. There is a lack of consistent and comparable data – which in turn weakens the strength of any in-depth analysis of agri-environmental measures across states (see, for example, Barnes et al. 2011). Mid-term evaluations of RDPs often do not provide estimates of actual impact of measures (EPEC 2004).

Due to these concerns, and also aiming to ease reporting requirements and associated administrative costs, many national governments and their agricultural agencies have sought to streamline the RDPs for the forthcoming CAP period. While this will bring benefits, it may also reduce the adaptiveness of RDP measures to sub-national diverse conditions. Some countries have also conducted cost-benefit analyses to try to improve targeting. In Denmark for example, several cost-efficiency analyses have been done, often with different assumptions about the value of natural resources. Optimizing policies require gauging multiple factors to consider the indirect effects of pollutant reduction measures on other sector targets. However, for various reasons, the actual studies often look only at cost-effectiveness in terms of nitrogen and/or phosphorus reduction.

### **5.3 DIFFERENTIATED COMPENSATION FOR AGRI-ENVIRONMENTAL ACTIONS**

As observed in the synthesis of implementability challenges (Section 5.1), country respondents repeatedly raised concerns that agri-environment payments are providing insufficient compensation for measures. In Finland it was highlighted that the

current agri-environmental payments have not reduced nutrient discharge from agricultural sources. Other studies (e.g., EPEC 2004) have found that farms' debt levels and inadequate capital to adjust their structure in response to market forces are key reasons why agri-environmental measures often show positive impacts when implemented on a small scale, but fail to make such impacts on a large scale (compare also with Section 4.1 showing the rapid structural development in the BSR).

While it remains a common challenge for all BSR countries to provide sufficient compensation for measures, some countries are more disadvantaged than others. The Latvia review found that the current financial resources are insufficient, and the authors emphasized the need for an equivalent financial framework for all Baltic Sea states, so all can implement measures under similar conditions.

EU Member States receive different budget allocations from the EU for both Pillar 1 and their RDP programming under Pillar 2. This is a key factor determining the ability of countries to ensure the relevant intensity and coverage of agri-environmental measures (see also Berninger et al. 2011). In the national reviews for this analysis, agencies in countries that are more disadvantaged in the distribution of agri-environmental funding raised criticism regarding the discrepancies in payments between Member States. Meanwhile, countries receiving larger budget allocations from the EU rarely pay attention to this as an issue, which can be traced back to the origins of the CAP (see also section 2).

Despite the introduction of the Single Payment Scheme, the legacy of production-related payment still prevails to some extent, in particular in the old Member States, as direct payment entitlements per hectare of land continue to be based on past production levels in many of the EU-15 Member States. This has resulted in a distribution of payments per hectare in which more productive land (often old, agriculturally "productive" members) tends to receive higher payments, and where the distribution of Pillar 1 budgets in the EU-27 continues to favour agriculturally "productive" Member States. In many of the new Member States, the entitlements are entirely coherent with the aim of the decoupled regime, while in old Member States this is not the case, thereby compromising the general competitiveness within the EU context. Moreover, in the national report from Denmark, the single farm payment scheme is found to be "considered to provide such an overriding influence that smaller and more

targeted forms of incentives and schemes are frequently rendered impotent" (Larsen and Vinthner 2011, 39).

Discrepancies also exist within countries. The distribution of both direct payments to farmers under Pillar 1 agri-environmental payments frequently benefits large-scale farming systems at the expense of small holdings, which in some countries results in a tension between entire regions (e.g. north vs. south in Sweden). In countries with many small-scale extensive farming systems, such as Poland, several agri-environmental measures are seen to benefit larger farms, while farms smaller than 5 ha (more than 50% of the total, see Figure 3) are not eligible for entitlements. According to the national report from Poland, 56% of farms are less than 5 ha. In several country contexts, there is an apparent tendency also for organic agri-environmental measures to support large farms and more intensive forms of production (UK National Audit Office 2010).

As for Pillar 1, country allocations of Pillar 2 funding from the EU are determined through models based on the historical legacy and spending of the areas (see section 2). Differences in allocations between programmes thus partly owe to a weighing of needs based on historical farming patterns and the past agri-environmental situation. The calculation formulas under the Rural Development Regulation assume a continuation of farming as the counterfactual baseline in the estimation of the necessary payment to compensate for income forgone. This implies that the payment levels are privileging already intensive and highly productive areas, whereas more extensive and less-productive areas are receiving smaller rewards for environmental actions. Meanwhile, in terms of EU co-financing, the rate also varies between countries and by measures; for instance, it is 85% for new Member States but 55% for old Member States, and is higher for agri-environmental measures than for measures in other axes. The required national co-financing has in several cases motivated countries not to accept the total budget available from the EU (OECD 2011). An interesting aspect of the payment-setting is that while a continuation of more-profitable farming is set as the baseline, many farms have no income to forgo and are operating with a net loss.

