



**WFD and Agriculture Linkages at the EU Level**  
**Summary report on an in-depth assessment of RD-  
programmes 2007-2013 as regards water management**

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The information compiled in this paper might be subject to rapid change.

The Rural Development information presented is the status as of **December 2008**.

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## 1 Introduction

As a result of a process of more than five years of discussions and negotiations between a wide range of experts, stakeholders and policy makers, the Water Framework Directive (or Directive 2000/60/EC) of the European Parliament and of the Council established a framework for European Community action in the field of water policy. The Directive, which entered into force on the 22nd of December 2000, establishes a framework for the protection of all waters, with the aim of all community waters achieving “good status” by 2015.

Since its reform in 2003, the EU Common Agricultural Policy (CAP) has been better suited to assisting in the implementation of the Water Framework Directive (WFD). The European Commission’s Environment Directorate-General prepared a working document highlighting a number of opportunities where the CAP can help achieve the WFD objectives (European Commission, DG Environment, 2003). Achieving these objectives remains a challenge, however. Recognising this, the Water Directors (representatives of the EU Member States administrations with overall responsibility for water policy) agreed in June 2004 to take action in the context of the Common Implementation Strategy (CIS)<sup>1</sup>. To this end, they established an EU Strategic Steering Group (SSG) to identify agricultural issues which affect a Member State’s ability to meet WFD objectives. The Strategic Steering Group (SSG) on WFD and Agriculture, which met for the first time in April 2005, is led by the UK, France and the European Commission’s Environment Directorate-General, with technical support from the Directorate-General for Agriculture and Rural Development.

The main focus of the SSG’s activity during 2005-2006 was the identification of gaps between WFD requirements and what the existing CAP may deliver in terms of water protection. Based on a detailed assessment of the linkages between the CAP and the WFD, the SSG explored further options for bridging these gaps. Their main findings have been put together in four technical reports, which have been endorsed by the Water Directors. Each report addresses a specific aspect of the CAP, in the context of WFD implementation:

1. Rural Development and the WFD (Dworak et al., 2005),
2. Incentive water pricing and cost recovery in the WFD - Elements for Linking EU Agricultural and Water Policies (Interwies, et al., 2006),
3. Cross-compliance and the WFD (Müssner et al., 2006), and
4. Co-operation and participation at the interface of EU Agricultural and Water Policies (Dworak et al., 2006).

According to Council Regulation (EC) No 1698/2005, Member States (MS) must establish multi-annual Rural Development (RD) programs for the period 2007-2013 at their appropriate territorial level and according to their own institutional arrangements.

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<sup>1</sup> The main aim of this strategy is to facilitate the coherent and harmonious implementation of the WFD. The focus is on methodological questions related to a common understanding of the technical and scientific implications of the WFD.

The programming of RD should comply with Community and MS's national priorities and complement the other Community policies, in particular the agricultural market policy, cohesion policy and common fisheries policy. The RD programs are co-funded by the European Agricultural Fund for Rural Development (EAFRD), the MS concerned and in the case of certain measures involves private funds of beneficiaries. Since the Rural Development Programmes for the period 2007-2013 have been approved and the drafting of the River Basin Management plans is in its final stage, the SSG is now focussing on the impacts these programmes could have on water issues identified in the WFD environmental analysis (see Herbke, et al., 2006). To this end, Ecologic and VITO have been commissioned to prepare a report in the context of the project "Place of WFD issues in rural development programmes and workshop related to WFD and agriculture", providing an assessment and comparison of national rural development strategies and programmes in the 27 Member States.

## 2 Rural Development and WFD implementation – Background information

Across much of the EU tackling the pressures on water caused by agriculture constitutes one of the main challenges to achieving WFD objectives. The development of these pressures has been strongly influenced by the main agricultural funding scheme, the Common Agricultural Policy (CAP) with its two main areas (so-called 'Pillars') of agricultural expenditure, namely i) the Market and income support (Pillar 1) and ii) the Rural Development (Pillar 2). In terms of budget, Pillar 1 received in 2007 by far more funding (42.7 billion Euros) than Pillar 2 (12.4 billion. Euros)<sup>2</sup>.

Over the last years, and in particular since the 2003 reform of the Common Agricultural Policy (CAP), the opportunities for reducing these pressures have increased significantly. The reform brought greater clarity to CAP funding, stabilised overall CAP expenditure, and increased the importance of environmental protection by including new provisions under Pillar 1 (e.g. further decoupling, Cross Compliance) as well as under Pillar 2 (measures under rural development).

The key change under **pillar 1** was the introduction of mandatory Cross Compliance (Council Regulation No 1782/2003 and Commission Regulation No 796/2004), which was an important step towards protecting European Waters on a broader scale and towards applying the Polluter Pays Principle to farmers. Since 2005, all farmers receiving direct payments must respect Cross Compliance standards in two ways:

- First, they must respect the Statutory Management Requirements set-up, in accordance with 19 EU Directives and Regulations<sup>3</sup>. The standards relate to the protection of the environment; public, animal and plant health, and animal welfare. With regard to water management, the most important Directives covered by Cross Compliance are the Groundwater Directive (80/68/EEC) and the Nitrate Directive (91/676/EEC), and to some extent the Sewage Sludge Directive (Directive 86/278/EEC), which will also be part of the River Basin management plans under the WFD.
- Second, all agricultural land for farmers claiming payment should be kept in Good Agricultural and Environmental Condition (GAEC). In general, GAEC's focus is on the protection of soil and its having a positive side-effect on the reduction of diffuse pollution. It is up to the individual Member States to define minimum GAEC requirements, which may differ, depending on local conditions.

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<sup>2</sup> See [http://ec.europa.eu/agriculture/fin/clearance/factsheet\\_en.pdf](http://ec.europa.eu/agriculture/fin/clearance/factsheet_en.pdf).

<sup>3</sup> The Directives relevant to water protection are the Groundwater Directive (Article 3), the Sewage Sludge Directive (Article 3), the Nitrates Directive (Articles 4 and 5), the Conservation of Wild Birds (Articles 3, 4 (1), (2), (4), 5, 7 and 8), and the Conservation of natural habitats, wild flora and fauna (Articles 6, 13, 15, and 22(b)).

Under **pillar 2** the main key change was a strengthened Rural Development policy with new measures to promote the environment, quality of food production, animal welfare and to help farmers meet EU production standards.

In order to further strengthen Pillar 2, "compulsory modulation" was introduced in 2003. It was complemented in 2007 by the possibility to apply additional "voluntary modulation"<sup>4</sup>. Compulsory modulation addresses the concern of increasing support for Rural Development within the EU by mandating that a percentage of Single Farm Payment (direct payments) spending be transferred to the Rural Development budget. Under the provisions of European Council Regulation 1782/2003, a compulsory modulation rate of 5% is currently levied on all direct payments in the EU15.

## **2.1 The CAP "Health Check" and implications for rural development programmes**

On 20 November 2008, the Council of the EU agriculture ministers reached a political agreement on the Health Check of the Common Agricultural Policy.

The Health Check agreement will imply a revision of the Community Strategic Guidelines in order to include the new challenges. This will lead to an obligation for MS to revise their national strategy plans after the adoption of the Community strategic guidelines and subsequently the rural development programmes.

As regards to **pillar 1** and its cross compliance obligations the "health check"<sup>5</sup> agreement introduces two new water related standards under the requirements of Good Agricultural and Environmental Condition (GAEC). These new standards focusing on the protection and management of water are designed to protect water against pollution and run-off and manage the use of water. This will involve the obligation of Member States to require the establishment of buffer strips along water courses and to ensure compliance with authorisation procedures in cases where the use of water for irrigation is subject to authorisation.

The start date for the irrigation GAEC is 1.1.2010; the buffer strip GAEC may also start then but MS are only obliged to introduce it by 1.1.2012.

The minimum requirements for the buffer strip measure mirror those required by the Nitrates Directive but apply to the whole territory and not only in Nitrate Vulnerable Zones. MS may apply more stringent requirements if they wish. As many MS are currently using RD payments to support the establishment of buffer strips, putting them under Cross Compliance would require an adaption of the RD programmes.

Another amendment related to water under pillar 1 is, the abolishment of the "set-aside provision". This might increase environmental pressures in many places and could

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<sup>4</sup> In March 2007, the European Council agreed on a new voluntary modulation regulation that allows Member States to modulate up to an additional 15 percent of the Single Farm Payment budget to the Rural Development budget if the Member State meets one of two conditions: i) the Member State already applies a voluntary modulation system (UK only); or ii) the member state already has an exemption from co-financing rural development measures (Portugal only).

<sup>5</sup> For details see <http://eur-lex.europa.eu/JOHtml.do?uri=OJ:L:2009:030:SOM:EN:HTML>.



require a re-adjustment of the RD measures in terms of areas targeted. The increase in the rural development budget through modulation as well as the additional requirements under GAEC, such as the establishment of buffer strips along water courses, could contribute to reducing the possible negative impacts of abolishing set-aside.

Under pillar 2 the Council also agreed on an indicative list of types of operations (measures) to address new challenges to be financed with the additional modulation budget, namely climate change, risk management, green energy, better water management and protection of biodiversity, as well as accompanying measures for dairy production and innovation measures linked to the new challenges. The table below presents possible operations to address the new challenges related to water management<sup>6</sup>.

Table 1: Indicative list with types of operations and potential effect related to the water priority under the “Health check” of the CAP.

Priority: Water Management		
Types of operations	Articles and measures	Potential effects
Water saving technologies (e.g. efficient irrigation systems) Water storage (including water overflow areas) Water saving production techniques (e.g. adapted cropping patterns)	Article 26: modernisation of agricultural holdings Article 30: infrastructure Article 28: adding value to agricultural and forestry products Article 39: agri-environment payments	Improvement of the capacity to use water more efficiently and to improve the capacity to store water
Wetland restoration Conversion of agricultural land into swamps	Article 41: non-productive investments Article 39: agri-environment payments Article 38: Natura 2000 payments	Conservation of high-value water bodies; protection and improvement of water quality
Conversion of agricultural land into forest/agro-forestry systems	Articles 43 and 45: first afforestation of agricultural land and non-agricultural land	Protection and improvement of water quality
Installations for waste water treatment on farms and in processing and marketing	Article 26: modernisation of agricultural holdings Article 28: adding value to agricultural land and forestry products	Improvement of the capacity to use water more efficiently

<sup>6</sup> Some of the measures will also allow addressing the issue of climate change.

Development of semi-natural water bodies Creation of natural banks Meandering rivers	Article 39: agri-environment payments Article 57: conservation and upgrading of the rural heritage	Conservation of high-value water bodies; protection and improvement of water quality
Soil management practices (e.g. catch crops; organic farming; conversion of arable land into permanent pasture)	Article 39: agri-environment payments	Contributing to the reduction of losses of different compounds to water, including phosphorus
Information and dissemination of knowledge related to water management	Article 21: vocational training and information actions Article 58: training and information	Raising awareness and knowledge and thus, indirectly, the efficiency of operations related to water management

Member States are free to introduce other measures relating to the new challenges as long as they comply with the Rural Development Regulation.

In order to cover the measures addressing these new challenges under pillar 2, the Council also agreed to increase compulsory modulation by an additional 5% introduced progressively. This rate will be increased to 10 percent by 2012.

## 2.2 Main principles of the European Rural Development policy

By creating a “hierarchy of objectives,” the 2003 rural development policy established a stronger link to the broader objectives of the EU, as specified in the Gothenburg and Lisbon strategies. In these strategies, the guiding principle for Rural Development Regulation (RDR) is: “Strong economic performance must go hand in hand with the sustainable use of natural resources”.

The current RDR provides Member States with the flexibility to tailor their programmes and measures to their national, regional and local conditions and to their needs with regard to the development of their rural areas and the provision of agricultural public goods (Maier, L., 2008). Member States can therefore set priorities at national or regional level, but they are also required to take into consideration overarching European objectives.

In this context, the RDR aims to place agriculture in a broader context that also takes into account the protection of the rural environment, the quality of produced food, and the attractiveness of rural areas to young farmers and new residents.

The current RD policy, co-financed by the European Agricultural Fund for Rural Development (EAFRD) and Member States, brings together a number of policy measures under a single instrument. It provides financial support under the framework of 37 measures. The various policy measures are organised into three axes with each axis targeting one of the three main domains (objectives) of intervention (European Commission, DG Agriculture, 2006) and a fourth axis called LEADER. Member States are required to allocate a minimum proportion of the EAFRD budget to each of the

domains, thus ensuring a balance between the axes of rural development (Art. 17 of Regulation (EC) N° 1698/2005). All programmes are also funded via national funds and for some measures private funding is also required. The three thematic axes are:

- Axis 1: Improving the competitiveness of the agricultural and forestry sector: The Community financial contribution shall cover at least 10 percent of the EAFRD total contribution to the rural development programme. Although the title of axis 1 refers only to competitiveness, it must be noted that axis 1 is a multi objective axis offering measures that can cover both competitiveness and environmental issues.
- Axis 2: Improving the environment and the countryside - at least 25 percent of the EAFRD total contribution to the programme shall be allocated to Axis 2<sup>7</sup>. Axis 2 focuses on environment and land management issues.
- Axis 3: The quality of life in rural areas and diversification of the rural economy - at least 10 percent of the EAFRD total contribution to the programme shall be allocated to Axis 3. Similar to Axis 1, Axis 3 can also address environmental issues.

So, environmental issues and therefore water can be addressed under all three axes.

In addition to the three thematic axes, a fourth axis called LEADER is provided under the RDR. The aim of Leader is to encourage rural actors to think about the longer-term potential of their area. It supports local actors in implementing a strategy that they themselves have designed by using the measures provided under axes 1, 2, and 3. At least 5 percent of the EAFRD total contribution to the programme shall be allocated to LEADER<sup>8</sup>.

Furthermore, up to 4% of rural development programme funding can be used for preparation, management, monitoring, evaluation, information and control activities (Technical Assistance).

In order to ensure that Member States consider the overarching European objectives and to give more guidance on how to implement the RDR in their national context, the Agriculture Council adopted EU strategic guidelines for rural development on 20 February 2006 (Council Decision, 2006). Based on the key priorities set out in the RDR, these guidelines set out a strategic approach and a range of options Member States should use in their national Rural Development programmes (RDPs).

In order to ensure that the various RDPs are in line with the RDR and the strategic guidelines, Member States must get approval from the European Commission.

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<sup>7</sup> For the programmes of the French overseas departments, the minimum Community financial contribution for Axis 2 shall be 10 %.

<sup>8</sup> For the new Member States, this contribution of 5% may be phased in over the programming period in such a way that on average at least 2.5% of the EAFRD total contribution is reserved for Axis 4.

## 2.3 Main Principles of the Water Framework Directive

The Water Framework Directive (WFD) entered into force in December 2000. As opposed to earlier water protection measures, which were based on sectoral approaches, the Directive extends to all aquatic systems, surface waters (rivers and lakes), groundwater and coastal waters. Land eco-systems depending on groundwater are also included under the protection of the quantity and quality of groundwater. River basin management plans, including summaries of programmes of measures, are currently being drawn up, in an effort to achieve the Directive's environmental objective of the "good ecological status" of all waters by 2015.

