ENVIEVAL

Development and application of new methodological frameworks for the evaluation of environmental impacts of rural development programmes in the EU

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Area 2.1.4: Socioeconomic research and support to policies

KBBE.2012.1.4-08: Development and application of methodologies and tools, including indicators, for the assessment of environmental impacts of rural development programmes in the EU

Report D2.1

Summary report on the review of indicator sets and monitoring approaches

Appendix A

List of indicators for public goods

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SEVENTH FRAMEWORK PROGRAMME

Appendix A

List of indicators for Public Goods

List of Tables

Table A1 List of indicators for Climate Change Mitigation

Evaluation document	Measure/ Programme	Indicator	Type of indicator	Member state/ region	Causal chain	Scale	Data
On going and mid-term (2007-2013)	111	Number of participants in training	CMEF output	BG	The indicator indirectly measures the impact on climate change mitigation. The training curriculum for livestock breeding includes modules dedicated to climate change and examples of best practices. This could help the farmers later to take advantages of this knowledge, to implement and face the requirements of the EU regarding climate change. According to the survey results (survey is conducted within the MTE) more than 70 % of beneficiaries under the RDP have no specific agricultural education and training. Farmers who completed training will be aware of the requirements of the EU.	National, regional	Number of participants.
On going and mid-term (2007-2013)	111	Number of training days received	CMEF output	BG	The indicator indirectly measures the impact on climate change mitigation. The training curriculum for livestock breeding includes modules dedicated to climate change and examples of best practices. This could help the farmers later to take advantages of this knowledge, to implement and face the requirements of the EU regarding climate change. According to the survey results (survey is conducted within the MTE) more than 70 % of beneficiaries under the RDP have no specific agricultural education and training. Farmers who completed training will be aware of the requirements of the EU.	National, regional	Number of training days.
Mid term (2007-2013)	111	Contribution to combating climate change: Increase of production of renewable energy from agriculture and forests	CMEF impact	FI	Fight against climate change through the growth of the production of renewable energy.	Nuts1	Number of projects.
Ex ante (2007-2013)	111	Labour productivity in agriculture	CMEF baseline	FR	The possibility to implement actions for the promotion of renewable energies, thanks to the implementation of	Programme level	Database measures of the programme (PDRN 2000-2006), statistical data.

					labour productivity.	(PDRH)	
Mid term (2007-2013)	111	Number of participants that successfully ended a training activity	CMEF result	NL	Impact assessment is based on evaluation question. The activities under this measure are focused on raising awareness relevant to the public good. However the assessment of the impact does only consider the more broad relevance to contributing to sustainable land management.		Interviews, surveys
Mid term (2007-2013) - Annual report from realisation RDP 2007-2013, MARD	111	Number of trainings on climate change mitigation	According to CMEF output	PL	The aim of the measure is to diffuse scientific knowledge and innovative practises in the agricultural and forestry sector. Indirect impact.	National	Number of beneficiaries, amount of payments realised, annually.
On going and mid-term (2007-2013)	114	Number of farmers who use advisory services	CMEF output	BG		National, regional	Number of farmers who use advisory services, survey results.
Mid term (2007-2013) - Annual report from realisation RDP 2007-2013	114	Number of farmers who use advisory services for climate change mitigation	CMEF output	PL	Indirect impact on sustainable management practices and cross compliance requirements.	National	Number of farmers who use advisory services for climate change mitigation, amount of payments realised.
Mid term (2007-2013)	121	Reduction of CO_2 emissions (equivalents)	Evaluator-additional impact	AT	Investments in biomass heating systems on agricultural holdings, storage of organic fertiliser and feedstuff, modern application techniques to reduce NH_3 and plant protection emissions into the air contribute on climate change.		
On going and mid-term (2007-2013)	121	Level of improvement of the overall performance of the agricultural holdings (competitiveness, sustainability and protection	CMEF output	BG	The measure supports the modernisation of the production factors, introduction of new technologies and new processes. This is directly linked to the implementation and use of protective environmental actions (low emission of CO_2, low use of N, improved	National	Number of holdings supported and number of holdings in livestock breeding, number of farms meeting the requirements of the nitrate Directive 91/676/EEC were used as additional indicators. Survey results.

		of environment)			soil quality). From the survey, conducted during the MTE with 279 beneficiaries, 23 beneficiaries answered that they used the investment for production of alternative energy from RES/or production of energy cultures. Part of respondents see positive effect of the investments on the environment, as well as the measure helps them in meeting the obligatory standards and preservation of the environment.		
Ex post (2000-2006)	121 (AFP) Improvement of the environmental conditions in production	Reduction of GHG emissions	CMEF baseline	DE1	The production of biomass has a strong impact on climate change.		
Ex post (2000-2006)	121 (AFP) Substitution of fossil fuels by renewable energies (promotion of biogas plants)	Calculation of CO_2 reduction factor of different renewable energies	Klobasa et al. 2005 (theoretically)	DE1	The production of biomass has a strong impact on climate change.		
Ex post (2000-2006)	121 (AFP) Reduction of CH_4 emission by energetic use (promotion of biogas plants)	CO_2 reduction potential by calculation of energy balance		DE1	The use of liquid manure for biogas production reduces the total CH_4 emissions of the farm.		
Mid term (2007-2013)	121	Contribution to combating climate change: increase of production of renewable energy from agriculture and forests	CMEF impact	LT			Declarations and statistical data. (ha of supported area)

Ex ante (2007-2013)	121	UAA devoted to energy and biomass crops (non-food set aside + energy crops + short rotation coppice on UAA)	CMEF baseline	LT	Larger territories used for bioenergy production indicate positive effect on climate change mitigation.	National	Area under the measure
Mid term (2007-2013)	121	Realised emission reduction		NL	Currently this measure is only applied in the greenhouse horticulture, where innovation in air quality control and energy use is contributing to the reduction of emission.	National	Annual reduction of CO_2 and NH_3 emissions. Monitoring data (financial and output/result indicators). The impact assessment is based on the results of survey/interview of beneficiaries.
Mid term (2007-2013)	123	Contribution to combating climate change: Increase of production of renewable energy from agriculture and forests	CMEF impact	AT			
Mid term (2007-2013)	123	Contribution to combating climate change: Increase of production of renewable energy from agriculture and forests	CMEF impact	FI	Fight against the climate change through the growth of the production of renewable energy.	Nuts1	Number of projects
Mid term (2007-2013)	123	Impact of emissions on the air		FI	Assessment about the influence of measure on air emissions.	Nuts 1	Combined data from Information Centre of the Ministry of Agriculture and Forestry
Mid term (2007-2013)	123	Number of beneficiaries	CMEF output	PL	Investments under this measure could have an indirectly impact on environmental protection, i.e. through the purchase and installation of equipment the protection of the environment is improved.	Regional	Number of beneficiaries, area covered by the measure, amount of payment realised.
Mid term (2007-2013)	123	Total value of investment	CMEF output	PL	Investments under this measure could have an indirectly impact on environmental protection, i.e. through the purchase and installation of equipment the protection of the environment is improved.	Regional	Number of beneficiaries, area covered by the measure, amount of payment realised.
Mid term (2007-2013)	123	Number of enterprises introducing new technologies and innovations	CMEF result	PL	Investments under this measure could have an indirectly impact on environmental protection, i.e. through the purchase and installation of equipment the protection of the environment is improved.	Regional	Number of beneficiaries, area covered by the measure, amount of payment realised.
Mid term (2007-2013)	123	Number of beneficiaries - enterprises processing plant materials into products used for energy purposes	According to CMEF	PL	Investments under this measure could have an indirectly impact on environmental protection, i.e. through the purchase and installation of equipment the protection of the environment is improved.	Regional	Number of beneficiaries, area covered by the measure, amount of payment realised.

On going and mid-term (2007-2013)	141	Number of semi-subsistence farm holdings which entered the market and meet the obligatory Community standards related to veterinary and phyto-sanitary requirements, animal welfare, environmental protection, hygiene and occupational health and safety		BG	The indicator indirectly measures the impact of the measure on climate change.	National, regional	Monitoring data. Survey results.
On going and mid-term (2007-2013)	211	Level of improvement of the environment	CMEF input-output	BG	The indicator shows that the measure contributes to high extent to the improvement of the environment and the countryside. This means that beneficiary farms meet the requirements of the EC relating to environment and indirectly to climate change. Environment is improved through implementation of good agricultural practices.	National, regional	Additional indicators that have been used: total public support, number of supported farms in mountain areas, supported agricultural land in the mountain regions (ha). Survey results.
Mid term (2007-2013)	211 Reduced use of agrochemicals	Achievement of environmental objective: Climate change mitigation = Area to be contributing to Climate change mitigation in the specific action (ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under climate change mitigation action as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact. Furthermore reduction in use of agrochemicals results to an overall reduction of indirect GHG emissions.	Action	Financial uptake, targeted area.
Mid term (2007-2013)	211 Reduced use of machinery/equipment	Achievement of environmental objective: Climate change mitigation = Area to be contributing to Climate change mitigation in the specific action (ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under climate change mitigation action as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact. Furthermore reduction in use of machinery result to an overall reduction of direct GHG emissions..	Action	Financial uptake, targeted area.
Mid term (2007-2013)	211 Green cover use and less soil	Achievement of environmental objective: Climate change mitigation =	Evaluators	ES61	The calculation of the area under climate change mitigation action as a function of the proportion of the financial uptake and the programmed target area is	Action	Financial uptake, targeted area.

	tillage	Area to be contributing to Climate change mitigation in the specific action (ha) X % financial uptake for this action.			provided as an estimation of the impact.		
On going and mid-term (2007-2013)	212	Level of improvement of the environment	CMEF input-output	BG	The indicator shows that the measure contributes to high extent to the improvement of the environment and the countryside. This means that beneficiary farms meet the requirements of the EC relating to environment and indirectly to climate change. Environment is improved through implementation of good agricultural practices.	National, regional	Additional indicators that have been used: total public support, number of supported farms in mountain areas, supported agricultural land in the mountain regions (ha). Survey results.
Mid term (2007-2013)	212	Agricultural land area supported	CMEF output	NL	Impact assessment is based on evaluation question.		Number of management contracts (output) & area of maintained landscape (results), survey among beneficiaries and interviews with experts.
Mid term (2007-2013)	212 Reduced use of agrochemicals	Achievement of environmental objective: Climate change mitigation = Area to be contributing to Climate change mitigation in the specific action (ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under climate change mitigation action as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact. Furthermore reduction in use of agrochemicals results to an overall reduction of indirect GHG emissions.	Action	Financial uptake, targeted area.
Mid term (2007-2013)	212 Reduced use of machinery/equipment	Achievement of environmental objective: Climate change mitigation = Area to be contributing to Climate change mitigation in the specific action (ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under climate change mitigation action as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact. Furthermore reduction in use of machinery result to an overall reduction of direct GHG emissions..	Action	Financial uptake, targeted area.
Mid term (2007-2013)	212 Green cover use and less soil tillage	Achievement of environmental objective: Climate change mitigation = Area to be contributing to Climate change mitigation in	Evaluators	ES61	The calculation of the area under climate change mitigation action as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area.

		the specific action (ha) X % financial uptake for this action.					
Mid term (2007-2013)	214 Environmental friendly land management of arable land and grassland (UBAG)- Catch crop with maize	Reduction of NH_3 emissions (through low-loss/mineral fertiliser and liquid manure application, greening and crop rotation)	Additional	AT	Reduced fertiliser application reduces GHG-emissions. There is positive impact and increase in the C-content of the soils through organic fertiliser in combination with greening.		
Mid term (2007-2013)	214 Minimal loss application of farm fertiliser and biogas manure	Reduction of NH_3 emissions through low-loss fertiliser and liquid/biogas manure application	Study: NH3 losses during the application of farm fertiliser related to the sub-measure 'minimal loss application of farm fertiliser and biogas manure'	AT	Indicator comes from a study for the NH_3 losses during the application of farm fertiliser related to the sub-measure 'minimal loss application of farm fertiliser and biogas manure'. The application of mineral fertiliser causes CO_2 and N_2O emissions. Through improved application the emissions of NH_3 and thereby N_2O are reduced. The calculation of reduced emissions is based on the share of farm fertiliser that was applied close to the ground in 2009. A reduction about 30% of NH_3 emissions is assumed by close to the ground application.	Regional and national	Share of close-to-the-ground fertiliser application, data from TIHALO Study (Amon et al., 2007), INVEKOS
Mid term (2007-2013)	214 Mulching and direct sowing - Greening of	Calculation of humus balance (CO_2 balance)	Additional	AT	Increase of humus content in soil. The reduced/improved fertiliser application has positive effects on the C balance in the soil contributing to reduction of GHG emissions by the maintenance and accumulation of organic C and reduction of N_2O	Regional and national	

	arable land (abandonment of agricultural crop land) - Organic farming				emissions.		
On going and mid-term (2007-2013)	214	Level of impact of agri-environment payments on climate change mitigation	CMEF output	BG	The indicator indirectly measures the impact of AEMs on climate change mitigation.	National, regional	Additional indicators that have been used: number of farm holdings and the receiving support, total area under agri-environmental support (ha), total number of contracts, physical area under agri-environmental support (ha), number of actions related to genetic resources. Survey results.
Mid term (2007-2013)	214	Impact on emissions to the air		FI	Qualitative assessment about the influence of environmental payments on air pollution.	Nuts 1	Expert assessments
Mid term (2007-2013)	214 (MEKA)	Area under AEMs	CMEF output	DE1	Individual actions of AEMs are reported that potentially contribute to climate protection.		Ha of promoted area
Mid term (2007-2013)	214 Undersown catch crops	Extend of additional CO_2-fixation in agricultural used soils (t ha-1 a-1) on AEMs promoted sites	Evaluator	DE9	Maintenance or increase of humus content in the soil. AEMs contribute to the protection or increase of the sequestration of CO_2 in the soil, also promote land-use that could lead to reduced emissions of GHG or NH_3 compared to conventional land-use.	Farm level, data analysed at regional level	IPCC-Guidelines, literature review.
Mid term (2007-2013)	214 Organic farming	Extend of additional CO_2-fixation in agricultural used soils (t ha-1 a-1) on sites with organic agriculture	Evaluator	DE9	Maintenance or increase of humus content in the soil. AEMs contribute to the protection or increase of the sequestration of CO_2 in the soil, also promote land-use that could lead to reduced emissions of GHG or NH_3 compared to conventional land-use.	Farm level, data analysed at regional level	IPCC-Guidelines, Freibauer et al. (2004). The VDLUFA Method (VDLUFA, 2004) is used, without considering the supply of farm fertiliser.
Mid term (2007-2013)	214 Environmental friendly liquid manure application	Amount of emission reduction of CO_2, CH_4, N_2O, NH_3 from agriculture through AEMs (GG a-1)	EEA, 2007; NIR	DE9	A reduction of N-fertiliser application leads to a reduced emission of N_2O. NH_3 contributes through the release of N to the eutrophication and acidification of soils.	Farm level, data analysed at regional level	Emission factors from the NIR based on literature analysis and international agreements, impact of measures are based on estimations from a literature analysis. Emissions from N-fertiliser application of agricultural land use and emissions from non-fertilised agricultural areas (indirect emissions from N-deposition and eroded and drained N from agriculture).

On going and mid-term (2007-2013)	214	Production of energy from renewable sources (Toe) and GHG emission reduction (Mg CO2 eq/year)	CMEF baseline	ITH5	The aim of the measure is to decrease the GHG emissions.	Regional	IACS, GIS data, Corine land cover, results of business surveys for the structural measures. Parameters and data taken from literature, National and International agencies (IPCC). Annual data.
On going and mid-term (2007-2013)	214	Change in annual regional emissions of GHG in the agricultural sector (N_2O from fertilisation and C sink in forest biomass)	Additional	ITH5	Emissions coming from the agriculture fertilisation represent one of the highest emission productions from the agriculture. Since the proposed CMEF indicator doesn't capture the GHG emissions, the additional impact indicator is built in order to be a more complex and complete indicator for the GHG reduction.	Regional	Data from AVEPA (Paying Agency), ISTAT (National Statistical Office), APAT (Agency for the environmental protection). Secondary data from the FADN database-REA for the counterfactual analysis.
Mid term post (2007-2013)	214 Ecological corridors, buffer strips, hedges and copses. Improving soil quality. Organic agriculture. Meadows, pastures and meadows pastures. Management of agricultural land with low input.	Production of energy from renewable sources (Toe) and GHG emission reduction (Mg CO_2 eq/year)	CMEF baseline	ITH3	The aim of the measure is to decrease GHG emissions.	Regional	IACS data. Results of previous analysis of impact. Results of business surveys for the structural measures. Parameters and data taken from the literature and from national and international agencies (IPCC).
Mid term post (2007-2013)	214 Ecological corridors, buffer strips, hedges and copses.	Reducing emissions of N from mineral fertilisers	Additional	ITH3	The emission coming from the agriculture fertilisation represents one of the highest emissions productions from the agriculture, the objective is to decrease the GHG emissions.	Regional	IACS data. Results of previous analysis of impact. Results of business surveys for the structural measures. Parameters and data taken from the literature and from national and international agencies (Institute for Environmental Protection and Research- ISPRA, IPCC).

	Improving soil quality. Organic agriculture. Meadows, pastures and meadows pastures. Management of agricultural land with low input.						
Ex ante (2007-2013)	214	Reducing N_2O emissions	CMEF baseline	ITH3	The aim of the measure is to decrease the GHG emissions. A reduction of N input (kg N) corresponds to a decrease of the N_2O emissions from agricultural soils. There are numerous studies in which it is addressed the problem of establishing a conversion coefficient of N-fertiliser to N_2O emission. In general it appears that N_2O emissions from fertilised fields with nitrogen function depend upon: the amount of N present in the soil, the type of fertiliser, the type of soil, the type of crop, the weather conditions and the quantity of fertiliser supply to the crops. Granli and Bockman (1994) state that the range of emission varies between 0,001% and 2,05% of the input depending on the type of fertiliser and the type of soil. Velthof (1997) proposes a range between 0,6% and 3,1%, which is also variable in function of the quantity of fertiliser applied.	Regional	Database from measure of the RDP. Results of previous analysis of impact. Results of business surveys for the structural measures. Parameters and data taken from the literature and from national and international agencies (Institute for Environmental Protection and Research- ISPRA, IPCC). Secondary data from the FADN database-REA for the counterfactual analysis.
Ex ante (2007-2013)	214	Production of energy from renewable agricultural sources	IRENA	ITF4		Regional	IPCC data
Mid term (2007-2013)	214	Contribution to combating climate change: Increase of production of renewable energy from agriculture and forests	CMEF impact	LT			Declarations (ha of supported area)

Mid term (2007-2013)	214	Production of renewable energy from agriculture (kToe)	CMEF baseline	NL		National	Literature research on additional indicators, interviews with experts and screening of applications. (There is no specific management package that contributes to the mitigation of climate change. Assessment is been made of the type and number of AEMs that contribute to mitigating the climate change. Biomass used for fuel is mentioned as making a potential contribution.)
Mid term (2007-2013)	214	GHG emissions from agriculture	CMEF baseline	NL		National	Literature research on additional indicators, interviews with experts and screening of applications. (There is no specific management package that contributes to the mitigation of climate change. Assessment is been made of the type and number of AEMs that contribute to mitigating the climate change. Biomass used for fuel is mentioned as making a potential contribution.)
Mid term (2007-2013)	214	Density of herbivorous animals per hectare UAA		PL	The lower density of herbivorous per one hectare of agricultural land increases the potential for carbon sequestration.	National	Qualitative data of density of herbivorous animals per hectare UAA
Mid term (2007-2013)	214	FBI 35		PL	FBI closer to 1 indicates that agricultural areas are better environment for the wild birds.	National	Qualitative data of FBI 35
Mid term (2007-2013)	214	NDVI (Normalized Difference Vegetation Index)		PL	NDVI is higher on area covered by the measure. Indicator is linked with the result indicator of CMEF biodiversity and HNV farmland/forestry.		Area covered by the measure
Mid term (2007-2013)	214	Share grain in arable land		PL	Area covered by the measure and number of beneficiaries have a significant impact on climate change. Extensive farming systems (less LU density/UAA) and rational fertiliser application (less than average use means of production- e.g. less pesticides, fertilisers, petroleum) contribute to GHG emissions.	National	Qualitative data of share grain in arable land
Mid term (2007-2013)-Report	214	Balance carbon with mathematic model CENTURY		PL	Estimation of carbon sequestration on area covered by the measure. Balance carbon is better on area covered by the measure.	National	Area covered by the measure.

product index, result index and impact for axis 2 (2010)							
Report product index, result index and impact for axis 2 (2010)	214	Reduction of CO_2 emission (equivalents)		PL	Area covered by the measure and number of beneficiaries have a significant impact on climate change. The reduction of CO_2 is linked with climate change mitigation because the increase of the area covered by agri-environmental activities contributes to the climate change mitigation.	National	Number of beneficiaries and area covered by the measure.
Ex post (2004-2006)-Report product index, result index and impact for axis 2 (2010)-Annual report from realisation RDP 2007-2013, MARD-Annual report from realisation RDP 2004-2006, MARD-Case study 2010	214	Area under agri-environmental support	CMEF output	PL	Area covered by the measure and number of beneficiaries have a significant impact on climate change. Extensive farming systems and rational fertiliser application (less than average use means of production- e.g. less pesticides, fertilisers, petroleum) contribute to mitigating climate change.	National (case study Nuts 2)	Number of beneficiaries, area covered by the measure
Ex post (2004-2006) -Report product	214	Number of beneficiaries receiving AEP	CMEF output	PL	Area covered by the measure and number of beneficiaries have a significant impact on climate change. Extensive farming systems and rational fertiliser application (less than average use means of	National (case study Nuts 2)	Number of beneficiaries, area covered by the measure.

index, result index and impact for axis 2 (2010)-Annual report from realisation RDP 2007-2013, MARD-Annual report from realisation RDP 2004-2006, MARD-Case study 2010					production- e.g. less pesticides, fertilisers, petroleum) contribute to mitigating climate change.		
Ex post (2004-2006)	214	Livestock density LU/ha UAA		PL	Area covered by the measure and number of beneficiaries have a significant impact on climate change. Extensive farming systems (less LU density/UAA) and rational fertiliser application (less than average use means of production- e.g. less pesticides, fertilisers, petroleum) contribute to GHG emissions.	National	Qualitative data of livestock density LU/ha UAA
Expost (2004-2006)	214	Permanent grassland/UAA		PL	The increase of permanent grassland areas increases the potential for carbon sequestration.	National	Qualitative data of permanent grassland/UAA
Mid term (2007-2013)	214 Reduced use of agrochemicals	Achievement of environmental objective: Climate change mitigation = Area to be contributing to Climate change mitigation in the specific action (ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under climate change mitigation action as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact. Furthermore reduction in use of agrochemicals results to an overall reduction of indirect GHG emissions.	Action	Financial uptake, targeted area.
Mid term (2007-2013)	214 Reduced use of	Achievement of environmental objective:	Evaluators	ES61	The calculation of the area under climate change mitigation action as a function of the proportion of the	Action	Financial uptake, targeted area.

	machinery/equipment	Climate change mitigation = Area to be contributing to Climate change mitigation in the specific action (ha) X % financial uptake for this action.			financial uptake and the programmed target area is provided as an estimation of the impact. Furthermore reduction in use of machinery result to an overall reduction of direct GHG emissions..		
Mid term (2007-2013)	214 Green cover use and less soil tillage	Achievement of environmental objective: Climate change mitigation = Area to be contributing to Climate change mitigation in the specific action (ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under climate change mitigation action as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area.
Mid term (2007-2013)	214	Related result/output indicators		UK-ENG	Impact assessment is based on interpretation from indirectly related result and output indicators	Agricultural holdings	Indirect data from the GHG Inventory (Mac Carthy et al 2010), number of holdings, area under support, physical area, number of contracts from Natural England and county agencies.
Mid term (2007-2013)	216	Impact on emissions to the air		FI	Qualitative assessment about the influence of environmental payments on air pollution.	Nuts 1	Expert assessments
Mid term (2007-2013)	221	Increased production of renewable energy	CMEF impact	AT	Extending forest land leads to the increase of production and provision of renewable energies.		
Mid term (2007-2013)	221	Production of renewable energy from agriculture (kToe)	CMEF baseline	FR	The increase of agricultural land devoted to renewable energy contributes to climate change mitigation.	Regional and programme (PDRN)	Results of the previous analysis of the impact. Parameters and data derived from literature, national and international agencies (IPCC).
Mid term (2007-2013	221	Production of renewable energy from forestry (kToe)	CMEF baseline	FR	The aim of the measure is to decrease the GHG emissions through afforestation.	Regional and programme (PDRN)	Paying Agency, National Statistical Office.
Ex post (2000-2006)	221	Increase in C sequestration	Common evaluation question	HU	For the calculation of C sequestration through afforestation a model developed to Hungarian circumstances (Casmofor 3.0 model) has been used. The model takes into account forestry tending and timber production models for the individual species as its basis to determine C sequestration, including also	National	Forestry data, IACS.

					natural dieback, decay and the impact of forestry technology. The data which provided the basis for the calculations was the land data for the individual types of tree stocks. In the model, the main species were given as the type of tree stocks.		
Mid term (2007-2013)	221	CO_2 fixation of afforestated areas (t CO_2/year/ha)	Evaluator	DE1	Increased carbon sequestration through afforestation.	Regional	Literature analysis (e.g. Paul et al. 2009)
Mid term (2007-2013)	221	Contribution to combating climate change: Increase of production of renewable energy from agriculture and forests	CMEF impact	ITF4	The aim of the measure is to decrease the GHG emissions.	Regional	IPCC data.
Ex ante (2007-2013)	221	Total emissions of NH_3 from agriculture (1990, 1995, 2000)	IRENA	ITF4	The indicator shows the annual trend of NH_3 emissions from 1990 to 2000 and the contribution of agriculture.	Regional	Monitoring data of NH_3 emissions for 1990, 1995, 2000.
Mid term post (2007-2013)	221	Reduction of CO_2 emissions equivalent thanks to the program	Additional	ITH3	The aim of the measure is to decrease the GHG emissions. Since the proposed CMEF indicator doesn't capture the GHG emissions, the additional impact indicator is built in order to be a more complex indicator for the GHG reduction.	Regional	Source AVEPA (Paying Agency), ISTAT (National Statistical Office), APAT (Agency for the environmental protection) Acquisition of secondary data from the FADN database-REA The information resulting from the FADN database-REA are used for the counterfactual analysis.
Ex ante (2007-2013)	221	Reduction of CO_2 emissions thanks to the programme at Regional Level	Additional	ITH3	The aim of the measure is to decrease the GHG emissions. Since the proposed CMEF indicator doesn't capture the GHG emissions, the additional impact indicator is built in order to be a more complex indicator for the GHG reduction.	Regional	Annual data from AVEPA (Paying Agency), ISTAT (National Statistical Office), APAT (Agency for the environmental protection).
Ex ante (2007-2013)	221	Increased renewable energy production	CMEF impact	ITH3	Implementation of renewable energy use from agricultural sector. In addition to the SRF (Short-Rotation Forestry), such as poplar or eucalyptus, it is important to highlight the potential arising from the construction of power plants for co-firing, such as coal and fuel from renewable sources.	Regional	Data from AVEPA (Paying Agency), ISTAT (National Statistical Office), APAT (Agency for the environmental protection).
Mid term (2007-2013)	221	Contribution to combating climate change: Increase of production of renewable energy from agriculture and	CMEF impact	LT			Declarations (Ha of supported area.)

		forests					
Ex ante (2007-2013)	221	Average annual increase of forest areas	CMEF	LT	The increase of forest areas has a positive impact on climate change mitigation.	National	Declarations (Ha of supported area)
Ex post (2004-2006)	221	Increase of C storage capacity		LT		National	Forest inventory, forestry data. (There was no environmental impact indicators used for 2004-2006. The title is given from the contextual information)
Mid term (2007-2013)	221	Area of agricultural land converted to forest	CMEF output	NL	Impact assessment based on EU evaluation questions. Forests contribute to carbon sequestration and renewable resources.		Analysis of management agreements, monitoring output indicators and survey/interviews with experts.
Mid term (2007-2013)	221	C sequestration through afforestation		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure
Mid term (2007-2013)	221	Number of Ha of afforestated land	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase of afforestated area in relation to the existing forests		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Share of afforestation in agricultural area		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase in the share of the areas supported by Measures 221 and 223 in relation to the RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Number of beneficiaries receiving afforestation aid	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase in the number of beneficiaries receiving afforestation aid in relation to RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Relationship between the index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI)		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation. The Transition index (TI) is the ratio of the share of area under afforestation in individual soil quality classes to the share of afforestated area in all arable land. It is expected that afforestation is preferentially concentrated on land with low agricultural suitability,	National	Number of beneficiaries, area covered by the measure, qualitative: index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI).

					therefore TI will be bigger for worse soil quality classes measured by the index of Valorisation of Agricultural Production Space (WWRPP).		
Mid term (2007-2013)	221	Degree of implementation of the afforestation plan		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase in the number of forest corridors		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Area under successful land management contributing to improvement of mitigating climate change	Output/result indicators	UK-ENG	Impact assessment is based on interpretation from indirectly related result and output indicators (e.g. area under successful land management contributing to improvement of mitigating climate change). Changes in forest cover and types reduce CO_2 and GHG emissions. (Information is reported along with information on measures 223, 225, 227).	According to data sources level ranges from international (IPCC) to national level	Secondary data sources from international reports and national inventories, such as the Read Report (Forestry Commission, 2009) and the Forestry Commission (FC). Original indicators (carbon saving from forestry, and contribution to increase in renewable energy) are drawn from the CMEF.
Mid term (2007-2013)	221	Number of Ha of afforestated land	CMEF output	UKM		Farm level	Measure specific survey of Rural Prority and Land Manager's Options beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data.
On going and mid-term (2007-2013)	223	Increased areas of forests	CMEF input/output	BG	The indicator indirectly measures the impact on climate changes.	National, regional	Financial parameters of the proposals/contracts. Number of beneficiaries receiving afforestration aid, number of hectares of afforested land. Survey from beneficiaries.
Mid term (2007-2013)	223	Sequestration of CO_2 (tonnes per year and tonnes per life time of biomass)	Evaluator	LV	The growing trees affect the volumes of CO_2 captured. Therefore support to artificial or natural reforestation activities which results in new forests impacts on CO_2 emission balance.	Measure	Area of afforestated land, coefficients of CO_2 sequestration for living and dead biomass of trees. It seems that a special study/estimation has been made.
Mid term (2007-2013)	223	Contribution to combating climate change: Increase of production of renewable energy from agriculture and forests	CMEF impact	LT			Declarations (Ha of supported area)
Ex ante (2007-2013)	223	Average annual increase of forest areas	CMEF baseline	LT	The increase of forest areas has a positive impact on climate change mitigation.	National	Ha of supported area.