Agri-environmental payments are also unevenly distributed on a spatial scale, covering only around 10% of the national UAA in some countries, while in others, such as Finland and Germany, they cover around 90% and 30%, respectively (Berninger 2011). For the EU-15 in the period 1998-2002, countries such as Sweden and Finland reached coverage of agri-environmental

measures of between 80-100 % of UAA, while the rest of the countries reached between 3% and 40% (DG Agriculture 2005).

The relative allocation of EU funds between axes and national co-funding to agri-environmental measures, including the degree of modulation (see section 2.3 on CAP Pillar 2), is decided at the national level. The degree of modulation and relative allocation to Axis 2 provide proxies for the interest individual countries take in agri-environmental measures, which in turn may provide an indication of the commitment to complying with the environment boundary conditions. In the period 2000-2006, most Member States prioritized Axis 1 in their budgeting.<sup>18</sup> While this average hides huge variations between countries, it shows that countries, in general avoid, allocating more than the required 25% to Axis 2 (see section 2.3 on Pillar 2 and agri-environmental measures). It may be hypothesized that this owes to the fact that other axes are more valued as means to support the agro-food sector and the country's intra- and extra-European competitiveness. Arguably, measures are designed based on a range of priorities, with environmental risks being but one.

Member States that have a low "production legacy" have prioritized the implementation of RDPs. Moreover, the balance of funding between Pillar 1 and Pillar 2 is much more even for the EU-12, whereas in the EU-15 Member States, the balance is in favour of Pillar 1.

Further, results from the BSR situational analysis suggest that in countries relying to larger extent on small-scale extensive farming, such as Poland, the environmental directives represents a greater challenge in terms of how to balance conservation and production (see Figure 23). In Poland, the Habitats Directive's Annex I has identified 69 natural habitat types. This has led to greater need for protection zones, which will have a definite impact on agricultural production. Furthermore, the Birds Directive, issued as a regulation in 2008 by the Ministry of Environment, designated 141 areas of bird protection as Natura 2000 sites. The extensive farming practice is a prerequisite to maintain the habitat, which again poses a challenge to the need for agricultural development and efficiency. There is a need to improve the current system to provide extension

<sup>18</sup> See Dvorak, T. (2009) 'Water in rural development programs: Lessons to be learned from Europe'. Presentation given at A Greener Agriculture for a Bluer Baltic Sea, 2 December 2009. Available at [http://www.laukutikls.lv/images/stories/konferences/PS\\_1\\_3\\_Thomas\\_Dvorak\\_AT.pdf](http://www.laukutikls.lv/images/stories/konferences/PS_1_3_Thomas_Dvorak_AT.pdf).

services to the large number of farmers compared with other countries in the region. More than 32% of Poland is already covered by a conservation programme. There are 23 national parks and 120 landscape parks, and more than 1,368 nature reserves.

#### **5.4 ADMINISTRATIVE HURDLES AND INSTITUTIONAL CAPACITY**

Country respondents identified institutional capacity and state-level political priorities as key factors in the success of implementing the directives. It was shared across countries that a broader stakeholder involvement, including private and civil society sectors would improve the design and implementation of measures. In Denmark, where the inter-sectoral collaboration in preparing the Green Growth Strategy has been commended, many argue that sub-national administrations, research institutes, agricultural organisations, NGOs, and others have mostly been left out of the process. It was suggested that this is partly due to lack of manpower and financial resources, partly due to EU requirements that had led to the government to opt for a more controlled and closed approach. This, in turn, has led to concerns about the analyses underlying targets measures, and about insufficient buy-in for programmes.

In the report from Germany it was highlighted that the current system prevents active involvement of farmers. For example, the defined management requirements at the national level are very restrictive: e.g., deadlines, documentation and sometimes specific mechanisation are necessary. In addition, farmers' acceptance to integrate environmentally compatible and resource saving methods in production is missing, due to the contractual duration of five years.

Low institutional capacity is also a key factor explaining lack of progress in implanting environmental directives. In fact, Member States' (including BSR countries') record of implementing EU environmental legislation has been described as poor, at least when seen within the broader picture of the overall number of infringement procedures. Environmental infringement procedures account for approximately one-third of all open cases for non-communication, non-conformity or bad application of EU law in the EU 27 (Coffey and Richartz 2003).