Programmes of measures must be developed for each river basin district and can be considered as the principal mechanism for the implementation of the environmental objectives of the WFD. These programmes must be established by 2009 and made operational by 2012 (Art. 11 WFD). They should be based on a risk assessment (Art. 5 WFD), which was completed in 2004/5. The results of the risk assessment can be summarised as follows (Herbke et al., 2006 and Kampa et al., 2009a):

- increased pollution of groundwater and rivers due to nitrate and pesticide leaching;
- reduction of groundwater and river flow levels as a direct result of water abstractions;
- increased negative impacts on natural resources resulting from the construction of dams and the diversion of watercourses for irrigation purposes;
- secondary effects such as risks of erosion, the disappearance of wetlands, oxygen deficits in rivers leading to the possible extinction of species of flora or fauna, or the gradual salinisation of groundwater in coastal areas;
- risks of adverse effects on human health and problems related to water treatment due to water pollution;
- increased risks of flooding due to e.g. local deforestation and the installation of polders for agricultural purposes.
- In addition to this agriculture is also highly responsible for hydro-morphological changes in particular because of land drainage.

In the framework of the rural development policy, the Community offers a menu of measures to address these pressures and impacts listed above. Many positive experiences show, if properly designed and implemented these RDR measures can facilitate the achievement of the WFD objectives<sup>9</sup>.

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<sup>9</sup> See e.g. European Commission (2005): Agri-environment Measures -Overview on General Principles, Types of Measures, and Application, available at [http://ec.europa.eu/agriculture/publi/reports/agrienv/rep\\_en.pdf](http://ec.europa.eu/agriculture/publi/reports/agrienv/rep_en.pdf); Schmidt, T et al (n.d.). Enhanced cost-effective agri-environmental measures for groundwater protection – an economic and ecological modelling approach, available online at: [http://wwc2008.msem.univ-montp2.fr/resource/authors/abs637\\_article.pdf](http://wwc2008.msem.univ-montp2.fr/resource/authors/abs637_article.pdf); Matzdorf et al (n.d.). Designing efficient agri-environmental schemes under consideration of the Common

## 2.4 Measures under the Rural Development Regulation that can support the WFD implementation

As outlined before, the RDR has several objectives and the improvement and protection of the environment is only one out of several. Further, water is not the only environmental issue that has to be taken into account when designing the national RD programmes as other environmental objectives are also valid. However, the three main axes of the RDR contain a large menu of measures for protecting and enhancing natural water resources (including Art. 38 referring to the WFD explicitly), as well as for preserving high-nature value farming and forestry systems and the cultural landscapes of Europe's rural areas (see table below)<sup>10</sup>.

Table 2: Overview of generic measures under the upcoming RDR relevant for water (based on Dworak et al, 2005).

+++	very relevant (positive)	---	very relevant (negative)	0	not relevant
++	relevant (positive)	--	relevant (negative)		
+	indirect linkage (positive)	-	indirect linkage (negative)		

	Pollution	Alterations of hydrologic regimes	Hydro-morphological modification	Soil erosion
<b>Rural Development Axis I</b>				
Natural disaster & prevention actions (Art. 20 b ((vi))	0	0	+++	+++
Vocational training and information actions (Art. 21)	+++	+++	+	+++
Setting up of young farmers (Art. 22)	+	+	0	+
Early retirement (Art. 23)	+	+	0	+
Use of advisory services (Art. 24)	+++	+++	+	+++
Setting up management, relief and advisory services (Art. 25)	++	++	+	++
Modernisation of agricultural holdings (Art. 26)	+++/-	+++/-	0	+++ /-
Improvement of the economic value of forests (Art. 27)	+	+	+	+
Infrastructure related to the development and adaptation of agriculture and forestry (Art. 30)	++/-	++/-	--	+++ /-
Meeting standards based on community legislation (Art.31)	+++	+++	++	+++
Semi-subsistence farming (Art. 34)	+/-	+/-	0	+/-

Agricultural Policy (CAP) in Europe. Available online at: <http://www.nercrd.psu.edu/taluc/Papers/MarzdorfDesigning.pdf>

<sup>10</sup> A more detailed overview of how the different measures under the RDR can be used to improve and protect water quality is given in Dworak et al; 2005. This table was also used as a template when assessing the different national MS assessment. During that assessment it turned out that under Axis III several more measures are used to implement water protection measures. Also some of the ratings related to the impacts have been adjusted based on expert judgement and new safeguard requirements.

<b>Rural Development Axis II</b>				
Natural handicap payments in mountain areas and payments in other areas with handicaps (Art. 37)	++	++	++	++
NATURA 2000 payments and payments linked to the WFD (Art. 38)	+++	+++	+++	+++
Agri-environmental payments (Art. 39)	+++	+++	+++	+++
Non-productive investments (Art. 41)	++	++	++	++
First afforestation of agricultural land (Art. 43)	+++	++/--	+++	+++
First establishment of agroforestry systems on agricultural land (Art. 44)	+++	++	+++	+++
First afforestation of non- agricultural land (Art. 45)	++	++/--	+++	+++
Natura 2000 payments (Art. 46)	+	+	+	+
Forest-environment payments (Art. 47)	++	++	++	++
Restoring forestry potential and introducing prevention actions (Art. 48)	0	0	+	+++
Non-productive investments (Art. 49)	++	++	++	++
<b>Rural Development Axis III</b>				
Conservation and upgrading of the rural heritage (Art. 57)	++	++	+	++
Skills acquisition and animation (Art. 59)	+/	+/	+/	+/

It is important to recognise that for several of these measures, such as support for investments in agricultural holdings and improving the processing and marketing of agricultural products, investments have to respect relevant national and Community standards. A general condition for axis 2 measures is that beneficiaries must respect the EU and national mandatory requirements for agriculture and forestry. Cross compliance is the baseline for direct payments and the same baseline is applicable to measures under axis 2. In the case of agri-environmental payments, which are mandatory, additional conditions for fertilizer and pesticide use set in the programmes will apply.

Nevertheless, the impact of measures chosen depends on various factors such as the type of farming system and management practice and the intensity of production within the targeted area, the organisational and geographical circumstances, the willingness of different stakeholders to co-operate, as well as the level of ecological awareness of farmers.

Furthermore, even if the selection and implementation of the RD measures is based on an assessment required under the Strategic Environmental Assessment Directive (Directive 2001/42/EC) and there is a principle of complementarity of axes (achievements in one axis are not undermined by measures of other axes), there are some measures that could also hamper WFD implementation by negatively affecting water bodies (e.g. payments for certain investments leading to intensification).

### **3 Nature of the present report**

#### **3.1 Main objectives and structure of the report**

As outlined in the previous section, there is a clear link between the Water Framework Directive and the Rural Development Regulation. Understanding this link is critical to achieving the best synergies between the two policies. The key objectives of this report, which provides the summary results of an in-depth assessment carried out on behalf of DG Environment, are:

- To assess the extent to which the theoretical opportunities of including water restoration and/or protection measures have been put into practice and to identify how Member States have used the Rural development funding to improve water status;
- To identify the strengths and weaknesses of existing RD programmes in the light of national water problems, including water quality issues (e.g. pollution by nutrients and pesticides), water quantity issues (floods and droughts) and hydro-morphological changes (e.g. restoration of wetlands);
- To identify the extent to which the WFD have been considered in the RD programmes; and
- To highlight cases in which the application of RD measures bears the risk of increasing pressures on European waters.

This assessment could also be used to provide input for ongoing discussions on improving RD programmes as regards to water as it highlights strengths and weaknesses of water management in the current design of rural development policies.

To this end, this report first presents background information on the RDR and the WFD (section 2). Some limitations to the assessment are highlighted in the following sub section (3.2).

Section 4 briefly introduces the methodology used to carry out the assessment. Section 5 provides a general overview of the importance of water in the overall context of the national RD programmes, highlighting the main pressures on water reported in the RD programmes as well as the link between the WFD and the RDPs. Following this introduction, section 6 details the approach taken by MS and provides examples of how RD measures can be used to improve water. RD measures are broken down by their primary focus (e.g. improvement of economic situation or reducing environmental costs) and MS that apply the measures are identified. Section 7 examines the use of Axis 4 – the LEADER approach – to implement the WFD, and section 8 reviews the monitoring and implementation approaches used by the MS to evaluate their RDPs, including CMEF and national water specific indicators.

To sum up the results of the assessment, section 9 presents the main strengths and weaknesses of the MS RDPs with respect to water issues. Section 10 draws final conclusions and recommendations for future activities.

### **3.2 Limitations of the report**

As set out in the terms of reference, conclusions and the entire present evaluation report are based on a survey and the review of the national Rural Development Programs for 2007-2013. Annex 2 provides an overview of the national RDP versions used in the assessment. The authors are fully aware that several more relevant documents such as the National Strategic Plans and other detailed national reports on the implementation related to rural development exist. However, due to the time and budget resources these documents could not be considered, which leads to the fact that:

- information on the control requirements and systems could not be fully assessed because such information was not completely included in the national Rural Development Programmes (RDPs) but documented separately as part of the control system at Member State level. Therefore, a judgement of the effectiveness of certain measures is not fully possible.
- the assessment did not take into account the adoption of the RD measures by farmers. In other words, as farmers are not obliged to participate in the RD programme and can select which measures they apply, it cannot be guaranteed that all measures which could bring a benefit for water are fully applied in a Member State. The authors recommend that such an assessment be carried out in the future.



## 4 Methodology used to carry out the assessment

In order to assess the EU 27 Rural Development reports the following approach was used:

1. First, based on an internet survey the RD programmes of the 27 Member States as well as the Instrument for Pre-Accession Assistance for Rural Development (IPARD) plans<sup>11</sup> for the accession countries were collected (see Annex 3).
2. In parallel an assessment template was developed in close cooperation with Commission services (DG Environment). This template was structured along the following issues: i) The agricultural context in which the RD programme has been developed; ii) The main environmental priorities in the RD programmes; iii) The extent to which water issues are reflected in the global and operational objectives of the RD programmes and (directly or indirectly) in the environmental measures; iv) The budget allocated to each type of measure relevant to water management issues; v) Administrative framework used for implementation and control. (A full version of the template used in the assessment is provided in Annex 1.)
3. The draft reports have been given to the Member States to allow for comment and a more detailed review. Relevant comments have been considered in the final version of the report.

This summary report has been produced based on the assessments of the national and regional RDP and follows the questions outlined below:

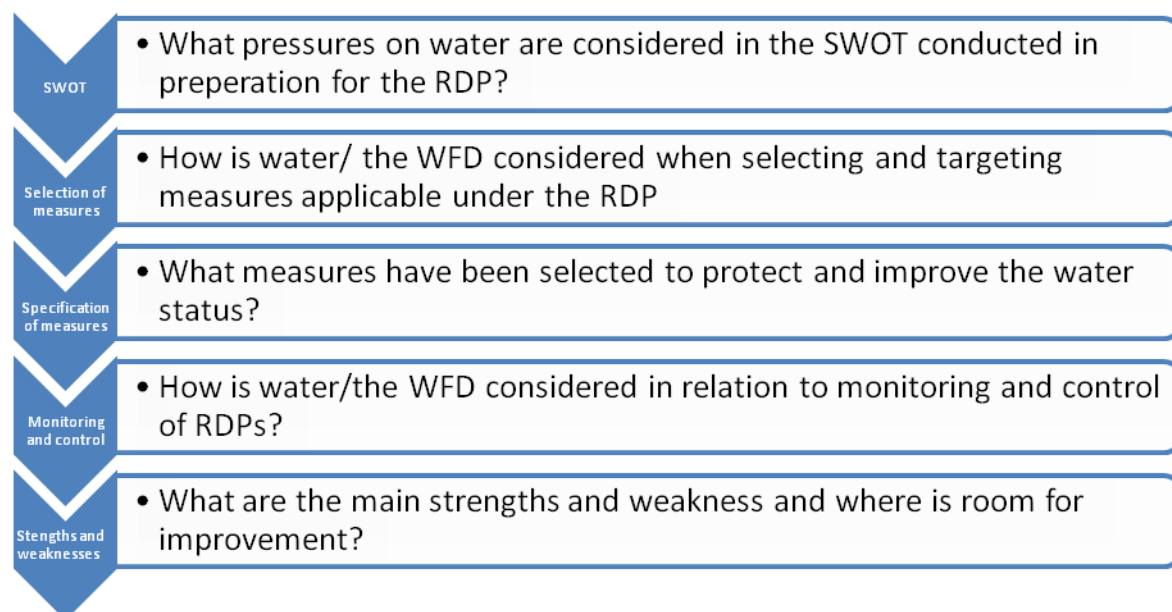


Figure 1: Methodology for assessing RD-programmes 2007-2013 as regards water management.

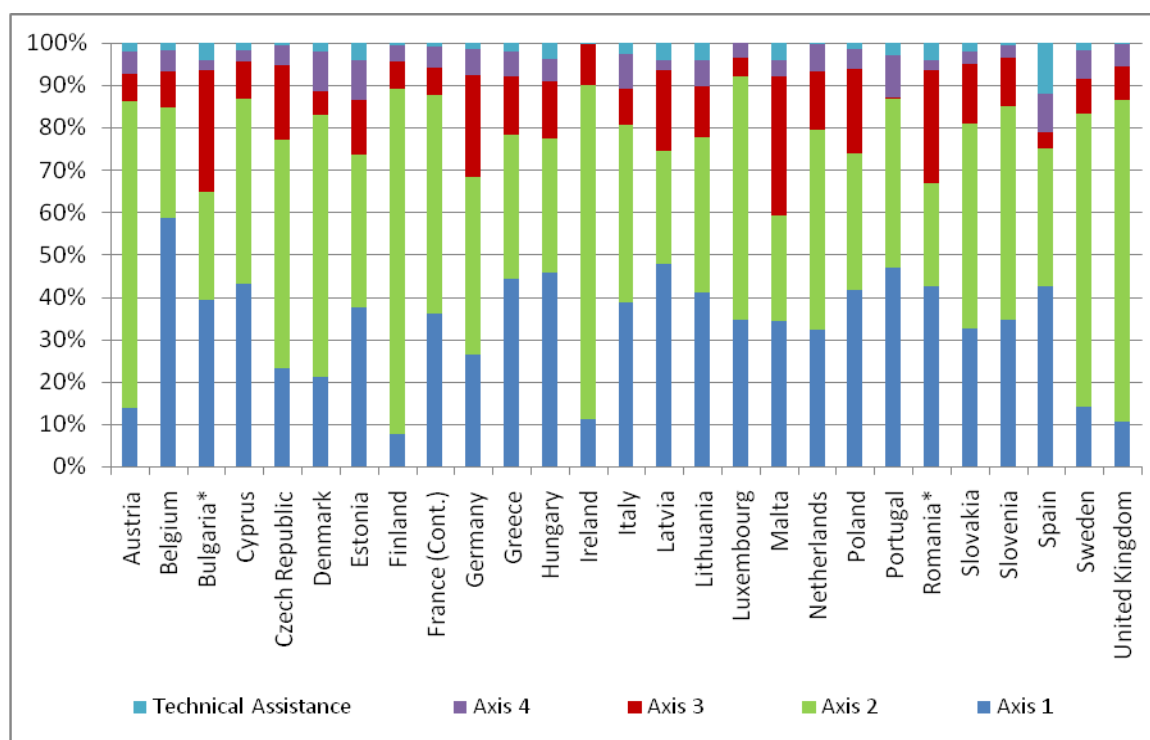
<sup>11</sup> The Instrument for Pre-accession Assistance for Rural Development (IPARD) of the EU aims to contribute to the sustainable adaptation of the agricultural sector and the implementation of EU law relevant to CAP and Rural Development Policy (RDP).