Ex ante (2007-2013)	223	Total absorption of CO_2 (1990, 1995, 2000)	IRENA	ITF4		Regional	Data from National Agricultural Information System. Monitoring data for 1990, 1995, 2000.
Mid term (2007-2013)	223	C sequestration through afforestation		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure
Mid term (2007-2013)	223	Number of Ha of afforestated land	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase of afforestated area in relation to the existing forests		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Share of afforestation in agricultural area		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase in the share of the areas supported by Measures 221 and 223 in relation to the RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Number of beneficiaries receiving afforestation aid	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase in the number of beneficiaries receiving afforestation aid in relation to RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Relationship between the index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI)		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation. The Transition index (TI) is the ratio of the share of area under afforestation in individual soil quality classes to the share of afforestated area in all arable land. It is expected that afforestation is preferentially concentrated on land with low agricultural suitability, therefore TI will be bigger for worse soil quality classes measured by the index of Valorisation of Agricultural Production Space (WWRPP).	National	Number of beneficiaries, area covered by the measure, qualitative: index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI).
Mid term (2007-2013)	223	Degree of implementation of the afforestation plan		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase in the number of forest corridors		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure.
Mid term	223	Number of Ha of afforestated	CMEF	UKM		Farm level	Measure specific survey of Rural Priority and

(2007-2013)		land	output				Land Manager's Options beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data.
Mid term (2007-2013)	223 Forest measures aiming at increasing afforestation and forest maintenance as well as the reduction of forest fires	Achievement of environmental objective: Climate change mitigation = Area to be contributing to Climate change mitigation in the specific action (ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under climate change mitigation action as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact. Furthermore all objectives would result in increased carbon and GHG sequestration.	Action	Financial uptake and targeted area.
Mid term (2007-2013)	225	Increased production of renewable energy	CMEF impact	AT	The regeneration of forest stands improve the production of wood and the provision of renewable energy is increased.		
Mid term (2007-2013)	225	Contribution to combating climate change: Increase of production of renewable energy from agriculture and forests	CMEF impact	LT			Declarations (Ha of supported area)
Ex ante (2007-2013)	225	Average annual increase of forest areas	CMEF baseline	LT	The increase of forest areas has a positive impact on climate change mitigation.	National	Ha of supported area.
Mid term (2007-2013)	225	Forest area under forest-environment support	CMEF output	UKM		Farm level	Measure specific survey of Rural Priority and Land Manager's Options beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data.
Mid term (2007-2013)	226	C fixation through forestry	Additional	AT	Maintenance of carbon fixation through forestry.		
On going and mid-term (2007-2013)	226	Area of restored forestry /supported area of damaged forests	CMEF input/output	BG			Financial parameters of the proposals/contracts. Input and output indicators: Total public support, number of actions supported; supported area of damaged forests (ha), number of equipped anti-fire depots, number of established/improved

							places for helicopters, number of fire monitoring points constructed/ improved used are additional indicators. Survey.
Mid term (2007-2013)	226	UAA devoted to renewable energy production (thousand ha)	Additional	FR	The additional impact indicator is built in order to be a more complex indicator for the GHG reduction.	Programme level (PDRN)	Data from Paying Agency and Agency for the environmental protection
Ex ante (2007-2013)	226	UAA devoted to renewable energy production (thousand ha)	CMEF baseline	FR	The objective of the measure is to increase the land use devoted to renewable energy and the indicator measures this UAA.	Programme level (PDRH)	Annual data from RICA
Ex ante (2007-2013)	226	Contribution to combating climate change: Increase of production of renewable energy from agriculture	CMEF impact	FR	The aim of the measure is to decrease the GHG emissions as one of the action of the fight against climate change.	Programme (PDRH)	The evolution of the bird population in forest (IFEN).
Ex ante (2007-2013)	226	Contribution to combating climate change: Increase of production of renewable energy from forests	CMEF impact	FR	The aim of the measure is to decrease the GHG emissions as one of the action of the fight against climate change.	Programme (PDRH)	RICA data.
Mid term (2007-2013)	226	Sequestration of CO_2 (tonnes per year and tonnes per life time of biomass)	Evaluator	LV	The growing trees affect the volumes of CO_2 captured. Therefore support to artificial or natural reforestation activities which results in new forests impacts on CO_2 emission balance.	Measure	Area of afforestated land, coefficients of CO_2 sequestration for living and dead biomass of trees. Annual data. It seems that a special study/estimation has been made.
Mid term (2007-2013)	226	Contribution to combating climate change: Increase of production of renewable energy from agriculture and forests	CMEF impact	LT			Declarations (Ha of supported area)
Ex ante (2007-2013)	226	Average annual increase of forest areas	CMEF baseline	LT	The increase of forest areas has a positive impact on climate change mitigation.	National	Ha of supported area.
Ex ante (2007-2013)	226	CO_2 equivalent emissions from the agricultural sector (1990, 1995, 2000)	IRENA	ITF4	The aim of the measure is to decrease the GHG emissions.	Regional	Data from Agriculture Department, Information System. Available data used of Puglia region for 2005.
Mid term (2007-2013)	226	Area of restored forestry/ supported area of damaged forests	CMEF output	PL	The prevention/restoration actions contribute to climate change mitigation.	Local	Number of beneficiaries, area covered by the measure
Mid term (2007-2013)	226	Forest land potentially affected by biotic factors		PL	The prevention/restoration actions contribute to climate change mitigation.	Local	Number of beneficiaries, area covered by the measure.

		associated with the occurrence of diseases and pests					
Mid term (2007-2013)	226	Number of prevention/restoration actions	CMEF output	PL	The prevention/restoration actions contribute to climate change mitigation.	Local	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	226	The proposed length of forest roads - fire commute		PL	The prevention/restoration actions contribute to climate change mitigation.	Local	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	226	Number of districts in the division of the degree of fire risk in accordance with the rules of this prevention action		PL	The prevention/restoration actions contribute to climate change mitigation.	Local	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	226	Total volume of investments for restoring forestry potential and introducing prevention action	CMEF output	PL	The prevention/restoration actions contribute to climate change mitigation.	Local	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	226 Forest measures aiming at increasing afforestation and forest maintenance as well as the reduction of forest fires	Achievement of environmental objective: Climate change mitigation = Area to be contributing to Climate change mitigation in the specific action (ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under climate change mitigation action as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact. Furthermore all objectives would result in increased carbon and GHG sequestration.	Action	Financial uptake and targeted area.
Mid term (2007-2013)	227	Contribution to combating climate change: Increase of production of renewable energy from agriculture and forests	CMEF impact	LT			Declarations (Ha of supported area)
Ex ante (2007-2013)	227	Average annual increase of forest areas	CMEF baseline	LT	The increase of forest areas has a positive impact on climate change mitigation.	National	Ha of supported area.
Mid term (2007-2013)	227	Number of forest holdings receiving forest-environment payments	CMEF output	UKM		Farm level	Measure specific survey of Rural Priority and Land Manager's Options beneficiaries, stakeholder consultation (including relevant

							scheme managers), industrial representatives, Scottish Government reporting data.
Mid term (2007-2013)	227 Forest measures aiming at increasing afforestation and forest maintenance as well as the reduction of forest fires	Achievement of environmental objective: Climate change mitigation = Area to be contributing to Climate change mitigation in the specific action (ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under climate change mitigation action as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact. Furthermore all objectives would result in increased carbon and GHG sequestration.	Action	Financial uptake and targeted area.
Ex post (2000-2006)	Forest environmental measures	Anticipated additional average annual increment thanks to assistance (m^3/hectare/year) (a) of which in new plantings (%, and hectares concerned) (b) of which due to improvement of existing woodlands (% and hectares)		ITF4	Measures have indirect effect on carbon storage.	Regional	Regional maps, agricultural land use, data from Agriculture Department and ISTAT (Statistical Institute). Annual data. The mean values are 4-7 m^3/ha/year, related to new woodland subsidized, the measure provides only the afforestation of agricultural land.
Ex post (2000-2006)	Forest environmental measures	Average annual net carbon storage from 2000-2012 thanks to assistance (millions of tons/year)		ITF4	The measures have an indirect effect on carbon storage.	Regional	Regional maps, agricultural land use, data from ISTAT (Statistical Institute). Annual data.
Ex post (2000-2006)	Forest environmental measures	Trend in average annual net carbon storage beyond 2012 thanks to assistance (millions of tons/year)		ITF4	The increase of wooded areas on agricultural land has an indirect effect on carbon storage.	Regional	Regional maps, agricultural land use, data from ISTAT (Statistical Institute). Annual data.
Ex post (2000-2006)	Forest environmental measures	Net carbon storage with fossil origin, storage between the 2000-2012 thanks to assistance (millions of tons/year)		ITF4	Less environmental impact thanks to the carbon storage.	Regional	Regional maps, agricultural land use, data from ISTAT (Statistical Institute). Annual data.
Ex post (2000-2006)	Forest environmental measures	Average annual net carbon storage from 2000-2012 thanks to assistance (millions		ITH3	The afforestation of non-agricultural land provides plants with production purposes and environmental surfaces other than agricultural and has an indirect	Regional, all forest land that	FRA 2005 for the sink estimation at National Level (FAO, Global Forest Resource Assessment 2005-Country Report ITALY), data related with

		of tons/year)			effect on carbon storage.	contributes to carbon storage improvement.	Short rotation forestry, due to the irrelevant carbon fixation (Reg. 2080/92).
Ex post (2000-2006)	Forest environmental measures	Trend in average annual net carbon storage beyond 2012 thanks to assistance (millions of tons/year)		ITH3	The increase of wooded areas on agricultural land has an indirect effect on carbon storage.	Regional, all forest land that contributes to carbon storage improvement.	National data from Natural Forestry and Establishment 2080 (Reg. 2080/92), Dendometric biomass, for the short rotation poplar.
Ex post (2000-2006)	Forest environmental measures	Net carbon storage with fossil origin, storage between the 2000-2012 thanks to assistance (millions of tons/year)		ITH3	Less environmental impact thanks to the carbon storage.	Regional	Data from AIEL (Italian Association for Agroforestry Energy), data related with Short rotation forestry, due to the irrelevant carbon fixation (Reg 2080/92).
Mid term (2007-2013)	311	Reduction of CO_2 emissions (equivalents)	Evaluator-additional impact	AT			
Mid term (2007-2013)	311	Impact of emissions on the air		FI	Assessment about the influence of measure on air emissions.	Nuts 1	Combined data from Information Centre of the Ministry of Agriculture and Forestry
Mid term (2007-2013)	312	Reduction of CO_2 emission (equivalents)	Evaluator	LV	The production of the renewable energy sources substitutes the use of fossil resources. Support is given to produce renewable energy sources. It seems that a special study/estimation has been made.	Measure	Produced RES (Ktoe/y)
Mid term (2007-2013)	312	Impact of emissions on the air		FI	Assessment about the influence of measure on air emissions.	Nuts 1	Combined data from Information Centre of the Ministry of Agriculture and Forestry
Mid term (2007-2013)	321	Reduction of CO_2 emissions (equivalents)	Evaluator-additional impact	AT			
Mid term (2007-2013)	321	Impact of emissions on the air		FI	Assessment about the influence of measure on air emissions.	Nuts 1	Combined data from Information Centre of the Ministry of Agriculture and Forestry
Mid term (2007-2013)	322	Impact of emissions on the air		FI	Assessment about the influence of measure on air emissions.	Nuts 1	Combined data from Information Centre of the Ministry of Agriculture and Forestry

Mid term (2007-2013)	411	Impact of emissions on the air		FI	Qualitative assessment about the influence of project aid and leader firm on air emissions.	Nuts 1	Expert assessments
Mid term (2007-2013)	413	Impact of emissions on the air		FI	Qualitative assessment about the influence of project aid and leader firm on air emissions.	Nuts 1	Expert assessments
Mid term (2007-2013)	Programme level	Contribution to combating climate change: Increase of production of renewable energy from agriculture and forests (in Mio. kg oil equivalent)	CMEF impact	AT	Increase of renewable energy production (biodiesel, bioethanol, energy plantations, wood and waste) and the resulting reduction of CO_2 emissions.		
Ex post (2000-2006)	Programme level	Budget of promotion (in Mio. Euro) and its share of the total programme budget (in %).		AT			
Mid term (2007-2013)	Programme level	Contribution to combating climate change: Increase of production of renewable energy from agriculture and forests	CMEF impact	FI	Climate change can be prevented by increasing the production of renewable energy 16 %.	Nuts 1	
SEA	Programme level	Contribution to combating climate change: Increase of production of renewable energy from forests	CMEF impact	FR	Increase in energy production from renewable sources. Thanks to afforestation there is reduction of GHG emissions (CH_4, N_2O and CO_2). Method that estimates the land use for forest.		Data from Paying Agency, National Statistical Office.
SEA	Programme level	Atmospheric emissions of ammonia from agriculture	IRENA	ITF4	Forests have the function of carbon removal in the ecosystem. The indicator shows the annual trend of ammonia emissions (1990-2002) and the contribution of agriculture.	Regional	Data from the regional database on ammonia emissions in agriculture from 1990 to 2002.
SEA	Programme level	Production of energy from renewable agricultural sources	IRENA	ITF4	Forests have the function of carbon removal in the ecosystem. This indicator is described on the basis of acreage and biomass production. Biomass production involves significant environmental costs and benefits, which must be taken properly into account in the planning stage. The benefits include the reduction of CO_2 emissions from the combustion of traditional fossil fuels, the development of energy production at the local level with the consequent reduction of import	Regional	

					dependency and diversification of energy sources used.		
SEA	Programme level	Gas emissions from agricultural activity	IRENA	ITF4	Forests have the function of carbon removal in the ecosystem. Contribution from the agricultural sector to emissions of GHG (CO_2, CH_4, N_2O).	Regional	IPCC data.
SEA	Programme level	Total annual removal of C from the atmosphere due to the presence of forests	Veneto Forest Service	ITH3	Forests have the function of carbon removal in the ecosystem.	Regional	
SEA	Programme level	Idroclimatico budget compared to the period 1994-2005	Arpav-CMT U.O. di Agrobiometeorology	ITH3	The long term meteorological data can give an idea about the climatic variation in the period concerned and the possible challenges for the following period. This indicator is important to evaluate possible future scenarios.	Regional	

Table A2 List of indicators for Biodiversity-Wildlife

Evaluation document	Measure/ Programme	Indicator	Type-origin of indicator	Member state/ region	Causal chain	Scale	Data
On going and mid-term (2007-2013)	111	Number of participants in training	CMEF output	BG	The indicator is not directly linked to biodiversity wildlife. The training curriculum for livestock breeding includes modules dedicated to wildlife biodiversity, and examples of best practices. This could help the farmers later to take advantages of this knowledge, to implement and face the requirements of the EU regarding biodiversity wild life. According to the survey results (survey is conducted within the MTE) more than 70% of beneficiaries under the RDP have no specific agricultural education and training. Farmers who completed training will be aware of the requirements of the EU.	National, regional	Number of participants, survey results
On going and mid-term (2007-2013)	111	Number of training days received	CMEF output	BG	The indicator is not directly linked to biodiversity wildlife. The training curriculum for livestock breeding includes modules dedicated to wildlife biodiversity, and examples of best practices. This could help the farmers later to take advantages of this knowledge, to implement and face the requirements of the EU regarding biodiversity wild life.	National, regional	Number of training days, survey results
Mid term (2007-2013)	111	Number of participants that successfully ended a training activity	CMEF result	NL	Impact assessment is based on evaluation question. The activities under this measure are focused on raising awareness relevant to the public good. However the assessment of the impact does only consider the more broad relevance to contributing to sustainable land management.		Interviews, surveys
Mid term (2007-2013) - Annual report from realisation	111	Number of trainings on sustainable land management and sustainable land management of natural resources	According to CMEF output	PL	The aim of the measure is to diffuse scientific knowledge and innovative practises in the agricultural and forestry sector. Indirect impact.	National	Number of beneficiaries, amount of payments realised.

RDP 2007-2013, MARD							
On going and mid-term (2007-2013)	114	Number of farmers who use advisory services	CMEF output	BG		National, regional	Number of farmers who use advisory services, survey results.
Mid term (2007-2013) - Annual report from realisation RDP 2007-2013	114	Number of farmers who use advisory services for sustainable land management and sustainable land management of natural resources	CMEF output	PL	Indirect impact on sustainable management practices and cross compliance requirements.	National	Number of farmers who use advisory services for sustainable land management and sustainable land management of natural resources, amount of payments realised.
On going and mid-term (2007-2013)	121	Level of improvement of the overall performance of the agricultural holdings (competitiveness, sustainability and protection of environment)	CMEF output	BG	One of the objectives of the measure is to improve the environmental protection. From the survey, conducted during the MTE with 279 beneficiaries, 30% of them reported that investments are indirectly related to the protection of biodiversity and 39% declared that there is a significant improvement of nature preservation and preservation of biodiversity.	National	Number of holdings supported and number of holdings in livestock breeding, number of farms meeting the requirements of the nitrate Directive 91/676/EEC were used as additional indicators. Survey results.
Thematic module report for the Ex post (2007-2013)	121	Change in grassland area	Evaluators	DE9	Investments to expand and/or rationalise dairy systems can reduce the extent of grazing activities and reduce the amount of grass fed to cattle which can induce the ploughing up of grassland with negative consequences for biodiversity.	Farm level data assessed at regional level (Federal State)	IACS data 2000-2010
Annual report from realisation RDP 2007-2013	121	Number of farm holdings that received investment support	CMEF output	PL		National	Number of beneficiaries, amount of payments realised.
Annual report from realisation	121	Type of investments	CMEF output	PL		National	Number of beneficiaries, amount of payments realised.

RDP 2007-2013							
Annual report from realisation RDP 2007-2013	121	Type of agricultural branch	CMEF output	PL		National	Number of beneficiaries, amount of payments realised.
Annual report from realisation RDP 2007-2013	121	Number of farm holdings that received investment support in LFAs, NATURA 2000, Nitrates Directive areas	According to CMEF output	PL		National	Number of beneficiaries, amount of payments realised.
Mid term (2007-2013)	123	Influence to endangered species		FI	Assessment about the influence of measure on endangered species.	Nuts 1	Expert assessment, combined data produced by Information Centre of the Ministry of Agriculture and Forestry.
Mid term (2007-2013)	123	Number of beneficiaries	CMEF output	PL		Regional	Number of beneficiaries, area covered by the measure, amount of payment realised.
Mid term (2007-2013)	123	Total value of investment	CMEF output	PL		Regional	Number of beneficiaries, area covered by the measure, amount of payment realised.
Mid term (2007-2013)	123	Number of enterprises introducing new technologies and innovations	CMEF result	PL		Regional	Number of beneficiaries, area covered by the measure, amount of payment realised.
Mid term (2007-2013)	123	Number of beneficiaries - enterprises processing plant materials into products used for energy purposes	According to CMEF	PL		Regional	Number of beneficiaries, area covered by the measure, amount of payment realised.
Mid term (2007-2013)	124	Influence to endangered species		FI	Assessment about the influence of measure on endangered species.	Nuts 1	Expert assessment, combined data produced by Information Centre of the Ministry of Agriculture and Forestry.
On going and mid-term (2007-2013)	141	Number of semi-subsistence farm holdings which entered the market and meet the obligatory Community standards related to veterinary and phyto-sanitary requirements, animal welfare,		BG		National, regional	Monitoring data. Survey results.

		environmental protection, hygiene and occupational health and safety					
Ex post (2004-2006)- Annual report from realisation RDP 2004-2006	141	Number of farm holdings that supported	CMEF	PL		National	Number of beneficiaries, amount of payment realised.
Ex post (2004-2006)	141	Structure of agricultural holdings due to the declared indirect objective of the support		PL		National	Number of beneficiaries, amount of payment realised. (Additional question: Has the support contributed to increasing the number of bird species in the area?)
Annual report from realisation RDP 2004-2006	141	Number of beneficiaries whose agricultural holding is located in LFAs		PL		National	Number of beneficiaries, amount of payment realised.
Mid term (2007-2013)	211	Share of organic farmland on LFA farms	Evaluators	AT	Organic farmland in Austrian LFAs is of high natural value (and will be classified as HNV in the future) and high biodiversity value. The extent of organically managed land on LFA farms provides an indication to what extent LFA payments contribute to maintaining farmland biodiversity. The CMEF impact indicators could not be used for the measure specific evaluation of LFA payments due to missing data.	Farm level data analysed at national / LFA level	IACS data and FADN data, annually. Also, results from surveys and expert interviews carried out in previous evaluation phases were integrated in the qualitative assessment of biodiversity impacts.
Mid term (2007-2013)	211	Share of extensive grassland of total UAA of LFA farms	Evaluators	AT	Extensive grazing land in Austrian LFAs is of high natural value (and will be classified as HNV in the future) and high biodiversity value. The extent of extensive grassland on LFA farms provides an indication to what extent LFA payments contribute to maintaining farmland biodiversity. The CMEF impact indicators could not be used for the measure specific evaluation of LFA payments due to missing data.	Farm level data analysed at national / LFA level	IACS data and FADN data, annually. Also, results from surveys and expert interviews carried out in previous evaluation phases were integrated in the qualitative assessment of biodiversity impacts.
Ex ante	211	Prevention of potential loss of		BG	The indicator indirectly measures the impact on	National	Extrapolation of expected outputs/results from

(2007-2013)		biodiversity-Maintenance of land with HNV (improved nature value of land)-Changes in the scope of land with HNV			biodiversity wildlife.		pre-accession funds (SAPARD and PHARE), historical data series 2000 -2006
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010-Annual report from realisation RDP 2007-2013-Annual report from realisation RDP 2004-2006-Case study (2010)	211	Number of beneficiaries receiving LFAs payments	CMEF output	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Number of beneficiaries, amount of payment realised.
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP	211	Supported agricultural land	CMEF output	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Number of beneficiaries, amount of payment realised.

2007-2013, 2010-Annual report from realisation RDP 2007-2013-Annual report from realisation RDP 2004-2006-Case study (2010)							
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010	211	FBI	CMEF impact	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems. FBI closer to 1 indicates that agricultural areas are better environment for wild birds.	National	Number of beneficiaries, amount of payment realised, qualitative data of FBI
Ex post (2004-2006)	211	Share grain in arable land		PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Number of beneficiaries, amount of payment realised, qualitative data of share grain in arable land
Ex ante (2007-2013)	211	Number of farms in less favoured areas (OBL: Obligate Wetland) indicator): trends comparable developments outside disadvantaged areas	Additional	FR		Programme level (PDRH)	Number of farms in Obligate Wetland
Ex ante (2007-2013)	211	UAA in LFAs comparable to changing trends outside areas disadvantaged (abandonment rate).	Additional	FR		Programme level (PDRH)	UAA in LFAs, National agriculture Agency (PDRH)

Mid term (2007-2013)	212	Share of organic farmland on LFA farms	Evaluators	AT	Organic farmland in Austrian LFAs is of high natural value (and will be classified as HNV in the future) and high biodiversity value. The extent of organically managed land on LFA farms provides an indication to what extent LFA payments contribute to maintaining farmland biodiversity. The CMEF impact indicators could not be used for the measure specific evaluation of LFA payments due to missing data.	Farm level data analysed at national / LFA level	IACS data and FADN data, annually. Also, results from surveys and expert interviews carried out in previous evaluation phases were integrated in the qualitative assessment of biodiversity impacts.
Mid term (2007-2013)	212	Share of extensive grassland of total UAA of LFA farms	Evaluators	AT	Extensive grazing land in Austrian LFAs is of high natural value (and will be classified as HNV in the future) and high biodiversity value. The extent of extensive grassland on LFA farms provides an indication to what extent LFA payments contribute to maintaining farmland biodiversity. The CMEF impact indicators could not be used for the measure specific evaluation of LFA payments due to missing data.	Farm level data analysed at national / LFA level	IACS data and FADN data, annually. Also, results from surveys and expert interviews carried out in previous evaluation phases were integrated in the qualitative assessment of biodiversity impacts.
Ex ante (2007-2013)	212	Prevention of potential loss of biodiversity-Maintenance of land with HNV (improved nature value of land)-Changes in the scope of land with HNV		BG	The indicator indirectly measures the impact on biodiversity wildlife.	National	Extrapolation of expected outputs/results from pre-accession funds (SAPARD and PHARE), historical data series 2000 -2006
Mid term (2007-2013)	212	Increase in biological diversity (farmland bird species population, abundance and density of bird species	CMEF impact	EE	Although the measure doesn't directly concern the improvement of the environmental status, since the target for area is achieved it may be concluded, that biological diversity has been preserved and areas are being maintained.	National	Monitoring data.
Ex ante (2007-2013)	212	Reversing biodiversity decline (FBI)	CMEF impact	FR	The impact indicator is related to the species diversity. The indicator represents change in quantity and quality of bird species populations in areas targeted by the intervention.	PDRH National	Population agricultural avifauna from Eurostat: http://epp.eurostat.ec.europa.eu (IFEN-National Museum Natural History, MNHN)
Ex ante (2007-2013)	212	Number of farms in less favoured areas (OBL: Obligate Wetland) indicator): trends comparable developments outside	Additional	FR		Programme level (PDRH)	Number of farms in Obligate Wetland

		disadvantaged areas					
Ex ante (2007-2013)	212	UAA in LFAs comparable to changing trends outside areas disadvantaged (abandonment rate).	Additional	FR		Programme level (PDRH)	UAA in LFAs, National agriculture Agency (PDRH)
Ex post (2000-2006)	212	(A) Share of UAA under environmentally benign farming systems: -of which used for organic farming -of which used as pasture with less than 1.4 LU/ha (B) Share of UAA used for arable farming where the quantity of nitrogen applied (farm manure and synthetic) is less than 170 kg/ha per year.	EC	DE1	Programme indicator has been used to answer the evaluation questions. The LU/ha was reduced from 2 to 1.4. The selected indicators are used as a proxy for environmental impact indicators, based on the assumption that an expansion of UAA of organic farming or other environmental friendly land management systems and practices will increase the provision of public goods from agriculture.	Regional (Mountain areas and other disadvantaged areas)	IACS data 2000 - 2006; Census data, FADN data. In addition, case studies in other Federal States have been carried out by the evaluators in order to obtain additional information on public goods and services from agriculture in those areas. The case studies comprised of expert interviews and stakeholder surveys. In a next step interviews with key stakeholders and experts in Baden Württemberg were held to validate the possible relevance of the case study findings for different regions in Baden Württemberg.
Mid term (2007-2013)	212	Reversing biodiversity decline (FBI)	CMEF impact	LV	Different versions of the farmland index, including European, Latvian, Boreal protected species. Additional indicators give supplementary information.	National, all ecosystems, however not the whole country	National monitoring of birds and additional inventories.
Mid term (2007-2013)	212	Reversing biodiversity decline (FBI)	CMEF impact	LT		National	Monitoring of 13 different farmland bird species population during field trips according to standardized methodology.
Mid term (2007-2013)	212	Agricultural land area supported	CMEF output	NL	Impact assessment is based on evaluation question.		Number of management contracts (output) & area of maintained landscape (results), survey among beneficiaries and interviews with experts.
Mid term (2007-2013)- Ex post (2004-2006)- Report product index, result index and	212	Number of beneficiaries receiving LFA payments	CMEF output	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Number of beneficiaries, amount of payment realised.