Implementation of the Nature Directives highlights some of the challenges for effective policy cohesion. Under Article 17 of the Habitats Directive, Member States must submit information on how the Directive is

being implemented every six years. For the reporting period 2001-2006, Member States for the first time provided detailed assessments on the conservation status of each of the habitat types (216) and species (nearly 1182) listed in the Directive and found within their territory. A summary report from the Commission to Parliament on the status of the Habitat and Bird Directives said that for many of the habitats and species listed under the Habitats Directive, favourable conservation status has not been achieved either at the national or bio-geographic regional level. Nevertheless, there are indications that in some cases the trend is positive. We will need to await the results of the next round of monitoring and reporting before these trends can be confirmed. The report concluded that Member States need to invest considerably more in this work, and that information is weak or lacking for marine habitats and species (European Commission 2009).

Decisions to prioritize agri-environmental measures may also be contingent on the administrative obstacles encountered in designing appropriate measures at the country level. Comparisons of the inclusion of RDP measures across Member States highlight that the share of agri-environmental measures in new Member States (20%) is close to half that of EU-15 (40%). It has been suggested that this is partially contingent on the ability of EU-15 Member States to "carry over" a high fraction of measures from the previous pre-2007 programming period, which are already streamlined into the administrative system (OECD 2011). This, in turn, suggests that old Member States are advantaged in their ability to meet environmental boundary conditions by the legacy of building up agri-environmental measures which are accepted by the European Commission. In the reviews, a clear pattern was found in that some countries (e.g. Poland, Lithuania, Latvia, Estonia) were facing more severe problems in documenting and delivering data in an acceptable format to the EU than other countries whose monitoring systems were more aligned with EU standards (e.g., Germany, Denmark, Sweden). While this likely represents a difference in the history each country has had in building up monitoring administration, it also partially reflects the fact that some countries have been more successful in shaping the EU monitoring standards than others, thus finding it easier to comply.

## 5.5 REVAMPING OF NATIONAL SUBSIDIARITY RISKS COMPROMISING TRANSBOUNDARY COLLABORATION

The design for inclusion of agri-environmental measures in the RDPs was originally founded on the “subsidiarity principle”, meaning that they could be used by Member States to go beyond what it legally required in the Community Treaty. This is a key reason for the space provided for Member States and their regional authorities to decide on the design of the RDPs. From this perspective, Pillar 2 is an instrument within CAP to subsidize efforts for improved environmental performance beyond the compulsory environmental boundary conditions. Agri-environmental measures are thus shaped by the individual countries to reward farmers for taking on additional responsibilities for the “public good” of their country.

The agri-environmental measures that countries choose are here influenced by how they have implemented environmental EU directives in national legislation. For instance, as national regulations and standards for nitrogen fertilization vary, so do the priorities for agri-environmental measures targeting nitrogen management (van Dijk and ten Berge 2009). It can thus be argued that the national space for setting environmental boundary conditions is shaping the decisions on agri-environmental measures, which in turn are designed to match those boundary conditions. Political and administrative priorities and perspectives are permitted to shape the design of agri-environmental measures. As a case in point, the CAP Health Check added agri-environmental measures focusing specifically on GHG emission reductions and climate change adaptation, and countries were obliged to reform their agri-environmental schemes to receive additional funds for these measures for the programming period 2007-2013 (von Homeyer et al. 2011). Yet, review of the agri-environmental measures prior to this adjustment (e.g., EPEC 2004) shows that Member States had already started to align their measures with climate and renewable energy policy objectives, in order to meet the targets of the Renewable Energy Directive.

The extensive national and sub-national mandates in the design of axis 2 schemes exercised under the principle of subsidiarity have great implications for the extent to which RDPs enable countries to address transboundary issues. Reflecting the underlying philosophy of agri-environmental measures, that they are meant to enable countries to meet national priorities, it is not surprising that countries generally prioritize national targets at the expense of transboundary collaboration. Several

examples can substantiate this point. First, public agencies as well as non-state actors in several BSR countries (e.g. Denmark, Poland, Germany) expressed, during consultations for country reviews, little if any sense of the BSR as a possible organizing principle for action, and thus – in their professional perspectives – largely disregard the voluntary agreement reached under the BSAP, instead focusing on strictly required targets under the environmental boundary conditions. Second, countries such as Lithuania, Latvia, Poland, Belarus, and Russia (Kaliningrad), which are experiencing extensive transboundary pollution flows in rivers and watersheds, express frustration with the fact that agri-environmental measures in other states generally prioritize national pollution control while “shifting the problem” to neighbouring (downstream) states. This second point is further exacerbated for the BSR countries bordering with non-EU states such as Belarus and Russia, which operate under entirely different policy regimes.