## 5 Importance of water in the overall context of the national RD programmes

### 5.1 General overview and share of public budget among the axes

In order to obtain EU support, all Member States have to prepare a Rural Development Programme (RDP) in which they set out those measures they intend to implement in the period 2007-2013. All RDPs must be approved by the European Commission. A RDP may cover an entire Member State or can cover individual regions within a country. All new Member States and seven EU-15 Member States (Austria, Denmark, Greece, Ireland, Luxembourg, the Netherlands and Sweden) have decided to submit a RDP for their entire country. Belgium, Germany, Italy, Spain and the UK have all submitted regional RDPs. Three Member States (Finland, France and Portugal) adopted a hybrid approach, developing one RDP for the mainland and regional RDPs for islands or overseas departments. Member States can distribute their budgets in various ways, reflecting the varying rural development needs of each locality.

The diagram below illustrates the split among the different Member States according to the three axes, LEADER and to technical assistance.



\*include direct payments

Figure 2: Share of public budget (i.e. Community and Member States contribution) among the different axes as percentage)<sup>12</sup>.

<sup>12</sup> In Ireland, Axis 3 measures are to be implemented using the Leader (Axis 4) approach, so the budget for Axis 4 was set to zero. In Romania and Bulgaria the amount covers also specific Accession Treaty measures for the 2007-09 period.

Regarding public expenditure, it is apparent in the above diagram that about half of the Member States (Spain, Latvia, Belgium, Portugal, Hungary, Greece, Poland, Romania, Lithuania, Estonia, Bulgaria, Malta, Netherlands) have dedicated the largest share to Axis 1 (improving agricultural competitiveness), while the other half (Finland, Ireland, Austria, United Kingdom, Sweden, Denmark, Luxembourg, Czech Republic, Slovenia, France, Slovakia, Cyprus, Germany, Italy) to Axis 2 (addressing environmental issues). No Member State has given the largest share to Axis 3. Except in Malta, Bulgaria and Romania, Axis 3 is in the third place<sup>13</sup>.

It is important to note that RD programmes cover a broad spectrum of environmental issues. According to the Community Strategic Guidelines of the Rural Development Regulation, the measures available under Axis 2 must be used to integrate several environmental objectives and must contribute to the implementation of the agricultural and forestry Natura 2000 network, to the Göteborg commitment to reverse biodiversity decline by 2010, to the Water Framework Directive objectives and to the Kyoto Protocol targets for climate change mitigation. **It is therefore important to note that water and the implementation of the WFD is one priority among several environmental issues.**

## 5.2 Main pressures to water reported in the RD programmes

When developing the RDP each MS has to prepare an assessment of Strengths, Weaknesses, Opportunities and Threats (SWOT) on various aspects to be addressed in the RD. The issue of water also needs to be addressed in this context. In many cases this SWOT assessment is linked to the results of Art. 5 assessment under the WFD, which includes i) analysis of characteristics of each River Basin District, ii) a review of pressures and impacts on waters and iii) a economic analysis. The Art. 5 assessment forms the starting point for the rivers basin management and planning under the WFD and could be used for developing the RDPs. Not all MS used the opportunity to reduce the work by using the Art 5 assessment, and in many cases the SWOT assessment carried out in the RDR is based on different sources. However, even if this link was not made in all cases the picture is close to the findings of an EU wide Art. 5 WFD assessment carried out by Herbke, et al in 2006. The main pressures on water reported in the RDP are:

- **Water Quality:** Diffuse pollution by nutrients and pesticides is the most important issue in Austria, Bulgaria, Czech Republic, Belgium, Cyprus, Denmark, Estonia, Finland, France, Germany, Lithuania, Netherlands, Poland, Slovakia, Slovenia, Sweden and the UK. Prevention/reduction of diffuse pollution in coastal zones is reported in Finland, parts of Spain and Latvia (future prevention). In the remaining countries diffuse pollution is addressed but a lower priority is given compared to other water issues. Romania, Slovakia and Bulgaria are also reporting point

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<sup>13</sup> Please note that due to the federal nature of the state, Italy, Spain, Germany, and the UK have more than one RD Programme. France and Portugal have also drawn up separate RD programmes for their mainland and overseas departments or regions. So the results presented here are average values for these countries.

sources as an issue in rural areas and have therefore included measures to improve the water sanitation sector.

- **Water quantity:** Water scarcity is most important in Cyprus, Greece, Hungary, Italy, Malta, Portugal and Spain. Regional scarcity issues are also reported in Bulgaria and England (East Anglica). Flooding is an important issue in Denmark, parts of Germany, Hungary, Slovakia, parts of Italy and the U.K. (Scotland). In this context, but also to improve biodiversity and natural water structure the creation/maintenance of wetlands, is supported by Denmark, Finland, Germany (Baden-Württemberg), parts of Italy, Sweden and the U.K. (England and Scotland).
- **Hydro-morphological changes** are only reported in a few cases as an issue and are often connected to flooding control measures (e.g. Flanders and Germany) or the creation of wetlands. However, this is in contradiction to the WFD findings (see Kampa, et al 2009a). In some countries (e.g. Austria and Czech Republic) village renewal measures have the potential to address hydro-morphological issues.

Even if there was no possibility, due to the limited resources, to carry out a detailed comparison between the Significant Water Management Issues required by the WFD (Art. 14.1) and the SWOT assessment (on the programme level), it becomes clear that the overall focus of MS RD programmes with regards to water reflect the main issues identified. As set out by Kampa et al, 2009b, diffuse pollution is a key pressure from agriculture across the EU: in 66% of RBDs agriculture is linked to nutrient enrichment, and in nearly 50% of RBDs agriculture is linked to contamination from priority substances. This fact is clearly taken into account in the RD programmes.

Further, water scarcity is also a key challenge for several MS. In response to questionnaires in the framework of the second European Commission interim report on water scarcity, thirteen Member States provided a list of river basins particularly affected by water scarcity (European Commission, 2007). Agriculture represents the major water user (abstractions) in many basins across Europe, not only in the southern regions. Most affected river basins are located in southern Europe (Cyprus, Malta, Italy, Portugal, Spain, France) but also northern and eastern countries (Belgium, Denmark, Germany, Hungary, United Kingdom) specified river basins. This is also reflected fully in the SWOT assessment of the RD programs.

### **5.3 Link between the WFD and the Rural Development programmes**

Within the Community Strategic Guidelines a clear statement with reference to the WFD is made. It is stated that the measures available under axis 2 should be used, inter alia, to contribute to the objectives laid down in Directive 2000/60/EC.

In most cases this integration is very unclear and the WFD is addressed as an important Directive that has to be implemented when justifying the priorities chosen. However, a clear link between the measures under axis 2 and the objectives of the WFD is not often provided.

Nevertheless some regional programmes in Italy, France, Germany, Greece, the UK, and the RD programmes of Malta, Denmark, Ireland, Romania, Slovakia, Lithuania, Flanders and Hungary specifically refer to the implementation of the WFD (beside mentioning Art. 38 RDR) when describing the axis II and other measures in detail.

**Illustration: Link between WFD and on RD measures level**

In Bulgaria there is a clear reference to the WFD in the case of new irrigation projects under the farm investments measure (Art. 26 RDR): *“Any project applications concerning investments which would increase the capacity or water consumption of the irrigation network on farm must be co-ordinated with the regional structures of the Ministry of Environment and Water, who is in charge of monitoring and managing the water balance at watershed level in line with the requirements of the Water Framework Directive (2000/60/EC), article 5 and Annex III, prior to their approval.”*

**Illustration: Detailed link between WFD assessment and selecting and targeting RD measures**

Another detailed link between the WFD and the RD measures can be found in Schleswig-Holstein, Germany. The analysis of the status of water quality (Art. 5 WFD) indicates that 98% of the surface waters and 50% of the ground water bodies are in danger of not meeting the targets laid out in the WFD. Measure 214-3 “Reduce nutrient input into waters” under axis II, which provides financial aid for catch crops, precision agriculture and buffer strips, was chosen based on the WFD assessment and is in line with the implementation of the WFD.

However, it has to be stressed that the River Basin Management Plans, which define the environmental objectives in each River Basin and include summaries of programmes of measures, were not established by the time MS drew up their RDP. This explains why the MS referred to water issues without making the link with the WFD. This also explains why a specific description on how RD measures will interplay with the WFD programmes of measures is not provided in any of the reports. However, some MS clearly indicate that relevant measures in the RPDs will be modified after approval of the RBMP.

A more detailed assessment of how MS use the different measures selected to improve or protect waters is given in the next chapter.

## 6 Examples of how RD measures can be used to improve water in the MS

### 6.1 Overview of RD measure with an impact on water applied at MS level

Integration of environmental requirements into the Common Agricultural Policy (CAP) is achieved alongside general requirements of cross compliance through incentive-based measures under the Rural Development Regulation. Based on Interwies et al, (2006), RD measures can be distinguished by the different incentives they provide:

- **Payments which focus primarily on improving the economic situation of rural areas.** These payments do not have a positive impact on the environment per se and therefore complementary safeguarding mechanisms are needed to ensure a positive environmental performance.
- **Payments that aim primarily at reducing the environmental pressures/costs<sup>14</sup> linked to agricultural water use<sup>15</sup>.** These measures can significantly contribute to water protection and restoration and to the implementation of the WFD.
- **Payments falling under both categories.** Some payments under the RDR, such as modernisation of farms, can fall under both categories. For example, investments in infrastructure support financial costs of water services<sup>16</sup> and investments for modern spraying equipment contribute to the improvement of the environment.

The table (Table 3) below shows the various measures that are applied by MS with positive direct or indirect impacts on water. Details about which regional RDP applies specific measure can be found in the main text. Further several illustrations (boxes in the text) presenting good examples for using the different measures to improve water status are provided. However it should be noted, that these illustrations do not account for the uptake by the farmers community or the way of implementation. They only should show possibilities and might stimulate the debate on how to design new measures as regards to water when revising the different RDPs.

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<sup>14</sup> Environmental costs are defined as “the costs of damage that water uses impose on the environment and ecosystems and those who use the environment” (WATECO 2003).

<sup>15</sup> Water uses are defined in Article 2 of the WFD as: “water services together with any other activity identified under Article 5 and Annex II having a significant impact on the status of water”.

<sup>16</sup> Water services means all services which provide water, for households, public institutions or any economic activity.

Table 3: RD measures applied at MS level that have a direct or indirect positive impact on water<sup>17</sup>.

Codes under Regulation (EC No 1698/2005)	AT	BE*	BG	CY	CZ	DK	EE	FI	FR	DE*	EL	HU	IE	IT*	LV	LT	LU	MT	NL	PL	PT	RO	SK	SI	ES*	SE	UK*	total	
<b>Payments with primary focus on the improvement of economic situation of rural areas</b>																													
Code 123: Adding value to agricultural products			X															X					X					3	
Code 125: Agricultural and forestry infrastructure	X	X		X	X	X	X		X	X	X	X		X	X	X		X	X	X	X	X	X	X	X		X	22	
Code 313: Tourism activities					X										X								X				X	4	
Code 321: Basic Services			X		X			X												X			X				X	5	
Code 322: Village renewal and development	X				X														X			X	X					5	
<b>Payments that aim primarily at reducing the environmental costs</b>																													
Codes under Regulation (EC No 1698/2005)	AT	BE*	BG	CY	CZ	DK	EE	FI	FR	DE*	EL	HU	IE	IT*	LV	LT	LU	MT	NL	PL	PT	RO	SK	SI	ES*	SE	UK*	total	
Code 213: NATURA 2000 on agricultural land and the WFD		X	X		X					X		X	X		X	X		X		X		X	X					12	
Code 214: Agri-Environmental measures	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	27
Code 216: Non productive investments		X				X	X	X	X	X				X					X		X				X			10	
Code 221: First afforestation of agricultural land		X	X	X	X	X	X		X	X	X	X		X		X				X	X	X	X		X		X	18	
Code 223: First afforestation of non-agricultural land			X	X						X	X	X		X		X				X	X				X		X	11	
Code 224: Natura 2000	X	X	X							X				X	X	X							X		X			9	

<sup>17</sup> Please note that the table below only represents the current status of discussions by experts of how to classify RD measures. This picture might change in the future.

payments (on forest land)																																
Code 225: Forest-environment payments				X	X	X				X		X		X		X	X	X	X		X		X		X		X		X		14	
Code 227: Non-productive investments There is also a measure on NATURA 2000 in forest land!					X	X				X			X		X		X		X				X		X		X		X		9	
Code 323: Conservation and upgrading of the rural heritage	X	X		X		X		X	X	X	X	X	X		X	X	X		X	X		X		X		X		X		X		9
Payments falling under both categories																																
Codes under Regulation (EC No 1698/2005)	AT	BE*	BG	CY	CZ	DK	EE	FI	FR	DE*	EL	HU	IE	IT*	LV	LT	LU	MT	NL	PL	PT	RO	SK	SI	ES*	SE	UK*	total				
Code 111: Training, Information	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	27	
Code 114: Use of advisory services	X	X	X		X	X	X			X	X	X		X	X	X		X	X		X				X	X	X		X		18	
Code 121: Modernisation of agricultural holdings	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	26	
Code 126: Restoration and prevention actions					X	X			X	X				X								X				X					7	
Code 211/212: Natural handicap payments	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	27	
Code 222: First establishment of agroforestry systems				X	X							X		X								X				X					6	
Code 226: Recovery of forestry potentials				X	X	X	X			X	X			X		X	X			X	X		X		X		X		X		13	

\*For these Member States the use of certain measures varies among the different sub-national RDPs.

X. A cross is only made when a link to water has been established or indirect effects on water can be tracked. So in some case a MS might apply a measure listed in the table above, but if no link to water was identified the measure has not been taken into account.



Pursuant to the Rural Development Regulation, evaluation activities shall take place on an ongoing basis, comprising at programme level ex ante, mid-term, and ex post evaluation, as well as other evaluation activities useful for improving programme management and impact. Furthermore, the exchange of good practices and the sharing of evaluation results can contribute significantly to the effectiveness of rural development.

In terms of budget within the EU 27, two measures are most prominent as regards water:

- Agri-environmental measures (Art. 39- code 214) are applied in all 27 MS
- Modernisation of agricultural holdings (Art. 26- code 121) is applied in EU 27

However, not only is the use of these two measures across the European Union significant but also the budget provided.

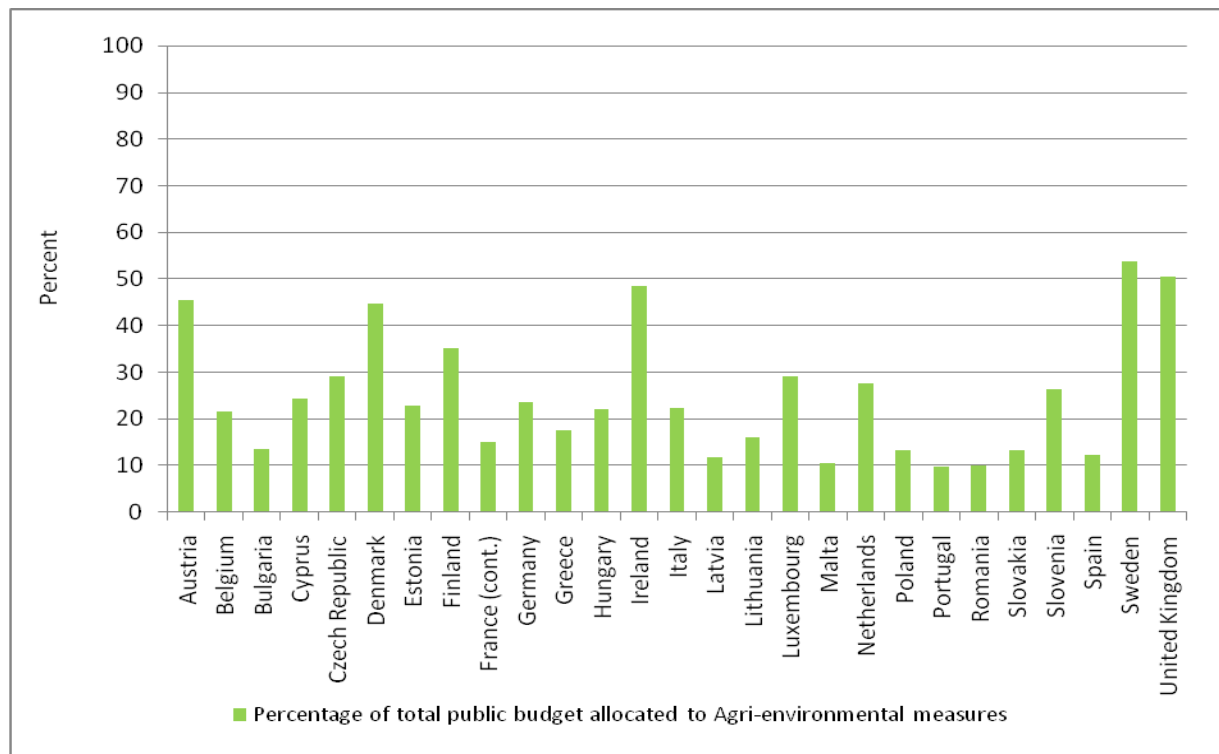


Figure 3: Importance of agri-environmental measures within the total public budget in the different Member States.