impact for axis 2 RDP 2007-2013, 2010-Annual report from realisation RDP 2007-2013-Annual report from realisation RDP 2004-2006-Case study (2010)							
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010-Annual report from realisation RDP 2007-2013-Annual report from realisation RDP 2004-2006-Case study (2010)	212	Supported agricultural land	CMEF output	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Number of beneficiaries, amount of payment realised.
Mid term (2007-2013)-	212	FBI	CMEF impact	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Number of beneficiaries, amount of payment realised, qualitative data of FBI

Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010					FBI closer to 1 indicates that agricultural areas are better environment for wild birds.		
Ex post (2004-2006)	212	Share grain in arable land		PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Number of beneficiaries, amount of payment realised, qualitative data of share grain in arable land
Mid term (2007-2013)	212	Change in trends in biodiversity decline measured by farmland species population	CMEF (impact)-literature review	UK-ENG	Reference to the CMEF and related baseline indicators on farmland birds and tree species composition is provided, in a very generic and qualitative way. Some reference is made to the advantages of novel agricultural management of hay meadows, pastures, allotments/intakes and moorland to enhance biodiversity.	Landscape	Outputs and results derived from secondary literature review and questionnaires.
Mid term (2007-2013)	212	Agricultural land area supported	CMEF output	UKM		Farm level	Survey responses of beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data
Mid term (2007-2013)	213	Increase in biological diversity (farmland bird species population, abundance and density of bird species)	CMEF impact	EE	The measure contributes to the continued use of agricultural activities with positive impact on biological diversity as a result of compliance with the environmental requirements. The non-use of lands would affect the composition of habitat species over time.	National, in 3 regions (22+22+22 producers), since 2010 in 2 regions (33+33 producers)	Annual monitoring data (population of farmland birds)
Mid term (2007-2013)	213	Output/result indicators: Supported grassland, Area under successful land management contributing to	CMEF	DE9		Regional (Federal State)	Monitoring data of output/results indicators, payment and IACS data.

		biodiversity					
Mid term (2007-2013)	213	FBI	CMEF impact	LV	Different versions of the farmland index, including European, Latvian, Boreal protected species. Additional indicators give supplementary information.	National, Natura 2000 sites	National monitoring of birds and additional inventories.
Mid term (2007-2013)	213	FBI	CMEF impact	LT		National	Monitoring of 13 different farmland bird species population during field trips according to standardized methodology.
Mid term (2007-2013)	214	FBI	CMEF impact	AT	The use of farmland bird indicators as a (sole) biodiversity indicator is based on the concept of umbrella species. AEMs and their prescriptions maintain and improve land use, habitat and landscape elements which support a high biodiversity and are important parts of suitable bird habitats.	National, differentiating between different agricultural land use systems, area designations (LFA and Natura) and groups of federal states.	FBI data
On going mid term (2007-2013)	214	Level of impact of the agri-environment payments on maintaining or improving habitats and biodiversity	CMEF	BG	The indicator indirectly measures the impact of the measure on biodiversity wildlife.	National, regional	Number of farm holdings and the receiving support, total area under agri-environmental support (ha), total number of contracts, physical area under agri-environmental support (ha), number of actions related to genetic resources. Survey results.
Mid term (2007-2013)	214: Support for organic production	Changes in environmental awareness of agricultural producers	Evaluators	EE	Beneficiaries are obliged to participate in agri-environmental and/or organic production training activities. Trainings provide direct knowledge of sustainable organic agricultural production, environmental conservation and marketing.	National	Interviews with producers, consultants.
Mid term (2007-2013)	214: Support for environmentally friendly	Reversal in biodiversity decline: Diversity and abundance of bumblebees.	Evaluators	EE	The diversity of species of bumblebees and Shannon diversity index is higher in areas under actions of organic production and environmentally friendly management. Although for the abundance of	National. Monitoring in 12+1 monitoring	3 transect counts during June-August.

	management, Support for organic production, Support for the maintenace of semi-natural habitats				bumblebees such trends is not observed.	units (a 2km2); the conditions of farms study included 30 producers in 6 municipalities. In 2010 additional data collection in new monitoring areas overlapping as much as possible with biodiversity monitoring areas (esp. farmland bird transects)	
Mid term (2007-2013)	214: Support for environmentally friendly management, Support for organic production, Support for the	Reversal in biodiversity decline: Structure of vascular plants community, species richness and coverage	Evaluators	EE	The survey of structure of vascular plants, species richness and coverage showed that the flora diversity of field edges decreased slightly in the field edges of monitoring farms under actions of environmentally friendly management and organic production.	National. Monitoring farms	15 monitoring units per field (5+5 opposite edges, 5 on field).

	maintenace of semi-natural habitats						
Mid term (2007-2013)	214: Support for environmentally friendly management, Support for organic production, Support for the maintenace of semi-natural habitats	Reversal in biodiversity decline: Species richness and abundance of earthworms and the activity of soil biomass	Evaluators	EE	The indicator analyse the extent and direction of changes in the composition of species (especially for tolerant and adapted species), the total number of earthworms and also the microbial biomass activity. The proportion of earthworms and micro-organisms in the soil of organically and conventionally cultivated fields was compared. Earthworm abundance showed no significant differences between the cultivation types.	National, (66 producers)	Manual sampling (50x50x50cm) and soil sample. Monitoring activities conducted every 2 years
Mid term (2007-2013)	214: Support for environmentally friendly management, Support for organic production, Support for the maintenace of semi-natural habitats	Reversing biodiversity decline (FBI)	CMEF impact	EE	For the reversal of biodiversity decline analysed how the general environmental condition of farms has been preserved or improved due to the application of AES requirements, considering their habitat function and if the organic farming facilitates biological diversity. According to the survey on bird species richness, abundance and population density, the potential indirect positive impact of various types of AE support cannot be underestimated despite the lack of aid type impact. Without the agricultural support, many habitats necessary for open field birds may remain fallow and overgrow with woods, resulting irreversible loss of habitat for these species.	Monitoring in 3 regions (22+22+22 producers), since 2010 in 2 regions (33+33 producers)	Data from 3 transect counts (May-June). Bird monitoring data, using Shannon diversity index (number of nesting species as well as diversity), number of nesting species on farmland, total population of nesting birds (number of nesting specimens).
Mid term (2007-2013)	214	Reversing biodiversity decline (FBI)	CMEF impact	FI		Nuts3	Counting, case study of 55 follow-up areas across the country
Mid term (2007-2013)	214	Reversing biodiversity decline (FBI)	CMEF impact	FR	The impact indicator is related to the species diversity. Common bird indicators are commonly used for	Regional	IFEN, evolution of the bird population in forest

					synthetic comparisons. The bird populations are recognised as excellent bio-indicators as they reflect an overall quality of the environments in which they live.		
On going mid term (2007-2013)	214	STOC indicator (temporal monitoring of common birds): Reversal decline of biodiversity	Additional	FR	Bird populations are recognised as excellent bio-indicators as they reflect an overall quality of the environments in which they live (abundance of food, quality of the fault, etc).	Programme level (PDRH)	IFEN, evolution of the bird population in forest
Ex ante (2007-2013)	214	Reversing biodiversity decline (FBI)	CMEF impact	FR	The impact indicator is related to the species diversity. The indicator represents change in quantity and quality of bird species populations in areas targeted by the intervention.	Programme level (PDRH)	Population agricultural avifauna from Eurostat: http://epp.eurostat.ec.europa.eu (IFEN-National Museum Natural History, MNHN)
Ex post (20002006)	214	Reversing biodiversity decline (FBI)	CMEF impact	FR	The impact indicator is related to the species diversity.	Regional Surface measure object(SOI) and AUU	Number of bird populations. Data from National agriculture Agency (PDRN).
Mid term	214 Water management	Proportion of UAA subject to environment friendly farming systems which affected area (a) to organic farming, (b) integrated production or integrated control agencies harmful, and (c) pasture with less than 2 LU / ha.	Additional	FR	For the introduction of innovative management projects aiming to promote and develop methodologies and innovative management and organization system, with specific reference to 'quality certification in agriculture', 'computerization in agriculture' and 'food safety and traceability products', these aspects are linked with the measure and the investment in agricultural farms.	Regional	Data were provided by the National monitoring system
Mid term (2007-2013)	214	Results indicators (Area indicators, crop diversity)	Evaluators -crop diversity is defined as additional impact indicator	DE1	The diversity of the wildlife fauna is also influenced by the number of different crops cultivated on arable land. An increase in the number of crops contributes to safeguarding the fauna on arable land. Crop diversity is applied as an indicator to describe the potential impact of the measure on biodiversity on arable land. The CMEF indicator FBI could not be assessed: lack of suitable data to assess measure impacts on the index.	Farm level data analysed at regional level (Federal State	IACS annual data
Ex post (2000-2006)	214 (MEKA)	Area with assisted input-reducing actions (ha) -of which with reduced application per ha of plant	EC	DE1	Indicators reflect an extensification of agricultural land use with a reduction in input use which improve habitat conditions for a wide range of plant and wildlife species and thus improve biodiversity.	Regional (Federal State)	IACS annual data and environmental monitoring data assessed in other studies.

		protection products (%) -of which with reduced application per ha of fertiliser (%) -of which with avoidance of specific inputs at critical periods of the year (%)					
Ex post (2000-2006)	214 (MEKA)	Animals/plants reared/cultivated under agreement (number of individuals or hectares broken down to breed/variety)	EC	DE1	This measure is targeted at the genetic diversity of animals reared and plants cultivated which is a key biodiversity indicator (although not in relation to wildlife). Indicator is defined as a biodiversity indicator, although it does not relate to wildlife	Regional (Federal State)	IACS annual data.
Thematic module report for the Ex post (2007-2013)	214	Amphibian - species diversity and abundance	Evaluator (based on report from ZALF)	DE4	The CMEF impact indicator FBI is not sufficient to assess measure-specific impacts on biodiversity. Amphibians are an important animal group for farmland biodiversity and many amphibian species are threatened by habitat loss. The measure 214 promotes the maintenance and creation of suitable habitats and biotopes for amphibians. Changes in the diversity and abundance of amphibians thus provide one measure or indicator for the (potential) biodiversity impacts of measure 214.	10 pilot areas	Species data from monitoring of trial areas, annually
Thematic module report for the Ex post (2007-2013)	214	Indicator plant species	Evaluator (based on report from ZALF,)	DE4	Rare and protected plant species are an important indicator for the ecological quality and biodiversity of grasslands. The number and abundance of these plant species often depends on the (timing of) certain management activities of meadows. The measure 214 promotes the maintenance and creation of suitable meadow habitats for plant species diversity. Changes indicator plant species thus provides an indicator for the (potential) biodiversity impacts of measure 214. The CMEF impact indicator FBI is not sufficient to assess measure-specific impacts on biodiversity.	119 trial areas with and without support covering different land use and habitat types	Monitoring data of trial areas, annually. Trials are done in three different regions of agriculturally used habitats.
Thematic module report for the Ex post	214 Management activities on meadows	Breeding success of meadow birds	Evaluator (based on report from	DE4	The CMEF impact indicator FBI is not sufficient to assess measure-specific impacts on biodiversity. Birds are an important animal group for farmland biodiversity and the provision of suitable breeding habitats for	7 trial areas with and without support	Monitoring data of trial areas, at different points in time during measure implementation and management.

(2007-2013)			ZALF,)		meadow birds depends on the (timing of) certain management activities of meadows. The measure 214 promotes the maintenance and creation of suitable meadow habitats for birds. Changes in breeding pairs or clutches thus provide an indicator for the (potential) biodiversity impacts of measure 214.		
Mid term (2007-2013)	214 Oriented grassland extensification	Number of indicator species	Measure design	DE9	A list of plant indicator species was designed, which reflect high species diversity on grassland. In addition, aspects such as protected and rare species (red list species) have been taken into account. Environmental outcome indicators are incorporated in the measure design. Indicator species show a high correlation with overall species diversity.	Field	Occurrence of indicator species on fields covered by measure. Expert judgement based on results of prototype studies and literature review.
Mid term (2007-2013)	214	Changes of the naturalness of the habitat patches related to AEMs	Common evaluation question	HU	In the mid-term evaluation (2007-2013) the evaluators preferred to use botanical data instead of using common bird monitoring data for assessing the biodiversity. Indicator aims at finding correlation between the naturalness of different habitat patches and parcels contracted under AE measures. The survey looks for the spatial coverage of natural and semi-natural habitats in sample plots with AE measures compared to the overall coverage of the habitats concerned.	National	IACS contracted parcels, Spatial Database of Habitats in Hungary (MÉTA-www.novenyzetiterkep.hu/?q=en/english/node/55)
Ex post (2000-2006)	214	Changes of population of great bustard (*Otis tarda*) related to AEMs	Common evaluation question	HU	Specific AEMs aim to the protection of great bustard population. Through actions aimed at special crop rotation, winter forage, nest protection and an overall habitat management for the great bustard (which is based on former surveys and experiences) an increase of the population is expected.	National, HNVs involved in great bustard protection	Population census data
Ex post (2000-2006)	214	Evidence of a positive relationship between assisted input reduction measures on the targeted land and species diversity (description, where practical involving estimates of species abundance)	Common evaluation question	HU	The calculation of indicator is based on the beneficiaries who have participated in indicator-related support schemes with relevant management regulations and the area covered: HNV arable land support schemes, ecological farming (arable land/ plantations).	National	Common bird monitoring (BirdLife Hungary's bird monitoring programme, and the botany analysis of the Hungarian Academy of Sciences' Institute of Ecology and Botany). Additional data: a countrywide network of sampling quadrates has been designated.

Mid term (2007-2013)	214	Reversing biodiversity decline (FBI)	CMEF impact	ITF4	The biodiversity abundance and diversity of bird species. FBI is the indicator of current trends relevant to the state of biodiversity, the best time-series data and geographical distribution.	Regional	Bird population from MITO 2000 (Italian Ornithological Monitoring, Fornasari et al., 2004), Italian data based on PECBMS.
Ex ante (2007-2013)	214	Evolution of the population of 18 species of birds selected in agricultural areas at national level.	IRENA	ITF4	The indicator is related to species diversity.	Regional	Surface measure object (SOI) on the total UAA-within the protected areas as protected natural areas and/or Natura 2000 sites such as SCI and SPAs.
Ex ante (2007-2013)	214	Level of threat to plant species: Species vegetable(herbivorous) exclusive of the Puglia Region	IRENA	ITF4	The measure is related with the vegetal species in the Region	Regional	Data were collected from 2000 to 2011as part of the project MITO2000, FBI is calculated over 26 species (National Rural Network and Lipu 2010, 2011).
Ex ante (2007-2013)	214	% of organic UAA compared to the total regional UAA	IRENA	ITF4	Organic agriculture and the aspects related to the agricultural sustainability.	Regional	Data were collected from 2000 to 2011as part of the project MITO2000, FBI is calculated over 26 species (National Rural Network and Lipu 2010, 2011).
Ex post (2000-2006)	214	Farmland under agreement contributing to perceptive/cognitive, in particular visual, differentiation (homogeneity/diversity) in the landscape (number of sites and ha/ km) -of which due to the visual complexity resulting from land-use /crop patterns influenced by the supported actions (extent, spatial arrangement including height, colours) (%) -of which due to environmental features such as flora, fauna or habitats directly/ indirectly resulting from the supported actions (%) -of which due to man-made objects (hedgerows,		ITF4	Biodiversity abundance and diversity of bird species.	Regional	Data from the Land use CENSUS.

		ditches, tracks) introduced/ preserved by the supported actions or the possibility, thanks to support for vegetation management, of viewing the landscape differentiation (homogeneity/diversity) (%)					
Ex post (2000-2006)	214	Adjacent valuable wetland or aquatic habitats that have been protected thanks to the assisted actions (ha) -of which protected from eutrophication and/or sediment flows (%) -of which protected from toxic substances (%) -of which in Natura 2000 areas -of which habitats that particularly benefit specific species or groups of species (%) -of which considered rare habitats at the relevant geographical level (%)		ITF4	Biodiversity abundance and diversity of bird species.	Regional	Data from the Land use CENSUS.
Ex post (2000-2006)	214	Area of farmland under agreements targeting particular wildlife species or groups of species (ha and specification of species) -of which widespread species (%) -of which specialist species (%) -of which declining species (%) -of which stable or increasing species (%) -of which soil organisms (%) -of which species figuring on international lists of		ITF4	Biodiversity abundance and diversity of bird species.	Regional	Data from the Land use CENSUS.

		endangered species (%)					
Ex post (2000-2006)	214	Evidence (by key type of farmland) of a positive relationship between the layout of crops or cover on the farmland under agreement and the impact on species diversity (description, and where practical, estimates of numbers of nest (of birds, mammals, etc) or species abundance (or observation frequency)		ITF4	Relationship between the crop or cover crop of the area and the above and below ground biodiversity.	Regional	Data from the Land use CENSUS.
Ex post (2000-2006)	214	Area with beneficial vegetation/crop-residues at critical periods thanks to assisted actions (ha)		ITF4	The indicator is related to the diversity in crop system.	Regional	Data from the Land use CENSUS.
Ex post (2000-2006)	214	Area with beneficial lay out of crops (types of crop, including associated livestock, crop-combinations and size of uniform fields) maintained/reintroduced thanks to assisted actions (ha)		ITF4	The indicator is related to the diversity in crop system.	Regional	Data from the Land use CENSUS.
Ex post (2000-2006)	214	Evidence of a positive relationship between assisted input reduction measures on the targeted land and species diversity (description, where practical involving estimates of species abundance)		ITF4	Indicator is related to the species diversity.	Regional	Data from the Land use CENSUS.
Ex post (2000-2006)	214	Animals/plants reared/ cultivated under agreement (number of individuals or ha broken down to breed/variety)-of which		ITF4	Biodiversity abundance and diversity of bird species.	Regional	Data from the Land use CENSUS.

		figuring on EU or international lists: World Watch List of FAO, International Undertaking on Plant Genetic Resources for Food and Agriculture -of which conserved within the farming system they traditionally are part of (%)					
Mid term (2007-2013)- Ex ante (2007-2013)	214	Reversing biodiversity decline (FBI)	CMEF impact	ITH3	Biodiversity abundance and diversity of bird species.	Regional	Bird population from MITO 2000 (Italian Ornithological Monitoring, Fornasari et al., 2004), Italian data based on PECBMS.
Ex post (2000-2006)	214 Organic agriculture, Buffer strips, Catch crops, Set aside, Conservation of lowland meadows and conservation of arable land into permanent grassland, Conservation and recovery of meadows and pastures of the hills and mountain	Evidence of a positive relationship between assisted input reduction measures on the targeted land and species diversity (description, where practical involving estimates of species abundance)		ITH3	The indicator is related to the species diversity.	Regional Surface measure object (SOI) and UAA	Surface measure object (SOI) on the total UAA-within the protected areas as protected natural areas and / or Natura 2000 sites such as SCI and SPAs.
Ex post (2000-2006)	214: Planting and	Assisted ecological infrastructure with habitat		ITH3	Biodiversity abundance thanks to the ecological infrastructure.	Regional Surface	Surface measure object (SOI) on the total UAA-within the protected areas as protected natural

	conservation of hedges and copses	function or non farmed patches of land linked to agriculture (ha and/or km and/or number of sites/ agreements) of which linear features (hedges, walls, etc) (%, km)				measure object (SOI) and UAA	areas and / or Natura 2000 sites such as SCI and SPAs.
Ex post (2000-2006)	214: Buffer strips, Financing crops for energy purposes, Set aside, Interventions in favour of wildlife, Planting and conservation of hedges and copses, Maintaining elements of the rural landscape	Assisted ecological infrastructure with habitat function or non farmed patches of land linked to agriculture (ha and/or km and/or number of sites/ agreements) of which patches or areas of non-farmed land (i.e. ecological set aside, other non-cropped areas, etc.) or partly non-cultivated land (unweeded and/or unfertilised edges of fields) (%)		ITH3		Regional Surface measure object (SOI) and UAA	Surface measure object (SOI) on the total UAA- within the protected areas as protected natural areas and / or Natura 2000 sites such as SCI and SPAs.
Ex post (2000-2006)	214 Planting and conservation of hedges and copses	Assisted ecological infrastructure with habitat function or non farmed patches of land linked to agriculture (ha and/or km and/or number of sites/ agreements) of which isolated features (patches of trees, etc., number)		ITH3		Regional surface measure object (SOI) and UAA	Surface measure object (SOI) on the total UAA- within the protected areas as protected natural areas and / or Natura 2000 sites such as SCI and SPAs.
Ex post (2000-2006)	214 Restoration	Assisted ecological infrastructure with habitat		ITH3		Regional surface	Surface measure object (SOI) on the total UAA- within the protected areas as protected natural

	and conservation of wetlands biotypes	function or non farmed patches of land linked to agriculture (ha and/or km and/or number of sites/ agreements) of which enhancing existing high nature-value habitats by alleviating their fragmentation (%)				measure object (SOI) and UAA	areas and / or Natura 2000 sites such as SCI and SPAs.
On going mid term (2007-2013)	214	Reversing biodiversity decline (FBI)	CMEF impact	ITH5	Biodiversity abundance and diversity of birds species	Regional	Data from IACS, LPIS and GIS.
On going mid term (2007-2013)	214	Reversing biodiversity decline (FBI)	CMEF impact	ITH5	Biodiversity abundance and diversity of birds species	Regional	Bird population from MITO2000 (Italian Ornithological Monitoring, Fornasari et al. 2004), Italian data based on PECBMS
Mid term (2007-2013	214	Reversing biodiversity decline (FBI)	CMEF impact	LV	Different versions of the farmland index, including European, Latvian, Boreal protected species. Additional indicators give supplementary information.	National, Natura 2000 sites	Farmland bird population
Mid term (2007-2013)	214 Organic farming	Number of ground beetles' species and abundance of ground beetles (Carabidae sp.)	Evaluators	LV	Number of ground beetles is higher in organic farms than in conventional areas.	Case study area (crop fields) in Latgale region	Investigation in a case study area.
Mid term (2007-2013)	214 Maintenance of biodiversity in grasslands	Number and diversity of day butterflies.	Evaluators	LV	The properly maintained grasslands host higher number of butterflies compared to non-managed grasslands.	Case study in 18 sites covering all 5 regions	Investigation in a case study area.
Mid term (2007-2013)	214 Maintenance of biodiversity in grasslands	Status of higher plants (quality of grasslands)	Evaluators	LV	Quality of grasslands is higher in maintained areas.	Case study in 18 sites covering all 5 regions	Investigation in a case study area.
Mid term (2007-2013)	214	Reversing biodiversity decline (FBI)	CMEF impact	LT		National	Monitoring of 13 different farmland bird species population during field trips according to standardized methodology.

Mid term (2007-2013)	214	Area of agricultural land under measure	CMEF output	NL			Monitoring system (output indicators), expert interviews and literature research.
Mid term (2007-2013)	214	Number of contracts	CMEF output	NL	Nature of the contracts reported: realisation of ecological elements, landscape maintenance and agricultural area with HNV, grassland management, management of HNV, actions to maintain natural habitats)		Monitoring system (output indicators), expert interviews and literature research.
Mid term (2007-2013)- Report product index, result index and impact for axis 2 RDP 2007-2013, 2010	214	Area under agri-environmental support	CMEF output	PL	Area covered by the measure and number of beneficiaries have a significant impact on biodiversity through extensive farming systems and rational fertiliser application (less than average use means of production- e.g. less pesticides, fertilisers, petroleum).	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)- Report product index, result index and impact for axis 2 RDP 2007-2013, 2010	214	Number of beneficiaries receiving AEP	CMEF output	PL	Area covered by the measure and number of beneficiaries have a significant impact on biodiversity through extensive farming systems and rational fertiliser application (less than average use means of production- e.g. less pesticides, fertilisers, petroleum).	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)- Report product index, result index and impact for axis 2 RDP 2007-2013,	214	Share of permanent pasture		PL	Area covered by the measure and number of beneficiaries have a significant impact on biodiversity through extensive farming systems and rational fertiliser application (less than average use means of production- e.g. less pesticides, fertilisers, petroleum).	National	Number of beneficiaries, area covered by the measure.

2010							
Mid term (2007-2013)- Report product index, result index and impact for axis 2 RDP 2007-2013, 2010	214	NDVI (Normalized Difference Vegetation Index)		PL	NDVI is higher on area covered by the measure. Indicator is linked with the result indicator of CMEF biodiversity and HNV farmland/forestry.	National	Area covered by the measure.
Mid term (2007-2013)- Report product index, result index and impact for axis 2 RDP 2007-2013, 2010	214	FBI	CMEF impact	PL	FBI closer to 1 indicates that agricultural areas are better environment for wild birds.	National	Qualitative data of FBI
Mid term (2007-2013)	214 Apiculture for biodiversity conservation with an additional premium for organic apiculture	Achievement of environmental objective: Biodiversity conservation = Area to be contributing to biodiversity conservation in the specific sub-measure of 214 (ha) X % financial uptake for this sub-measure of 214	Evaluators	ES61	The calculation of the area under biodiversity conservation measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Sub-measure	Financial uptake, targeted area
Mid term (2007-2013)	214 Conservation of threatened autoctonus races	Achievement of environmental objective: Biodiversity conservation = Area to be contributing to biodiversity conservation in	Evaluators	ES61	The calculation of the area under biodiversity conservation measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Sub-measure	Financial uptake, targeted area

		the specific sub-measure of 214 (ha) X % financial uptake for this sub-measure of 214					
Mid term (2007-2013)	214	FBI and secondary indicators	CMEF impact and literature reviews	UK-ENG	Reference to secondary indicators is extensively performed with adaptation to different farmland systems/ecosystems being made, including lowland grasslands, arable land, moorland and boundaries and margins, trees and woodland, wetland and coastal). Qualitative assessment.	Regional and national, depending on secondary data availability	FBI (indirectly), output targets (number of farm holdings, total area under support, physical area under support and total number of contracts), result indicator (area of land contributing to maintaining and improving biodiversity). Natural England report of Agri-environment schemes in England (2009).
Ex ante (2007-2013)	216	Reversing biodiversity decline (FBI)	CMEF impact	FR	The impact indicator is related to the species diversity.	Programme level(PDRH)- National	Population agricultural avifauna from Eurostat: http://epp.eurostat.ec.europa.eu (IFEN-National Museum Natural History, MNHN)
Ex post (2000-2006)	221	Area planted/ regenerated/ improved with indigenous tree species (ha) -of which in mixture -of which providing in situ conservation of genetic resources		ITF4	The indicator is related to species diversity.	Regional	Data come from the Land use CENSUS (1998-2005)
Ex post (2000-2006)	221	Critical sites maintained/ improved due to assistance (ha) -of which in or linked to Natura 2000 areas -of which protected/restored from natural hazards CMEF		ITF4	Improvement of biodiversity in agricultural areas.	Regional	Data come from the Land use CENSUS (1998-2005)
Ex post (2000-2006)	221	Trend in protection of vulnerable non-commercial (i.e., non-traded forest products) species/varieties of flora & fauna on land subject to assisted actions (description, e.g., number of different species/varieties affected and where possible change in the abundance of		ITF4	Improvement of biodiversity in agricultural areas.	Regional	Data come from the Land use CENSUS (1998-2005)

		key species)					
Mid term (2007-2013)	221	Reversing biodiversity decline (FBI)	CMEF impact	LT		National	Monitoring of 13 different farmland bird species population.
Ex ante (2007-2013)	221	Composition of tree species	CMEF baseline	LT	The indicator has been modified taking into account soft and hard broadleaves and conifer trees. Maintaining species composition within the natural variability is an important aspect to conserve biodiversity. Furthermore, maintaining species composition typical of the range of natural variation enables the ecosystem to respond and recover from disturbance. A productive and resilient ecosystem is sustainable and is capable of providing the many products and services desired by the public.	National	
Mid term (2007-2013)	221	C sequestration through afforestation		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure
Mid term (2007-2013)	221	Number of Ha of afforestated land	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase of afforestated area in relation to the existing forests		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Share of afforestation in agricultural area		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase in the share of the areas supported by Measures 221 and 223 in relation to the RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Number of beneficiaries receiving afforestation aid	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase in the number of beneficiaries receiving afforestation aid in relation to RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Relationship between the index adjustment of agricultural soils (WWRPP) and the rate of preferential		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation. The Transition index (TI) is the ratio of the share of area under afforestation in individual soil quality classes to	National	Number of beneficiaries, area covered by the measure, qualitative: index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation

		exclusion of soils due to afforestation (TI)			the share of afforestated area in all arable land. It is expected that afforestation is preferentially concentrated on land with low agricultural suitability, therefore TI will be bigger for worse soil quality classes measured by the index of Valorisation of Agricultural Production Space (WWRPP).		(TI).
Mid term (2007-2013)	221	Degree of implementation of the afforestation plan		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase in the number of forest corridors		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Area under successful land management contributing to biodiversity and HNV farming/forestry	result	UK-ENG	Reference to 'ecological functions' of forests including the prevention of forest fires, but without reporting on concrete biodiversity-related impact indicators.	Scales range from the forest to the English national.	Result indicator for biodiversity and High Nature Value Forest, indirect and secondary literature (Quine & Watts, 2007), countryside surveys on biodiversity.
Mid term (2007-2013)	221	Number of Ha of afforestated land	CMEF output	UKM		Farm level	Measure specific survey of Rural Priority and Land Manager's Options beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data.
On going and mid-term (2007-2013)	223	Increased areas of forests	CMEF input/output	BG		National, regional	Financial parameters of the proposals/contracts. Number of beneficiaries receiving afforestration aid, number of hectares of afforested land. Survey from beneficiaries.
Mid term (2007-2013)	223	Composition of tree species	Evaluators	LV	Mixed forests provide higher biodiversity.	National	Reported information to the Management information
Mid term (2007-2013)	223	Reversing biodiversity decline (FBI)	CMEF impact	LT		National	Monitoring of 13 different farmland bird species population.
Ex ante (2007-2013)	223	Composition of tree species	CMEF baseline	LT	The indicator has been modified taking into account soft and hard broadleaves and conifer trees. Maintaining species composition within the natural variability is an important aspect to conserve biodiversity. Furthermore, maintaining species composition typical of the range of natural variation enables the ecosystem to respond and recover from disturbance. A productive and resilient ecosystem is	National	

					sustainable and is capable of providing the many products and services desired by the public.		
Mid term (2007-2013)	223	C sequestration through afforestation		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure
Mid term (2007-2013)	223	Number of Ha of afforestated land	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase of afforestated area in relation to the existing forests		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Share of afforestation in agricultural area		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase in the share of the areas supported by Measures 221 and 223 in relation to the RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Number of beneficiaries receiving afforestation aid	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase in the number of beneficiaries receiving afforestation aid in relation to RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Relationship between the index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI)		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation. The Transition index (TI) is the ratio of the share of area under afforestation in individual soil quality classes to the share of afforestated area in all arable land. It is expected that afforestation is preferentially concentrated on land with low agricultural suitability, therefore TI will be bigger for worse soil quality classes measured by the index of Valorisation of Agricultural Production Space (WWRPP).	National	Number of beneficiaries, area covered by the measure, qualitative: index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI).
Mid term (2007-2013)	223	Degree of implementation of the afforestation plan		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase in the number of forest corridors		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term	223 Forest	Achievement of	Evaluators	ES61	The calculation of the area under biodiversity	Action	Financial uptake and targeted area.