While the principle of subsidiarity has influenced the policy regime of agri-environmental measures from the outset, this principle is now being gradually revised as agri-environmental measures are rewritten to allow countries to attain the environmental boundary conditions set out within the EU environmental directives, notably the WFD and the Habitats Directive. Whereas the function of cross-compliance under Pillar 1 is to ensure that farmers meet compulsory environmental requirements, Pillar 2 now increasingly helps to operationalize country-level accountability to regional/European environmental targets, and thus compliance with EU-level requirements. For instance, in the draft River Basin Management Plans under the WFD, more than half of the Member States included measures to be paid for under the RDP. Countries planned to revise their RDPs accordingly and apply Article 38, which allows for compensation to farmers for income forgone and additional costs due to implementation of the WFD and Nature 2000 (Dworak et al. 2010).

This shift is enhancing the linkage between the CAP and EU environmental directives and thus increasing the capacity for CAP to serve as an implementing instrument to achieve the EBCs. The insights from this report suggest that the mediation between interests with respect to these two purposes of agri-environmental measures is limited. Countries are not held accountable to the EU for the quality of stakeholder involvement. For instance, in their reporting to the Commission, countries are not responsible for documenting how they arrive at payment levels for measures, nor whether actors outside responsible agencies have been involved

(European Court of Auditors 2011). In fact, in the preparation of the draft RBMPs, which increasingly draw on agri-environmental measures under the RDPs for implementation, only around 25% of the plans had considered implementability or acceptability to stakeholders, or indicated that this was taken into account (Dworak et al. 2010).

As was noted above (section 5.2), the procedures for design, selection and monitoring of measures under both EU and country level administrations/frameworks are fraught with significant ambiguities. The complexity of the policy environment under the RD Regulation, including the large number of elective measures, variations in payment levels and design and decisions on modulation etc., has not only high administration costs but also weakens transparency in how different national interests are shaping the agri-environmental programmes (EPEC 2004).

As regards accountability to national constituencies, at least two types of country-level participation may be meaningfully discerned. First, the ability of countries to factor in diverse national interests in

their agri-environmental programmes depends to a large extent on inter-sectoral coordination between ministries and agencies who are caretakers of different agendas and objectives. This coordination poses a significant challenge in most BSR countries, where the agricultural and environmental sectors often maintain their institutional boundaries in order to retain control over their respective policy processes, as evidenced in the national situation assessments. Second, participation in agri-environmental measure design depends on relevant involvement of non-state actors into the policy process owned by agencies and ministries. Here, the EU exhibits marked differences in governance cultures, with varying degrees of hierarchy and authority exercised by government offices. The institutionalization of “stakeholder participation” varies between countries, with some countries, for instance Belarus and Russia, having a more extensive tradition of hierarchical management. Yet, in countries priding themselves of strong traditions of public participation, the *de facto* exercise of this involvement is, in several cases, questioned by non-state actors (e.g. Denmark, Sweden, and Germany).

## 6 CONCLUSIONS

The overview of farming systems in the BSR (section 4) highlighted the great variability in the status of ecosystem services under different modes of agricultural production. Much of the variety exhibited in these production systems can be explained by the relative amount of external inputs and degree of intensity of these production systems. When viewed on a European scale, the production systems in the BSR are less intensive and use fewer external inputs than the European average. From a BSR perspective it is more difficult to draw conclusions at a territorial level to differentiate production systems. Great variation is exhibited within a single territory.

In addition to the national and sub-national variation in production systems, the agricultural sector in the EU is faced with geographically diverse challenges that also have to be taken into consideration. Some areas are affected by water stress, while others suffer from floods or poor soil conditions. The type and size of farms are also important factors. Small holdings may be more vulnerable to market changes; there is a strong decline in the number of small-scale farms, especially in Estonia, Latvia and Lithuania. Generally, the pressure on the environment from agricultural production is strongly linked with intensity levels. These are all key issues in the design and implementation of the CAP to address regional diversity and to meet the challenges to maintain a living countryside, providing both food for the population and other ecosystem services.

The synthesis of key implementability challenges (section 5) in view of the legacy of the CAP highlighted that EU Member States in the BSR have faced a number of similar/related challenges in the 2007–2013 CAP period. Still, these countries have different entitlements under the CAP, which creates an uneven playing field when using the CAP to comply with the EU's environmental directives. At the same time, the bio-physical and socio-economic and institutional environments in these countries also vary significantly, making it difficult for some of them to meet the environmental boundary conditions.