More than half of the MS (AT, BE, CY, CZ, DE, DK, EE, FI, HU, IE, IT, LU; NL, SL, SE, UK) allocate more than 20% of their total public budget to agri-environmental measures. Two countries (Sweden and UK) spend even more than 50%.

Seven MS (BE, CY, EE, HU, IT, LT, LU) have allocated more than 20% of their budget to the modernisation of farms. Belgium has by far the biggest share among the MS.

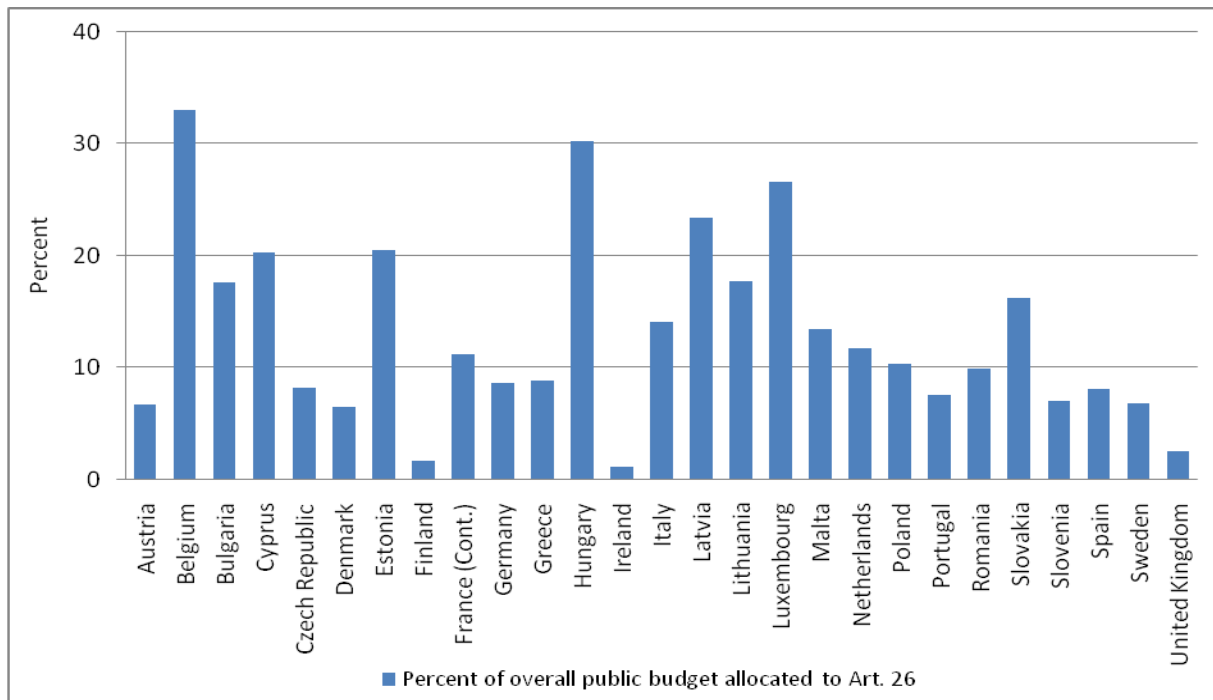


Figure 4: Percentage of total public budget allocated to Art. 26.

## 6.2 Payments with primary focus on the improvement of rural areas' economic situation

### 6.2.1 Adding value to agricultural products (code 123)

There is considerable potential for farmers and foresters in the region to improve profitability and competitiveness through greater collaboration within the supply chain and through adding value. Support aims to facilitate the development of new products, processes and markets. Investments should also address specific environmental issues such as: reducing packaging, reducing transport distances, re-use of waste products (including by anaerobic digestion) and other products and processes which mitigate or help adaptation to climate change. The measure is applied by BG, MT, SK.

#### **Illustration: Water efficiency in food processing industry in Malta**

In Malta micro, small and medium-sized enterprises can get funding for the reduction of dependence on natural resources, by improving conservation, rationalising use, re-use and recycling renewable resources, such as run-off water, by-products, and processing effluents.

#### **Illustration: Improve the overall performance of the business in Slovakia**

In Slovakia small and medium-sized agriculture and forestry companies can receive funding for activities which improve the overall performance of the business including: construction, reconstruction and modernization of technology designed to protect the environment such as waste disposal and wastewater treatment facilities; encouraging better use or elimination of by-products or waste; construction, reconstruction and modernization of production buildings and supply depots; and procurement, reconstruction and modernization of technology and processing and production capacities, including processing and exploitation of renewable sources of energy.

### 6.2.2 Agricultural and forestry infrastructure (Code 125)

The measure is applied in all EU 27 except BG, FI, IE, LU, SE. Support provided covers two aspects:

- operations related to access to farm and forest land, land consolidation and improvement, energy supply and water management (i.e. water saving irrigation); and
- support to improve efficiency of existing networks. In the context of water this clearly refers to irrigation networks (see also section 6.4.3).

Payments under these measures could be used for more efficient irrigation technology (replacement of leaky systems) or to reduce the incidence and the severity of soil erosion in some regions (e.g. replacement of sprinkler systems by drip systems), thereby supporting the implementation of the WFD. The measure can also be used to establish coherent areas as outlined in the illustration below.

#### **Illustration: Funding for the establishment of environmental and nature projects in Denmark**

The establishment of environmental and nature projects often involves areas belonging to more than one agricultural holding. An important means to help achieve the desired effects from an environmental and nature project is land distribution, which can be used to establish coherent areas. In Denmark the purpose of the measure is to contribute to the competitiveness of agriculture in the project areas. Support for land distribution is only given if the land distribution forms part of a larger nature and environment project proposed under the measure. The additional purpose and content must relate to the promotion of the environment, nature, culture or recreational purposes.

#### **Illustration: Support for the development of infrastructure tied to the development or adaptation of the agricultural sector in France**

A large area of agriculture in France is dependent on irrigation and water is an essential production factor. The goal the measure is to maintain agricultural production. At the same time, the aim is to preserve the environment by ensuring that ground waters are not over-exploited (e.g. by creating water storage capacity, modernisation of distribution channels to the irrigated fields). Support is given to investments in integrated projects for a common strategy to restore a degraded resource or to stop degradation. Each development of water storage needs to be accompanied by a full analysis of potential water savings.

#### **Illustration: Improving and developing the infrastructure related to the development and adaptation of agriculture and forestry In Romania**

The Romanian RDP specifies that only the modernisation and/or rehabilitation of irrigation systems are eligible for support. In order to avoid certain negative or contradictory impacts with Axis 2 objectives, the contracted projects must comply with all environmental rules required by the law. These rules also take into account the objectives of the Community network of Natura 2000 protected areas. Furthermore, for irrigation and drainage schemes, only the modernisation/ rehabilitation of the existing systems is supported (e.g. systems already in place before designation as a Natura 2000 site and which cannot lead to major

changes to the environment)- Furthermore, existing systems are eligible that contribute to improving water use efficiency and that are economically viable irrigation systems. It is the aim to decrease 10% of water loss, an ambitious objective.

### 6.2.3 Tourism activities (Code 313)

This measure aims to attract visitors in rural areas and create new employment opportunities through sustainable development by providing support to new (entrepreneurs) or existing rural tourism enterprises. This measure is currently used by five MS (CZ, LV, RO, SK, UK-SCT).

#### **Illustration: waste water treatment on camping type accommodations in Slovakia**

Slovakia uses this measure for the construction, reconstruction and modernisation of camping type accommodations including access roads within the premises, paved parking areas, electric, water-supply and sewage distributions, fencing, lighting and sanitary facilities.

### 6.2.4 Basic Services (Code 321)

Improved access and quality of basic services are essential for maintaining rural population and for creating positive conditions for business development. This measure aims to improve or maintain the living conditions and welfare of the rural population by providing funding for infrastructure such as water services. The measure is similar to measures under Village renewal and development (code 322) by improving existing water supply network and extension of the sewage systems. The measure is applied in BG, CZ, FI, PL, RO, SK, UK-SCT.

### 6.2.5 Village renewal and development (Code 322)

The measure focuses on the reconstruction and modernisation of transport infrastructure (local roads); water management infrastructure (water supply, sewage systems); other technical infrastructure (bridges, foot-bridges, public lighting, pavements, bike routes); the improvement of village appearance (public spaces, parks) and integrated village initiatives that promote community development and regeneration. The measure is applied in AT, CZ, NL, RO, SK.

#### **Illustration: Using Village renewal and development for improving the waste water and water supply sector in Romania**

Measure 322 will, among other activities, set-up, extend and modernize infrastructure for water (collection, treatment states, water supply) for rural settlements with less than 10,000 equivalent populations. Similar approaches are reported in Poland, Bulgaria and Slovakia.

#### **Illustration: Water in rural areas in Austria**

In Austria the measure can be used to recreate typical elements of rural villages. The focus, therefore, is on small water streams, which have often been transformed into subsurface channels.

## 6.3 Payments that aim primarily at reducing the environmental cost

### 6.3.1 NATURA 2000 on agricultural land and the WFD (Code 213)

Under Article 38 of the Rural Development Regulation (code 213) farmers may be compensated for additional costs and income foregone due to the implementation of Natura 2000 and the WFD.

Currently, Member States are only able to use Article 38 payments for Natura 2000 areas as the WFD implementation rules have not been established yet. These rules are currently under development and are expected in 2009. Several MS already stated that they will make modifications to their RD programmes when the RBMPs are in place to be able to use Article 38. This is already reported by BE-FL, BG, CZ, DE-BY, DE-BR, DE-HH, DE-NI, DE-ST, DE-SH, DE-BW, DE-HE, DE-NW, HU, IE, LT, LV, MT, PO, RO and SK.

Some MS currently use the measure to compensate farmers for costs incurred and income foregone resulting from disadvantages in the areas related to the implementation of Natura 2000 areas. This also has a positive indirect effect on water.

### 6.3.2 Agri-Environmental measures (Code 214)

Agri-environmental measures in the RDPs are key elements for protecting the environment, as they can be applied in various ways and address a broad spectrum of environmental pressures. The agri-environmental measures are mandatory measures for Member States, i.e. they are required to include such measures in their RD programmes. However, these measures remain optional for farmers, who can choose to sign a contract to carry out one or more measures.

In reflection of their diverse environmental needs, Member States and regions have chosen to implement the policy in very diverse ways (European Commission, 2005). An important distinction has been made between 'broad and shallow versus deep and narrow' schemes (sometimes known also as 'light green versus dark green' schemes). 'Broad and shallow' or horizontal schemes tend to include a large number of farmers, cover a wide area, make relatively modest demands on farmers' practices and pay correspondingly little for the environmental service provided. 'Deep and narrow or dark green' schemes tend to target site specific environmental issues, therefore including fewer farmers (European Commission, 2005).

Agri-environmental measures (AEMs) have demonstrated their capacity to reduce pressures from agriculture on water in several cases. There are many agri-environmental measures whose objective is, wholly or partly, to improve or protect water quality. The AEMs with main impacts on water can be classified as follows:

- Input reduction: This category of measures includes reductions in fertilisers and plant protection products. Expected impacts include: securing water quality, enhanced biodiversity and soil quality. The measure can further be divided into:
  - Nutrients reduction (e.g. limits in fertiliser use (time and type), nutrient balances on farm level, crop rotation plans, catch crops) (AT, BU, DE-BW, DE-BY, DE-BR, DE-HH, DE-HE, DE-NI, DE-MV, DE-RP, DE-SL, DE-SN, DE-ST, DE-SH, DE-TH, FI, ES-AN, ES-CM, ES-EX, ES\_GA; ES-PV, EL, EE LU,

IE, IT-ABR, IT-EMR, IT-FVG, IT-LAZ, IT-MAR, IT-PMN, IT-BZ, IT-TN, SE, LT, NL, PO; RO, SK, UK-ENG, UK-SCT, UK-WLS).

- Pesticide reduction in all farming practices (e.g. limits in pesticide use) (AT, BE-FLA, DE-BW, DE-BY, DE-BR, DE-HE, DE-NI, DE-MV, DE-RP, DE-SL, DE-SN, DE-ST, DE-SH, DE-TH, DK, ES-AN, ES-CT, ES-EX, ES-PV, EL, EE, FI, IE IT-BZ, NL, LU, MT, SE).
- Restriction pesticide use for specific crops (AT, CY, DE-RP, IT-MAR, MT).
- Organic farming: This is a clearly defined and controlled approach to farming according to Commission Regulation No 834/2007, which incorporates a wide range of measures, e.g. input reduction, rotation, extensification of livestock. Expected impacts include: enhanced soil quality, preserving water quality, and biodiversity enhancement. This measure is applied in all MS.
- Integrated farming schemes: Integrated Farm Scheme (IFS) is a whole farm system providing efficient and profitable production that is environmentally responsible. IFS works by integrating beneficial natural processes into modern farming techniques and ensures that high standards of stewardship and environmental care are practiced. The measure is applied in AT, DE-MV, ES-AN, ES-AR, ES-IB, ES-CN, ES-CM, ES-CT, ES-EX, ES-GA, ES-M, ES-MU, ES-LO, EL, HU, IT-ABR, IT-BAS, IT-CAL, IT-CAM, IT-EMR, IT-LAZ, IT-LIG, IT-LOM, IT-MAR, IT-MOL, IT-PMN, IT-SIC, IT-TOS, IZT-UMB, LV, PT, SL, UK-ENG, UK-NIR.
- Multi-objective measures:
  - Land use change covers activities for the conversion of arable land into grassland and is targeted at intensive land or setting up new wetlands (AT, DE-NI, DE-RP, DE-ST, ES-PV, EL, FI, IT-FVG, IT-LAZ, IT-LIG, IT-LOM, IT-PMN, IT-TN, IT-TOS, IT-VEN, LT, LU, PO, SL, UK-SCT).
  - Buffer zones include the establishment of riparian zones, buffer strips or any other zone that set restrictions on fertiliser/PPP use and have requirements linked to spraying dates and/or techniques, limited grazing and livestock access. (AT, BE\_FL, BE-WAL, BU, DE-HH, DE-HE, DE-NW, DE-RP, DE-SH, DK, ES-CM, ES-NA, EE, IE, FI, IT-BAS, IT-CAL, IT-FVG, IT-LOM, IT-MOL, IT-UMB, IT-VEN, NL, MT, PO, UK-SCT, UK-WLS). It is important to note that the design of these buffer zones varies widely. Some regions (e.g. AT, DE-HE, DE-NRW, DE-RP, DK, PO) only limit the use of pesticides and fertilizers on an area up to around 2-5 meters next to the water course, Others are intending to develop these zone in combination with nature protection measures increasing also biodiversity (see e.g. DE-HH).
  - Extensification measures cover the promotion of extensive grazing and extensive livestock production (DK, BE-WAL, FR, LU, IR, SI) and/or extensive grassland use (FI, IT-EMR, IT-VEN, DE-BY, DE-BR, DE-HE, DE-NI, DE-NW, DE-SN DE-TH, ES-AR, ES-O, ES-S, ES-CM, ES-CL, ES-CT, ES-GA, ES-M, ES-MU, ES-PV; ES-LO, LV, SE, UK-ENG).
- Soil erosion measures combine measures such as stocking limits and maintaining terracing and soil cover. (AT, BE-WA, BU, BE-FL, IT-EMR, IT-LAZ, IT-MOL, IT-PUG,

IT-SAR, IT-TOS, IT-VDA, IT-VEN, DE-BR, DE-NI, DE-MV, DE-TH, ES-O, ES-IB, ES-CM, ES-CT, ES-GA, ES-MU, ES-PV, ES-LO, ES-VC, IE, HU, LT, RO, SK, UK-ENG).