(2007-2013)	measures aiming at increasing afforestation and forest maintenance	environmental objective: Biodiversity conservation = Area to be contributing to biodiversity conservation in the specific action of 223 (ha) X % financial uptake for this action within the measures			conservation measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.		
Mid term (2007-2013)	223	Number of Ha of afforestated land	CMEF output	UKM		Farm level	Measure specific survey of Rural Priority and Land Manager's Options beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data.
Mid term (2007-2013)	224	Conservation status of forest habitat types and forest species in Natura 2000 areas	Evaluators	EE	The definition of the conservation status is taken from Habitats Directive. The conclusion of evaluators is that since such monitoring data is very uneven, the monitoring of the achievement of these objectives is difficult. For example, for some species there is a 30-year time series, but other species have 3–5 years time series data. Consequently, additional indicator should be proposed.		
Mid term (2007-2013)	224	Impacts on breeding birds in different habitats		DE1			Qualitative assessment is based on participant survey, expert interviews and literature review.
Mid term (2007-2013)	224	Reversing biodiversity decline (FBI)	CMEF impact	LT		National	Monitoring of 13 different farmland bird species population.
Ex ante (2007-2013)	224	Composition of tree species	CMEF baseline	LT	The indicator has been modified taking into account soft and hard broadleaves and conifer trees. Maintaining species composition within the natural variability is an important aspect to conserve biodiversity. Furthermore, maintaining species composition typical of the range of natural variation enables the ecosystem to respond and recover from disturbance. A productive and resilient ecosystem is sustainable and is capable of providing the many products and services desired by the public.	National	
Mid term (2007-2013)	225	Reversing biodiversity decline (FBI)	CMEF impact	LT		National	Monitoring of 13 different farmland bird species population.

Ex ante (2007-2013)	225	Composition of tree species	CMEF baseline	LT	The indicator has been modified taking into account soft and hard broadleaves and conifer trees. Maintaining species composition within the natural variability is an important aspect to conserve biodiversity. Furthermore, maintaining species composition typical of the range of natural variation enables the ecosystem to respond and recover from disturbance. A productive and resilient ecosystem is sustainable and is capable of providing the many products and services desired by the public.	National	
Mid term (2007-2013)	225	Forest area under forest-environment support	CMEF output	UKM		Farm level	Measure specific survey of Rural Priority and Land Manager's Options beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data.
Ex ante (20007-2013)	226	Prevention of potential loss of biodiversity (number of population of farmland birds)		BG	The indicator indirectly measures the impact on biodiversity wildlife.	National	Extrapolation of expected outputs/results from pre-accession funds (SAPARD and PHARE), historical data series 2000-2006.
Mid term (2007-2013)	226 Forest measures aiming at increasing afforestation and forest maintenance	Achievement of environmental objective: Biodiversity conservation = Area to be contributing to biodiversity conservation in the specific action of 226 (ha) X % financial uptake for this action within the measures	Evaluators	ES61	The calculation of the area under biodiversity conservation measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area.
Mid term (2007-2013)	227 Forest measures aiming at increasing afforestation and forest maintenance	Achievement of environmental objective: Biodiversity conservation = Area to be contributing to biodiversity conservation in the specific sub-measure of 227 (ha) X % financial uptake for this action within the measures	Evaluators	ES61	The calculation of the area under biodiversity conservation measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area.
Mid term	227 Flora	Achievement of	Evaluators	ES61	The calculation of the area under biodiversity	Sub-	Financial uptake, targeted area.

(2007-2013)	and fauna conservation activities	environmental objective: Biodiversity conservation = Area to be contributing to biodiversity conservation in the specific sub-measure of 227 (ha) X % financial uptake for this action within the measures			conservation measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	measure	
Mid term (2007-2013)	227	Number of supported forest holders	CMEF output	UKM		Farm level	Measure specific survey of Rural Priority and Land Manager's Options beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data.
Mid term (2007-2013)	311	Influence to endangered species		FI	Assessment about the influence of measure on endangered species.	Nuts 1	Expert assessment, combined data produced by Information Centre of the Ministry of Agriculture and Forestry.
Mid term (2007-2013)	312	Influence to endangered species		FI	Assessment about the influence of measure on endangered species.	Nuts 1	Expert assessment, combined data produced by Information Centre of the Ministry of Agriculture and Forestry.
Mid term (2007-2013)	313	Influence to endangered species		FI	Assessment about the influence of measure on endangered species.	Nuts 1	Expert assessment, combined data produced by Information Centre of the Ministry of Agriculture and Forestry.
Mid term (2007-2013)	321	Influence to endangered species		FI	Assessment about the influence of measure on endangered species.	Nuts 1	Expert assessment, combined data produced by Information Centre of the Ministry of Agriculture and Forestry.
Mid term (2007-2013)	322	Influence to endangered species		FI	Assessment about the influence of measure on endangered species.	Nuts 1	Expert assessment, combined data produced by Information Centre of the Ministry of Agriculture and Forestry.
Mid term (2007-2013)	323	Influence to endangered species		FI	Assessment about the influence of measure on endangered species.	Nuts 1	Expert assessment, combined data produced by Information Centre of the Ministry of Agriculture and Forestry.
Mid term (2007-2013)	323	Created natural areas (ha)	CMEF output	NL		National	Interviews results on the basis of EU evaluation questions
Mid term (2007-2013)	323	Ecological network connections (km)	CMEF output	NL		National	Interviews results on the basis of EU evaluation questions
Mid term	Programme	Reversing biodiversity decline	CMEF	DE1	The use of farmland bird indicators as a (sole)	Regional	FBI data, monitoring took place on 104 samples

(2007-2013)	level	(FBI)	impact		biodiversity indicator is based on the concept of umbrella species. Indicator was only used to report regional trend.	(Federal State)	in 2008
Thematic module report for the Ex post (2007-2013)	Programme level	Reversing biodiversity decline (FBI)	CMEF impact	DE9	The report refers to a study from Vetter and Storch (2009), which showed that the umbrella function was effective for 50% of the examined farmland bird species while one third showed a negative result. Overall, the report concludes the farmland birds respond to changes in agricultural land management, but the umbrella effect on other species and habitats requires further examinations. Structural changes in agriculture and changes in land management practices affect the suitability of the habitats for birds, e.g. field margins as breeding habitat for birds, which is reflected in a decline of the FBI. RDP measures such as creation of field margins improve the suitability of the habitat for birds.	Regional, programme	FBI data, IACS and payment data
SEA	Programme level	Maintaining natural spaces - adherence to the objectives in Natura 2000 sites	Additional	FR		Programme level(PDRH)	National agriculture Agency (PDRH)
SEA	Programme level	Maintaining biodiversity species -% UAA extensive grassland	Additional	FR		Programme level(PDRH)	National agriculture Agency (PDRH)
SEA	Programme level	Evolution of the population of 23 species of birds selected for their characteristics related to the environment of the agricultural areas of Europe.	IRENA	ITF4	The biodiversity abundance and diversity of selected birds species.	Regional	The data on biodiversity were assessed by the surveys of the regional flora and fauna.
SEA	Programme level	Percentage of Natura 2000 sites covered by Natura 2000 habitats that depend on the existence extensive agriculture	IRENA	ITF4	The biodiversity abundance and diversity of birds species in the site NATURA 2000.	Regional	The data on biodiversity were assessed by the surveys of the regional flora and fauna.
SEA	Programme level	Number and consistency of local breeds poultry animals in agriculture	ARPAV (Regional Environmental	ITH3		Regional	

			Protection Agency)				
SEA	Programme level	Functionality of the ecological network	ARPAV (Regional Environmental Protection Agency)	ITH3		Regional	

Table A3 List of indicators for Biodiversity –HNV

Evaluation document	Measure/ Programme	Indicator	Type-origin of indicator	Member state/ origin	Causal chain	Level	Data
On going and mid term (2007-2013)	111	Number of participants in training	CMEF output	BG	The indicator indirectly measures the impact on biodiversity-HNV. The training curriculum for livestock breeding includes modules dedicated to biodiversity-HNV and examples of best practices. This could help the farmers later to take advantages of this knowledge, to implement and face the requirements of the EU regarding biodiversity-HNV. According to the survey results (survey is conducted within the MTE) more than 70 % of beneficiaries under the RDP have no specific agricultural education and training. Farmers who completed training will be aware of the requirements of the EU.	National, regional	Number of participants, survey results
On going and mid term (2007-2013)	111	Number of training days received	CMEF output	BG	The indicator indirectly measures the impact on biodiversity-HNV. The training curriculum for livestock breeding includes modules dedicated to biodiversity-HNV and examples of best practices. This could help the farmers later to take advantages of this knowledge, to implement and face the requirements of the EU regarding biodiversity-HNV. According to the survey results (survey is conducted within the MTE) more than 70 % of beneficiaries under the RDP have no specific agricultural education and training. Farmers who completed training will be aware of the requirements of the EU.	National, regional	Number of training days, survey results
Mid term (2007-2013)	111	Number of participants that successfully ended a training activity	CMEF result	NL	Impact assessment is based on evaluation question. The activities under this measure are focused on raising awareness relevant to the public good. However the assessment of the impact does only consider the more broad relevance to contributing to sustainable land management.		Interviews, surveys

Mid term (2007-2013) - Annual report from realisation RDP 2007-2013, MARD	111	Number of trainings on sustainable land management and sustainable land management of natural resources	According to CMEF output	PL	The aim of the measure is to diffuse scientific knowledge and innovative practises in the agricultural and forestry sector. Indirect impact.	National	Number of beneficiaries, amount of payments realised.
On going and mid term (2007-2013)	114	Number of farmers who use advisory services	CMEF output	BG		National, regional	Number of farmers who use advisory services. Survey results.
Mid term (2007-2013) - Annual report from realisation RDP 2007-2013	114	Number of farmers who use advisory services	CMEF output	PL	Indirect impact on sustainable management practices and sustainable management of natural resources.	National	Number of farmers who use advisory services on sustainable land management and sustainable management of natural resources, amount of payments realised.
On going and mid-term (2007-2013)	121	Level of improvement of the overall performance of the agricultural holdings (competitiveness, sustainability and protection of environment)	CMEF output	BG	One of the objectives of the measure is to improve the environmental protection. From the survey, conducted during the MTE with 279 beneficiaries, 30 % of them reported that investments are indirectly related to the protection of biodiversity.	National	Number of holdings supported and number of holdings in livestock breeding, number of farms meeting the requirements of the nitrate Directive 91/676/EEC were used as additional indicators. Survey results.
Mid term (2007-2013)	122	Maintenance of HNV farmland and forestry : Changes in high nature value areas	CMEF impact	LT	Three different types of HNV areas are defined: agricultural areas with natural HNV meadows- extensively managed agricultural areas with natural or semi-natural areas distinguished by high landscape heterogeneity - agricultural areas for preservation of international important species or habitats, parts of international networks (Andersen et al., 2003). During evaluation period (2007-2009) only second and third group of HNV areas were eligible for support.	National	Declaration data (Ha of agricultural area)
Mid term (2007-2013)	123	Number of beneficiaries	CMEF output	PL		Regional	Number of beneficiaries, area covered by the measure, amount of payment

							realised.
Mid term (2007-2013)	123	Total value of investment	CMEF output	PL		Regional	Number of beneficiaries, area covered by the measure, amount of payment realised.
Mid term (2007-2013)	123	Number of enterprises introducing new technologies and innovations	CMEF result	PL		Regional	Number of beneficiaries, area covered by the measure, amount of payment realised.
Mid term (2007-2013)	123	Number of beneficiaries - enterprises processing plant materials into products used for energy purposes	According to CMEF output	PL		Regional	Number of beneficiaries, area covered by the measure, amount of payment realised.
On going and mid-term (2007-2013)	141	Number of semi-subsistence farm holdings which entered the market and meet the obligatory Community standards related to veterinary and phyto-sanitary requirements, animal welfare, environmental protection, hygiene and occupational health and safety		BG		National, regional	Monitoring data. Survey data.
Ex ante (2007-2013)	211	Prevention of potential loss of biodiversity-Maintenance of land with HNV (improved nature value of land)-Changes in the scope of land with HNV		BG	The indicator indirectly measures the impact on biodiversity-HNV.	National	Extrapolation of expected outputs/results from pre-accession funds (SAPARD and PHARE), historical data series 2000 –2006.
Mid term (2007-2013)	211	UAA classified as high nature value area (area in million hectares)	CMEF baseline	FR	Biodiversity abundance and diversity of bird species.	Programme (PDRH) and regional	
Ex ante (2007-2013)	211	Maintenance of HNV farmland and forestry- (UAA classified as HNV (area in million hectares)	CMEF baseline	FR	The environmental protection of the buffer zones contributes to the increase in biodiversity species.	Programme (PDRH) and regional	
Mid term (2007-2013)	211	Inputs in LFAs: Change in fertiliser and pesticide use in LFAs	Evaluators	EL	The low-intensity agricultural activities which are used in LFAs enhance local ecosystem resources. The low input farming systems directly affect some plant species and indirectly other species, such as bird species when their diet includes seeds and invertebrates.	Farm level integrated at the LFA level	Fertiliser and pesticide costs per unit of area (farm level).

Mid term (2007-2013)	211	Maintenance of HNV farming and forestry areas: Changes in the extent of areas under successful land management contributing to improvement of biodiversity	According to CMEF impact	EL	This is a baseline indicator of HNV areas, taking into account areas under successful land management contributing to improvement of biodiversity. The presence of natural habitats and the distribution of wildlife species populations that exist in farmland and forest can characterise these areas as HNV.	National, all agricultural land under successful land management contributing to improvement of biodiversity.	Maps and statistical data of agricultural land where measures are implemented for successful land management contributing to improvement of biodiversity. The monitoring data concern: Corine Land Cover Classification for y2000, biodiversity data, IBAs of Greece, distribution of bear, wolf and bird of prey populations, SCI and habitat mapping of Greek Natura 2000 network, data from environmental protected areas, data gathered by NVZs, data from agricultural census for y2000, olive fields' cadastre, expert surveys.
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010-Annual report from realisation RDP 2007-2013-Annual report from realisation RDP 2004-2006-Case study (2010)	211	Number of beneficiaries receiving LFA payments	CMEF output	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Number of beneficiaries, amount of payment realised.

Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010-Annual report from realisation RDP 2007-2013-Annual report from realisation RDP 2004-2006-Case study (2010)	211	Supported agricultural land	CMEF output	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Number of beneficiaries, amount of payment realised.
Mid term (2007-2013)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010	211	Patch Density Index (PDI)		PL	This measure has a significant impact on biodiversity and high nature value farming areas.	National	Number of complex with mosaic UAA, forest on areas covered by measure
Mid term (2007-2013)-Ex post (2004-2006)-Report	211	FBI	CMEF impact	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems. FBI closer to 1 indicates that agricultural areas are better environment for wild birds.	National	Number of beneficiaries, amount of payment realised, qualitative data of FBI

product index, result index and impact for axis 2 RDP 2007-2013, 2010							
Ex post (2004-2006)	211	Share of land abandonment in LFAs		PL		National	Share of land abandonment in LFAs
Ex post (2004-2006)	211	Share of grain in arable land		PL		National	Share of grain in arable land
Ex ante (2007-2013)	212	Prevention of potential loss of biodiversity-Maintenance of land with HNV (improved nature value of land)-Changes in the scope of land with HNV		BG	The indicator indirectly measures the impact on biodiversity-HNV.	National	Extrapolation of expected outputs/results from pre-accession funds (SAPARD and PHARE), historical data series 2000 –2006.
Mid term (2007-2013)	212	Maintenance of HNV farmland and forestry: Changes in high nature value areas	CMEF impact	EE	In Estonia, the agricultural areas with high nature value are primarily semi-natural habitats in LFAs.	National	
Mid term (2007-2013)	212	Inputs in LFAs: Change in fertiliser and pesticide use in LFAs	Evaluators	EL	The low-intensity agricultural activities which are used in LFAs enhance local ecosystem resources. The low input farming systems directly affect some plant species and indirectly other species, such as bird species when their diet includes seeds and invertebrates.	Farm level integrated at the LFA level	Fertiliser and pesticide costs per unit of area (farm level).
Mid term (2007-2013)	212	Maintenance of HNV farming and forestry areas: Changes in the extent of areas under successful land management contributing to improvement of biodiversity	According to CMEF impact	EL	This is a baseline indicator of HNV areas, taking into account areas under successful land management contributing to improvement of biodiversity. The presence of natural habitats and the distribution of wildlife species populations that exist in farmland and forest can characterise these areas as HNV.	National, all agricultural land under successful land management contributing to improvement of biodiversity.	Maps and statistical data of agricultural land where measures are implemented for successful land management contributing to improvement of biodiversity. The monitoring data concern: Corine Land Cover Classification for y2000, biodiversity data, IBAs of Greece, distribution of bear, wolf and bird of prey populations, SCI and habitat mapping of Greek Natura 2000 network, data from environmental protected areas, data

							gathered by NVZs, data from agricultural census for y2000, olive fields' cadastre, expert surveys.
Mid term (2007-2013)	212	Maintenance of HNV farmland and forestry : Changes in high nature value areas	CMEF impact	LT	Three different types of HNVs are defined: - agricultural areas with natural HNV meadows - extensively managed agricultural areas with natural or semi-natural areas distinguished by high landscape heterogeneity - agricultural areas for preservation of international important species or habitats, parts of international networks (Andersen et al., 2003). During evaluation period (2007-2009) only second and third group of HNV were eligible for support.	National	Declaration data (Ha of agricultural area)
Mid term (2007-2013)	212	Supported agricultural land	CMEF output	NL	Assessment is based on evaluation question. The survey among beneficiaries is used to estimate the RPD's contribution to the maintenance and improvement of sustainable agricultural systems.		Survey among beneficiaries, number of management contracts (output) and area of maintained landscape (results).
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010-Annual report from realisation RDP 2007-2013-Annual report from realisation RDP 2004-2006-Case	212	Number of beneficiaries receiving LFA payments	CMEF output	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Number of beneficiaries, amount of payment realised.

study (2010)							
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010-Annual report from realisation RDP 2007-2013-Annual report from realisation RDP 2004-2006-Case study (2010)	212	Supported agricultural land	CMEF output	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Number of beneficiaries, amount of payment realised.
Mid term (2007-2013)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010	212	Patch Density Index (PDI)		PL	This measure has a significant impact on biodiversity and high nature value farming areas.	National	Number of complex with mosaic UAA, forest on areas covered by measure
Mid term (2007-2013)-Ex post (2004-2006)-	212	FBI	CMEF impact	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems. FBI closer to 1 indicates that agricultural areas are better environment for wild birds.	National	Number of beneficiaries, amount of payment realised, qualitative data of FBI

Report product index, result index and impact for axis 2 RDP 2007-2013, 2010							
Ex post (2004-2006)	212	Share of land abandonment in LFAs		PL		National	Share of land abandonment in LFAs
Ex post (2004-2006)	212	Share of grain in arable land		PL		National	Share of grain in arable land
Mid term (2007-2013)	212	Change in trends in biodiversity decline measured by farmland species population	CMEF (impact)-literature review	UK-ENG	Reference to the CMEF and related baseline indicators on farmland birds and tree species composition is provided, in a very generic and qualitative way. Some reference is made to the advantages of novel agricultural management of hay meadows, pastures, allotments/intakes and moorland to enhance biodiversity.	Landscape	Outputs and results derived from secondary literature review and questionnaires.
Mid term (2007-2013)	213	Maintenance of HNV farmland and forestry: Changes in high nature value areas	CMEF impact	EE	The measure contributes to the continued use of agricultural activities with positive impact on biological diversity as a result of compliance with the environmental requirements.		Changes in HNV areas
Mid term (2007-2013)	213	Maintenance of HNV farming and forestry areas: Changes in the extent of areas under successful land management contributing to improvement of biodiversity	According to CMEF impact	EL	This is a baseline indicator of HNV areas, taking into account areas under successful land management contributing to improvement of biodiversity. The presence of natural habitats and the distribution of wildlife species populations that exist in farmland and forest can characterise these areas as HNV.	National, all agricultural land under successful land management contributing to improvement of biodiversity.	Maps and statistical data of agricultural land where measures are implemented for successful land management contributing to improvement of biodiversity. The monitoring data concern: Corine Land Cover Classification for y2000, biodiversity data, IBAs of Greece, distribution of bear, wolf and bird of prey populations, SCI and habitat mapping of Greek Natura 2000 network, data from environmental protected areas, data gathered by NVZs, data from

							agricultural census for y2000, olive fields' cadastre, expert surveys.
Mid term (2007-2013)	213	Maintenance of HNV farmland and forestry: Changes in high nature value areas	CMEF impact	LV	Natura 2000 sites are designated to protect high nature value land areas. Therefore maintaining meadows and grasslands in NATURA 2000 areas is considered as maintaining high nature value areas.	Measure	Data from the National Management Authority (supported area)
Mid term (2007-2013)	213	Maintenance of HNV farmland and forestry Changes in high nature value areas	CMEF impact	LT	Three different types of HNVs are defined: - agricultural areas with natural HNV meadows - extensively managed agricultural areas with natural or semi-natural areas distinguished by high landscape heterogeneity - agricultural areas for preservation of international important species or habitats, parts of international networks (Andersen et al., 2003). During evaluation period (2007-2009) only second and third group of HNV were eligible for support.	National	Declaration data (Ha of agricultural area)
On going mid term (2007-2013)	214	Level of impact of the agri-environment payments on maintaining or improving habitats and biodiversity	CMEF	BG	The indicator indirectly measures the impact of the measure on biodiversity HNV.	National, regional	Number of farm holdings and the receiving support, total area under agri-environmental support (ha), total number of contracts, physical area under agri-environmental support (ha), number of actions related to genetic resources. Survey results.
Mid term (2007-2013)	214: Support for environmentally friendly management, Support for the maintenace of semi-natural habitats	Maintenance of HNV farmland and forestry: Changes in high nature value areas	CMEF impact	EE	Rural and forest areas of HNV currently supported are semi-natural habitats in Natura 2000 areas. Although there is valuable agriculture of HNV also outside Natura 2000 areas and semi-natural habitats (e.g. mosaic landscapes).		Changes in HNV areas
Ex post (2000-2006)	214 (MEKA)	HNV farmland habitats that have been protected by supported actions (number of sites/agreements; total hectares, average -of which resulting from specific land-uses or traditional	EC	DE1	Many agricultural habitats managed through extensive and traditional farming systems are classified as HNV farm land. The maintenance or introduction of extensive and traditional farming systems contributes to the protection of HNV habitats.	Regional (Federal State)	IACS annual data. Quantification of habitat changes over the programme period.