The growing trend to employ CAP payments to boost national compliance happens at the expense of regional collective action around common water bodies, such as the Baltic Sea. This means that the competitive nature of the national application of CAP risks undermining the ambition of territorial regional cohesion as espoused under the Cohesion Policy.

The meetings and interviews conducted in the Baltic COMPASS project, which served as the basis for this report, suggest that limited appreciation of regional diversity presently serves as a barrier to the implementation of joint measures. Indeed, the data suggest that the implementation of actions to manage environmental boundary conditions at a national level can compromise the governance of boundary conditions at a BSR scale. Conflicts of interest in terms of managing environmental boundary conditions also exist due to the ambiguous aims that underpin the EU laws connected to different directives.

This report offers an alternative narrative to explain differences in “compliance” with EU environmental directives, such as across dualisms of “western-eastern”, “old-new” Member States, etc. Rather than basing an argument on different degrees of “advancement” in technical and/or human resources (as it is frequently expressed around the BSR), this report puts forth the argument that compliance must be judged from the perspective of the presently unequal playing field created by the EU's CAP as an implementing instrument, which creates differentiated benefits both between countries and within sub-national contexts (see section 4).

**Two key recommendations** for the implementation of CAP post-2013 come out of this study:

***1. There is a need to change how the CAP is perceived and operationalized.***

Currently, the CAP is widely seen as an instrument that was designed to promote food productivity and security in the EU and has been rendered less optimal due to environmental compliance demands. Instead, the environmental aspects of the CAP need to be seen as an enhancement that recognizes environmental “services” provided by farmers. At the national level, the emphasis on compliance is linked to countries' need to meet various environmental targets. At a farm level, the treatment of the environment is a hybrid: it is a “given” due to the cross-compliance requirements under Axis 1, and it is as service at least at a subsidiary level within Axis 2. What we propose is to promote a consolidation of Pillars 1 and 2 that treats environmental services as a core part of the value of farming. Thus environmental services would no longer be a precondition for CAP payments, but rather part of the package of benefits that those payments recognize, along with food security and rural development. This would also allow for a

broader consideration of the multiple benefits that various payment approaches can support. For example, constructing wetlands can not only contain nutrients, but also increase biodiversity, protect from floods, and support ecotourism. A precondition for this change, given the proposal already on the table for the new CAP period, is linked to our second key recommendation:

***2. The CAP should embrace diversity in agriculture and recognize stakeholders from different scales and sectors to reconcile differences and inequities and identify synergies and win-wins.***

This recommendation seeks to ameliorate controversies that presently arise due to the diverse set of stakeholders in the BSR. To help them find common ground on how to promote sustainable agriculture that recognizes the diversity in the region, the CAP should complement the existing technical measures with a new set of “soft measures” geared to supporting the diverse needs and preferences of different actors in the system. An

example of a soft measure, in line with the EU Baltic Sea Region strategy, could be to support a dialogue between riparian countries on a joint target for nutrient reduction in the Baltic Sea. Other types of soft measures would be directed to facilitate negotiations between stakeholders on needs (e.g. nutrient leakage, food security, flooding, etc.) and actions in different systems linked to different benefits. Identifying context-specific solutions requires improved capacity and opportunities for bottom-up local governance approaches.

Here it is worthwhile to recall that EU policy has recently moved towards prioritizing such stakeholder-based “soft measures” to propel collective action. However, funding and human resources to support such innovations have largely been lacking. There is now be an opportunity for the EU and its Member States to provide targeted payment schemes to launch such stakeholder negotiation platforms, for instance through the RDPs post-2013.

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## ANNEX 1: DATA ANALYSIS FOR ESTIMATION OF INTENSITY AND FARM SIZE SHARE CONTINUA

### Parameters for intensity continuum

Parameters	Definition
Cereal crop yield	Share of UAA where cereal yield <60% of EU average 2005-2007 (2,81 t/ha)
Grazing livestock density	Share of UAA where grazing livestock density ≤ 1 L.U./ha of forage area
Pig production*	Production capacity (domestic production per capita / average consumption per capita)
Poultry production*	Production capacity (domestic production per capita / average consumption per capita)
Manufactured nitrogen input	Fertilization rate of manufactured nitrogen (kg/ha). Total estimated consumption of manufactured N-fertilizers/estimated fertilized area)
Manufactured phosphorus input	Fertilization rate of manufactured phosphorus (kg/ha). Total estimated consumption of manufactured P-fertilizers/estimated fertilized area)
Manufactured pesticide input	Application rate of manufactured pesticides (kg/ha). Total estimated consumption of manufactured pesticides/UAA)
Share of organic production	Share of total organic area (fully converted and under conversion) in total UAA

\*No intensity index was encountered for this parameter. Hence, the share of domestic production capacity related to average EU consumption demand has been employed as a proxy to measure the intensity of the production.