- Management of wetlands: Under this measure MS set specific protection measures for wetlands. (AT, DK, FI, ES-CT, EL, IT-LOM, IT-BZ, IT-TN, LT, HU, SE, UK-SCT, UK-ENG).
- Water saving measures: In ES-M, ES-VC there are measures for sustainable rice production, which should also result in water savings.

**Illustration: Scheme for improving the status of water bodies at risk in Lithuania**

The objective of the scheme is to help achieve good status of water bodies that are at risk of not achieving good status by 2015 (as is required by Water Framework Directive and Water Law of Lithuania) due to especially big negative impacts from farming - pollution of water with nutrients, organic substances.

The scheme for improvement of water body's at risk consists of the measure "Conversion of arable land into permanent pasture (meadow)". It is designed to reduce nitrogen and phosphorus reaching water bodies at risk because of soil erosion and fertilization. Surveys have established that the quantity of nitrogen leaching into water bodies from soil sown with permanent grassland is several times less than that of arable land. The status of every water body mostly depends on the activities in its catchment territory. Therefore, the implementation of the measure will lead to the improvement in water body status and contribute to the implementation of WFD water protection objectives. As the implementation of measure will reduce nutrients inflow to the Baltic Sea, it will contribute to the reduction of eutrophication of the Baltic Sea, which is identified as the priority environmental problem in the Baltic Sea by HELCOM. After the river basin management plans will be adopted and implementing rules for Art. 38 of the Rural Development Regulation will be fixed, this measure will be revised.

**Illustration: Extensive Rice production in Murcia, Spain**

The measure requires compulsory crop rotation. Rice can be planted for a maximum three years, with a year break for another cereal (and limited nitrogen application) or the parcel has to be left fallow and without use of fertilizer. Further, there is compulsory use of 'fanguero' or a type of rolling with a mesh-wire to obtain uniformity of the terrain and impermeability and achieve water savings. Also, drying of fields in July without using herbicides is required to save water.

**Illustration: Buffer Zones in Hamburg, Germany**

In Hamburg funding is provided to purchase land for the purpose of nature conservation, in particular to establish and maintain habitats and buffer strips to protect waters. Thereby, the aim is to develop zones which serve nature conservation in general and do not focus on a particular aspect (e.g. bird protection). In order to get funding, nature conservation has to be ensured for a minimum of 12 years in this area.

### 6.3.3 Non productive investments on agricultural land (Code 216)

The article supports the funding of non-productive farm investments which (i) are linked to the achievement of commitments undertaken pursuant to the agri-environmental measures of Art. 39 or other agri-environmental objectives and (ii) enhance the public amenity value of a Natura 2000 area or other high nature value area (e.g. wetlands). Such non-productive farm investments can help to establish, for example, buffer strips or set up Natura 2000 areas. The measure is applied in BE, DE-HH, DE-NW, DE-RP, DK, EE, ES-AN, ES-IB, ES-CT, ES-EX, ES-GA, ES-MU, ES-LO FI, FR, IT-ABR, IT-BAS, IT-CAL, IT-CAM, IT-EMR, IT-FVG, IT-LAZ, IT-LIG, IT-LOM, IT-MAR, IT-PMN, IT-PUG, IT-SIC, IT-UMB, IT-VEN, NL, PT.

#### **Illustration: The creation of multifunctional wetlands in Finland**

Creation of multifunctional wetlands is designed to promote water conservation in watercourses and coastal areas with a heavy environmental load from agriculture; improve the living conditions for birds; reclaim habitats that were lost when arable areas were drained and improve the conditions of brooks that organisms use as passages. Furthermore, wetland areas reduce harmful flooding downstream and increase low flows.

The investment support in Finland is used to establish wetlands and wetland-like flooded areas in places in which they would occur naturally, on arable areas susceptible to flooding and on terraced drainage areas, and to restore channels in accordance with the principles of natural water construction. The measures must be implemented in accordance with a specific plan, and measures must not have an adverse impact on the drainage situation of arable land cultivated outside the area covered by the measure. The area of a wetland must be at least 0.5–1.0% of the area of the upstream catchment area.

#### **Illustration: Measures for water conservation in Flanders, Belgium**

The goal of this measure is to temporarily conserve water in the upstream area. This will improve the groundwater tables and reduce the water shortage during drought and it leads to an increased recharging of shallow and deep aquifers. This leads to positive impacts on the environment (recharge of deep groundwater), agriculture (less damage because of drought), biodiversity (hydrological buffers around nature areas, conservation of water-loving species), and it has a positive impact on the reduction of flooding in downstream areas.

Support in Flanders is given to realise measures that increase the water level or slow down the downstream water flow. Possible measures may be the adaptation of ditches; the development of small retention structures (“stuw”), raising the height (<0.5 m) of field plot edges, the placement and working of monitoring wells. The measures must be implemented in accordance with a specific management plan for specific areas.

#### **Illustration: Use of non-productive investments in the Po Delta, Italy**

The area, close to the Po delta is characterized by strong agronomic constraints due to peaty soils that require the cultivation of rice on at least half of the surface to maintain soil characteristics compatible with farming. At the same time, wetland restoration is a priority in the area to complement the protected areas close to the delta and to re-create some of the original landscape and biological features of the area.



In the RDP of the Emilia Romagna region, one of the sub-measure “non productive investments“ is used to protect biodiversity and high value ecosystems. This also includes in particular the improvement of the surface water in the Po delta with its typical brackish water and related species. The measure is used for the creation of wetlands, creation of channels in laguna and dykes.

**Illustration: Support for non-productive investments in The Netherlands**

As the demand for so called “blue” and “green” goods and services is rising, the Dutch Government wants to encourage farmers to introduce measures that create these goods and services (e.g. by using alternative production methods). Farmers are paid for these goods and services through agri-environmental payments (measure 214). But, before these changes in land and water management can take place, there are sometimes one-off changes in the physical conditions or characteristics of the land that have to be made. Measure 216 supports these pre-management changes. In addition, measures to preserve biodiversity in nearby nature areas are also included under measure 216 (e.g. hydrological buffers around a wetland area...).

**6.3.4 First afforestation of agricultural land (Code 221)**

This measure aims to increase forest cover in rural areas. Afforestation offers additional possibilities to private land owners who can discontinue use of less productive land for agricultural production and switch to the forest production. It is applied in BE, BG, CY, CZ; DK, DE-BY, DE-BR, DE-MV, DE-NW, DE-SN, DE-ST, DE-SH, DE-TH, EE, EL, ES-AN, ES-AR, ES-O, ES-IB, ES-PV, ES-EX, ES-GA, ES-S, ES-CM, ES-CL; ES-CT, ES-LO, ES-M, ES-MU, ES-NA, FR, HU, IT-LIG, IT-ABR, IT-BAS, IT-CAL, IT-CAM, IT-EMR, IT-FVG, IT-LAZ, IT-LOM, IT-MAR, IT-MOL, IT-PMN, IT-PUG, IT-SIC, IT-TOS, IT-UMB, IT-VEN, LT, PL, PT, SK, RO, UK-SCT, UK-WLS, UK-ENG.

**Illustration: Creation of retention capacity due to afforestation in Germany:**

The extreme summer flood in the Elbe River watershed initiated a debate on the role of forest conversion and afforestation as measures for preventative flood protection. In Lower Saxony this measure is combined with two other measures, namely “First afforestation of non- agricultural land” (Code 223) and “Non-productive investments (Code 227), to increase the retention capacity to alter run off regimes. Afforestation is planned on 1,190 ha of agricultural and on 140 ha of non agricultural land afforestation. This measure is applied primarily in regions with a special need for water retention. Generally, the state wishes to achieve: increased water storage capacity and retention potential, groundwater recharge, prevention of soil erosion, and forest as a natural nutrient supply for woodland streams.

**Illustration: Support for afforestation of agricultural land in France**

Forests play an important role in the framework of climate change (carbonisation), renewable energy and water quality protection. Support is given to investments concerning the preparation and planting of forests (e.g. preparing the soil for forestation, deliverance of seeds or plants adapted to forests, planting the area, protection of the plants..). The support

is only for afforestation on land that is in use as agricultural land for at least two sequential years in the 5 year period preceding the request for support.

### 6.3.5 First afforestation of non-agricultural land (Code 223)

This measure aims to increase the forest cover of a country to enable agricultural restructuring, to increase the social and public welfare of forests and to improve the employment opportunities in rural areas. The measure is mainly used to prevent forest fires. It is applied in BG, CY, DE-BY, DE-NI, DE-MV, DE-SN; DE-ST, EL, HU, IT-LIG, IT-ABR, IT-BAS, IT-CAL, IT-CAM, IT-FVG, IT-LAZ, IT-LOM, IT-MOL, IT-PMN, IT-PUG, IT-SIC, IT-TOS, IT-UMB, IT-VEN, LT, PL, PT, ES-AN, ES-AR, ES-O, ES-CN, ES-EX, ES-GA, ES-M, ES-LO, UK-ENG, UK-SCT, UK-WLS.

#### **Illustration: First afforestation in Hungary**

Areas selected for afforestation can be selected based on desired environmental effects, for example protection against erosion, expansion of forestry resources to decrease the effect of climate change, increasing biodiversity, protection of watercourses, and flood protection. No protected natural areas or NATURA 2000 sites may be selected where the current landscape structure and cultivation strategy sustains high biological diversity. The areas where the measure can be applied have to be verified by the Institute of Geodesy in Hungary.

#### **Illustration: First afforestation of non-agricultural land in Cyprus**

In Cyprus, the measure "First afforestation of non-agricultural lands" is applied to rural areas abandoned by farmers for different reasons (e.g. low productivity of cultivations, movement of population to urban areas etc.) as well as to other abandoned lands such as mines. These areas face a number of environmental problems including soil erosion, desertification, reduction of water quality and quantity, climate change etc. The specific measure is intended to contribute positively to tackling all these environmental problems.

Among others, the main aims of the measure include contribution to protection of rural areas from natural disasters like floods and wildfires, protection of soil from erosion and desertification and protection and improvement of water quality.

A minimum surface area of .3 ha is set for this measure. Two groups of activities can be supported: a) Settlement and protection of the forest plantation and b) Maintenance of the forest plantation. Among others, supported sub-activities include the set up of simple irrigation systems for the afforested area and their maintenance. Afforestation must respect principles of Natura 2000 as well as the Water Framework Directive.

### 6.3.6 Natura 2000 payments on forest land (code 224)

The measure aims to support cost incurred resulting from restrictions of the use of the forestland due to Natura 2000. These restrictions in use also bring benefits to water in particular to groundwater resources. The measure is applied in AT, BE-WAL, BG, DE-NW, DE-SN, IT-FVG, IT-LAZ, IT-MAR, IT-VEN, LT, LV, SK, ES-AR.

### 6.3.7 Forest-environment payments (Code 225)

This measure aims to benefit land owners who make forest –environmental commitments on a voluntary basis, for example afforestation, which encouraging the planting of trees for environmental reasons such as prevention of erosion and floods, increasing biodiversity etc.. The activity has many positive impacts on water. It is used in CY, CZ, DE-BW, DE-BY, DE-HH, DE-MV, DE-ST, DK, HU, ES-AN, ES-CL, ES-EX, ES-PV, IT-CAL, IT-EMR, IT-SAR, IT-TOS, IT-UMB, IT-VEN, LT, LU, MT, NL, PT, SK, UK-ENG, UK-SCT.

#### **Illustration: Prevention of soil erosion and surface- and groundwater pollution – Andalusia, Spain**

The Mediterranean high forests of Andalucía face several challenges: on the one hand there is the problem of maintaining and improving their environmental state while increasingly providing goods and services (e.g. environmental and recreational) to society, and on the other hand there are problems of profitability. The measure aims to encourage an active and sustainable management of forest ecosystems that take into account specific requirements. Two aims are relevant for water: the prevention of soil erosion and that of surface- and groundwater pollution.

The prevention of soil erosion includes specific actions such as the restoration of protective forest cover, management and treatment actions that guarantee the stability of forest mass and guarantee its resistance and functionality, soil conservation practices, improvement or planting of soil-stabilizing bush or grass vegetation, and stabilization of slopes.

Forest-environment payments aim to protect water bodies. They include actions focusing on the areas adjacent to surface water bodies, with the implementation of “green” (buffer) strips and the reforestation of areas next to surface water bodies. Another group of possible actions aim for the recovery or restoration of river borders, wetlands and springs.

### 6.3.8 Non-productive investments on forest land (Code 227)

Payments under this measure are linked to forest-environment undertakings or other environmental objectives which enhance the public amenity value of the forest. It is part of the RDP in CZ, DE-BW, DE-BY, DE-BR, DE-NI, DE-MV, DE-NW, DE-RP, DE-SL, DE-SN, DE-ST, DE-SH, DK, ES-AN, ES-AR, ES-O, ES-IB, ES-CN, ES-PV, ES-EX, ES-GA, ES-S, ES-CM, ES-CL; ES-CT, ES-LO, ES-M, ES-MU, ES-NA, ES-VC, IT-LIG, IT-ABR, IT-BAS, IT-CAM, IT-EMR, IT-LAZ, IT-MAR, IT-MOL, IT-IT-BZ, IT-TN, IT-PUG, IT-TOS, IT-UMB, LT, LU, PT, SE.

#### **Illustration: Converting stands with environmental purposes in Portugal**

In Portugal the measure is used to transform existing plantations of ecologically ill-adapted eucalyptus trees into plantations of native species better adapted to the climate and soil conditions with high environmental value. In converting these eucalyptus stands, the main purpose is to reduce environmentally harmful production in sensitive water and soil areas. As eucalyptus plantation often have negative impacts on groundwater levels, this measure should also increase protection of subsurface waters.

### 6.3.9 Conservation and upgrading of the rural heritage (Code 323)

The measure "Conservation and upgrading of the rural heritage" supports actions such as drawing up the plans for Natura 2000 and high natural value places. It is also clearly linked to

the protection of Natura 2000 areas allowing the, preparation and implementation of Natura 2000 management plans. It should also help to implement the WFD. In those MS (AT, BE, CY, DK, FI, FR, DE-BW, DE-BY, DE-BR, DE-HH, DE-NI, DE-NW, DE-MV, DE-RP, DE-SN, DE-ST, DE-SH, DE-TH, EL, ES-AN, ES-AR, ES-O, ES-CN, ES-CM, ES-CL, ES-CT, ES-EX, ES-GA, ES-M, ES-NA, ES-LO, ES-VC, HU, IE, IT-ABR, IT-BAS, IT-CAM, IT-EMR, IT-FVG, IT-LAZ, IT-BZ, IT-TN, IT-UMB, LU, MT, NL, PT, RO, UK-ENG, UK-NIR, UK-SCT) where the measure is applied in combination with other payments under Axis 2 (e.g. agri-environmental payments, Natura 2000 payment).