		farming systems (%) -of which resulting from prevention of encroachment (colonisation by scrub, etc) or abandonment (%)-of which located in Natura 2000 areas (%) -of which habitats that in particular benefit specific species or groups of species (%)-of which considered rare habitats at the relevant geographical level (%) size)					
Mid term (2007-2013) -Ex post (2000-2006)	214	Proportion of eligible farms accepting payments in compensation for environmental constraints. (HNV) PDRN	Programme (PDRN) indicator	FR	There is a casual chain between the indicator and the programme due to payment given for the protection of the HNV areas.	Programme (PDRN) and regional	Data from National agriculture Agency (PDRN)
On going mid term (2007-2013)	214	Maintenance of HNV farmland and forestry (evolution of HVN land farming and forestry	CMEF impact	FR		Programme (PDRH) and regional	
Ex ante (2007-2013)	214	Maintenance of high nature value areas and woodlands-Variety of species of forests and woodlands	CMEF baseline	FR	The environmental protection of the buffer zones contributes to the increase in biodiversity species.	Programme (PDRH) and regional	
Mid term (2000-2006)	214	Proportion of the UAA subject to environmental constraints for farmers to receive payments PDRN	Programme (PDRN) indicator	FR	There is a casual chain between the indicator and the programme due to payment given for the protection of the HNV areas.	Programme (PDRN) and regional	Data from National agriculture Agency (PDRN)
Mid term (2007-2013)	214	Maintenance of HNV farming and forestry areas: Changes in the extent of areas under successful land management contributing to improvement of biodiversity	According to CMEF impact	EL	This is a baseline indicator of HNV areas, taking into account areas under successful land management contributing to improvement of biodiversity. The presence of natural habitats and the distribution of wildlife species populations that exist in farmland and forest can characterise these areas as HNV.	National, all agricultural land under successful land management contributing to improvement of	Maps and statistical data of agricultural land where measures are implemented for successful land management contributing to improvement of biodiversity. The monitoring data concern: Corine Land Cover Classification for y2000, biodiversity data, IBAs of Greece, distribution of bear, wolf and bird of prey populations, SCI and habitat mapping of Greek

						biodiversity.	Natura 2000 network, data from environmental protected areas, data gathered by NVZs, data from agricultural census for y2000, olive fields' cadastre, expert surveys.
On going mid term (2007-2013)	214	Conservation of biodiversity and HNV farmland habitats	CMEF impact	ITH5	HNV areas are important areas for the conservation of the biodiversity. This aspect is really important when the impact of the measure 'agri-environmental payments' is evaluated.	Regional	Database measurements of the RDP, regional land use map "farmers data"
Mid term (2007-2013)	214	Maintenance of HNV farmland and forestry	CMEF impact	ITF4		Regional	Database measurements of the RDP, regional land use map, FADN data
Ex post (2000-2006)	214	HNV farmland habitats that have been protected by supported actions (number of sites/agreements; total hectares, average -of which located in Natura 2000 areas (%) -of which habitats that in particular benefit specific species or groups of species (%) -of which considered rare habitats at the relevant geographical level (%) size)	EC	ITF4	The impact indicator is proposed as an assessment indicator of measures aimed at the maintenance of biodiversity. One of the characteristics of HNV areas is the prevalence of low intensity farming systems, these areas tend to coincide with those less productive and marginal areas, in which agriculture practices are extensive.	Regional	Regional data based on IACS (2005), regional technical maps, Corine Land Cover, maps of the extent of agricultural land under measure 214, Network of Threatened Species in GRID format for the regional distribution of threatened species prepared by the Project 'National Ecological Network' (REN) by the Ministry of the Environment.
Ex post (2000-2006)	214	Ecological infrastructure object of engagement with habitat function or plots of land not cultivated linked to agriculture (hectares and / or kilometers and / or number of sites / commitments) of which enhancing existing high nature-value habitats by alleviating their fragmentation (%)	EC	ITF4	The impact indicator is proposed as an assessment indicator of measures aimed at the maintenance of biodiversity. One of the characteristics of HNV areas is the prevalence of low intensity farming systems, these areas tend to coincide with those less productive and marginal areas, in which agriculture practices are extensive.	Regional	Regional data based on IACS (2005), regional technical maps, Corine Land Cover, maps of the extent of agricultural land under measure 214, Network of Threatened Species in GRID format for the regional distribution of threatened species prepared by the Project 'National Ecological Network' (REN) by the Ministry of the Environment.
Ex post (2000-2006)	214	Important natural habitats in agricultural areas that have been protected thanks to the shares subject to commitment (number	EC	ITF4	These areas tend to coincide with less productive and marginal areas, in which practices are extensive	Regional	Regional data based on National Integrated Administration and Control System (IACS) (year 2005). Regional technical maps. Maps of the extent of

		of sites / commitments, total area in hectares, average size) (c) where located in Natura 2000 areas (%)					agricultural land under measure
Mid term (2007-2013)	214	Reversing biodiversity decline	CMEF impact	ITH3	Biodiversity abundance and diversity of bird species. In the definition of the indicator says that it represents change quantity and quality of populations of bird species in areas requiring intervention. It is shown that, at the time, the FBI is the indicator of current trends relevant to the state of biodiversity, the best time-series data and geographical distribution.	Regional	MITO2000 (Monitoraggio Italiano Ornitologico, Fornasari et al. 2004), Italian date base on PECBMS
Mid term (2007-2013)	214	Agricultural areas with high natural value (HNV farmland)	CMEF	ITH3	HNV are important areas for the conservation of the biodiversity.	Regional	Database measurements of the RDP, regional land use map, FADN data
Ex post (2000-2006)	214 Integrated farming, Organic agriculture, Conservation and recovery of meadows and pastures of the hills and mountain	HNV farmland habitats that have been protected by supported actions (number of sites/agreements; total hectares, average -of which habitats that in particular benefit specific species or groups of species (%) -of which considered rare habitats at the relevant geographical level (%) size)	EC	ITH3	The impact indicator is proposed as an assessment indicator of measures aimed at the maintenance of biodiversity. One of the characteristics of HNV areas is the prevalence of low intensity farming systems, these areas tend to coincide with those less productive and marginal areas, in which agriculture practices are extensive.	Regional	Regional data based on IACS (2005), regional technical maps, Corine Land Cover, maps of the extent of agricultural land under measure 214, Network of Threatened Species in GRID format for the regional distribution of threatened species prepared by the Project 'National Ecological Network' (REN) by the Ministry of the Environment.
Ex post (2000-2006)	214 Restoration and conservation of wetlands biotypes	Assisted ecological infrastructure with habitat function or non-farmed patches of land linked to agriculture (hectares and/or kilometres and/or number of sites/agreements) of which enhancing existing high nature-value habitats by alleviating their fragmentation (%)	EC	ITH3	These areas tend to coincide with those less productive and marginal areas, in which practices are extensive.	Regional	Regional data based on National, IACS data,(year 2005), regional technical maps, maps of the extent of agricultural land under measure
Ex post (2000-2006)	214 Restoration and conservation of wetlands	Area of buffer zones designed to protect wetlands / aquatic habitats	EC	ITH3	The indicator of CMEF modified. The environmental protection of the buffer zones contributes to the increase in biodiversity species.	Regional	Regional data based on National, IACS data,(year 2005), regional technical maps, maps of the extent of agricultural land under measure

	biotypes						
Mid term (2007-2013)	214 Maintenance of biodiversity in grasslands	Maintenance of HNV farmland and forestry: Changes in high nature value land area	CMEF impact	LV	Biological valuable grasslands are considered as high nature value areas for biodiversity.	Measure	Data from the National Management Authority (supported area)
Mid term (2007-2013)	214	Maintenance of HNV farmland and forestry : Changes in high nature value areas	CMEF impact	LT	Three different types of HNVs are defined:- agricultural areas with natural HNV meadows- extensively managed agricultural areas with natural or semi-natural areas distinguished by high landscape heterogeneity - agricultural areas for preservation of international important species or habitats, parts of international networks (Andersen et al., 2003). During evaluation period (2007-2009) only second and third group of HNV were eligible for support.	National	Declaration data (Ha of agricultural area)
Mid term (2007-2013)	214	FBI	CMEF impact	PL		National	FBI data (qualitative)
Mid term (2007-2013)	214	Patch Density Index (PDI)		PL		National	Number of complex with mosaic UAA, forest on areas covered by measure (qualitative)
Mid term (2007-2013)	214	Share of permanent grassland in UAA		PL		National	Share of permanent grassland in UAA (qualitative)
Mid term (2007-2013)	214	Share of grain in arable land		PL		National	Share of grain in arable land (qualitative)
Mid term (2007-2013)	214	Reversing biodiversity decline (FBI)	CMEF (impact)- literature review	UK-ENG	Reference to secondary indicators is extensively performed with adaptation to different farmland systems/ecosystems being made, including lowland grasslands, arable land, moorland and boundaries and margins, trees and woodland, wetland and coastal). Natural England report of agri-environment schemes in England (2009).	Regional and national, depending on secondary data availability	FBI (indirectly), output targets (number of farm holdings, total area under support, physical area under support and total number of contracts), result indicator (area of land contributing to maintaining and improving biodiversity).
Mid term (2007-2013)	216	Maintenance of HNV farming and forestry areas: Changes in the extent of areas under successful land management contributing to improvement of biodiversity	According to CMEF impact	EL	This is a baseline indicator of HNV areas, taking into account areas under successful land management contributing to improvement of biodiversity. The presence of natural habitats and the distribution of wildlife species populations that exist in farmland and forest can characterise these areas as HNV.	National, all agricultural land under successful land management	Maps and statistical data of agricultural land where measures are implemented for successful land management contributing to improvement of biodiversity. The monitoring data concern: Corine Land Cover

						contributing to improvement of biodiversity.	Classification for y2000, biodiversity data, IBAs of Greece, distribution of bear, wolf and bird of prey populations, SCI and habitat mapping of Greek Natura 2000 network, data from environmental protected areas, data gathered by NVZs, data from agricultural census for y2000, olive fields' cadastre, expert surveys.
Mid term (2007-2013)	216	Area under successful land management contributing to improvement of biodiversity	CMEF result	NL	Qualitative assessment based on evaluation questions.		Survey of beneficiaries and interviews with statutory bodies.
Mid term (2007-2013	216	Reversing biodiversity decline (FBI)	CMEF (impact)-literature review	UK-ENG	Measure is jointly reported with AEMs, including further detail to amenity values of biodiversity related to the effects of Natura 2000.	Regional and national, depending on secondary data availability	FBI (indirectly), output targets (number of farm holdings, total area under support, physical area under support and total number of contracts), result indicator (area of land contributing to maintaining and improving biodiversity).
Mid term (2007-2013	216	Volume investment	CMEF output	UKM		Farm level	Measure specific survey of beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data.
Mid term (2007-2013)	221	Maintenance of HNV farming and forestry areas: Changes in the extent of areas under successful land management contributing to improvement of biodiversity	According to CMEF impact	EL	This is a baseline indicator of HNV areas, taking into account areas under successful land management contributing to improvement of biodiversity. The presence of natural habitats and the distribution of wildlife species populations that exist in farmland and forest can characterise these areas as HNV.	National, all agricultural land under successful land management contributing to improvement of biodiversity.	Maps and statistical data of agricultural land where measures are implemented for successful land management contributing to improvement of biodiversity. The monitoring data concern: Corine Land Cover Classification for y2000, biodiversity data, IBAs of Greece, distribution of bear, wolf and bird of prey populations, SCI and habitat mapping of Greek Natura 2000 network, data from environmental protected areas, data gathered by NVZs, data from

							agricultural census for y2000, olive fields' cadastre, expert surveys.
Mid term (2007-2013)	221	Maintenance of HNV farmland and forestry: Changes in high nature value areas	CMEF impact	LT	Three different types of HNVs are defined:- agricultural areas with natural HNV meadows- extensively managed agricultural areas with natural or semi-natural areas distinguished by high landscape heterogeneity - agricultural areas for preservation of international important species or habitats, parts of international networks (Andersen et al., 2003). During evaluation period (2007-2009) only second and third group of HNV were eligible for support.	National	Declaration data (Ha of agricultural area)
Mid term (2007-2013	221	Ha of afforested land	CMEF output	NL	The objective of the measure has been modified from prevention of natural disasters to contribution to the ecological value of forests. Leading to an assessment of the contribution of afforestation to the maintenance and development of ecological value/quality.		Beneficiaries' survey and interview with experts to analyse the management agreements.
Mid term (2007-2013)	221	C sequestration through afforestation		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure
Mid term (2007-2013)	221	Number of Ha of afforestated land	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase of afforestated area in relation to the existing forests		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Share of afforestation in agricultural area		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase in the share of the areas supported by Measures 221 and 223 in relation to the RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Number of beneficiaries receiving afforestation aid	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase in the number of beneficiaries receiving afforestation aid in relation to RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Relationship between the index adjustment of agricultural soils		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation. The	National	Number of beneficiaries, area covered by the measure, qualitative: index

		(WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI)			Transition index (TI) is the ratio of the share of area under afforestation in individual soil quality classes to the share of afforestated area in all arable land. It is expected that afforestation is preferentially concentrated on land with low agricultural suitability, therefore TI will be bigger for worse soil quality classes measured by the index of Valorisation of Agricultural Production Space (WWRPP).		adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI).
Mid term (2007-2013)	221	Degree of implementation of the afforestation plan		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase in the number of forest corridors		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Area under successful land management contributing to biodiversity and HNV farming/forestry	result	UK-ENG	Reference to 'ecological functions' of forests including the prevention of forest fires, but without reporting on concrete biodiversity-related impact indicators.	Scales range from the forest to the English national.	Result indicator for biodiversity and High Nature Value Forest, indirect and secondary literature (Quine & Watts, 2007), countryside surveys on biodiversity.
Mid term (2007-2013)	221	Number of Ha of afforestated land	CMEF output	UKM		Farm level	Measure specific survey of Rural Priority and Land Manager's Options beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data.
On going and mid-term (2007-2013)	223	Increased areas of forests	CMEF input/output	BG		National, regional	Financial parameters of the proposals/contracts. Number of beneficiaries receiving afforestration aid, number of hectares of afforested land. Survey from beneficiaries.
Mid term (2007-2013)	223	Maintenance of HNV farmland and forestry: Changes in high nature value areas	CMEF impact	LT	Three different types of HNVs are defined:- agricultural areas with natural HNV meadows- extensively managed agricultural areas with natural or semi-natural areas distinguished by high landscape heterogeneity - agricultural areas for preservation of international important species or habitats, parts of international networks (Andersen et al., 2003). During evaluation period (2007-2009) only second and third group of	National	Declaration data (Ha of agricultural area)

					HNV were eligible for support.		
Mid term (2007-2013)	223	C sequestration through afforestation		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure
Mid term (2007-2013)	223	Number of Ha of afforestated land	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase of afforestated area in relation to the existing forests		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Share of afforestation in agricultural area		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase in the share of the areas supported by Measures 221 and 223 in relation to the RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Number of beneficiaries receiving afforestation aid	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase in the number of beneficiaries receiving afforestation aid in relation to RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Relationship between the index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI)		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation. The Transition index (TI) is the ratio of the share of area under afforestation in individual soil quality classes to the share of afforestated area in all arable land. It is expected that afforestation is preferentially concentrated on land with low agricultural suitability, therefore TI will be bigger for worse soil quality classes measured by the index of Valorisation of Agricultural Production Space (WWRPP).	National	Number of beneficiaries, area covered by the measure, qualitative: index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI).
Mid term (2007-2013)	223	Degree of implementation of the afforestation plan		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase in the number of forest corridors		PL	Afforestated area and number of beneficiaries have a significant impact on biodiversity.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Number of Ha of afforestated land	CMEF output	UKM		Farm level	Measure specific survey of Rural Priority and Land Manager's Options beneficiaries, stakeholder consultation

							(including relevant scheme managers), industrial representatives, Scottish Government reporting data.
Mid term (2007-2013)	224	Maintenance of HNV farmland and forestry	CMEF impact	EE	Since forest land of HNV is not defined in the context of the ERDP 2007–2013, evaluator makes a proposal based on a comment from the Ministry of the Environment that forest land of HNV in Estonia should be the forest areas located in Natura 2000 network. With such approach, the measure will help to preserve areas of HNV.		
Mid term (2007-2013)	224	Maintenance of HNV farming and forestry areas: Changes in the extent of areas under successful land management contributing to improvement of biodiversity	According to CMEF impact	EL	This is a baseline indicator of HNV areas, taking into account areas under successful land management contributing to improvement of biodiversity. The presence of natural habitats and the distribution of wildlife species populations that exist in farmland and forest can characterise these areas as HNV.	National, all agricultural land under successful land management contributing to improvement of biodiversity.	Maps and statistical data of agricultural land where measures are implemented for successful land management contributing to improvement of biodiversity. The monitoring data concern: Corine Land Cover Classification for y2000, biodiversity data, IBAs of Greece, distribution of bear, wolf and bird of prey populations, SCI and habitat mapping of Greek Natura 2000 network, data from environmental protected areas, data gathered by NVZs, data from agricultural census for y2000, olive fields' cadastre, expert surveys.
Mid term (2007-2013)	224	Maintenance of HNV farmland and forestry	CMEF impact	LV	The mid-term report states that the impact of measure on biodiversity is low as the measure compensates the foregone income and does not support maintenance or improvement activities.	Measure	Data from the National Management Authority (supported area)
Mid term (2007-2013)	224	Maintenance of HNV farmland and forestry :Changes in high nature value areas	CMEF impact	LT	Three different types of HNVs are defined: - agricultural areas with natural HNV meadows - extensively managed agricultural areas with natural or semi-natural areas distinguished by high landscape heterogeneity - agricultural areas for preservation of international important species or habitats, parts of international networks (Andersen et al., 2003). During evaluation	National	Declaration data (Ha of agricultural area)

					period (2007-2009) only second and third group of HNV were eligible for support.		
Mid term (2007-2013)	225	Maintenance of HNV farmland and forestry :Changes in high nature value areas	CMEF impact	LT	Three different types of HNVs are defined: - agricultural areas with natural HNV meadows - extensively managed agricultural areas with natural or semi-natural areas distinguished by high landscape heterogeneity - agricultural areas for preservation of international important species or habitats, parts of international networks (Andersen et al., 2003). During evaluation period (2007-2009) only second and third group of HNV were eligible for support.	National	Declaration data (Ha of agricultural area)
Mid term (2007-2013	225	Forest area under forest-environment support	CMEF output	UKM		Farm level	Measure specific survey of Rural Priority and Land Manager's Options beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data.
Ex ante (20007-2013)	226	Prevention of potential loss of biodiversity (number of population of farmland birds)		BG	The indicator indirectly measures the impact on biodiversity wildlife.	National	Extrapolation of expected outputs/results from pre-accession funds (SAPARD and PHARE), historical data series 2000-2006.
Mid term (2007-2013	226	Maintenance of agricultural and forest land of high environmental value	CMEF impact	FR		Programme (PDRH) and regional	
Ex ante (2000-2006)	226	Maintenance of HNV farmland and forestry (variety of species of forest and woodland)	CMEF	FR	The environmental protection of the buffer zones contributes to the increase in biodiversity species.	Programme (PDRH) and regional	
Mid term (2007-2013)	226	Maintenance of HNV farming and forestry areas: Changes in the extent of areas under successful land management contributing to improvement of biodiversity	According to CMEF impact	EL	This is a baseline indicator of HNV areas, taking into account areas under successful land management contributing to improvement of biodiversity. The presence of natural habitats and the distribution of wildlife species populations that exist in farmland and forest can characterise these areas as HNV.	National, all agricultural land under successful land management contributing to improvement	Maps and statistical data of agricultural land where measures are implemented for successful land management contributing to improvement of biodiversity. The monitoring data concern: Corine Land Cover Classification for y2000, biodiversity data, IBAs of Greece, distribution of bear, wolf and bird of prey populations,

						of biodiversity.	SCI and habitat mapping of Greek Natura 2000 network, data from environmental protected areas, data gathered by NVZs, data from agricultural census for y2000, olive fields' cadastre, expert surveys.
Mid term (2007-2013	226	Maintenance of HNV farmland and forestry	CMEF impact	LV	The mid-term report identifies the impact on HNV areas, however it is stated that natural afforestation after fires provides higher biodiversity compared to artificial activities.	Measure	Data from the National Management Authority (supported area)
Mid term (2007-2013)	226	Maintenance of HNV farmland and forestry :Changes in high nature value areas	CMEF impact	LT	Three different types of HNVs are defined: - agricultural areas with natural HNV meadows - extensively managed agricultural areas with natural or semi-natural areas distinguished by high landscape heterogeneity - agricultural areas for preservation of international important species or habitats, parts of international networks (Andersen et al., 2003). During evaluation period (2007-2009) only second and third group of HNV were eligible for support.	National	Declaration data (Ha of agricultural area)
Mid term (2007-2013)	227	Maintenance of HNV farming and forestry areas: Changes in the extent of areas under successful land management contributing to improvement of biodiversity	According to CMEF impact	EL	This is a baseline indicator of HNV areas, taking into account areas under successful land management contributing to improvement of biodiversity. The presence of natural habitats and the distribution of wildlife species populations that exist in farmland and forest can characterise these areas as HNV.	National, all agricultural land under successful land management contributing to improvement of biodiversity.	Maps and statistical data of agricultural land where measures are implemented for successful land management contributing to improvement of biodiversity. The monitoring data concern: Corine Land Cover Classification for y2000, biodiversity data, IBAs of Greece, distribution of bear, wolf and bird of prey populations, SCI and habitat mapping of Greek Natura 2000 network, data from environmental protected areas, data gathered by NVZs, data from agricultural census for y2000, olive fields' cadastre, expert surveys.
Mid term (2007-2013)	227	Maintenance of HNV farmland and forestry :Changes in high	CMEF impact	LT	Three different types of HNVs are defined: - agricultural areas with natural HNV meadows - extensively managed	National	Declaration data (Ha of agricultural area)

		nature value areas			agricultural areas with natural or semi-natural areas distinguished by high landscape heterogeneity - agricultural areas for preservation of international important species or habitats, parts of international networks (Andersen et al., 2003). During evaluation period (2007-2009) only second and third group of HNV were eligible for support.		
Mid term (2007-2013)	323	Created natural areas (ha)	Output	NL		National	Monitoring data, questionnaires or interviews.
Mid term (2007-2013)	323	Ecological network connections (km)	Output	NL		National	Monitoring data, questionnaires or interviews.
Mid term (2007-2013)	323	Number of rural heritage actions	CMEF output	UKM			Measure specific survey of RP and LMO beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data
Midterm (2007-2013)	Programme level	Area indicators	Baseline & result	AT			Share of HNV area on total area, share of Natura 2000 area, share of protected forests.
Midterm (2007-2013)	Programme level	Maintenance of HNV farmland and forestry	CMEF impact	FI			
Midterm (2007-2013	Programme level	HNV farmland area	CMEF impact	DE1	Many agricultural habitats managed through extensive and traditional farming systems are classified as HNV farm land. The maintenance or introduction of extensive and traditional farming systems contributes to the protection of HNV habitats.	Regional, programme	ATKIS data (share of HNV area on total UAA, share of Natura 2000 area, share of protected forests)
Thematic module report for the Ex post (2007-2013)	Programme level	Maintenance of HNV farmland and forestry	CMEF impact	DE9	Checks of logic consistencies between the RDP strategy and measure descriptions have been summarised. Indicator has been modified and differentiates between different HNV areas and elements classified into different HNV types.	Regional, programme	IACS-GIS data, HNV-GIS data, databases of protected areas.
Ex ante (2007-2013) & SEA	Programme level	Areas of high nature value (in agricultural areas)	IRENA	ITF4	This indicator shows the percentage UAA with high nature value.		
Ex ante (2007-2013)	Programme level	Protected natural areas: % of Natura 2000 sites covered by	IRENA	ITF4			

		Natura 2000 habitats that depend on the existence extensive agriculture					
Ex ante (2007-2013)	Programme level	Soil erosion: amount of soil removed due to surface erosion water	IRENA	ITF4			
SEA	Programme level	Degree of distribution of forestry in lowlands (forest area and other wooded land) (0-100 m), hills (100-600 m) and mountains (600 meters above sea level and up)	ARPAV (Regional Environmental Protection Agency)	ITH3			

Table A4 List of indicators for Water Quality

Evaluation document	Measure/ Programme	Indicator	Type-origin of indicator	Member state/ region	Causal chain	Scale	Data
On going and mid-term (2007-2013)	111	Number of participants in training	CMEF output	BG	The indicator indirectly measures the impact on water quality. The training curriculum for livestock breeding includes modules dedicated to water quality and examples of best practices. This could help the farmers later to take advantages of this knowledge, to implement and face the requirements of the EU regarding biodiversity-HNV. According to the survey results (survey is conducted within the MTE) more than 70 % of beneficiaries under the RDP have no specific agricultural education and training. Farmers who completed training will be aware of the requirements of the EU.	National, regional	Number of participants, survey results
On going and mid-term (2007-2013)	111	Number of training days received	CMEF output	BG	The indicator indirectly measures the impact on water quality. The training curriculum for livestock breeding includes modules dedicated to water quality and examples of best practices. This could help the farmers later to take advantages of this knowledge, to implement and face the requirements of the EU regarding biodiversity-HNV. According to the survey results (survey is conducted within the MTE) more than 70 % of beneficiaries under the RDP have no specific agricultural education and training. Farmers who completed training will be aware of the requirements of the EU.	National, regional	Number of training days, survey results
Mid term (2007-2013)	111	Number of participants that successfully ended a training activity	CMEF result	NL	Impact assessment is based on evaluation question. The activities under this measure are focused on raising awareness relevant to the public good. However the assessment of the impact does only consider the more broad relevance to contributing to sustainable land management.		Interviews, surveys

Mid term (2007-2013) - Annual report from realisation RDP 2007-2013, MARD	111	Number of trainings on sustainable land management	According to CMEF output	PL	The aim of the measure is to diffuse scientific knowledge and innovative practises in the agricultural and forestry sector. Indirect impact.	National	Number of training days, number of beneficiaries, amount of payments realised, annually.
On going and mid-term (2007-2013)	114	Number of farmers who use advisory services	CMEF output	BG		National, regional	Number of farmers who use advisory services. Survey results.
Mid term (2007-2013) - Annual report from realisation RDP 2007-2013	114	Number of farmers who use advisory services for sustainable land management	CMEF output	PL	Indirect impact on sustainable management practices and cross compliance requirements.	National	Number of farmers who use advisory services on sustainable land management, amount of payments realised.
Ex post (2000-2006)	121 Promotion of loss-minimizing plant protection techniques	Reduction of input of herbicides and pesticides in surface water bodies		AT	Input of herbicides and pesticides in surface water bodies is detrimental to water quality.		
On going and mid-term (2007-2013)	121	Level of improvement of the overall performance of the agricultural holdings (competitiveness, sustainability and protection of environment)	CMEF output	BG	The measure supports the modernisation of the production factors, introduction of new technologies and new processes. This directly is linked to the implementation and use of protective environment actions (savings in water use). From the survey, conducted during the MTE with 279 beneficiaries, 21 beneficiaries answered that used investment in water saving.	National	Number of holdings supported and number of holdings in livestock breeding, number of farms meeting the requirements of the nitrate Directive 91/676/EEC were used as additional indicators. Survey results.
Ex post (2000-2006)	121 (AFP) Promotion of loss-	Reduction of input of herbicides and pesticides in surface water bodies		DE1	Input of herbicides and pesticides in surface water bodies is detrimental to water quality.		

	minimizing plant protection techniques						
Mid term (2007-2013)- Ex ante (2007-2013)	121	Improvement in water quality -Changes in gross nutrient balance GNB	CMEF impact	LT		National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Ex ante (2007-2013)	121	Pollution by nitrates	CMEF baseline modified	LT	Only nitrogen is taken into account. Nitrogen is better indicator to monitor pollution from agriculture.	National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Ex ante (2007-2013)	121	Pollution by pesticides	CMEF baseline modified	LT	Pollution by pesticides is described as a separate indicator as sources and trends are different.	National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Mid term (2007-2013)- Annual report from realisation RDP 2007-2013	121	Number of farm holdings that received investment support	CMEF output	PL	Modernisation of farms improves their economic performance through introduction of new technologies and innovations.	National	Number of beneficiaries, amount of payment realised.
Mid term (2007-2013)	121	Number of support projects, including number 'new challenges' project	According to CMEF output	PL	Indicator indirectly measures the impact of investment on water quality, according to the type and objective of the investment.	National	Number of supported 'new challenges' projects.
Mid term (2007-2013)	121	Value of 'new challenges' projects	According to CMEF output	PL	Indicator indirectly measures the impact of investment on water quality, according to the type and objective of the investment.	National	Number of beneficiaries, amount of payment realised.
Annual report from realisation RDP 2007-2013	121	Type of investments		PL		National	Number of beneficiaries, amount of payment realised.
Annual report from	121	Type of agricultural branch		PL		National	Number of beneficiaries, amount of payment realised.

realisation RDP 2007-2013							
Annual report from realisation RDP 2007-2013	121	Number of farm holdings that received investment support in LFAs, Natura 2000 and under Nitrate Directive areas		PL		National	Number of beneficiaries, amount of payment realised.
Mid term (2007-2013)	123	Number of beneficiaries	CMEF output	PL		Regional	Number of beneficiaries, area covered by the measure, amount of payment realised.
Mid term (2007-2013)	123	Total value of investment	CMEF output	PL		Regional	Number of beneficiaries, area covered by the measure, amount of payment realised.
Mid term (2007-2013)	123	Number of enterprises introducing new technologies and innovations	CMEF result	PL		Regional	Number of beneficiaries, area covered by the measure, amount of payment realised.
Mid term (2007-2013)	123	Number of beneficiaries - enterprises processing plant materials into products used for energy purposes	According to CMEF	PL		Regional	Number of beneficiaries, area covered by the measure, amount of payment realised.
Ex post (2000-2006)	125 Land consolidation	Gross nutrient balance- excess of nitrogen use in kg / ha	CMEF baseline	FR		Programme level (PDRN)	Monitoring system of PDRN
Mid term (2007-2013)	125	Area of land affected by measure (ha) and Added value by land use and operation	CMEF output	NL		National	
Mid term (2007-2013)- Annual report from realisation RDP 2007-2013	125	Number of operations supported	CMEF output	PL		National	Number of operations, amount of payments
Mid term (2007-2013)- Annual report from	125	Total volume of investments	CMEF output	PL		National	Number of operations, amount of payments

realisation RDP 2007-2013							
On going and mid-term (2007-2013)	141	Number of semi-subsistence farm holdings which entered the market and meet the obligatory Community standards related to veterinary and phyto-sanitary requirements, animal welfare, environmental protection, hygiene and occupational health and safety		BG		National, regional	Monitoring data. Survey data.
Ex post (2004-2006) - Annual report from realisation RDP 2004-2006	141	Number of farm holdings that received investment support	CMEF output	PL	Indicator indirectly measures the impact on water quality.	National	Number of beneficiaries, amount of payment realised
Ex post (2004-2006)	141	Structure of agricultural holdings due to the declared indirect objective of the support		PL	Indicator indirectly measures the impact on water quality.	National	Number of beneficiaries
Annual report from realisation RDP 2004-2006	141	Number of beneficiaries whose agricultural holding is located in LFAs		PL	Indicator indirectly measures the impact on water quality.	National	
Ex ante (2007-2013)	211	Area under the effective management of the territory, which has successfully contributed: to improve water quality	Additional	ITF4	The additional indicator was created to evaluate the impact of the use of the principal fertilisers that cause water pollution in agriculture.	Regional	Agricultural census and regional database (info about the fertilisers and pesticide used in agriculture)
Mid term (2007-2013)-	211	Number of supported holdings in LFAs	CMEF output	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Number of beneficiaries

Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010-Annual report from realisation RDP 2007-2013-Annual report from realisation RDP 2004-2006-Case study (2010)							
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010-Annual report from realisation RDP 2007-2013-Annual report from	211	Supported agricultural land in LFAs	CMEF output	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Supported area

realisation RDP 2004-2006-Case study (2010)							
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010-	211	Structure of sown area by different crops		PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Structure of sown area by different crops (qualitative)
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010-	211	Improvement in water quality -Changes in gross nutrient balance GNB	CMEF impact	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	GNB per ha per year(qualitative)
Mid term (2007-2013)	211 Green cover use and less soil tillage	Achievement of environmental objective: Area to be contributing to Water quality in the specific action (part of 211 in ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under water quality measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area
Mid term (2007-2013	211 Reduced use of	Achievement of environmental objective: Area	Evaluators	ES61	The calculation of the area under water quality measure as a function of the proportion of the financial uptake	Action	Financial uptake, targeted area

	agrochemicals	to be contributing to Water quality in the specific action (part of 211 in ha) X % financial uptake for this action.			and the programmed target area is provided as an estimation of the impact.		
Mid term (2007-2013	211 Reduced use of machinery/equipment	Achievement of environmental objective: Area to be contributing to Water quality in the specific action (part of 211 in ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under water quality measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area
Ex ante (2007-2013)	212	Area under the effective management of the territory, which has successfully contributed: to improve water quality	Additional	ITF4	The additional indicator was created to evaluate the impact of the use of the principal fertilisers in agriculture that provoke the water pollution.	Regional	Agricultural census and regional database (info about the fertilisers and pesticide used in agriculture)
Mid term (2007-2013)	212	Number of ha supported	CMEF output	NL	Impact assessment is based on evaluation question.		Monitoring data: number of management contracts (output), area of maintained landscape (results), survey among beneficiaries and interviews with experts.
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010-Annual report from realisation RDP 2007-2013-Annual report from	212	Number of supported holdings in LFAs		PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Number of beneficiaries

realisation RDP 2004-2006-Case study (2010)							
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010-Annual report from realisation RDP 2007-2013-Annual report from realisation RDP 2004-2006-Case study (2010)	212	Supported agricultural land in LFAs	CMEF output	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Supported area
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013,	212	Reversing biodiversity decline (FBI)	CMEF output	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	FBI data

2010							
Ex post (2004-2006)	212	Share of abandonment land in UAA		PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Share of abandonment land
Ex post (2004-2006)	212	Share of grain in arable land		PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Share of grain in arable land
Report product index, result index and impact for axis 2 RDP 2007-2013, 2010	212	Patch Density Index (PDI)		PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Number of complex with mosaic UAA, forest on areas covered by the measure
Mid term (2007-2013)	212 Green cover use and less soil tillage	Achievement of environmental objective: Area to be contributing to Water quality in the specific action (part of 212 in ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under water quality measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area
Mid term (2007-2013)	212 Reduced use of agrochemicals	Achievement of environmental objective: Area to be contributing to Water quality in the specific action (part of 212 in ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under water quality measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area
Mid term (2007-2013)	212 Reduced use of machinery/equipment	Achievement of environmental objective: Area to be contributing to Water quality in the specific action (part of 212 in ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under water quality measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area
Mid term (2007-2013)- Ex ante (2007-2013)	213	Improvement in water quality -Changes in gross nutrient balance GNB	CMEF impact	LT		National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Ex ante	213	Pollution by nitrates	CMEF	LT	Only nitrogen is taken into account. Nitrogen is better	National	Different ground and surface water quality

(2007-2013)			baseline modified		indicator to monitor pollution from agriculture.		monitoring data, studies on discharge from agriculture land and forested areas
Ex ante (2007-2013)	213	Pollution by pesticides	CMEF baseline modified	LT	Pollution by pesticides is described as separate indicator, as sources and trends are different.	National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Mid term (2007-2013)	214	Improvement in water quality -Changes in gross nutrient balance GNB	CMEF impact	AT	The impact indicator 'Improvement in water quality' is proposed by the CMEF. Quantitative change in the estimations of GNB that can be attributed to the intervention should be measured. The GNB indicates potential nutrient losses to the water bodies likely to be detrimental for the quality of water.	NUTS III regions	Nutrient balances, nitrate and phosphate, by the OECD/EUROSTAT Method, (years 1995, 1999, 2003, 2005 and 2007) EUROSTAT Project (Grant 2007, topic 67, Pilot Survey on the use of fertilisers, conducted for Austria by Statistic Austria and the Federal Environmental Agency, 2010).
Ex post (2000-2006)	214 Environmental friendly production-Conservation and Maintenance of cultural landscape-Abandonment of the use of chemically synthesised inputs - Extensive and environmental friendly plant production - Use of biological and bio-technological	Area under AEMs	CMEF output	AT	AEMs are expected to have an impact especially through the reduction of N-inputs in ground and surface water bodies.		Promoted areas (ha)

	techniques						
On going and mid-term (2007-2013)	214	Level of impact of the agri-environment payments on maintaining or improving habitats and biodiversity		BG		National, regional	Number of farm holdings and the receiving support, total area under agri-environmental support (ha), total number of contracts, physical area under agri-environmental support (ha), number of actions related to genetic resources. Survey results.
Mid-term (2007-2013)	214	Improvement on water quality		CY	Assessment is based on evaluation question.	Farm level	Survey-Field Research, Nitrate concentrations, expert judgements
Mid-term (2007-2013)	214 Support for environmentally friendly management - Support for organic farming	Concentration of plant nutrients in drainage water	Evaluators	EE	It is very difficult to evaluate the impact of measures on water quality and results can only be seen after many years. The evaluators, in order to assess the indirect impact of environmentally friendly management and organic farming, conducted studies, analysing the use of nutritional elements, pesticides performance load and plant nutritional elements concentration in drain water.		Analysis of water and soil samples, interviews and focus group.
Mid-term (2007-2013)	214 Support for environmentally friendly management - Support for organic farming	Improvement in water quality-(Changes in gross nutrient balance GNB	CMEF impact	EE	Thanks to the environmental requirements of measures, the chemical load on environment has decreased, P and K fertilisers use has decreased the share of legumes has increased. As a significant restriction, the use of chemical fertilisers and pesticides has been specified in the requirements of the measure. Thus, the presented restrictions in some way help to contribute to the preservation of the quality of water and soil in the limited management zone and special conservation area	National (7 counties, ca 100 producers for gross nutrient balance study, 4(+1) producers for water quality study, ca 70 producers for pesticide study)	Interviews with producers, accounting data (field records).
Mid-term (2007-2013)	214	Improvement in water quality		FI	Farmers' opinion about the impact of environmental payments on water quality.	Nuts 1	Farmers inquiry
Mid-term (2007-2013)	214	Improvement in water quality -Changes in gross nutrient	CMEF impact	FI		Local	Sold amount of fertiliser, regional crop data.

		balance GNB					
Mid term (2007-2013)	214	Pollution by nitrates and pesticides	CMEF baseline	FR	Measure 214 Agri-environment is related to several environmental aspects, such us fertilisation impacts.		National statistics on Agricultural production and agri-environmental system commitments
Mid term (2007-2013)	214	Improvement of water quality	Additional	FR	The additional indicator was created to evaluate the water pollution on the Region, regarding the principal fertilisers used in agriculture (N, P).	Programme level (PDRH)	National statistics on agricultural production and agri-environmental system commitments.
Mid term (2007-2013)	214	Variation of leaching phosphorus	Additional	FR	The additional indicator was created to evaluate the impact of the use of the principal fertiliser in agriculture, leaching and water pollution.	Programme level (PDRH)	National statistics on agricultural production and agri-environmental system commitments.
Mid term (2007-2013)	214	Excess of nitrogen use in kg / ha	CMEF baseline	FR		Programme level (PDRH)	National statistics on agricultural production and agri-environmental system commitments.
Mid term (2007-2013)	214	Excess use of nitrogen in groups of regions with different issues (with a different definition of national EU definition) (average 2002/2003/2004: contributions minus exports / UAA)		FR	Measure 214 Agri-environment is related to several environmental aspects, such us fertilisation impacts.	Programme level (PDRH)	National statistics on agricultural production and agri-environmental system commitments.
Ex ante (2007-2013)	214	Excess use of nitrogen in groups of regions with different issues (with a different definition of national EU definition) (average 2000/2001/2002: contributions minus exports / UAA)		FR		Programme level (PDRH)	Agricultural survey PDRH
Ex ante (2007-2013)	214	Pollution by nitrates and pesticides	CMEF baseline	FR		Programme level	Agricultural survey PDRH, midterm (RICA),
Ex post (2000-2006)	214 Water management	Gross nutrient balance (excess of nitrogen use in kg / ha)	CMEF baseline	FR		Programme level (PDRN)	Monitoring system of PDRN
Mid term (2000-2006))	214 Water management	Proportion arable land (UAA) affected by the amount of nitrogen applied (farmyard	Additional	FR	The quantification of nutrient impact thanks to the indicator.	Programme level (PDRN)	Data from PDRN monitoring system RICA

		manure + synthetic fertiliser) less than 170 kg / ha / year. add					
Mid term (2000-2006)	214 Water management	Proportion of UAA subject to friendly farming systems environment which affected area (a) to organic farming, (b) Integrated production or integrated control agencies harmful, and (c) pasture with less than 2 LU/ha.	Additional	FR	The quantification of nutrient impact thanks to the indicator.	Programme level (PDRN)	Data from PDRN monitoring system RICA
Mid term (2000-2006))	214 Water management	Proportion of arable UAA affected by the amount of pesticides spread, where this is less than a specified threshold.	Additional	FR	The quantification of nutrient impact thanks to the indicator.	Programme level (PDRN)	Monitoring system of PDRN
Mid term (2007-2013)	214 - Environmental friendly agriculture - Organic farming	Improvement in water quality- (Changes in gross nutrient balance GNB	CMEF impact	DEB	Reduced nutrient inputs from agriculture (N, P and pesticides) improve water quality. Comparison of the GNB of AEM participants with non-participants.	Regional	GNB
Mid term (2007-2013)	214 Extensive Grassland management - Extensive management of permanent grassland - Grassland management in mountainous areas – Organic farming	Amount of organic fertiliser: stock density (LU)/ha add	Additional impact	DE1	Nitrogen inputs from organic fertiliser in ground and surface water bodies are detrimental to water quality.	Farm level	InVeKos, (year 2008), stock density (LU)/ha; comparison participants/non-participants.

Ex post (2000-2006)	214 Extensification and transformation of cropland to grassland - Environmental friendly production- Conservation and Maintenance of cultural landscape - Abandonment of the use of chemically synthesised inputs - Extensive and environmental friendly plant production - Use of biological and bio-technological techniques	Area under AEMs	CMEF output	DE1	AEMs are expected to have an impact especially through the reduction of N-inputs in ground and surface water bodies..		Ha of promoted areas
Mid term (2007-2013)	214	Improvement in water quality- Changes in gross nutrient balance GNB	CMEF impact	DE9	The impact indicator 'Improvement in water quality' is proposed by the CMEF. Quantitative change in the estimations of GNB that can be attributed to the intervention should be measured. The GNB indicates potential nutrient losses to the water bodies likely to be	Regional	No primary data is used. GNB origins from previous studies and expert estimations.

					detrimental for the quality of water. Until the mid- term evaluation the evaluators did not have adequate data about the GNB and no inquiries were conducted so far. Therefore, the amount of GNB balance reduction could not be quantified accurately. Thus, in the mid-term evaluation a simplified method of impact assessment is performed. Only the impact of the measure on the nitrogen balance is considered, the phosphor balance is not included.		
Mid term (2007-2013)	214	Pollution by nitrates and pesticides	CMEF baseline	EL	Indicator is not yet available. The baseline index must be established first.	Drainage basin	Concentrations of nitrate and pesticides in surface and ground water
On going Mid term (2007-2013)	214	Change in gross unit load (kg / ha) of nitrogen in the Region	Additional	ITH5	Measure 214 Agri-environment is related to several environmental aspects, such us fertilisation impacts.	Regional	Measures' database of the RDP, statistical data. Production specifications and system agri-environmental commitments. Technical itineraries for major crops (contributed by experts)
On going Mid term (2007-2013)	214	Change in gross unit load (kg / ha) of phosphorus in areas subject to intervention.	Additional	ITH5	Measure 214 Agri-environment is related to several environmental aspects, such us fertilisation impacts. The overall objective of this indicator is to asses the benefit of implementing a series of measures that have among their objectives the improvement of the quality of water that run off from cultivated fields.	Regional	Measures' database of the RDP, statistical data. Agricultural production and agri-environmental system commitments. Technical itineraries for major crops
On going Mid term (2007-2013)	214	Load variation as it is (Kg / ha) of pesticides in the region	Additional	ITH5	Measure 214 Agri-environment is related to several environmental aspects, such us fertilisation impacts. The overall objective of this indicator is to asses the benefit of implementing a series of measures that have among their objectives the improvement of the quality of water that run off from cultivated fields.	Regional	Measures' database of the RDP, statistical data. Agricultural production and agri-environmental system commitments. Technical itineraries for major crops
On going Mid term (2007-2013)	214	Load variation weighted by the toxicity of pesticides in the Region	Additional	ITH5	Measure 214 Agri-environment is related to several environmental aspects, such us fertilisation impacts.	Regional	Measures' database of the RDP, statistical data. Production specifications and system agri-environmental commitments. Technical itineraries for major crops (contributed by experts)
Ex ante (2007-2013)	214	Area under the effective management of the territory, which has successfully contributed: to improve water quality		ITF4	The additional indicator was created to evaluate the impact of the use of the principal fertilisers in agriculture that provoke the water pollution.	Regional	Agricultural census and regional database (info about the fertilisers and pesticide used in agriculture)

Ex ante (2007-2013	214	Reduction of the nitrogen wooded buffer strips (FTB)		ITF4	Measure 214 Agri-environment is related with several environmental aspects, such us fertilisation impacts	Regional	
Ex post (2000-2006)	214	Reduction of agricultural inputs per hectare thanks to agreements (%)		ITF4	The impact indicator is related to the multifunctional approach of the soil system. In fact the Measure Agri-environment is related with several environmental aspects.	Regional	ISTAT, Agricultural census
Ex post (2000-2006)	214	Nitrogen balance (kg/ha/year)	CMEF baseline	ITF4		Regional	ISTAT, Agricultural census
Ex post (2000-2006)	214	Area subject to supported actions reducing the transport of pollutants to aquifers (through run-off, leaching or erosion) (ha) (b) of which with non-crop barriers to run-off (field margins, hedgerows, contour cultivation, field size) (%)		ITF4		Regional	ISTAT, Agricultural census
Ex post (2000-2006)	214	Concentration of (the relevant) pollutant in water flowing from areas under agreement = the proportion of surface/groundwater above the threshold concentration of the relevant substance (mg, µg, etc per litre)		ITF4		Regional	ISTAT, Agricultural census
Ex post (2000-2006)	214	Farm and/or off-farm indirect impacts resulting from farmland under agreements		ITF4		Regional	ISTAT, Agricultural census
Ex post (2000-2006)	214	Area not irrigated thanks to agreement (ha) (a) of which due to direct limitation of irrigated area (%) (b) of which due to changed crop pattern/vegetation or farm practice (%)		ITF4		Regional	ISTAT, Agricultural census
Ex post	214	Area with reduced rate of		ITF4		Regional	ISTAT, Agricultural census

(2000-2006)		irrigation (consumption/hectare) thanks to agreement (hectare) (a) of which due to direct limitation of irrigation rate (%) (b) of which due to changed crop pattern/vegetation or farm practice (other than irrigation) (%) (c) of which due to improved irrigation methods (%)					
Ex post (2000-2006)	214	Reduction in quantity of water used for irrigation thanks to agreement (m3, ha concerned)		ITF4		Regional	ISTAT, Agricultural census
Ex post (2000-2006)	214	Efficiency of irrigation for key crops influenced by agreements, i.e., quantity of crop produced per unit of water (tons/m3)		ITF4		Regional	ISTAT, Agricultural census
Ex post (2000-2006)	214	Trend concerning the water levels in surface and ground water(description and/or indicator to be defined at programme level)		ITF4		Regional	ISTAT, Agricultural census
Ex post (2000-2006)	214	Global impacts arising thanks to the protection of the water levels of surface and ground water		ITF4		Regional	ISTAT, Agricultural census
Ex post (2000-2006)	214	Area with assisted input-reducing actions (ha) (b) of which with reduced application per hectare of fertiliser (%) (c) of which with avoidance of specific inputs at critical periods of the year (%)		ITF4		Regional	ISTAT, Agricultural census
Ex post	214	Reduction of agricultural input		ITF4		Regional	ISTAT, Agricultural census

(2000-2006)		per hectare thanks to agreement (%)					
Ex post (2000-2006)	214	Area under assisted farming systems or practices that reduce/prevent leeching, run-off or sedimentation of farm inputs/soil in adjacent valuable wetland or aquatic habitats (hectares) (a) of which input reduction techniques (%)(b) of which run-off and/or erosion prevention (%)(c) of which reduction of leaching (%)		ITF4		Regional	ISTAT, Agricultural census
Midterm (2007-2013)	214 Ecological corridors, buffer strips, hedges and copses	Reduction of the Nitrogen Wooded buffer strips (FTB)		ITH3	Measure 214 Agri-environment is related with several environmental aspects, such us fertilisation impacts.	Regional	Measures' database of the RDP, statistical data, production specifications
Midterm (2007-2013)	214 Improving soil quality-Organic agriculture-Meadows, pastures and meadows pastures	Gross nutrient balance: reduction of nitrogen and phosphorus surplus in the areas of intervention)	CMEF	ITH3	Measure 214 Agri-environment is related with several environmental aspects, such us fertilisation impacts. The overall objective of this indicator is to asses the benefit of implementing a series of measures that have among their objectives the improvement of the quality of water that run off from cultivated fields.	Regional	Measures' database of the RDP, statistical data, agricultural production and agri-environmental system commitments. Technical itineraries for major crops
Mid term (2007-2013)	214 Organic agriculture	Reduction of 'risk index' resulting from use of pesticides		ITH3	Measure 214 Agri-environment is related with several environmental aspects, such us fertilisation impacts.	Regional	Measures' database of the RDP, statistical data. Production specifications and system agri-environmental commitments. Technical itineraries for major crops (contributed by experts)
Ex ante (2007-2013)	214	Improvement in water quality-Changes in gross nutrient balance GNB	CMEF impact	ITH3		Regional	

Ex ante (2007-2013)	214	Variation of the nitrogen loading in the Region	Additional	ITH3	The additional indicator was created to evaluate the impact of the use of the principal fertilisers in agriculture that provoke the water pollution. The addition of a new indicator is made by the need to evaluate the water pollution on the Region, regarding the principle fertilisers used in agriculture (N, P).	Regional	
Ex ante (2007-2013)	214	Variation of the nitrogen loading to surfaces object of intervention	Additional	ITH3	The additional indicator was created to evaluate the impact of the use of the principal fertilisers in agriculture that provoke the water pollution. The addition of a new indicator is made by the need to evaluate the water pollution on the Region, regarding the principle fertilisers used in agriculture (N, P).	Regional	
Ex ante (2007-2013)	214	Variation of the phosphorus loading to surface object of intervention	Additional	ITH3	The additional indicator was created to evaluate the impact of the use of the principal fertilisers in agriculture that provoke the water pollution. The addition of a new indicator is made by the need to evaluate the water pollution on the Region, regarding the principle fertilisers used in agriculture (N, P).	Regional	FADN database-REA are used for the counterfactual analysis through the identification of groups of non-beneficiaries (comparison groups) for estimating the net effect of the RDP
Ex ante (2007-2013)	214	Variation of the phosphorus loading in the Region	Additional	ITH3	The additional indicator was created to evaluate the impact of the use of the principal fertilisers in agriculture that provoke the water pollution. The addition of a new indicator is made by the need to evaluate the water pollution on the Region, regarding the principle fertilisers used in agriculture (N, P).	Regional	
Ex post (2000-2006)	214 Integrated farming - Organic agriculture	Area not irrigated thanks to agreement (hectare) of which due to direct limitation of irrigated area (%)		ITH3		Regional	UAA irrigated/tot UAA, ISTAT 2000, Agricultural census
Ex post (2000-2006)	214 Integrated farming - Organic agriculture - Buffer strips-Conservation	Reduction of agricultural inputs per hectare thanks to agreements (%)		ITH3	The impact indicator is related to the multifunctional approach of the soil system. In fact the Measure Agri-environment is related with several environmental aspects.	Regional scale, all agriculture land that contributed to the use of inputs	ISTAT (2001-2003), Agricultural census

	of lowland meadows and conservation of arable land into permanent grassland - Conservation and recovery of meadows and pastures of the hills and mountain						
Ex post (2000-2006)	214 Integrated farming - Organic agriculture - Buffer strips- Conservation of lowland meadows and conservation of arable land into permanent grassland - Planting and conservation of hedges and copses	Nitrogen balance (kg/ha/year)	CMEF baseline	ITH3		Regional	ISTAT (2001-2003. Agricultural census. FADN database-REA are used for the counterfactual analysis
Ex post (2000-2006)	214 Integrated	Area not irrigated thanks to agreement (hectare)		ITH3		Regional	UAA irrigated/tot UAA, ISTAT 2000, Agricultural census

	farming - Organic agriculture – Set aside						
Ex post (2000-2006)	214 Set aside	Area not irrigated thanks to agreement (hectare) of which due to changed crop pattern/vegetation or farm practice (%)		ITH3		Regional	UAA irrigated/tot UAA. The information resulting from the FADN database-REA are used for the counterfactual analysis through the identification of groups of non-beneficiaries (comparison groups) to be used in the estimation of the net effect of the RDP
Mid term (2007-2013)- Ex ante (2007-2013)	214	Improvement in water quality -Changes in gross nutrient balance GNB	CMEF impact	LT		National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Ex ante (2007-2013)	214	Pollution by nitrates	CMEF baseline modified	LT	Only nitrogen is taken into account. Nitrogen is better indicator to monitor pollution from agriculture.	National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Ex ante (2007-2013)	214	Pollution by pesticides	CMEF baseline modified	LT	Pollution by pesticides is described as a separate indicator as sources and trends are different.	National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Mid term (2007-2013)	214	Area under AEMs	CMEF output	NL	The activities under this measure do not include a main objective to improve water quality, however the current management contracts that reduce the use of agri-chemicals and fertiliser will contribute to this public good. There is not target set for water quality, which means impact can not be measured.		Monitoring system (output indicators), expert interviews and literature research.
Mid term (2007-2013)- Ex post (2004-2006)- Report product index, result index and impact for axis 2 RDP	214	GNB	CMEF impact	PL		National	GNB data

2007-2013, 2010							
Mid term (2007-2013)- Ex post (2004-2006)- Report product index, result index and impact for axis 2 RDP 2007-2013, 2010	214	Livestock density per ha UAA near body of water		PL		National	Livestock density per ha UAA near body of water
Mid term (2007-2013)- Ex post (2004-2006)- Report product index, result index and impact for axis 2 RDP 2007-2013, 2010	214	Number of beneficiaries receiving AEP	CMEF output	PL		National	Number of beneficiaries, amount of payment realised
Mid term (2007-2013)	214	Area under AEMs	CMEF output	PL		National	Area covered by the measure
Mid term (2007-2013)	214 Green cover use and less soil tillage	Achievement of environmental objective: Area to be contributing to Water quality in the specific action (part of 214 in ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under water quality measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area
Mid term (2007-2013)	214 Reduced use of	Achievement of environmental objective: Area	Evaluators	ES61	The calculation of the area under water quality measure as a function of the proportion of the financial uptake	Action	Financial uptake, targeted area

	agrochemicals	to be contributing to Water quality in the specific action (part of 214 in ha) X % financial uptake for this action.			and the programmed target area is provided as an estimation of the impact.		
Mid term (2007-2013)	214 Reduced use of machinery/equipment	Achievement of environmental objective: Area to be contributing to Water quality in the specific action (part of 214 in ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under water quality measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area
Mid term (2007-2013)	214	Surplus nutrient per ha and pollution by nitrates and pesticides	CMEF baseline	UK-ENG	Public goods of water quality and soil are reported together. Soil and water were considered as a coupled system. Local, regional contingencies and targets are also accounted for, including effects of several protection/management options such as buffer strips, field corner management, arable reversion, beetle banks, cover crops, tillage and tramline alterations.	Impact is reported at the plot and watershed scales, and then upscales into national or regional conclusions	Evaluator's review of literature and regional data, e.g. surplus nutrient per ha, annual trends in concentration of nitrates and pesticides, output indicators related to the measure 214 from Natural England
Mid term (2007-2013)	214	Contribution of AEMs to improvement water quality		UKM	Impact assessment is based on evaluation question. Answers include: improved practices, e.g. manure management, providing buffer strips, reduced ploughing, fencing off livestock.	Farm level	Survey of beneficiaries
Mid term (2007-2013)	216	Baseline indicators (Surplus Nutrient per ha and Pollution by nitrates and pesticides)		UK-ENG	Measure 216 is jointly addressed with 214. Public goods of water quality and soil are reported together. Soil and water were considered as a coupled system. Local, regional contingencies and targets are also accounted for, including effects of several protection/management options such as buffer strips, field corner management, arable reversion, beetle banks, cover crops, tillage and tramline alterations.	Impact is reported at the plot and watershed scales, and then upscales into national or regional conclusions	Evaluator's review of literature and regional data, e.g. surplus nutrient per ha, annual trends in concentration of nitrates and pesticides, output indicators related to the measure 214 from Natural England

Mid term (2007-2013)	216	Total volume of investments		UKM		Farm level	Measure specific survey of Rural Priority beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data.
Mid term (2007-2013)	221	Improvement in water quality-Changes in gross nutrient balance GNB	CMEF impact	AT	Forestry is a more extensive land-use than agriculture, lower fertiliser application reduces N and P surpluses.		
Mid term (2007-2013)	221	Pollution by nitrates and pesticides	CMEF baseline	EL	Indicator is not yet available. The baseline index must be established first.	Drainage basin	Concentrations of nitrate and pesticides in surface and ground water
Ex post (2000-2006)	221	Resources/assets enjoying improved protection due to assisted forest actions (hectare): (b) of which water bodies (%)		ITF4		Regional	ISTAT, Agricultural census
Ex ante (2007-2013)	221	Area under the effective management of the territory, which has successfully contributed: to improve water quality	Additional to CMEF result	ITF4	The additional indicator was created to evaluate the impact of the use of the principal fertilisers in agriculture that provoke the water pollution.	Regional	Agricultural census and regional database (info about the fertilisers and pesticide used in agriculture)
Mid term (2007-2013)-Ex ante (2007-2013)	221	Improvement in water quality -Changes in gross nutrient balance GNB	CMEF impact	LT		National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Ex ante (2007-2013)	221	Pollution by nitrates	CMEF baseline modified	LT	Only nitrogen is taken into account. Nitrogen is better indicator to monitor pollution from agriculture.	National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Ex ante (2007-2013)	221	Pollution by pesticides	CMEF baseline modified	LT	Pollution by pesticides is described as a separate indicator as sources and trends are different.	National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Mid term (2007-2013)	221	C sequestration through afforestation		PL	Afforestated area and number of beneficiaries have a significant impact on water quality.	National	Number of beneficiaries, area covered by the measure
Mid term (2007-2013)	221	Number of Ha of afforestated land	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on water quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase of afforestated area in relation to the existing forests		PL	Afforestated area and number of beneficiaries have a significant impact on water quality.	National	Number of beneficiaries, area covered by the measure.