Country	UAA (Ha)	Intensity classification						
		Yield	Grazing livestock		Pig production		Poultry production	
			Class	Class	Production capacity1 [%]	Class	Production capacity1 [%]	Class
Denmark	2 662 590	3	3		753%	3	259%	3
Germany	16 931 900	3	2		136%	3	128%	2
Estonia	906 830	1	0		74%	1	74%	1
Latvia	1 773 840	1	0		83%	1	76%	1
Lithuania	2 648 950	0	1		55%	0	159%	3
Poland	15 477 190	2	2		99%	1	228%	3
Finland	2 292 290	3	1		83%	1	119%	2
Sweden	3 118 000	3	1		60%	0	84%	1

	Mode	% UAA2	Class	% UAA3	Class	Prod. cap., %	Class	Prod. cap., %	Class
<b>Classification for intensity</b>	Very high intensity	0	3	0	3	$\geq 125$	3	$\geq 125$	3
	High intensity	0-25%	2	0-25%	2	$\geq 100-125$	2	$\geq 100-125$	2
	Moderate intensity	25-50%	1	25-50%	1	$\geq 75-100$	1	$\geq 75-100$	1
	Low intensity	>50%	0	>50%	0	<75	0	<75	0

1 No intensity index was encountered for this parameter.  
Hence, the ratio of domestic production capacity related to average EU consumption demand has been employed as a proxy to measure the intensity of the production.

2 Share of UAA where cereal yield <60% of EU average 2005-2007 (2,81 t/ha).

3 Share of UAA where grazing livestock density  $\leq 1$  L.U./ha of forage area.

Intensity classification											
Country	UAA (Ha)	N-rate		P-rate		Pesticide rate		Organic		Average class for intensity	
		KgN/ Ha	Class	KgP/Ha	Class	KgN/ Ha	Class	% of UAA	Class		
Denmark	2 662 590	99	3	3,8	1	1,5	2	5,9	3	2,6	
Germany	16 931 900	135	3	7,9	2	2,0	2	5,6	3	2,5	
Estonia	906 830	50	1	4,1	1	0,5	1	11,0	2	1,0	
Latvia	1 773 840	35	1	3,6	1	0,6	1	8,7	2	1,0	
Lithuania	2 648 950	67	2	5,3	1	-	-	4,8	3	1,4	
Poland	15 477 190	95	3	13,4	3	1,0	1	2,3	3	2,3	
Finland	2 292 290	83	2	7,6	2	0,7	1	7,2	2	1,8	
Sweden	3 118 000	76	2	4,1	1	0,5	1	12,8	1	1,3	

	Mode	KgN/Ha	Class	KgP/Ha	Class	KgN/Ha	Class	Org share	Class
<b>Classification for intensity</b>	Very high intensity	$\geq 90$	3	$\geq 9$	3	$\geq 3$	3	<6	3
	High intensity	$\geq 60-90$	2	$\geq 6-9$	2	$\geq 1.5-3$	2	$\geq 6-12$	2
	Moderate intensity	$\geq 30-60$	1	$\geq 3-6$	1	$\geq 0.5-1.5$	1	$\geq 12-25$	1
	Low intensity	<30	0	<3	0	<0.5	0	$\geq 25$	0

Member state	Size categories					Class
	<2-9,9 ha	10-29,9 ha	30-49,9 ha	50-99,9 ha	>100 ha	
Denmark	23%	30%	13%	16%	19%	0,5
Germany	36%	28%	13%	14%	9%	1,0
Estonia	58%	25%	6%	4%	7%	1,5
Latvia	66%	25%	4%	3%	2%	2,0
Lithuania	81%	14%	2%	2%	1%	2,0
Poland	85%	13%	2%	1%	0,3%	3,0
Finland	22%	38%	19%	16%	5%	1,0
Sweden	33%	30%	12%	14%	11%	1,0

Classification for farm size share	Share of number of holdings by farm size		Class
	Share	Farm size	
	<15%	>10 ha	2,5
	<15%	>30 ha	2
	<15%	>50 ha	1,5
	<15%	>100 ha	1
	>15%	>100 ha	0,5