**Illustration: Integrated Territorial Interventions in Portugal**

In Portugal “Natura 2000” sites and other chosen territories with a high natural or landscape value that are subjected to Integrated Territorial Interventions. These interventions represent a framework for local actions which combine the support provided under various measures.

**Illustration: State acquisition of land in Denmark**

Under measure “Conservation and upgrading of the rural heritage”, state acquisition of land shall be undertaken in connection with projects with the objective to protect and improve the aquatic environment in the area concerned and to reduce the use of plant protection products. The acquisition of land by the state can be a necessary prerequisite to implement a given project concerning establishment or reestablishment of wetlands, conservation or restoration of nature areas. State acquisition of land will only be used as a last resort and if essential to carry out projects to promote environmental or nature conservation considerations. The land is bought by the State with the unambiguous intention to sell the land as soon as possible to a private individual, fund or other private legal person at the market prices (which will be lower after the project has been implemented). The land will be sold with long-term legal commitments only. Land owners must prior to State purchase be given the alternative opportunity to receive area based compensation under the agri-environment measures pursuant to Articles 36 (a) (iv) and 39 of Council Regulation (EC) No 1698/2005. In this case the Danish state is the beneficiary of the payments.

**Illustration: Hydro-morphological restructuring in Lower Saxony, Germany**

Besides other water protection measures covered by “Conservation and upgrading of the rural heritage”, Lower Saxony provides funding for hydro-morphological restructuring. This covers the removal of about 300 weirs in order to improve the connectivity of rivers and to achieve the objectives of the WFD.

## **6.4 Payments falling under both categories**

### **6.4.1 Training, Information (Code 111)**

This measure aims to improve the skills (technical or commercial) of all people in the agriculture and forestry sector through training activities. The term training includes a multitude of activities, ranging from written information materials via papers and demonstration projects, to group consultations and problem-related consultations at individual farms. To consider water pollution control aspects in the framework of agricultural

practices, the promotion of interdisciplinary agricultural consulting and advanced training is highly relevant. The measure could also be used to ensure that farmers collectively know why and how to implement projects aiming at water protection. The measure is applied in all EU 27.

**Illustration: Training and Information measure to implement the WFD Hamburg, Germany**

The implementation of the WFD, as well as the preservation and development of a cultural landscape, requires new tools and measures to ensure that environmental objectives and competitiveness of industry is obtained. Furthermore, advisory services and cooperation between water supply companies and professional organisation need to be continued. Under this measure, information (through the form of group events, seminars and information sessions) about water saving in the agriculture sector, and especially in the fruit and horticulture sector, needs to be provided to land managers.

**Illustration: Training of farmers in Hungary**

In Hungary training courses offer information on cross-compliance requirements; requirements of sustaining the Simplified Direct Payments and the proper agricultural and environmental state (for forest managers); the production, utilization and primary processing of biomass for energetic purposes; providing theoretical and practical knowledge serving competitive and sustainable farming; and on requirements concerning the Water Framework Directive.

**6.4.2 Use of advisory services (Code 114)**

This measure aims to help rural populations improve their business activities by increasing their competitiveness. In several cases the measure is used in combination with training and information measures. Farm advisory service should at least embrace the requirements of cross-compliance. The measure is used in AT, BE, BG, CZ, DE-BW, DE-NW, DE-ST, DK, EE, EL, ES-AN, ES-AR, ES-O, ES-IB, ES-CN, ES-PV, ES-EX, ES-GA, ES-S, ES-CM, ES-CL; ES-CT, ES-LO, ES-M, ES-MU, ES-NA, ES-VC, HU, IT-LIG, IT-ABR, IT-BAS, IT-CAL, IT-CAM, IT-EMR, IT-LOM, IT-MAR, IT-MOL, IT-PMN, IT-PUG, IT-SIC, IT-TOS, IT-UMB, IT-VEN, LV, LT, MT, NL, PT, SE, UK-ENG, UK-SCT.

**Illustration: Use of advisory services in The Netherlands**

Farmers are confronted with many changes due to national and international law. They often need professional advice about the way they can adapt to the changing legislation and keep their business running. The advice can also include water plans (how to cope with water quantity and quality issues) and nature plans. The Dutch government pays a part of the costs of such an advisory service.

The support in the Netherlands is used to stimulate and help farmers to comply to the changing legislation. Farmers who use this measure will be informed about the necessary management (safety, employment...) demands and good agricultural and environmental conditions and the way it is implemented in the Netherlands. To receive this support, some criteria need to be met.

### 6.4.3 Modernisation of agricultural holdings (Code 121)

This measure seeks to aid farmers in taking up investments in production techniques that enable them to meet new market conditions and demands. Through this measure farmers receive support to modernise agricultural holdings to improve not only their economic performance but also the environmental, occupational safety, hygiene and animal welfare status of their holdings. While farm investments can be beneficial for the environment (e.g. increased irrigation efficiency, better manure storage capacities), there is also the risk that these new investments will lead to further unsustainable intensification of the agricultural sector, in particular in the EU 12 countries (Metera, D. et al, 2004). However, it should be noted that when evaluating the draft RD programmes before adoption, the Commission, verified that the conclusions of the ex-ante evaluation and of the strategic environmental assessment were taken into account in the design of RD measures.

Furthermore, regarding the setting up of new irrigation systems and the increase of irrigated lands, the compliance with the Water Framework Directive regarding groundwater (balance between abstractions and natural recharge) and surface water is a key issue and should be respected (WFD Art. 4.7 on new modifications). This means that the creation of new resources for irrigation should be reserved only to cases where the Authorities can demonstrate that no other alternatives are possible in compliance with the Environmental Impact Assessment requirements.

The measure is applied in all EU 27 MS. As regards water, three types of investments can be distinguished:

- **Investments in irrigation technologies:** Austria, Bulgaria, Ireland, Romania, Greece, Slovakia, Germany, Italy, Spain, Portugal, Cyprus and Malta provide support to investments in irrigation systems. Two reasons are given: to improve the efficiency of irrigation technologies to address water scarcity and droughts; and in countries not facing water scarcity the main reason is to improve productivity and increase the competitiveness of the sector.

#### **Illustration: Farm investments related to modernisation of irrigation and the link to the WFD in Spain**

The Spanish national framework mentions as a strategy the necessity of gearing water management towards higher efficiency, water saving, and diminishing pollution of soils and groundwater, along with "maintaining the coherence with the WFD". This is taken up in the horizontal measure 125.1, which aims at "modernising irrigation infrastructure". Within the measure description in the national framework, it is stated that this modernisation shall occur with "strict adherence to the national legislation which transposes into national law the WFD". The measure will guarantee water availability for crops, as well as the sustainability of irrigation systems. Regional RDPs in Spain usually take up this reference when justifying a particular measure. In the same RDP, measure 125.3, which modernises irrigation systems, also states that modernisation reduces water consumption "with clear environmental benefits, which will help achieve the environmental objectives established in the WFD before 2015 ...".

In four Member States, payments explicitly refer to an increase in irrigated area (Austria, Portugal, Bulgaria, and Malta). In this context it is important that after 2009 these new irrigation activities are in line with the WFD, which aims at preventing any

deterioration in the existing status of waters (Art. 4 WFD). However, under WFD Art. 4.7 new modifications and activities are possible and provide room for such new irrigation projects. None of the four plans explicitly refers to this article. In **Bulgaria**, any project applications concerning investments which would increase the capacity or water consumption of the irrigation network on farm must be co-ordinated with the regional structures of the Ministry of Environment and Water, who is in charge of monitoring and managing the water balance at watershed level in line with the requirements of the Water Framework Directive (2000/60/EC), article 5 and Annex III. Furthermore, it is recommended that new construction and reconstruction of irrigation systems should be accompanied by justifications in compliance with the application of new technologies, which ensure water saving, energy efficiency, and should be nature-friendly (erosion prevention). In **Malta**, investments for irrigation projects are only supported on the condition that the project will result in the reduction of groundwater use. However, more specific details on how this process will take place are missing. **Portugal** supports meeting all national and Community legislation when setting up new irrigation infrastructure. **Austria** does not make any reference to the WFD.

- **Investments in water saving technologies:** Investments in water saving technologies, in addition to more efficient irrigation technologies, are provided under this measure (e.g. rainwater harvesting systems, water recycling).

**Illustration: Farm investments related to water saving in Malta**

In Malta investments leading to an increase in water savings, including the use of recycled water and harvested rain water, are funded under this measure. Training related to the operation of the new equipment and new systems is mandatory.

- **Investment in farm equipment to reduce diffuse and/or point pollution** (e.g. new fertilizer spreading equipment). Although these new investments are aimed at better environmental performance on the farm there is also the risk of increasing certain environmental pressures (e.g. soil compaction due to more heavy machinery) if new investments are not managed properly or do not take into account local environmental conditions. All MS provide this measure.

**Illustration: Farm investments related to reduce diffuse and/or point pollution In Scotland, UK**

In Scotland the measure is used to improve water quality through storage improvements that enable better handling and application of manure and through the use of technology to process surplus slurry and manure into biogas or compost. This will also contribute to delivering environmental benefits by reducing ammonia and nitrous oxide emissions and to increasing the efficiency of farm operations as well.

#### 6.4.4 Restoration and prevention actions (Code 126)

These measures aim to mitigate the effects of natural disasters (e.g. floods and droughts, forest fires) by helping restore agricultural and forestry production damaged by such events and introducing appropriate prevention instruments. The measure is applied in CZ, DE-BY, DE-BR, DE-NI, DE-RP, DE-ST, DE-SH, DE-TH, DK, EL, ES-AR, ES-CL, FR, IT-LIG, IT-LOM, IT-SIC, IT-UMB, PT.

### **Illustration: Implementing the Flood Directive in Brandenburg, Germany**

While in France and Denmark the measure is used to fund restoration activities (irrigation systems, dykes), in Brandenburg, Germany the measure is used to restore agricultural production potential and to introduce appropriate prevention measures contributing to competitiveness of agriculture and forestry. The measure also intends to develop High Water Risk Plans in accordance with the EU Directive on Flooding. Funding can be obtained for measures such as:

- Development and implementation of flood protection plans;
- Reconstruction, building and expansion of installations for flood control;
- Planting and other installations to improve the natural production conditions for crop farming as well as to reduce the discharge of substances and soil erosion;
- Nature-related upgrading of waters to improve water reservation and a nature related development of waters.

### **Illustration: Preventive protection against drought events in Sicilia, Italy**

In Sicily, the measure is used a) to prevent natural disasters and b) to compensate farmers in the case of a natural event. The focus is on the preventive protection of the natural water cycle and to avoid droughts.

#### 6.4.5 Natural handicap payments (Code 211/212)

58% of the overall utilized agricultural area in the EU is currently classified as less favoured areas (LFA)<sup>18</sup>. The aid to farmers through natural handicap payments or LFA payments is a longstanding measure of the Common Agricultural Policy. In place since 1975, it is a broad-scale mechanism for maintaining the countryside in areas where farming activity is subject to natural handicaps. An area might be less favoured, for example, due to natural conditions (e.g. water scarcity). Under the current RDR, the LFA measure should contribute to 'maintaining the countryside' as well as 'maintaining and promoting sustainable farming systems'. In addition, it should contribute to preventing land abandonment. Farmers located in LFAs are often offered additional support beyond the compensatory allowance payment, for example higher aid intensity under other RD measures. All MS apply this measure.

#### 6.4.1 First establishment of agro-forestry systems (Code 222)

This measure aims to support farmers with extensive agricultural and forestry activities on the same land so that farmers can improve their income possibilities and enhance biodiversity. Another important aspect of agro-forestry systems is they protect against wind and water erosion and diffuse pollution when used as buffer zones. Plantings also physically stabilise stream banks and have the ability to store water (wetlands), which is relevant for flooding. Furthermore, such strips help to prevent stream bank erosion, which in turn decreases sedimentation downstream. However, the measure is mostly used to preserve biological diversity and improvements in water quality have to be considered as a side effect.

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<sup>18</sup> [http://ec.europa.eu/agriculture/consultations/lfa/consultationdoc\\_en.pdf](http://ec.europa.eu/agriculture/consultations/lfa/consultationdoc_en.pdf).



It is part of the RDP in CY, ES-AN, ES-AR, ES-O, ES-CN, ES-EX, ES-GA, HU, IT-CAL, IT-LAZ, IT-MAR, IT-SIC, PT.

#### 6.4.2 Recovery of forestry potentials (Code 226)

This measure aims to financially support forestry farmers after short-term natural phenomena (e.g. windstorm and flooding), to stop the wood price decline, for oversupply and to avoid the hazard of insecticide entries in the forest area. The measure is applied in the following countries CY, CZ, DK, DE-BW, DE-BR, DE-NI, DE-MV, EE, EL, ES-AN, ES-AR, ES-O, ES-IB, ES-S, ES-CN, ES-CM, ES-CL, ES-CT, ES-EX, ES-GA, ES-M, ES-MU, ES-NA, ES-LO, ES-VC, IT-LIG, IT-ABR, IT-BAS, IT-CAL, IT-CAM, IT-EMR, IT-FVG, IT-LAZ, IT-LOM, IT-MAR, IT-MOL, IT-PMN, IT-BZ, IT-TN, IT-PUG, IT-SAR, IT-SIC, IT-TOS, IT-UMB, IT-VEN, LT, LU, PL, PT, SK.

## 7 Use of LEADER to implement the WFD

Under LEADER, regional networks of local groups can be set up to act as knowledge brokers, promotional platforms and instruments of political negotiation at the interface between local actors, administrations and other segments of society, such as professional organisations or training institutions (ÖIR-Managementdienste GmbH, 2004). Leader aims to contribute to the priorities of axis 1 and 2 and in particular axis 3. This offers a unique chance to create a bottom-up approach in WFD “problem areas”. Nevertheless, LEADER is hardly used for activities under Axis 2, although some programmes apply LEADER to territorial agri-environmental payments (Loriz-Hoffmann, 2007).

In Europe several hundred Local Action Groups under LEADER exist in the current programming period, but a detailed focus of these groups is not provided in the RDPs. It is beyond the scope of this study to assess all the approaches taken at MS level.

However, two good examples of how LEADER can be used to implement WFD objectives through a common approach within the agricultural sector were found in Finland and Spain.

### **Illustration: LEADER and wetland management in Finland**

In Finland special payments can also be granted to beneficiaries other than farmers in accordance with the Leader approach. The Leader approach provides registered associations with the opportunity to establish wetlands that individual farmers are not able to establish. The payment application is delivered to the local action group for processing and the issuing of a statement. Payments can be granted when the measures support the objectives of the local rural development plan of the supported area and the granting of the payment is appropriate for the plan in question.

### **Illustration: Modernisation of irrigation infrastructure by using Local action Groups in Spain**

In many regions of Spain, problems of water availability and/or areas with water deficit are coupled with outdated irrigation practices, such as gravity irrigation, which generate significant water losses. Traditional irrigation practices also frequently lead to higher irrigation returns with high pollutant loads. Modernisation of irrigation infrastructure leads to benefits for both water quality and water quantity issues.