Mid term (2007-2013)	221	Share of afforestation in agricultural area		PL	Afforestated area and number of beneficiaries have a significant impact on water quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase in the share of the areas supported by Measures 221 and 223 in relation to the RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on water quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Number of beneficiaries receiving afforestation aid	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on water quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase in the number of beneficiaries receiving afforestation aid in relation to RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on water quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Relationship between the index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI)		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation. The Transition index (TI) is the ratio of the share of area under afforestation in individual soil quality classes to the share of afforestated area in all arable land. It is expected that afforestation is preferentially concentrated on land with low agricultural suitability, therefore TI will be bigger for worse soil quality classes measured by the index of Valorisation of Agricultural Production Space (WWRPP).	National	Number of beneficiaries, area covered by the measure, qualitative: index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI).
Mid term (2007-2013)	221	Degree of implementation of the afforestation plan		PL	Afforestated area and number of beneficiaries have a significant impact on water quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase in the number of forest corridors		PL	Afforestated area and number of beneficiaries have a significant impact on water quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Area under successful land management contributing to improvement of water quality	Result-Forestry Commission	UK-ENG	Afforestation contributes to flood risk management, and also to the deduction if diffuse water pollution. Generic conclusions drawn from indirect sources.	National,	Scientific literature, such as Morrow, Silgram & Nisbett (2010), generic conclusions from the Environment Agency (2009) and the Forestry Commission
Ex ante (2007-2013)	223	Area under successful land management contributing to improvement of water quality		ITF4	In fact the Measure Agri- environment is related with several environmental aspects. such us fertilisation impacts. The overall objective of this indicator is to asses the benefit of implementing a series of measures that have among their objectives the improvement of the quality of water that run off from cultivated fields.	Regional	Agricultural census and regional database (info about the fertilisers and pesticide used in agriculture)

Mid term (2007-2013)- Ex ante (2007-2013)	223	Improvement in water quality -Changes in gross nutrient balance GNB	CMEF impact	LT		National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Ex ante (2007-2013)	223	Pollution by nitrates	CMEF baseline modified	LT	Only nitrogen is taken into account. Nitrogen is better indicator to monitor pollution from agriculture.	National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Ex ante (2007-2013)	223	Pollution by pesticides	CMEF baseline modified	LT	Pollution by pesticides is described as a separate indicator as sources and trends are different.	National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Mid term (2007-2013)	223	C sequestration through afforestation		PL	Afforestated area and number of beneficiaries have a significant impact water quality.	National	Number of beneficiaries, area covered by the measure
Mid term (2007-2013)	223	Number of Ha of afforestated land	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on water quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase of afforestated area in relation to the existing forests		PL	Afforestated area and number of beneficiaries have a significant impact on water quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Share of afforestation in agricultural area		PL	Afforestated area and number of beneficiaries have a significant impact on water quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase in the share of the areas supported by Measures 221 and 223 in relation to the RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on water quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Number of beneficiaries receiving afforestation aid	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on water quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase in the number of beneficiaries receiving afforestation aid in relation to RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on water quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Relationship between the index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI)		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation. The Transition index (TI) is the ratio of the share of area under afforestation in individual soil quality classes to the share of afforestated area in all arable land. It is expected that afforestation is preferentially concentrated on land with low agricultural suitability, therefore TI will be bigger for worse soil quality classes	National	Number of beneficiaries, area covered by the measure, qualitative: index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI).

					measured by the index of Valorisation of Agricultural Production Space (WWRPP).		
Mid term (2007-2013)	223	Degree of implementation of the afforestation plan		PL	Afforestated area and number of beneficiaries have a significant impact on water quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase in the number of forest corridors		PL	Afforestated area and number of beneficiaries have a significant impact on water quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)- Ex ante (2007-2013)	224	Improvement in water quality -Changes in gross nutrient balance GNB	CMEF impact	LT		National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Ex ante (2007-2013)	224	Pollution by nitrates	CMEF baseline modified	LT	Only nitrogen is taken into account. Nitrogen is better indicator to monitor pollution from agriculture.	National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Ex ante (2007-2013)	224	Pollution by pesticides	CMEF baseline modified	LT	Pollution by pesticides is described as a separate indicator as sources and trends are different.	National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Mid term (2007-2013)	225	Improvement in water quality-Changes in gross nutrient balance GNB	CMEF impact	AT	Forestry is a more extensive land-use than agriculture, lower fertiliser application reduces N and P surpluses.		Supported area
Mid term (2007-2013)- Ex ante (2007-2013)	225	Improvement in water quality -Changes in gross nutrient balance GNB	CMEF impact	LT		National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Ex ante (2007-2013)	225	Pollution by nitrates	CMEF baseline modified	LT	Only nitrogen is taken into account. Nitrogen is better indicator to monitor pollution from agriculture.	National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Ex ante (2007-2013)	225	Pollution by pesticides	CMEF baseline modified	LT	Pollution by pesticides is described as a separate indicator as sources and trends are different.	National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Mid term (2007-2013)	225	Area under forest environment support	CMEF output	UKM		Farm level	Measure specific survey of Rural Priority and Land Manager's Option beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data
Mid term (2007-2013)	226	Improvement in water quality-Changes in gross nutrient	CMEF impact	AT			Area promoted

		balance GNB					
Mid term (2007-2013)	226	Area of restored forestry/ supported area of damaged forests	CMEF output	BG	The indicator indirectly measures the impact on water quality. Additional indicators that have been used: total public support, number of actions supported, number of equipped anti-fire depots, number of established/improved places for helicopters, number of fire monitoring points constructed/improved.	National, regional	Financial parameters of the proposals/contracts. Number of beneficiaries receiving afforestation aid, number of hectares of afforested land. Survey from beneficiaries.
Mid term (2007-2013)	226	Pollution by nitrates and pesticides	CMEF baseline	EL	Indicator is not yet available. The baseline index must be established first.	Drainage basin	Concentrations of nitrate and pesticides in surface and ground water
EX ante (2007-2013)	226	Area under successful land management contributing to improvement of water quality	Additional to CMEF result	ITF4	In fact the Measure Agri- environment is related with several environmental aspects, such us fertilisation impacts.	Regional	Agricultural census and regional database (info about the fertilisers and pesticide used in agriculture)
Mid term (2007-2013)- Ex ante (2007-2013)	226	Improvement in water quality -Changes in gross nutrient balance GNB	CMEF impact	LT		National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Ex ante (2007-2013)	226	Pollution by nitrates	CMEF baseline modified	LT	Only nitrogen is taken into account. Nitrogen is better indicator to monitor pollution from agriculture.	National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Ex ante (2007-2013)	226	Pollution by pesticides	CMEF baseline modified	LT	Pollution by pesticides is described as a separate indicator as sources and trends are different.	National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Mid term (2007-2013)	226	Area of restored forestry/ supported area of damaged forests	CMEF output	PL	The prevention/restoration actions contribute to improvement of water quality	Local	Number of beneficiaries, area covered by the measure
Mid term (2007-2013)	226	Forest land potentially affected by biotic factors associated with the occurrence of diseases and pests		PL	The prevention/restoration actions contribute to improvement of water quality.	Local	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	226	Number of prevention/restoration actions	CMEF output	PL	The prevention/restoration actions contribute to improvement of water quality.	Local	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	226	The proposed length of forest roads - fire commute		PL	The prevention/restoration actions contribute to improvement of water quality.	Local	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	226	Number of districts in the division of the degree of fire		PL	The prevention/restoration actions contribute to improvement of water quality.	Local	Number of beneficiaries, area covered by the measure.

		risk in accordance with the rules of this prevention action					
Mid term (2007-2013)	226	Total volume of investments for restoring forestry potential and introducing prevention action	CMEF output	PL	The prevention/restoration actions contribute to improvement of water quality.	Local	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)- Ex ante (2007-2013)	227	Improvement in water quality -Changes in gross nutrient balance GNB	CMEF impact	LT		National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Ex ante (2007-2013)	227	Pollution by nitrates	CMEF baseline modified	LT	Only nitrogen is taken into account. Nitrogen is better indicator to monitor pollution from agriculture.	National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Ex ante (2007-2013)	227	Pollution by pesticides	CMEF baseline modified	LT	Pollution by pesticides is described as a separate indicator as sources and trends are different.	National	Different ground and surface water quality monitoring data, studies on discharge from agriculture land and forested areas
Mid term (2007-2013)	227	Number of supported forest holders	CMEF output	UKM		Farm level	Measure specific survey of Rural Priority and Land Manager's Option beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data
Mid term (2007-2013)- Annual report from realisation RDP 2007-2013	321	Number of supported actions	CMEF output	PL	Indirect influence of measure on water quality.	National	Number of operations
Mid term (2007-2013)- Annual report from realisation RDP 2007-2013	321	Total volume of investment	CMEF output	PL	Indirect influence of measure on water quality.	National	Amount of payment
Mid term	411	Impact of emissions on water		FI	A qualitative assessment about the influence of leader	Nuts 1	Expert assessments

(2007-2013)		system			firm and project aids on water		
Mid term (2007-2013)	413	Impact of emissions on water system		FI	A qualitative assessment about the influence of leader firm and project aids on water	Nuts 1	Expert assessments
Mid term (2007-2013	Programme level	Improvement in water quality: Changes in gross nutrient balance GNB	CMEF impact	AT			OECD method, EUROSTAT Project (Grant 2007, topic 67, Pilot Survey on the Use of Fertilizers, that is conducted for Austria by Statistic Austria and the Federal Environmental Agency, Statistik Austria, 2010)
Ex post (2000-2006)	Programme level	Budget of promotion (in Mio. Euro) and its share of the total programme budget (in %).		AT	Although the evaluation differentiates according to EC indicators, the evaluation mainly assesses the budget of promotion (in Mio. Euro) and its share of the total programme budget (in %). Assessment by areas under measures with positive impacts on water quality and the budget (and share of the total programme budget) for these measures. Especially many AEMs have a positive impact on water quality.		Areas under measures with positive impacts on water quality and the budget (and share of the total programme budget) for these measures.
Mid term (2007-2013)	Programme level	N-depositions, N-surplu		DE1	Based on evaluation question/Qualitative assessment. Programme impacts are assessed in a quality manner in the order to answer horizontal evaluation question. The indicators of N-depositions, N-surplus are discussed. Differentiation between different relevant measures and overall impact.		
Mid term (2007-2013)	Programme level	Decrease in the surplus nitrogen	IRENA	ITF4		Regional	ARPA Puglia Regional agriculture database
Mid term (2007-2013)	Programme level	Reduction of nitrate in groundwater - n. samples exceeding the maximum value of 50mg /l	IRENA	ITF4		Regional	Survey campaigns ARPA Puglia Regional agriculture database on nitrates concentrations
SEA	Programme level	Nitrogen Excess in the field	IRENA	ITF4	This indicator is intended to give an overview of the state of nitrates and pesticides in surface water and groundwater in European countries between 1992 and 2001.	Regional	Dynamics of consumption of nitrogenous products in Puglia and type of crops on the basis of the CORINE land cover
SEA	Programme level	Concentration of nitrates and pesticides in surface water	IRENA	ITF4	This indicator is intended to give an overview of the state of nitrates and pesticides in surface water and groundwater in European countries between 1992 and 2001. In general, the ratings on these polluted waters	Regional	Dynamics of consumption of nitrogenous products in Puglia and type of crops on the basis of the CORINE land cover

					are not assessed for direct measurement into water bodies but consumption evaluated based on the sales of fertilisers and plant protection products.		
SEA	Programme level	State of the Environment Lake	ARPAV (Regional Environmental Protection Agency)	ITH3		Regional	
SEA	Programme level	Index HRH (SAR)	ARPAV (Regional Environmental Protection Agency)	ITH3		Regional	
SEA	Programme level	Nitrate concentration in groundwater	ARPAV (Regional Environmental Protection Agency)	ITH3		Regional	
SEA	Programme level	Leads from the civil sector and livestock (surface water)	ARPAV (Regional Environmental Protection Agency)	ITH3		Regional	
SEA	Programme level	Type of irrigation and sustained losses in the irrigation network	ARPAV (Regional Environmental Protection Agency)	ITH3		Regional	
SEA	Programme level	Water resources	ARPAV (Regional Environm	ITH3		Regional	

			ental Protectio n Agency)				
SEA	Programme level	State of the Environment Watercourses (SACA)	ARPAV (Regional Environm ental Protectio n Agency)	ITH3		Regional	

Table A5 List of indicators for Soil Quality

Evaluation document	Measure/ Programme	Indicator	Type-origin of indicator	Member states/region	Causal chain	Scale	Data
On going and mid-term (2007-2013)	111	Number of participants in training	CMEF output	BG	The indicator indirectly measures the impact on soil quality. The training curriculum for plant production and livestock breeding include modules dedicated to soil protection and improvement, as well as examples of best practices. This could help farmers to take advantages of this knowledge, to implement and face the requirements of the EU regarding soil. According to the survey results more than 70 % of beneficiaries under the RDP have no specific agricultural education and training. Farmers who completed training will be aware of the requirements of the EU.	National, regional	Number of participants, survey results
On going and mid-term (2007-2013)	111	Number of training days received	CMEF output	BG	The indicator indirectly measures the impact on soil quality. The training curriculum for plant production and livestock breeding include modules dedicated to soil protection and improvement, as well as examples of best practices. This could help farmers to take advantages of this knowledge, to implement and face the requirements of the EU regarding soil. According to the survey results more than 70 % of beneficiaries under the RDP have no specific agricultural education and training. Farmers who completed training will be aware of the requirements of the EU.	National, regional	Number of training days, survey results
Mid term (2007-2013)	111	Number of participants that successfully ended a training activity	CMEF result	NL	Impact assessment is based on evaluation question. The activities under this measure are focused on raising awareness relevant to the public good.		Survey
Mid term (2007-2013) - Annual report from realisation	111	Number of trainings on sustainable land management	According to CMEF output	PL	The aim of the measure is to diffuse scientific knowledge and innovative practises in the agricultural and forestry sector. Indirect impact.	National	Number of training days, number of beneficiaries, amount of payments realised, annually.

RDP 2007-2013, MARD							
On going and mid-term (2007-2013)	114	Number of farmers who use advisory services	CMEF output	BG		National, regional	Number of farmers who use advisory services. Survey results.
Mid term (2007-2013) - Annual report from realisation RDP 2007-2013	114	Number of farmers who use advisory services for sustainable land management	CMEF output	PL	Indirect impact on sustainable management practices and cross compliance requirements.	National	Number of farmers who use advisory services on sustainable land management and sustainable management of natural resources, amount of payments realised.
On going and mid-term (2007-2013)	121	Level of improvement of the overall performance of the agricultural holdings (competitiveness, sustainability and protection of environment)	CMEF output	BG	The measure supports the modernisation of the production factors, introducing new technologies and processes. This is directly linked to improved soil quality.	National	Survey results. Number of holdings supported and number of holdings in livestock breeding, number of farms meeting the requirements of the nitrate Directive 91/676/EEC were used as additional indicators.
Ex post (2000-2006)	121	Soil erosion - estimation of the C factor for soil erosion	Based on data and applications of the State Authority for Mining, Energy and Geology	DE1	Different cropping and land management practices affect the vegetation coverage of soils which has an influence on the risk and extent of soil erosion. The crop management factor C measures the impact of different management practices on soil erosion, which reduces the soil functionality and quality. The CMEF does currently not include an impact indicator for soils.		IACS data. Indicator is based on data and applications of the State Authority for Mining, Energy and Geology.
Mid term (2007-2013)- Annual report from realisation RDP 2007-	121	Number of farm holdings that received investment support	CMEF output	PL	Modernisation of farms improves their economic performance through introduction of new technologies and innovations.	National	Number of beneficiaries, amount of payment realised.

2013							
Mid term (2007-2013)	121	Number of support projects, including number 'new challenges' project	According to CMEF output	PL	Indicator indirectly measures the impact of investment on soil quality, according to the type and objective of the investment.	National	Number of supported 'new challenges' projects.
Mid term (2007-2013)	121	Value of 'new challenges' projects	According to CMEF output	PL	Indicator indirectly measures the impact of investment on soil quality, according to the type and objective of the investment.	National	Number of beneficiaries, amount of payment realised.
Annual report from realisation RDP 2007-2013	121	Type of investments		PL	Indicator indirectly measures the impact of investment on soil quality, according to the type and objective of the investment.	National	Number of beneficiaries, amount of payment realised.
Annual report from realisation RDP 2007-2013	121	Type of agricultural branch		PL		National	Number of beneficiaries, amount of payment realised.
Annual report from realisation RDP 2007-2013	121	Number of farm holdings that received investment support in LFAs, Natura 2000 and under Nitrate Directive areas		PL	.	National	Number of beneficiaries, amount of payment realised.
Mid term (2007-2013)	123	Number of beneficiaries	CMEF output	PL		Regional	Number of beneficiaries, area covered by the measure, amount of payment realised
Mid term (2007-2013)	123	Total value of investment	CMEF output	PL		Regional	Number of beneficiaries, area covered by the measure, amount of payment realised
Mid term (2007-2013)	123	Number of enterprises introducing new technologies and innovations	CMEF result	PL		Regional	Number of beneficiaries, area covered by the measure, amount of payment realised
Mid term (2007-2013)	123	Number of beneficiaries - enterprises processing plant materials into products used for energy purposes	According to CMEF	PL		Regional	Number of beneficiaries, area covered by the measure, amount of payment realised
Mid term	125	Number of operations	CMEF	PL	Indicator indirectly measures the impact on soil quality.	National	Number of operations, amount of payments

(2007-2013)- Annual report from realisation RDP 2007-2013		supported	output				
Mid term (2007-2013)- Annual report from realisation RDP 2007-2013	125	Total volume of investments	CMEF output	PL	Indicator indirectly measures the impact on soil quality.	National	Number of operations, amount of payments
On going and mid-term (2007-2013)	141	Number of semi-subsistence farm holdings which entered the market and meet the obligatory Community standards related to veterinary and phyto-sanitary requirements, animal welfare, environmental protection, hygiene and occupational health and safety		BG	The indicator indirectly measures the impact on soil quality.	National, regional	Monitoring data. Survey data.
Ex post (2004-2006) - Annual report from realisation RDP 2004-2006	141	Number of farm holdings that received investment support	CMEF output	PL	Indicator indirectly measures the impact on soil quality.	National	Number of beneficiaries, amount of payment realised
Ex post (2004-2006)	141	Structure of agricultural holdings due to the declared indirect objective of the support		PL	Indicator indirectly measures the impact on soil quality.	National	Number of beneficiaries
Annual report from	141	Number of beneficiaries whose agricultural holding is		PL	Indicator indirectly measures the impact on soil quality.	National	Number of beneficiaries

realisation RDP 2004-2006		located in LFAs					
On going and mid-term (2007-2013)	211	Level of contribution of the compensatory allowances to ensuring continued agricultural land use in mountain areas		BG	Maintaining the agricultural activities in mountain areas in order to prevent land abandonment.	National, regional	Input and output indicators: total public support; number of supported farms in mountain areas; supported agricultural land in the mountain regions (ha). Survey results.
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010-Annual report from realisation RDP 2007-2013-Annual report from realisation RDP 2004-2006-Case study (2010)	211	Number of supported holdings in LFAs	CMEF output	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Number of beneficiaries
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and	211	Supported agricultural land in LFAs	CMEF output	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Supported area

impact for axis 2 RDP 2007-2013, 2010-Annual report from realisation RDP 2007-2013-Annual report from realisation RDP 2004-2006-Case study (2010)							
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010-	211	Model Universal Soil Loss Equation per ha per year (USLE)		PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Supported area, number of beneficiaries
Case study (2010)	211	Livestock density per ha UAA		PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Supported area, number of beneficiaries
Case study (2010)	211	Density of granivorous livestock per ha UAA		PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Supported area, number of beneficiaries
Mid term (2007-2013)	211 Green cover use and less soil tillage	Achievement of environmental objective: Area to be contributing to Soil quality in the specific action (part of 211 in ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under soil quality measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area
Mid term	211 Reduced	Achievement of	Evaluator	ES61	The calculation of the area under soil quality measure as	Action	Financial uptake, targeted area

(2007-2013)	use of agrochemicals	environmental objective: Area to be contributing to Soil quality in the specific action (part of 211 in ha) X % financial uptake for this action.	s		a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.		
Mid term (2007-2013)	211 Reduced use of machinery/equipment	Achievement of environmental objective: Area to be contributing to Soil quality in the specific action (part of 211 in ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under soil quality measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area
On going and mid-term (2007-2013)	212	Level of contribution of the compensatory allowances to ensuring continued agricultural land use in mountain areas		BG	Maintaining the agricultural activities in mountain areas in order to prevent land abandonment.	National, regional	Input and output indicators: total public support; number of supported farms in mountain areas; supported agricultural land in the mountain regions (ha). Survey results.
Mid term (2007-2013)	212	Number of ha supported	CMEF output	NL	Impact assessment is based on evaluation question.		Survey among beneficiaries and interviews with experts. Number of management contracts (output) and area of maintained landscape (results) are just used to make an assessment of the success of this measure.
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010-Annual report from realisation RDP 2007-2013-Annual	212	Number of supported holdings in LFAs	CMEF output	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Number of beneficiaries

report from realisation RDP 2004-2006-Case study (2010)							
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP 2007-2013, 2010-Annual report from realisation RDP 2007-2013-Annual report from realisation RDP 2004-2006-Case study (2010)	212	Supported agricultural land in LFAs	CMEF output	PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Supported area
Mid term (2007-2013)-Ex post (2004-2006)-Report product index, result index and impact for axis 2 RDP	212	Model Universal Soil Loss Equation per ha per year (USLE)		PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Supported area, number of beneficiaries

2007-2013, 2010-							
Case study (2010)	212	Livestock density per ha UAA		PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Supported area, number of beneficiaries
Case study (2010)	212	Density of granivorous livestock per ha UAA		PL	The aim of the measure is to improve the environment through the promotion of sustainable farming systems.	National	Supported area, number of beneficiaries
Mid term (2007-2013)	212 Green cover use and less soil tillage	Achievement of environmental objective: Area to be contributing to Soil quality in the specific action (part of 212 in ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under soil quality measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area
Mid term (2007-2013)	212 Reduced use of agrochemicals	Achievement of environmental objective: Area to be contributing to Soil quality in the specific action (part of 212 in ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under soil quality measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area
Mid term (2007-2013)	212 Reduced use of machinery/equipment	Achievement of environmental objective: Area to be contributing to Soil quality in the specific action (part of 212 in ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under soil quality measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area
Mid term (2007-2013)	213	Changes in plant nutrient balance	Evaluators	EE	Restrictions concerning the use of biocides, plant protection products and fertilisers in Natura 2000 sites help to contribute to the preservation of the water and soil quality.	National	Soil sampling data from monitoring areas. Opinions of interviewees and focus group.
Mid term (2007-2013)	213	Area under successful land management contributing to improvement of soil quality	CMEF result	DE1	Positive impact through the promotion of extensification.		Ha of supported area
Mid term (2007-2013)	213	Increased number of areas where use of pesticides and mineral fertilisers is limited		LT	Indicators are not explicitly mentioned. Impacts are described both on water and soil. Indicator's title is taken form the analysis context. CMEF does not provide any soil impact indicator. Some of schemes restrict use of pesticides, mineral fertilisers and plant	National	Declarations (ha of area under measure)

					protection products. So expected effect is achieved in declared areas. Its efficiency is dependent on the effectiveness of control functions.		
Mid term (2007-2013)	213	Reduced number of territories with a risk of soil erosion and increased chemical elements migration in the soil		LT	Indicators are not explicitly mentioned. Impacts are described both on water and soil. Indicator's title is taken form the analysis context. CMEF does not provide any soil impact indicator. The measure does not allow land ploughing, so declared territories should be more resistant to erosion processes as well as have natural chemical cycles.	National	Declarations (ha of area under measure)
Ex ante (2007-2013)	213	Areas at risk of erosion (tn/ha/year)	CMEF baseline proposed as impact	LT	CMEF does not provide soil impact indicator. The measure does not allow land ploughing, so declared territories should be more resistant to erosion processes as well as have natural chemical cycles.	National	Declarations (ha of area under measure)
Mid term (2007-2013)	214	Increase of humus content	Evaluators-additional impact	AT	Increase of humus content in the soil improves the buffer, filter and storage function of agricultural soils and vineyards as well as the physical soil quality (improved infiltrations rate and less siltation).		
Mid term (2007-2013)	214 Erosion protection on arable land	Risk of soil erosion	Evaluators-additional impact	AT			Data of humus draining crops in Lower Austria
Mid term (2007-2013)	214-Organic farming-Environmentally friendly land use of arable land and grassland-Integrated production of potatoes, beet, vegetables and	(Risk of soil erosion)-Phosphorus content, humus content and pH of the soil	Evaluators-additional impact	AT	Measures key aspects of soil quality		Ha of area supported

	strawberries-Mulching and direct seeding-Catch crops / cover crops on arable land -Reduction of yield increasing agricultural inputs-Reduced or conservation or zero tillage						
On going and mid-term (2007-2013)	214	Level of impact of the agri-environment payments on maintaining or improving habitats and biodiversity		BG		National, regional	Number of farm holdings and the receiving support, total area under agri-environmental support (ha), total number of contracts, physical area under agri-environmental support (ha), number of actions related to genetic resources. Survey results.
Mid-term (2007-2013)	214 Support for environmentally friendly management -Support for organic farming	Soil fertility (pH, K, P); Changes in the soil organic matter content (organic carbon)	Evaluators	EE	Determine the changes in soil fertility levels with regard to AES by analysing the content of soil nutrients and organic elements.	National	Aggregate soil sampling data.
Mid-term (2007-2013)	214 Support for environmentally friendly management	Soil loss	Evaluators	EE	Determine areas threatened by soil erosion (water and wind erosion) and areas of actual erosion in Estonia based on land use.		Studies conducted on selected areas by analysing orthophotos and IACS/LPIS databases. GIS land use data. LIDAR relief data (2011 study)

	-Support for organic farming						
Mid-term (2007-2013)	214 Support for environmentally friendly management -Support for organic farming	Changes in the content of plant nutrients (P, K, Ca, Mg, Cu, Mn, B), acidity, nitrogen mineralization (Nmin) and organic matter content	Evaluators	EE		Monitoring in 3 areas across Estonia (areas with different soil-climatic conditions and different production types)	Analysis of soil samples (extra analysis of organic matter content and Nmin).
Mid-term (2007-2013)	214	Maintenance/increase the organic matter content in soils		FR	For the conservation of the soil and its fertility, the monitoring activities on the soil organic matter become essential, for this purpose this indicator evaluate the impact on this aspect on soil.	Programme level (PDRH)	Regional database, CORINE Land Cover, land use maps.
Ex ante (2007-2013)	214	Areas at risk of erosion (tn/ha/year)	CMEF baseline	FR	Soil plays a number of key environmental, social and economic issues, is relevant for the protection of water, air and biodiversity (habitat), the conservation of the landscape and cultural heritage.	Programme level (PDRH)	Regional database, CORINE Land Cover, land use maps.
Ex post (2000-2006)	214	Maintenance of soil		FR	The soil quality is generally assessed using two dimensions: sensitivity to erosion and organic matter content. About the risk of erosion, a database established by the GIS Soil, in order to identify erosion hazard areas but not to measure the risk evolution of the situation (erosion risk). The organic matter content is also followed by the GIS Soil over different periods of time. Long term observations between 1990-1995 and 1999-2004 periods.	National, programme level (PDRN)	GIS Soil
Mid term (2000-2006)	214	Proportion of UAA subject to friendly environment farming systems which affected area (a) to organic farming, (b)	Additional	FR	The introduction of innovative management projects aimed at promoting and developing methodologies and organization system, with specific reference to 'quality certification in agriculture', 'computerization in	National, programme level (PDRN)	Agricultural survey PDRN (RICA).

		Integrated production or integrated control agencies harmful, and (c) pasture with less than 2 LU/ha.			agriculture' and 'food safety and traceability products'. These aspects are linked with the measure and the investments in agricultural farms.		
Mid term (2000-2006)	214	Farmland under agreements preventing/reducing soil loss (number and hectares) of which reducing erosion from (mainly) water/wind/tillage respectively (%)	Additional	FR	This indicator was built in order to evaluate soil erosion due to the water, wind and tillage phenomena.	National, programme level (PDRN)	Agricultural survey PDRN (RICA),
Mid term (2007-2013)	214	Yearly soil loss (t/ha)	Evaluators-additional impact	DEG	Soil loss through erosion is detrimental to soil quality.	Regional	Estimation of soil loss rate per year; impact of the measures is based on literature.
Ex post (2000-2006)	214 Extensification and transformation of cropland to grassland-Environmental friendly production-Abandonment of the use of chemically synthesised inputs	Ha of promoted areas	CMEF output	DE1			Ha of promoted areas.
Mid term (2007-2013)	214 No till farming-Catch crops-Organic farming	Soil erosion - estimation of the C factor for soil erosion and prevented soil loss rate	Builds on ex-post evaluation of measure 121	DE9	Different cropping and land management practices affect the vegetation coverage of soils which has an influence on the risk and extent of soil erosion. The crop management factor C measures the impact of different management practices on soil erosion, which reduces the soil functionality and quality. The CMEF does currently not include an impact indicator for soils.	Regional (Federal State)	IACS data. Indicator is based on data and applications of the State Authority for Mining, Energy and Geology.