## ANNEX 2: COMPLETE SUMMARY OF IMPLEMENTABILITY CHALLENGES ACROSS THE BALTIC SEA REGION

<b>Key challenge</b>	<b>Specification</b>	<b>Examples</b>
<b>Coordination</b>	<p>Poor or insufficient coordination/collaboration between implementing agencies and/or sectoral ministries (Finland, Estonia; Latvia; Lithuania; Poland)</p> <p>Integration of agri/environmental policies and processes (Estonia; Lithuania; Sweden; Latvia) and commitment to this integration (Sweden; Germany)</p>	
<b>Impact</b>	<p>Implemented measures have unexpected or unintended impact (Estonia, Poland)</p> <p>Unforeseen contributing factors or changing circumstances (Finland e.g. increased large animal production units; Sweden, at regional scale, HELCOM; Latvia – increased forestry sector contributing to eutrophication)</p>	<p>Poland &gt; lands transferred to younger farmers as part of measure did not improve the spatial structure, as intended</p> <p>Estonia &gt; Phosphorus chemical load has been decreasing, but the state of soil fertility is worsening</p> <p>Finland &gt; Short rental contracts do not motivate farmers to take care of the land</p> <p>Latvia &gt; economic activity has become greater in the forestry rather than the agriculture sector, and the forestry sector promotes the development of blue-green algae which assimilates summer atmosphere nitrogen</p>
<b>Resources</b>	<p>Lack of manpower (Poland; Sweden) and/or resources (Finland; Poland) and/or limited available financial resources (Poland, Finland, Germany; Latvia) and/or future sustainability concerns relating to such (Estonia)</p> <p>Unequal resource distribution between states (Latvia)</p> <p>Financial incentive measures do not match the force of the market/agricultural structural development</p>	
<b>Legal conflicts</b>	Legal conflicts between regulations/laws (Poland)	
<b>Data &amp; Information/ Knowledge</b>	<p>Lack of data conforming to required format/type (Latvia; Poland) or difficulties creating such (Finland; Lithuania)</p> <p>Data uncertainty (Finland)</p> <p>Data sharing issues (Poland)</p> <p>Limited information, knowledge gaps (Finland), and uncertainty (Sweden)</p>	
<b>Models/Trust WP5</b>	<p>Acceptability and validity of models for setting targets. Model dependence reducing / limiting capacity to innovate measures.</p> <p>Lack of trust in models (Germany)</p>	

<b>Selection/ Relevance/ Appropriateness of measures</b>	<p>Acceptability and validity of cost-benefit analysis for selection of measures – provision of a broader set of benefits leading to willingness to integrate into existing farming systems and receptiveness of a larger group of stakeholders with a diverse set of farming systems (Lithuania). CAP has poorly targeted tools (requiring greater focus and development, and better links of measures to environmental challenges)(Finland; Poland)</p> <p>Motivation/basis for engagement in measures is 'compensation for losses', and requires changing to PES (Finland) or 'compensation for public benefit' (Lithuania)</p>	<p>Lithuania &gt; Grasslands and wetlands overgrown by bushes and shrubs are not considered as suitable to apply for agri-environmental payments, and restoring (cutting/cleaning) such plots, which are very valuable for biodiversity, are also not eligible for agri-environmental schemes.</p> <p>Poland &gt; Measures have been implemented rather as tools of social policy rather than fulfilling their intended environmental purposes</p>
<b>Monitoring</b>	<p>Insufficient/problems in monitoring system (Finland; Latvia; Lithuania; Poland),</p> <p>Lack of trust in own monitoring system (Germany – farmers lack of trust) or in other countries' monitoring systems and approaches</p> <p>Availability of monitoring results hampered (Poland)</p>	e.g. Lithuania > monitoring of the impact of agri-environmental measures on environmental quality is not integrated into the national environmental monitoring system
<b>Participation</b>	<p>Insufficient or problematic process of stakeholder participation (ownership?), unlevel playing field, lack of inclusion etc (Finland)</p> <p>Low-level participation in some measures/activities/schemes (Lithuania; Finland; Germany; Lithuania; Poland)</p> <p>Motivational (Sweden)</p>	Finland > buy-in from farmers of the special measures buffer zones and multifunctional wetland exceedingly low
<b>Compensation</b>	<p>Insufficient compensation or benefits associated with the payments for the implementation of agri-environmental actions and measures (Finland; Germany; Latvia; Lithuania; Poland)</p> <p>Motivation for receiving compensation based on 'compensation for loss', rather than 'compensation for public benefit' (Lithuania)</p>	Poland > The package "Creation of buffer zones" was not very popular due to its high requirements. Probably in particular the reason was the low-rate subsidies - 0, 18 PLN to 0, 64 PLN/meter of the buffer zone
<b>Capacity</b>	<p>Lack of:</p> <p>Understanding/Awareness (Estonia; Latvia; Poland), and/or</p> <p>Appropriate training/extension services (Estonia, Finland) /</p> <p>Appropriate trainers (Poland), and/or</p> <p>Time, and/or</p> <p>Labor, to implement measures or to participate in payment schemes</p>	Estonian farmers received generic advice, but required more targeted advice
<b>Communication</b>	<p>Poor communication channels between clients and policy implementers and policy makers (Germany; Latvia; Lithuania).</p> <p>Poor communication to larger public (Sweden, Finland)</p> <p>Heavy bureaucracy, administrative hurdles and complicated procedures (Finland; Germany; Latvia; Lithuania; Poland).</p> <p>Rules not communicated properly or appropriately, or missing details (Poland)</p> <p>Rules and processes lacking consistency as governments and policies change (Finland)</p>	e.g. Latvia > the low promotion and visibility of some measures since the Ministry of Agriculture via national media has mainly been promoting the measures of Axis 1 rather than other Axes