The Andalusian RDP (Spain) includes among its actions addressing competitiveness (targeting e.g. knowledge, capacity building, technology, etc.) actions that target infrastructure related to development and adaptation of agriculture and silviculture. “Adaptation” refers to the changes in socio-economic and the environmental requirements. The measure supports infrastructure related to the management and the sustainable use of water resources, particularly for farms working with traditional irrigation practices. The organisation of the application of these measures is carried out by Local Action Groups funded under LEADER.

## 8 Implementation, controls, monitoring and evaluation

The monitoring and implementation of the RDP has two levels. On the one hand, it has to be ensured that the measures that farmers receiving funding for are implemented properly. On the other hand, the overall design of the programme has to be sufficient and have a positive impact on the objectives set. The implementation of the measures in all MS is based on two main elements. Firstly, there is a financial control ensuring that all payments are correctly calculated and transferred to the farmers, and on-the-spot controls are required for all RDP measures. Full information on the control requirements, systems and sanctions is not included in the RDPs because it forms part of the control system and is documented separately at Member State level. In addition, as set out in Art. 34 of Regulation 1975/2006, MS shall report to the Commission each year by the 15 July on the checks carried out and results of the checks related to the previous EAFRD financial year.

Regulation (EC) No 1698/2005 foresees the obligation of monitoring and evaluation of the RDPs. The basis for reporting on progress is the common framework for monitoring and evaluation (CMEF) established in cooperation with the Member States. CMEF provides a limited number of common indicators and a common methodology at the EU level. MS should supplement these with national indicators to reflect programme-specific issues. All Member States use the system proposed by the Commission.

The CMEF contains five types of indicators:

- Input indicators. These refer to the budget or other resources allocated at each level of assistance. Financial input indicators are used to monitor progress in terms of the (annual) commitment and payment of the funds available for any operation, measure or programme in relation to its eligible costs.
- Output indicators. These evaluate activities directly realised within programmes. These activities are the first step towards realising the operational objectives of the intervention and are measured in physical or monetary units (number of training sessions organised, number of supported holdings in Natura 2000 areas/under WFD).
- Result indicators. These measure the direct and immediate effects of the intervention (e.g. successful training outcomes, area under successful land management contributing to water quality).
- Impact indicators. These refer to the benefits of the programme beyond the immediate effects on its direct beneficiaries both at the level of the intervention but also more generally in the programme area. They are linked to the wider objectives of the programme (e.g. improvement in water quality).
- Baseline indicators: Baseline indicators are used in the SWOT analysis and the definition of the programme strategy and can be divided in two categories:
  - Objective related baseline indicators. These are directly linked to the wider objectives of the programme. They are used to develop the SWOT analysis in relation to objectives identified in the regulation. They are also used as a reference against which the programmes' impact will be assessed. They reflect the situation at the beginning of the programming period and a trend over time. The estimation of impact should reflect the part of the change over

time that can be attributed to the programme once the baseline trend and other intervening factors have been taken into account.

- Context related baseline indicators. These provide information on relevant aspects of the general contextual trends that are likely to have an influence on the performance of the programme.

Indicators measuring water quality can be found as part of objective related baseline indicators. One indicator focuses on the Goss Nutrient Balance and is measured as surplus of nitrogen and phosphorus in kg/ha. The other indicator measures pollution by nitrates and pesticides and is measured as 'trend in concentrations of nitrate and pesticides in ground and surface water'. While the later indicator provides a detailed picture of the loads in the water, the gross nutrient balance indicator for nitrogen only provides the best available approximation of current potential water pollution and identifies those agricultural areas and systems with very high nitrogen loadings.

With regard to water use/abstraction, a context related baseline indicator is provided: percentage of irrigated UAA. However, the amount of water used for irrigation differs widely among the plants grown, the type of irrigation applied and the type of supply network, so the indicator only gives a rough estimation on water used.

Indicators for hydro-morphological issues or wetlands are not provided in the CMEF.

MS can compliment this system by national indicators. Only a few did so:

- Bulgaria: Microbiological contamination is measured under agri-environmental measures;
- Sweden accounts for nitrate leakages under the measure "Natural handicap payments in mountain areas or other areas presenting special difficulties" and payments for environmental friendly farming;
- Portugal and Spain measure water savings per hectare and in total (m<sup>3</sup>/ha);
- In the Canary Islands (Spain) the amount of purified and desalinated water is also calculated.

Based on the CMEF, all Member States are obliged to carry out a mid-term and ex post evaluation of their national and regional RD programmes (Art. 84 RDR). The Managing Authority for the programme uses ongoing evaluations to examine the progress of the programme in relation to its goals, to improve the quality of programmes and their implementation, to examine proposals for substantive changes to the programme and to prepare for the mid-term and ex post evaluations. It remains unclear what criteria are used to judge if a measure will be modified/replaced if they turn out not being effective, except in Wales where it is clearly stated to consider future modelling results on water quality.

Besides the above mentioned controls and indicator based assessments, contracts play a crucial role when implementing agri-environmental measures. Farmers and the authorities can enter into a contract<sup>19</sup> ensuring that the agri-environmental measures are implemented properly and to ensure that farmers are taking part in the long run independently from market

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<sup>19</sup> The period of the RDP and the duration of the contract are not obligatory linked. Further the authority has even the possibility to put an end to existing contracts if the requirements are becoming cross compliance relevant.

developments which might provide different incentives (e.g. increase in price developments of certain products).

## 9 Summary of main strengths and weaknesses of the MS RDPs

The EU's Rural Development Regulation for 2007-2013 is now operating. 94 national and regional operation programmes have been approved by the Commission. When looking at the overall design of the RD programmes, the "European Model of Agriculture" is fully reflected as agricultural production has its own specific characteristics in all Member States. There are significant differences in production traditions and methods, farm size and natural conditions between them. So, specific measures are applied in mountainous and less favored areas in order to maintain agricultural production in these regions as well.

The environmental protection and the creation of public goods (e.g. high value landscapes) are essential in these areas. Mediterranean rural areas are characterized by a contrast between a few fertile plains and vast, arid mountain ranges; by the significant socio-economic and environmental vulnerability; and often a disparity in agricultural productivity and income. Measures in the Mediterranean area focus on making farms more efficient by reducing inputs (e.g. water) to improve the competitiveness of the sector and at the same time to reduce environmental damage in vulnerable regions. In new Member States, where agricultural pressures are often much lower compared to EU 15 (EEA, 2007), the focus is on improving and often securing the current situation. Strengthening of non-agricultural activities in rural areas is more in the focus in these countries; but there are also still investments to increase outputs leading to more environmental pressures and pollution.

Water is an important issue and water protection is not only high on the agenda in all of the RDPs, but the WFD is also recognised as an important Directive in all RDPs. Several examples of efforts made to support the implementation of the WFD outside the specific "WFD Article of the RDR (Art. 38 RDR)" can be found. (The implementation rules for the WFD under Art. 38 were still not finalised at the time when this assessment was carried out.)

Even if not all MS have used the Art. 5 Impact and Pressure Assessment required by the WFD, RDPs still reflect the results thereof. All types of agricultural pressures on water are identified and measures under all three axes can be used to reduce the pressures.

With regard to water quantity, most efforts are made to improve irrigation efficiency. As nitrate and pesticide pollution is one of the biggest concerns across Europe, measures focusing on water quality address these two problems. Less attention is drawn to other pollutants (e.g. phosphorus, pharmaceuticals, organic pollution) and hydro-morphological changes resulting from agriculture. The measures provided are often multipurpose and aim to bring mutual benefits to rural areas. These benefits are not limited to water: they cover the full spectrum of objectives of the RDR.

Measures with probably the largest impact are those targeting the modernisation of farms and a variety of agri-environmental sub-measures that address different circumstances across Europe.

However, there is still a risk that some of the measures could lead to mismanaged intensification, in particular:

- new irrigation projects, even if they comply with the WFD. Only some RDPs ensure that new irrigation will not lead to an extension of irrigated areas but only an improvement in irrigation techniques leading to water saving. However, the WFD in

principle aims to avoid new deterioration, but exemptions (Art. 4.7 WFD) are allowed if there is an overriding public interest; and

- new intensification, especially in the new MS. There is a risk that the increase in agricultural production will lead to new uncontrolled intensification and the modernisations of farms will support this development.

MS do not always refer clearly to safeguard mechanisms in order to ensure that inappropriate developments will be controlled and avoided.

Natura 2000 zones and Nitrate Vulnerable Zones are important drivers in targeting RD measures. All MS have put particular focus on these two zones. Other areas requiring environmental protection are also covered by measures in all RDPs, however fewer measures are often offered to farmers. This can be explained due to budget restrictions Member States face in many cases.

A main weakness in most RDPs is the fact that only the indicators provided in the CMEF are applied to evaluate impacts of the measures. This European wide Framework does not really account for water savings as there is only one indicator (percent of irrigated UAA) provided, that does not reflect the issue of saving. Also, with regard to water quality, the “in situ” measurement of phosphorus is not part of the indicator system. Biological quality elements in waters (e.g. fish) are also not addressed, but they play an important role in assessing the status of aquatic ecosystems. Member States have the liberty to add national indicators to this framework but this is only done in a few cases as regards to water (e.g. Spain, Portugal for water saving). In the case of water quantity, the application of national indicators might also be limited as metering is not mandatory in all MS.

Further, in several cases indicators are only provided at measure level and not at sub-measure level. However, these sub-measures are often very different in nature and using only one set of indicators to evaluate efficiency is very difficult.

## 10 Conclusions and recommendations for future activities

The Common Agricultural Policy (CAP) and the Water Framework Directive (WFD) are two major policies in Europe with a strong influence on environmental issues. The WFD establishes a framework for the protection of all waters, including inland and coastal waters, with the aim of reaching "good status" by 2015. The main instrument of the directive is the development and implementation of river basin management plans (RBMP) which should ensure the maintaining and improvement of the water in the river basin concerned.

The Rural Development Regulation (RDR) for the period 2007-2013 will directly provide financial support to the implementation of the WFD objectives via Art. 38 RDR. In addition, the four axes of the RDR contain measures that support the protection and enhancement of natural water resources (e.g. agri-environment and forest-environment payments, natural handicap payments, training, use of advisory services, farm investment support to improve the environmental status of agricultural holdings). However, it is important to consider that the RD-programs were finalised before the RBMPs, which will have to be ready by the end of 2009. Further, the current programming period of the RD programs will end in 2013, two years before the second RBMP plans become operational. This difference in timing has to be considered when discussing the link between the two policies.

Furthermore, environmental issues are only one of the priorities of the European rural development policy, and MS have flexibility to select the most appropriate measures to address the specific needs of their territory and decide (up to a certain amount) how to spend their budgets among the four axes. This leads to important differences in the RDP of the different MS and especially in the priority they give to environmental and particularly water related issues. Some countries like Austria, Denmark, Finland, Ireland, Sweden and the UK are spending less than 20% of their EAFRD budget on measures to improve agricultural competitiveness (axis 1) and more than 50% of their EAFRD budget on measures to manage the land in an environmentally friendly, sustainable manner (axis 2). The highest EAFRD budget spent on axis 2 was found in Finland with 81,6%.

Countries like Belgium (Flanders and Wallonia), Greece, Spain and the majority of the east European New Member States (NMS) are spending the majority of their public budget on axis 1 measures "Improving the competitiveness of agriculture and forestry sector, in particular on new farm investments. The modernisation of the agricultural sector and the agri-food processing industry is considered crucial for the economic development of rural areas in many NMS. This explains why the majority of the budget is devoted to measures under axis 1. Sufficient effort should be made to make these measures conditional on the farmer's effort to ensure compliance with legal standards set under the WFD.

Otherwise, the risk remains that measures under axis 1 may result in mismanaged intensification of agricultural production, which could be detrimental to water quality. This is particularly important if a MS intends to increase its irrigated area. At the same time, it should be noted that several of the axis 1 farm investments aim to improve the environmental performance of the farm by increasing equipment efficiency. However, these measures have not been evaluated on their effectiveness in delivering environmental outcomes so far.

When comparing the results of this study to the WFD Art. 5 assessment (Herbke et al, 2006), it becomes clear that the actions taken under the RD programmes will not be sufficient in



many cases to solve water problems and additional effort in the agricultural sector will be needed. Nonetheless, as mentioned earlier, this is also not the intention of the RDR and several other objectives have to be pursued as well. Therefore, when implementing the WFD, financing sources for water protection measures also need to be considered. In particular, the further mandatory use of Art. 9 WFD, which addresses water pricing, should be implemented in the agricultural sector. However, there is no doubt that rural development programmes are an important tool that can have a significant impact on achieving the WFD objectives. Increased coordination is needed to solve open issues and better link both policies. In particular, the following issues should be discussed in more details:

**Avoiding negative effects:**

- Are institutional arrangements in place to ensure that safeguard mechanisms are operational? Will these mechanisms avoid that new farm investments will have a negative impact on the water status? Are robust environmental indicators in place and used to assess impacts and inform institutions? In particular, how can it be ensured that new projects concerning irrigation are compatible with the goals of the WFD?
- In order to tackle concerns regarding negative impacts on water management due to new farm investments (Art 28 and Art 30 RDR), in particular new irrigation systems and new water storage, in a holistic way, control systems should be developed that help growing agriculture holdings use water sources in a sustainable way. One option could be a water allocation approach that focuses on regional/basin level instead of the micro-economic level and where water would be allocated to agriculture activities that achieve the highest margins per water use. This would reduce inefficient water use. Furthermore, farmers could still take the necessary actions to remain economically competitive. However, further analysis of this approach is needed to better understand impacts and limitations.

Under the Health Check, better water management has been added as an emerging issue, and the types of operations (measures) set by Member States should aim at achieving more efficient water use and the protection and improvement of water quality (see Art 16 and Annex II of Council Regulation 74/2009). If this provision is enforced properly, in theory it should limit such negative effects.

A further safe guard mechanism is provided by the WFD itself. If new dams or artificial lakes are funded under the RDR provision, they also have to be coordinated with the WFD requirements set out under Article 4.7. Under Art 4.7 exemptions from the “good status” and the “non deterioration” clause<sup>20</sup> required under the WFD can be applied to new modifications to the hydro-morphological characteristics of water bodies (e.g. new dykes, dams) and new sustainable human development activities. These exemptions are only allowed when all practicable steps are taken to mitigate the adverse impact on the status of the body of water. Further the impacts of those new modifications and alterations may be limited to the water bodies in which modification works are undertaken; or extend to water bodies beyond those in which the modification works are undertaken.

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<sup>20</sup> The WFD not only requires achieving “good status” it also limits the possibilities to deteriorate the status of a water body.

They are not allowed if they permanently exclude or compromise other water bodies within the same river basin district from achieving “good status”, as set out in Article 1 of the WFD and at least the same level of protection must be achieved as provided for by existing Community law.

### **Effectiveness**

- This assessment did not take into account the uptake of the RD measures by farmers. In other words, as farmers are not obliged to participate in the RD programme and can select for which measure they apply, it can not be guaranteed that all measures which could bring a benefit for water are fully applied in a Member State. It is recommended that such an assessment should be carried out in the future to better estimate the effectiveness of the RDPs.
- The current indicator (percent irrigated UAA) measuring water consumption should be developed further to track water saving better. However, this is not an easy task as water metering is not applied in all MS.
- While the WFD requires judging the most cost effective combination of measures, the RD programmes are subject to ex-ante, mid-term and ex-post evaluations with the objective to improve the quality, efficiency and effectiveness of their implementation. Member States are required to monitor, on an annual basis, the impacts of the selected measures but there are several gaps in this monitoring system (see section 8). At the time this report was compiled, the RD programmes were only in place for one year or less and detailed monitoring results were not available. Therefore, at this stage a detailed judgment on the effectiveness of the measures is not possible and future assessments should clearly focus on this issue. However, the assessment carried out for the purpose of this report shows that several measures included in the national RD programmes are also discussed as potential cost-effective measures for the River Basin Management plans<sup>21</sup>.

### **Better linkages between both policies**

- How can the link between the Pressures and Impacts assessment required by the WFD and the selection of RD measures be improved to ensure that agri-environmental measures target the most environmental sensitive areas? Which set of indicators is most suitable to measure their effectiveness? It should be discussed to which extent the Pressures and Impact assessment required by the WFD should (mandatory) form the basis for the SWOT assessment required by the RDR when changing the programs under the current period.
- How to ensure that RD measures and RBMP are complimentary, gaps between them are minimised, measures are linked and are not contradictory or stand-alone?
- As full information on the control requirements, systems and sanctions is not required to be included in the RDPs and documented separately, an in-depth assessment should be carried out to identify potential synergies between the RD monitoring and the monitoring system established under the WFD. How can the Common Monitoring

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<sup>21</sup> See for example the European catalogue of measures that contains information on costs and effects of different measures to reduce pressures from agriculture on water. Available at [http://circa.europa.eu/Members/irc/env/wfd/library?l=/framework\\_directive/thematic\\_documents/wfd\\_agriculture](http://circa.europa.eu/Members/irc/env/wfd/library?l=/framework_directive/thematic_documents/wfd_agriculture).

and Evaluation Framework (CMEF) system can be improved to better reflect the impacts the RD measures have on water? Could the monitoring system under the WFD also be used to measure the performance of the RDPs?

- Across Europe several hundred Local Action Groups have been established under LEADER. Currently, it seems that no detailed and systematic assessment of LEADER as regards to water is available. It is recommended that such an assessment should be carried out to identify best practice examples to find local solutions between the water managers and farmers.
- What are the most appropriate implementing rules for Art. 38?
- Currently the WFD and the RDR have different timetables. Is it feasible to better synchronise the timing of implementing the RDR and the implementation of the WFD to better link both policies? What are possible options? Is there a cooperation structure or platform in place in each MS to ensure that the two policy fields can work together?
- As several measures in the RBMP will be similar or the same as the measures set out in the national RD programmes, there are several lessons to be learned. For water managers it could be quite helpful to learn from the experiences in the agriculture sector in terms of implementing and controlling measures at farm level. As the WFD requires judgment on the cost effectiveness of measures, agricultural authorities could use this information to increase the performance of RD programmes. Therefore, a common platform at national/regional level is could be useful.
- How does the Polluter Pays Principle set out by the WFD and the payments under the RDR allowed under Art 9.3 WFD<sup>22</sup> converge and what are the limits of funding<sup>23</sup>?

### **Public participation**

- A key element of the WFD is public participation, and River Basin Management Plans have to be prepared in way that public involvement is ensured. In this context maps play an important role. In order to better visualise the areas covered by several RD measures (e.g. agri-environmental measures, LFA, non productive investments), such maps would allow a more transparent view for the general public. Furthermore, the maps could help to improve landscape planning and coordination in targeting the measures in the river basin management plans.

### **Health check and new challenges**

Due to the agreed changes of the CAP under the health check, all RDPs have to be amended to the new circumstances. In this context the following issues should be considered:

- The Annex to Regulation 74/2009 amending Regulation 1698/2005 provides examples of actions which might be supported to address the new challenge of water management (see Table 1) by the RDPs (Member States are not obliged to undertake the activities listed). The legal text of the annex is ambiguous regarding

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<sup>22</sup> Art 9.3 of the WFD states that "Nothing in this Article shall prevent the funding of particular preventive or remedial measures in order to achieve the objectives of this Directive."

<sup>23</sup> For further details see also Interviews et al, 2006.

some requirements – for example, proposed funding for water storage does not make clear whether new storage activities can be funded or only activities to improve existing ones. Such ambiguities could open the door for increased pressure on water bodies if such activities related to water storage are not coordinated well although, as mentioned above, the WFD has safe guard mechanisms to limit the potential negative impact of some of these activities.

- Climate change has been identified as an emerging issue that should receive special attention. Currently, mitigation to climate change and increase in bioenergy use is high on the agenda. Both issues are closely connected to water issues. Climate change will change the hydrological conditions in many areas and will require specific adaptation measures. Therefore, growing sufficient bioenergy crops will clearly depend on the availability of water. However, bioenergy crops bear the risk of further intensification, although they also provide opportunities to reduce existing pressures and therefore require special attention. Besides the impacts of land use changes (e.g. reactivation of land that has not been farmed over the last years, ploughing up of grassland), the environmental impact of energy crops depends very much on the types of crops chosen as well as the pattern and intensity of the current land use they are replacing.

Short-rotation coppice, however, generally reduces nutrient leaching and soil erosion risks compared to most arable crops. Furthermore, the use of animal manure for biogas production can reduce nutrient leaching risks in intensive livestock production systems (Dworak et al; 2008).

Depending on which, where and how crops are produced, bioenergy developments also can cause increased water use. Especially in water scarce areas, growing a bioenergy crop with increased water use requirements could decrease the availability of water for human consumption, industry and downstream freshwater ecosystems and also result in changed hydrology and growth of soil salinisation. Furthermore, due to the abolishment of the set aside rule, bio-energy crops can be grown on former grassland; thus, the new use could be more water intensive and increase water abstraction. On the other hand, bioenergy crops could also be irrigated more often with wastewater as public concerns are expected to be lower since the risk of contaminating food does not exist. Such waste water irrigation could reduce freshwater demand. Therefore, new RD measures to promote bioenergy cropping should not lead to uncontrolled intensification; they should be promoted as options to reduce environmental pressures and allow farmers also to gain profits.

- With the amendment of the cross compliance regulation buffer strips will become mandatory along all water courses in 1.1.2012. Previous research has shown that buffer strips have a positive impact on water in many places as they reduce eroding sediments and limit the transport of nutrients, pesticides, metals, and other compounds. However, research has also shown that the effectiveness of such strips is strongly dependant on the slope gradient, the wideness of the strip, the type of plants grown (e.g. grass, shrubs, trees) and the type of pollution (e.g. nitrate,

phosphor, pesticides, sediments<sup>24</sup>). (Eastern Canada Soil and Water Conservation Centre; n.y.; Wenger, 1999; Hickey et al; 2004). It is important to have these influencing factors in mind when setting up rules for the design of these strips as a one fits all solution does not exist.

In order to support Member States in designing these rules, it is recommended to bring together the various results on the effectiveness of buffer strips from local field studies and to investigate the current application of buffer stripes in the MS<sup>25</sup>. Based on this information guidance on the appropriate design of buffer strips should be developed.

- The permanent abolishment of set-aside areas might require new measures, as the previous set-aside regulation provided an important function in terms of reducing inputs, buffering watercourses and other habitats, linking habitats and protecting soils. Further, a valuable feature of set-aside is that the environmental benefits are widely distributed across the countryside, although they are probably greatest within relatively intensive arable landscapes. Some of them are now lost if a suitable replacement policy is not established. The extension of existing RD measures (e.g. conversion into permanent grass land, afforestation) or new RDP (e.g. payments for voluntary set aside) measures might ensure maintaining the environmental benefits provided by former set-aside.

#### **Further research needs**

- This assessment should only be seen as a first step for further assessments to provide more geographical information. It would be interesting to see how certain pressures identified in the SWOT are geographically targeted by the RDP measures set up by MS. In combination with budget information (Euro/hectare under AEM) and analysing the development of the pressures over time, such information could provide valuable input in making RDPs more effective and efficient.

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<sup>24</sup> For example buffer strips should not be used as a sediment removal system when they are located in flood prone areas. Seasonal floods may flush them out and transport the previously trapped sediment particles into the watercourse.

<sup>25</sup> Such guidance was also requested at the last meeting of the strategic Steering Group on WFD and Agriculture set up under the CIS process. See minutes of the meeting of 19.3.2009, available at <http://circa.europa.eu/Public/irc/env/wfd/library>.

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## Annex 1: Assessment template - Draft [Member State] report of an in-depth assessment of RD-programmes 2007-2013 as regards water management

### Summary of the assessment

Please provide a short summary of the main weaknesses and strengths of the RD programme as regards WFD.

### Reports assessed

Please list which RD reports have been assessed.

### The agricultural context in which the RD programme has been developed

In this section the following information should be compiled:

#### General information on agriculture in [MS]

	[MS-Name] Please duplicate this column in the case where the RD programme is split into several regions and fill in the information for each region in a single column	
	Eurostat	RD programme
Utilised agricultural area (UAA)		
Main types of production and distribution across the regions		
Area equipped for irrigation (if available) in ha		
Information on Live stock density (LSU per UAA)		
Share between arable and pasture land		
Area under organic farming		

**Q1: Is there a statement on the intensification of agriculture in the MS? IF yes please summary the main problems and regions:**

### General information on RD Programmes:

Area covered under the RD programme (ha)	Please duplicate this column in the case where the RD programme is split into several regions				
Budget dedicated to each axis per year (if the information is available for several years, please copy the line, otherwise give numbers for the full period 2007-2013)	I	II	III	IV	Tech assist.
	%	%	%	%	%
	Please duplicate the column above in the case where the RD programme is split into several regions				
Is voluntary modulation used as an additional financing mechanism for RD?	Yes/no				
Does the MS provide any additional national payments beyond the regular EU/MS share? If yes please indicate the budget:					
Is a fixed review process of the RD programmes mentioned?	Yes/no				
Main environmental problems identified in the agricultural sector <sup>26</sup>					
How many measures/actions are explicitly referring to water or WFD and what is the budget linked to the measures mentioned above?	RD-Code	Name of the measures/action		Budget (2007-2013)	
What is the public budget for the entire duration of the RDP (2007-2013) linked to Art. 39 (agri-env. Payments) and Art. 26 (modernization of farms). For Art. 26/Art. 30 please list total budgets	Art. 39 (code 214)	Art. 26 (code 121)		Art. 30 (code 125)	

### The main environmental priorities in the RD programmes

Please answer the following questions:

<sup>26</sup> This could provide additional information for the section on environmental priorities and allow to see 'coherence' of the proposed programme in relation to water management (i.e. if water pollution/management is identified as a problem, but insufficient financial/measure attention is given to water issues - the programme lacks coherence.

**Q2: What are the main priorities of the RD programme and what is the role of environmental issues**

A RD programme can be used to focus on several priorities. Please indicate the main priorities (if there is a difference for different regions, please specify). Further, please indicate the priority of the environment in the overall context and the focus within this topic (e.g. biodiversity, water, climate change).

**Q3: How is the link to water issues and /or to the WFD established (if any)?**

The measures in the table below have been identified as measures that could be used to build a link with water management issues. The link can be direct or indirect. For further details see Dworak et al, 2005<sup>27</sup>). Please fill in the white boxes in the table below and describe potential linkages.

RD-CODE	RD-MEASURE	Description of the direct link	Description of the indirect link
	<b>Rural Development Axis I</b>		
126	Natural disaster & prevention actions (Art. 20 b ((vi))		
111	Vocational training and information actions (Art. 21)		
112	Setting up of young farmers (Art. 22)		
113	Early retirement (Art. 23)		
114	Use of advisory services (Art. 24)		
115	Setting up management, relief and advisory services (Art. 25)		
121	Modernisation of agricultural holdings (Art. 26)		
122	Improvement of the economic value of forests (Art. 27)		
125	Infrastructure related to the development and adaptation of agriculture and forestry (Art. 30)		
131	Meeting standards based on community legislation (Art.31)		
141	Semi-subsistence farming (Art. 34)		
	<b>Rural Development Axis II</b>		
211 212	Natural handicap payments in mountain areas and payments in other areas with handicaps (Art. 37)		
213	NATURA 2000 payments and payments linked to the WFD (Art. 38)		
214	Agri-environmental payments (Art. 39)		
216	Non-productive investments (Art. 41)		
221	First afforestation of agricultural land (Art. 43)		
222	First establishment of agroforestry systems on agricultural land (Art. 44)		
223	First afforestation of non- agricultural land (Art. 45)		
224	Natura 2000 payments (Art. 46)		

<sup>27</sup> Dworak, T, et al., 2005.

225	Forest-environment payments (Art. 47)		
226	Restoring forestry potential and introducing prevention actions (Art. 48)		
227	Non-productive investments (Art. 49)		
	<b>Rural Development Axis III</b>		
322	Village renewal and development (Article 52(b)(ii)) <sup>28</sup>		
323	Conservation and upgrading of the rural heritage (Art. 57)		
341	Skills acquisition and animation (Art. 59)		

**Q4: What agri-environmental measures (under Art. 39: CODE 214) with a link to water are planned, how much budget is dedicated to them and area covered by this measure?**

Please describe the measures in detail and provide detailed budget information)

**Q5: Is there an indication of the budget that will be available for NATURA 2000 payments and payments linked to the WFD (Art. 38: CODE 213)?**

(Measures under Art 38 are currently not in force. Before entering into force more detailed rules have to be developed. Nevertheless some MS might have already foreseen a budget for this article.

**Q6: Is LEADER foreseen/used to implement the WFD in a common approach with the agricultural sector? If yes, please provide a brief description of strategy(ies) pursued.**

### **Administrative framework used for implementation and control**

An important issue to make the various measures work is proper implementation and control. Therefore, it is not only important to assess the measures put into place, it is also important to evaluate the administrative framework under which they are governed.

**Q7: What administrative framework has been established to control the proper implementation of the RD programmes?**

Please describe the system. If there are any descriptions of the resources available for control (e.g. number of staff) please indicate.

**Q8: Is there a monitoring system to measure the impacts of the agri-environmental measures (CODE 214) in place?**

<sup>28</sup> This measure was not considered in the assessment made by Dworak et al, 2005.

As a result of the evaluation of previous RD programmes it became clear that the impact of the agri-environmental measures and other measures it is not always easy to quantify due to lack of monitoring. Some MS might have reacted to these critics.

**Annex 2: Rural Development Programmes assessed**

Member State	Version of	Date of approval by the COM
Austria	25. Oct 07	19.09.2007
Belgium FL Wa	October 06 July 2008	24/10/2007, 21/11/2007
Bulgaria	Dec 07	19.12.2007
Cyprus	24. Oct 07	24.10.2007
Czech Republic	May 2007	17/07/2007
Denmark	11 February 2008	24.01.2008
Estonia	5 July 2007	21.11.2007
Finland	14. Apr 08	20.06.2007
France	Jun 08	20.06.2007
Germany	various	various
Great Britain	England 7/12/2008, Wales 20/02/2008, NI July 2007 (not agreed), Scotland 20/7/2007	England 21/11/2007, Wales 20/02/2008, Scotland 21/01/2008, N. I. 28/07/2007
Greece	01. Nov 07	21.11.2007
Hungary	Sep 07	19.09.2007
Ireland	24.07.2007	24.07.2007
Italy	various	various
Latvia	final version (no reference to the date)	19.12.2007
Lithuania	19. Sep 07	20.09.2007
Luxembourg	19 October 2007	19.09.2007
Malta	Dec. 2007	19.12.2007
Poland	Jul 07	24.07.2007
Portugal	Nov 07	21.11.2007
Romania	Feb 08	19.02.2008
Slovakia	Nov 07	04.12.2007
Slovenia	20.07.2007	24.07.2007

Spain	Various	various
Sweden	2 June 2008	May 2007
The Netherlands	19.06.2007	20.06.2007

## **Annex 3 Summary of MS Assessments**

See separate document.