<b>Adaptation issues at / national and Sub-national levels</b>	<p>EC requirements inhibit national and/or sub-national adaptation and collaboration, or national requirements inhibit local or sectoral (Sweden, forestry; Finland) adaptation and collaboration</p> <p>e.g. Measures:</p> <ul style="list-style-type: none"> <li>Are insufficient to achieve intended purpose (Finland);</li> <li>Don't account for local ecological and/or socio-economic conditions and contexts (Estonia; Finland; Lithuania; Poland);</li> <li>Are impractical or difficult to implement (Estonia; Germany);</li> <li>Face national/sub-national planning disjunct (Estonia in RBMPs)</li> </ul>	Lithuania > compensation cost calculations do not account for the real costs involved in using special machinery (tools), the transportation of cattle, fencing and shepherd's services expenses for the management of wetlands in remote territories (which are often sites of valuable biodiversity).
<b>Transboundary Cooperation/ Export/data sharing/Trust/ communication</b>	Limited transboundary cooperation leading to poor harmonization of policies, actions and measures to address nutrient reduction and multiple benefits (Latvia; Lithuania)/Unwillingness to share data. Lack of trust in data	
<b>Compliance</b>	<p>Lack of compliance with rules and regulations e.g.</p> <p>Rules and regulations are:</p> <ul style="list-style-type: none"> <li>Used in unintended ways (Poland); and/or</li> <li>Too difficult to comply with (Poland; Latvia)</li> <li>Too harsh and result in low participation (Germany)</li> <li>Have inflexible and absurd control mechanisms (Lithuania)</li> <li>Measures are not harmonized to the context / are insufficient to address the intention of the measure/activity (Poland)</li> </ul>	Poland > The criterion of "agricultural activities" that entitles benefit from the support has been recognized through presentation of a certificate from the municipality showing regular agricultural tax payments. However, holders of agricultural land who are not engaged in agricultural activities also pay agricultural taxes, and as such are also eligible to benefit from support under this action.
<b>BSAP/belonging</b>	<p>National problem definition not in line with BSAP</p> <p>Presents too extensive commitments for the country (Sweden)</p>	Poland, Denmark, Germany
<b>Ecological Complexity</b>	The ecology and geography of the area are complex, resulting in difficulties in implementing the measures; may also tie to Adaptation of Measures? (Poland )	



SEI - Africa  
Institute of Resource Assessment  
University of Dar es Salaam  
P.O. Box 35097, Dar es Salaam  
**Tanzania**  
Tel: +255-(0)766079061

SEI - Asia  
15th Floor Witthayakit Building  
254 Chulalongkorn University  
Chulalongkorn Soi 64  
Phyathai Road Pathumwan  
Bangkok 10330  
**Thailand**  
Tel: +(66) 22514415

SEI - Oxford  
Florence House  
29 Grove Street  
Summertown  
Oxford OX2 7JT  
**UK**  
Tel: +44 1865 426316

SEI - Stockholm  
Kräftriket 2B  
106 91 Stockholm  
**Sweden**  
Tel: +46 8 674 7070

SEI - Tallinn  
Lai 34, Box 160  
EE -10502, Tallinn  
**Estonia**  
Tel: +372 6 276 100

SEI - U.S.  
11 Curtis Avenue  
Somerville, MA 02144  
**USA**  
Tel: +1 617 627-3786

SEI - York  
University of York  
Heslington  
York YO10 5DD  
**UK**  
Tel: +44 1904 43 2897



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