Mid term (2007-2013)	214	Maintenance/increase the organic matter content in soils		ITF4	For soil fertility conservation the monitoring activities on the soil organic matter become essential, for this purpose this indicator evaluates the impact on this aspect on soil.		Soil quality and CORINE Land Cover
Ex ante (2007-2013)	214	Risk of soil erosion by water environment on an annual basis	IRENA	ITF4			Regional erosion risk current drawn by ARPA in 2006
Ex ante (2007-2013)	214	Quality of the soil, the organic carbon content in the surface layer (0-30 cm).	IRENA	ITF4			
Ex post (2000-2006)	214	Resources/assets enjoying improved protection due to assisted forest actions (hectare): (a) of which agricultural land (%) (b) of which water bodies (%) (c) of which villages, tourist facilities (%, plus type & magnitude of interest – e.g., expressed approximately as number of inhabitants, night beds, etc)		ITF4	Soil plays a number of key environmental, social and economic issues; it is relevant for the protection of water, air and biodiversity (habitat) for the conservation of the landscape and cultural heritage.		SINAB data. Organic agriculture and Regional census.
Ex post (2000-2006)	214	Area under assisted farming systems or practices that reduce/prevent leeching, run-off or sedimentation of farm inputs/soil in adjacent valuable wetland or aquatic habitats (hectares) (a) of which input reduction techniques (%) (b) of which run-off and/or erosion prevention (%) (c) of which reduction of leaching (%)		ITF4	Soil plays a number of key environmental, social and economic issues, it is relevant for the protection of water, air and biodiversity (habitat) for the conservation of the landscape and cultural heritage.		CORINE Land Cover and Regional Census.
Mid term (2007-2013)	214	Maintenance/increase the organic matter content in soils		ITH5	For the conservation of the soil and its fertility, the monitoring activities on the soil organic matter become essential, for this purpose this indicator evaluates the		IACS data, Regional UAA (SOI/UAA), SOI: surface measure object

					impact on this aspects in soil		
Mid term (2007-2013)	214	Change in risk of erosion	CMEF baseline	ITH5	The erosion risk is an indicator of the soil loss due to the process and is in relation with the measure that evaluates the impact on soil characterisation.		IACS data
Mid term (2007-2013)	214 Ecological corridors, buffer strips, hedges and copses- Meadows, pastures and meadows pastures- Organic farming- Management agricultural land with low input- Improving soil quality- Improving soil quality	Maintenance / increase the organic matter content in soils		ITH3	For the conservation of the soil and its fertility, the monitoring activities on the soil organic matter become essential, for this purpose this indicator evaluate the impact on this aspects in soil		IACS data, results of the previous analysis of the impact. Results of business surveys for the structural measures. Parameters and data taken from the literature and national, international agencies (Padua University).
Ex ante (2007-2013)	214	Areas at risk of erosion (tn/ha/year)	CMEF baseline	ITH3	For this environmental resource, the purpose is related to the knowledge and the preservation of its many functions, and productive environment. The need for a sustainable use of soil resources is linked to its slow regeneration capacity, the need to maintain and promote all of its functions, to conserve resources present in it, but also to its possible role as a 'biological filter' that can within certain limits, to curb any negative impacts on the environment and likely produced by other major environmental matrices compromised by human activities. The protection of soil from erosion and pollution, is one of the objectives of the Sixth	Regional	2005 monitoring database is the most representative of the number of beneficiaries and areas affected by agri-environmental measures. Regional database, CORINE Land Cover, AVEPA, Land use maps.

					Environment Action Programme.		
Ex post (2000-2006)	214 Economic growth- Integrated farming- Buffer strips- Catch crops- Conservation of lowland meadows and conservation of arable land into permanent grassland- Conservation and recovery of meadows and pastures of the hills and mountain- Planting and conservation of hedges and copses	Farmland under agreements preventing/reducing soil loss (number and hectares) of which: reducing erosion from (mainly) water/wind/tillage respectively (%)-land-use (pasture, other permanent crops)		ITH3	Soil is a vital and largely non-renewable source, subject to increasing anthropogenic pressure. It plays a number of key environmental, social and economic issues, is relevant for the protection of water, air and biodiversity (habitat) for the conservation of the landscape and cultural heritage and the development of many economic activities.	Regional	2005 monitoring database is the most representative of the number of beneficiaries and areas affected by agri-environmental measures. Regional database, CORINE Land Cover, AVEPA, Land use maps.
Mid term (2007-2013)	214	Increased number of areas where use of pesticides and mineral fertilisers is limited		LT	Indicators are not explicitly mentioned. Impacts are described both on water and soil. Indicator's title is taken form the analysis context. CMEF does not provide any soil impact indicator. Some of schemes restrict use of pesticides, mineral fertilisers and plant protection products. So expected effect is achieved in declared areas. Its efficiency is dependent on the effectiveness of control functions.	National	Declarations (ha of area under measure)

Mid term (2007-2013)	214	Reduced number of territories with a risk of soil erosion and increased chemical elements migration in the soil		LT	Indicators are not explicitly mentioned. Impacts are described both on water and soil. Indicator's title is taken form the analysis context. CMEF does not provide any soil impact indicator. The measure does not allow land ploughing, so declared territories should be more resistant to erosion processes as well as have natural chemical cycles.	National	Declarations (ha of area under measure)
Ex ante (2007-2013)	214	Areas at risk of erosion (tn/ha/year)	CMEF baseline proposed as impact	LT	CMEF does not provide soil impact indicator. The measure does not allow land ploughing, so declared territories should be more resistant to erosion processes as well as have natural chemical cycles.	National	Declarations (ha of area under measure)
Ex post (20004-2006)	214	Reduced erosion		LT		National	Surveys, monitoring data from RDP administrating organization.
Ex post (20004-2006)	214	Reduced or avoided chemical pollution		LT		National	Surveys, monitoring data from RDP administrating organization.
Ex post (20004-2006)	214	Benefits for society from soil protection		LT		National	Surveys, monitoring data from RDP administrating organization.
Mid term (2007-2013)	214	Area under AEMs	CMEF output	NL	The activities under this measure do not include a main objective to improve soil quality however the current management contract that reduce the use of agri-chemicals and fertilisers will contribute to soil quality.		Monitoring system (area under AEMs), expert interviews and literature research.
Mid term (2007-2013)- Report product index, result index and impact for axis 2 RDP 2007-2013, 2010	214	Number of beneficiaries receiving AEP	CMEF output	PL	This indicator has linked to the provision of public good, it refers to raise qualities of the soil and increase humus.	National	Number of beneficiaries, amount of payment realised
Mid term (2007-2013)- Report product index, result	214	Area under AEMs	CMEF output	PL	This indicator has linked to the provision of public good, it refers to raise qualities of the soil and increase humus.	National	Number of beneficiaries, amount of payment realised

index and impact for axis 2 RDP 2007-2013, 2010							
Mid term (2007-2013)- Report product index, result index and impact for axis 2 RDP 2007-2013, 2010	214	Model Universal Soil Loss Equation per ha per year (USLE)		PL	This indicator has linked to the provision of public good, it refers to raise qualities of the soil and increase humus.	National	Number of beneficiaries, amount of payment realised
Mid term (2007-2013)- Report product index, result index and impact for axis 2 RDP 2007-2013, 2010	214	Share of area covered by green fields during winter in total UAA		PL	This indicator has linked to the provision of public good, it refers to raise qualities of the soil and increase humus.	National	Number of beneficiaries, amount of payment realised
Mid term (2007-2013)	214 Green cover use and less soil tillage	Achievement of environmental objective: Area to be contributing to Soil quality in the specific action (part of 214 in ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under soil quality measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area
Mid term (2007-2013)	214 Reduced use of agrochemicals	Achievement of environmental objective: Area to be contributing to Soil quality in the specific action (part of 214 in ha) X %	Evaluators	ES61	The calculation of the area under soil quality measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area

		financial uptake for this action.					
Mid term (2007-2013)	214 Reduced use of machinery/equipment	Achievement of environmental objective: Area to be contributing to Soil quality in the specific action (part of 214 in ha) X % financial uptake for this action.	Evaluators	ES61	The calculation of the area under soil quality measure as a function of the proportion of the financial uptake and the programmed target area is provided as an estimation of the impact.	Action	Financial uptake, targeted area
Mid-term (2007-2013)	214	Area of land contributing to maintaining and improving soil quality	CMEF output/result	UK-ENG	Water and soil quality are partially reported together, with main impacts directly linked on water quality and effects of runoff in arable and grassland systems. Impacts of measures such as buffer strips and related options, commonly addressed with water-related impacts.	Catchments are proposed as the adequate level for joint soil-water assessment, although most of reporting from the literature refers to plot or farm level.	Secondary literature, both scientific and reports from Natural England. Result indicator (area of land contributing to maintaining and improving soil quality), output targets (number of holdings, area under support, physical area and number of contracts), baseline soil indicators (areas at risk of soil erosion and UAA under organic).
Mid-term (2007-2013)	216	Area of land contributing to maintaining and improving soil quality	CMEF output/result	UK-ENG	This measure is partially evaluated (Volume 2) with measure 214. Water and soil quality are partially reported together, with main impacts directly linked on water quality and effects of runoff in arable and grassland systems. Impacts of measures such as buffer strips and related options, commonly addressed with water-related impacts.	Catchments are proposed as the adequate level for joint soil-water assessment, although most of reporting	Secondary literature, both scientific and reports from Natural England. Result indicator (area of land contributing to maintaining and improving soil quality), output targets (number of holdings, area under support, physical area and number of contracts), baseline soil indicators (areas at risk of soil erosion and UAA under organic).

						from the literature refers to plot or farm level.	
Mid-term (2007-2013)	221	Risk of soil erosion	Evaluators-additional impact	AT	Afforestation of agricultural land reduces the risk for soil erosion		
Mid term (2007-2013)	221	C sequestration through afforestation		PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of beneficiaries, area covered by the measure
Mid term (2007-2013)	221	Number of Ha of afforestated land	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase of afforestated area in relation to the existing forests		PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Share of afforestation in agricultural area		PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase in the share of the areas supported by Measures 221 and 223 in relation to the RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Number of beneficiaries receiving afforestation aid	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase in the number of beneficiaries receiving afforestation aid in relation to RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Relationship between the index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI)		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation. The Transition index (TI) is the ratio of the share of area under afforestation in individual soil quality classes to the share of afforestated area in all arable land. It is expected that afforestation is preferentially concentrated on land with low agricultural suitability, therefore TI will be bigger for worse soil quality classes measured by the index of Valorisation of Agricultural	National	Number of beneficiaries, area covered by the measure, qualitative: index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI).

					Production Space (WWRPP).		
Mid term (2007-2013)	221	Degree of implementation of the afforestation plan		PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	221	Increase in the number of forest corridors		PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of beneficiaries, area covered by the measure.
Mid-term (2007-2013)	221	Number of ha of afforestated area	CMEF and Forestry Commission Output/result indicators	UK-ENG	No clear linkages seem to exist between output-result indicators and soil quality, with most reference linked to water/catchments.	Scales is hereby linked to water quality through catchments.	Ha of new forest areas from the Forestry Commission. Literature review and secondary evidence.
On going and mid term (2007-2013)	223	Increased areas of forests		BG		National, regional	Financial parameters of the proposals/contracts. Additional indicators that have been used: number of beneficiaries receiving afforestation aid, number of hectares of afforested land. Survey from beneficiaries.
Mid term (2007-2013)	223	Increased number of areas where use of pesticides and mineral fertilisers is limited		LT	Indicators are not explicitly mentioned. Impacts are described both on water and soil. Indicator's title is taken form the analysis context. CMEF does not provide any soil impact indicator. Some of schemes restrict use of pesticides, mineral fertilisers and plant protection products. So expected effect is achieved in declared areas. Its efficiency is dependent on the effectiveness of control functions.	National	Declarations (ha of area under measure)
Mid term (2007-2013)	223	Reduced number of territories with a risk of soil erosion and increased chemical elements migration in the soil		LT	Indicators are not explicitly mentioned. Impacts are described both on water and soil. Indicator's title is taken form the analysis context. CMEF does not provide any soil impact indicator. The measure does not allow land ploughing, so declared territories should be more resistant to erosion processes as well as have natural chemical cycles.	National	Declarations (ha of area under measure)
Ex ante (2007-2013)	223	Areas at risk of erosion (tn/ha/year)	CMEF baseline proposed	LT	CMEF does not provide soil impact indicator. The measure does not allow land ploughing, so declared territories should be more resistant to erosion processes	National	Declarations (ha of area under measure)

			as impact		as well as have natural chemical cycles.		
Mid term (2007-2013)	223	C sequestration through afforestation		PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of beneficiaries, area covered by the measure
Mid term (2007-2013)	223	Number of Ha of afforestated land	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase of afforestated area in relation to the existing forests		PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Share of afforestation in agricultural area		PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase in the share of the areas supported by Measures 221 and 223 in relation to the RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Number of beneficiaries receiving afforestation aid	CMEF output	PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase in the number of beneficiaries receiving afforestation aid in relation to RDP 2004-2006		PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Relationship between the index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI)		PL	Afforestated area and number of beneficiaries have a significant impact on climate change mitigation. The Transition index (TI) is the ratio of the share of area under afforestation in individual soil quality classes to the share of afforestated area in all arable land. It is expected that afforestation is preferentially concentrated on land with low agricultural suitability, therefore TI will be bigger for worse soil quality classes measured by the index of Valorisation of Agricultural Production Space (WWRPP).	National	Number of beneficiaries, area covered by the measure, qualitative: index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI).
Mid term (2007-2013)	223	Degree of implementation of the afforestation plan		PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	223	Increase in the number of forest corridors		PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	224	Reduced number of territories with a risk of soil erosion and increased chemical elements		LT	Indicators are not explicitly mentioned. Impacts are described both on water and soil. Indicator's title is taken form the analysis context. CMEF does not	National	Declarations (ha of area under measure)

		migration in the soil			provide any soil impact indicator. The measure does not allow land ploughing, so declared territories should be more resistant to erosion processes as well as have natural chemical cycles.		
Ex ante (2007-2013)	224	Areas at risk of erosion (tn/ha/year)	CMEF baseline proposed as impact	LT	CMEF does not provide soil impact indicator. The measure does not allow land ploughing, so declared territories should be more resistant to erosion processes as well as have natural chemical cycles.	National	Declarations (ha of area under measure)
Mid-term (2007-2013)	225	Risk of soil erosion	Evaluators-additional impact	AT	Regeneration of forest stands reduces the risk for soil erosion.		Ha of promoted areas
Mid term (2007-2013)	225	Reduced number of territories with a risk of soil erosion and increased chemical elements migration in the soil		LT	Indicators are not explicitly mentioned. Impacts are described both on water and soil. Indicator's title is taken form the analysis context. CMEF does not provide any soil impact indicator. The measure does not allow land ploughing, so declared territories should be more resistant to erosion processes as well as have natural chemical cycles.	National	Declarations (ha of area under measure)
Ex ante (2007-2013)	225	Areas at risk of erosion (tn/ha/year)	CMEF baseline proposed as impact	LT	CMEF does not provide soil impact indicator. The measure does not allow land ploughing, so declared territories should be more resistant to erosion processes as well as have natural chemical cycles.	National	Declarations (ha of area under measure)
Mid term (2007-2013)	225	Area under successful land management contributing to increasing soil quality	CMEF result	UK-ENG	Impact assessment is based on interpretation from indirectly related result and output indicators. Some additional information is provided on the effects of protected areas (Sites of Special Scientific Interests, Natura 2000 & Native Woodland) over soil quality. (Information of measure is reported along with 221, 223, 227).		
Mid term (2007-2013)	225	Area under forest environment support	CMEF output	UKM		Farm level	Measure specific survey of Rural Priority and Land Manager's Option beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data
On going	226	Area of restored forestry/	CMEF	BG	The indicator indirectly measures the impact on soil	National,	Financial parameters of the proposals/contracts.

and mid term (2007-2013)		supported area of damaged forests	output		quality.	regional	Survey results. Additional indicators that have been used: total public support, number of actions supported, number of equipped anti-fire depots, number of established/improved places for helicopters, number of fire monitoring points constructed/improved.
Mid term (2007-2013)	226	Reduced number of territories with a risk of soil erosion and increased chemical elements migration in the soil		LT	Indicators are not explicitly mentioned. Impacts are described both on water and soil. Indicator's title is taken form the analysis context. CMEF does not provide any soil impact indicator. The measure does not allow land ploughing, so declared territories should be more resistant to erosion processes as well as have natural chemical cycles.	National	Declarations (ha of area under measure)
Ex ante (2007-2013)	226	Areas at risk of erosion (tn/ha/year)	CMEF baseline proposed as impact	LT	CMEF does not provide soil impact indicator. The measure does not allow land ploughing, so declared territories should be more resistant to erosion processes as well as have natural chemical cycles.	National	Declarations (ha of area under measure)
Mid term (2007-2013)	226	Area of restored forestry/ supported area of damaged forests	CMEF output	PL	The prevention/restoration actions contribute to improvement of soil quality	Local	Number of beneficiaries, area covered by the measure
Mid term (2007-2013)	226	Forest land potentially affected by biotic factors associated with the occurrence of diseases and pests		PL	The prevention/restoration actions contribute to improvement of soil quality.	Local	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	226	Number of prevention/restoration actions	CMEF output	PL	The prevention/restoration actions contribute to improvement of soil quality.	Local	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	226	The proposed length of forest roads - fire commute		PL	The prevention/restoration actions contribute to improvement of soil quality.	Local	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	226	Number of districts in the division of the degree of fire risk in accordance with the rules of this prevention action		PL	The prevention/restoration actions contribute to improvement of soil quality.	Local	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	226	Total volume of investments for restoring forestry potential and introducing prevention action	CMEF output	PL	The prevention/restoration actions contribute to improvement of soil quality.	Local	Number of beneficiaries, area covered by the measure.

Mid term (2007-2013)	227	Reduced number of territories with a risk of soil erosion and increased chemical elements migration in the soil		LT	Indicators are not explicitly mentioned. Impacts are described both on water and soil. Indicator's title is taken form the analysis context. CMEF does not provide any soil impact indicator. The measure does not allow land ploughing, so declared territories should be more resistant to erosion processes as well as have natural chemical cycles.	National	Declarations (ha of area under measure)
Ex ante (2007-2013)	227	Areas at risk of erosion (tn/ha/year)	CMEF baseline proposed as impact	LT	CMEF does not provide soil impact indicator. The measure does not allow land ploughing, so declared territories should be more resistant to erosion processes as well as have natural chemical cycles.	National	Declarations (ha of area under measure)
Mid term (2007-2013)	227	Number of supported forest holders	CMEF output	UKM		Farm level	Measure specific survey of Rural Priority and Land Manager's Option beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data
Mid-term (2007-2013)	321	Number of supported actions	CMEF output	PL	Indirect influence of measure on soil quality.	National	Number of operations
Mid-term (2007-2013)	321	Total volume of investment	CMEF output	PL	Indirect influence of measure on soil quality.	National	Amount of payment
Ex post (2000-2006)	Programme level	Amount of budget spent on measures to improve soil		AT	Although the evaluation differentiates according to EC indicators, the evaluation mainly assesses the budget of promotion (in Mio. Euro) and its share of the total programme budget (in %).		Amount of budget spent on measures to improve soil
SEA	Programme level	Quality of the soil, the organic carbon content in the surface layer (0-30 cm)	IRENA	ITF4	High organic carbon content limits the erosion and enhances the ability of CO2 absorption. Soils with organic content of between 1% and 10% can be considered of high agricultural value, while soils with contents less than 1% are at risk of desertification. The value of Puglia soils is about 1,17%, which is considered good.		
SEA	Programme level	Risk of soil erosion by water environment on an annual basis	IRENA	ITF4	Soil erosion is a widespread problem throughout Europe. The Mediterranean, and in this specific case, the region of Puglia, is a region particularly vulnerable because of alternation of long dry periods to short periods of heavy rainfall. Any soil loss of more than		

					1ton/ha/year can be considered as irreversible within a period of 50-100 years. The value for Puglia is 0,72 t/ha/year, which is considered low, mainly due to the climatic conditions and its morphology.		
SEA	Programme level	Land use change	(ARPAV, Regional Environmental Protection Agency)	ITH3			
SEA	Programme level	Change in soil carbon	ARPAV (Regional Environmental Protection Agency)	ITH3			
SEA	Programme level	Change in current soil erosion risk	ARPAV (Regional Environmental Protection Agency)	ITH3			
SEA	Programme level	Number of landslides / floods	ARPAV (Regional Environmental Protection Agency)	ITH3			

Table A6 List of indicators for Landscape

Report	Measure/ Programme	Indicator	Type-origin of indicator	Country	Causal chain	Scale	Data
Mid term (2007-2013)	111	Number of participants in training	CMEF output	BG	The indicator is indirectly linked to landscape. The training curriculum for plant production and livestock breeding include modules dedicated to landscape, as well as examples of best practices. This could help farmers to take advantages of this knowledge, to implement and face the requirements of the EU regarding landscape. According to the survey results more than 70 % of beneficiaries under the RDP have no specific agricultural education and training. Farmers who completed training will be aware of the requirements of the EU.	National, regional	Number of participants, survey results
Mid term (2007-2013)	111	Number of training days received	CMEF output	BG	The indicator is indirectly linked to landscape. The training curriculum for plant production and livestock breeding include modules dedicated to landscape, as well as examples of best practices. This could help farmers to take advantages of this knowledge, to implement and face the requirements of the EU regarding landscape. According to the survey results more than 70 % of beneficiaries under the RDP have no specific agricultural education and training. Farmers who completed training will be aware of the requirements of the EU.	National, regional	Number of training days, survey results
Mid term (2007-2013) - Annual report from realisation RDP 2007-2013, MARD	111	Number of trainings on sustainable land management	According to CMEF output	PL	The aim of the measure is to diffuse scientific knowledge and innovative practises in the agricultural and forestry sector. Indirect impact.	National	Number of training days, number of beneficiaries, amount of payments realised, annually.
Mid term (2007-2013)	114	Number of farmers who use advisory services	CMEF output	BG		National, regional	Number of farmers who use advisory services. Survey results.

Mid term (2007-2013) - Annual report from realisation RDP 2007-2013, MARD	114	Number of farmers who use advisory services	CMEF output	PL		National	Number of farmers who use advisory services on sustainable land management and sustainable management of natural resources, amount of payments realised.
Mid term (2007-2013)	121	Level of improvement of the overall performance of the agricultural holdings (competitiveness, sustainability and protection of environment)	CMEF output	BG	One of the objectives of the measure is to improve the protection of the environment.	National	Number of holdings supported and number of holdings in livestock breeding, number of farms meeting the requirements of the nitrate Directive 91/676/EEC were used as additional indicators. Survey results.
Mid term (2007-2013)	125 Infrastructure in context with the development and adaptation of agriculture and forestry	Maintenance and creation of cultural landscapes (e.g. landscape protective forest roads)		AT			
Mid term (2007-2013)	125	Area of land affected by measure (ha) and Added value by land use and operation	CMEF output	NL		National	Area of land affected by measure (ha) and Added value by land use and operation
Mid term (2007-2013) - Annual report from realisation RDP 2007-2013, MARD	125	Number of operations supported	CMEF output	PL		National	Number of operations, amount of payments
Mid term (2007-2013) - Annual report from	125	Total volume of investments	CMEF output	PL		National	Number of operations, amount of payments

realisation RDP 2007-2013, MARD							
Mid term (2007-2013)	141	Number of semi-subsistence farm holdings which entered the market and meet the obligatory Community standards related to veterinary and phyto-sanitary requirements, animal welfare, environmental protection, hygiene and occupational health and safety		BG		National, regional	Monitoring data and survey results
Mid term (2007-2013)	211	Share of area under organic farming		AT	Maintenance of a diverse cultural landscape, cultural landscapes are strongly influenced by agricultural land-use.		
Mid term (2007-2013)	211	stocking density (LU) per ha forage area		AT	Low stocking density protects ecologic sensitive areas and biodiversity.	National	Stocking density (LU) in different regions
Mid term (2007-2013)	211	Level of contribution of the compensatory allowances to ensuring continued agricultural land use in mountain areas		BG	To maintain the agricultural activities in mountain areas and to prevent land abandonment and depopulation. To contribute to the conservation and improvement of existing biodiversity in mountain areas via rational use. Conservation and sustainable development of land and other natural resources. Improvement of environment through implementation of good agricultural practices.	National, regional	Survey results. Input and output indicators: total public support; number of supported farms in mountain areas; supported agricultural land in the mountain regions (ha).
Ex post (2004-2006)-Mid term(2007-2013)-Report product index, result index and impact for axis 2 (2010)-Annual report from	211	Number of supported holdings in LFAs	CMEF output	PL	The aim of this measure is to improve the environment and the countryside by means of support for land management. The other aim of this measure is to promote sustainable farming systems, especially to maintain extensive farming.	National	Number of beneficiaries

realisation RDP 2007-2013, MARD-Annual report from realisation RDP 2004-2006, MARD-Case study 2010							
Ex post (2004-2006)-Mid term(2007-2013)-Report product index, result index and impact for axis 2 (2010)-Annual report from realisation RDP 2007-2013, MARD-Annual report from realisation RDP 2004-2006, MARD-Case study 2010	211	Supported agricultural land in LFAs	CMEF output	PL	The aim of this measure is to improve the environment and the countryside by means of support for land management. The other aim of this measure is to promote sustainable farming systems, especially to maintain extensive farming	National	Supported area
Ex post	211	Share permanent grasslands per		PL		National	Share permanent grasslands per ha

(2004-2006)		ha UAA					UAA
Mid term (2007-2013)- Report product index, result index and impact for axis 2 (2010)	211	Patch Density Index		PL		National	Number of complex with mosaic UAA, forest on areas covered by measure
Case study 2010	211	Share of ecologic compensation areas in UAA		PL		National	Share ecologic compensation areas in UAA
Mid term (2007-2013)	212	Share of area under organic farming		AT	Maintenance of a diverse cultural landscape, cultural landscapes are strongly influenced by agricultural land-use.		
Mid term (2007-2013)	212	Stocking density (LU) per ha forage area	Additional	AT	Low stocking density protects ecologic sensitive areas and biodiversity.	National	Stocking density (LU) in different regions
Mid term (2007-2013)	212	Level of contribution of the compensatory allowances to ensuring continued agricultural land use in mountain areas		BG	To maintain the agricultural activities in mountain areas and to prevent land abandonment and depopulation. To contribute to the conservation and improvement of existing biodiversity in mountain areas via rational use. Conservation and sustainable development of land and other natural resources. Improvement of environment through implementation of good agricultural practices.	National, regional	Input and output indicators: total public support; number of supported farms in mountain areas; supported agricultural land in the mountain regions (ha). Survey results
Ex post (2004-2006)	212	Preservation of traditional landscape features	Additional	LT	(There was no environmental impact indicators used for 2004-2006. The title is given from the contextual information)	National	Surveys, monitoring data from RDP administrating organization
Mid term (2007-2013)	212	Preservation of traditional landscape features	Additional	LT	From contextual information can be concluded that indicator is based on prerequisite, that schemes which determine particular requirements from environmental point of view are important also for preservation of landscape. Therefore supports for territories where those schemes are applied allow to preserve landscape.	National	Declarations (area under support)
Mid term (2007-2013)	212	Ha of area supported	CMEF output	NL	Impact assessment is based on evaluation question.		Survey among beneficiaries and interviews with experts. Number of management contracts (output) and area of maintained landscape (results) are just used to make an assessment of

							the success of this measure.
Ex post (2004-2006)-Mid term(2007-2013)-Report product index, result index and impact for axis 2 (2010)-Annual report from realisation RDP 2007-2013, MARD-Annual report from realisation RDP 2004-2006, MARD-Case study 2010	212	Number of supported holdings in LFAs	CMEF output	PL	The aim of this measure is to improve the environment and the countryside by means of support for land management. The other aim of this measure is to promote sustainable farming systems, especially to maintain extensive farming.	National	Number of beneficiaries
Ex post (2004-2006)-Mid term(2007-2013)-Report product index, result index and impact for axis 2 (2010)-	212	Supported agricultural land in LFAs	CMEF output	PL	The aim of this measure is to improve the environment and the countryside by means of support for land management. The other aim of this measure is to promote sustainable farming systems, especially to maintain extensive farming	National	Supported area

Annual report from realisation RDP 2007-2013, MARD-Annual report from realisation RDP 2004-2006, MARD-Case study 2010							
Ex post (2004-2006)	212	Share permanent grasslands per ha UAA		PL		National	Share permanent grasslands per ha UAA
Mid term (2007-2013)-Report product index, result index and impact for axis 2 (2010)	212	Patch Density Index		PL		National	Number of complex with mosaic UAA, forest on areas covered by measure
Case study 2010	212	Share ecologic compensation areas in UAA		PL		National	Share ecologic compensation areas in UAA
Mid term (2007-2013)	212	Ha of area supported	CMEF output	UKM			Survey responses of beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data
Mid term (2007-2013)	213	Preservation of traditional landscape features		LT	From contextual information can be concluded that indicator is based on prerequisite, that schemes which determine particular requirements from environmental point of view are important also for preservation of landscape. Therefore support for territories where those schemes are applied allow to preserve landscape.	National	Declarations (area under support)

Mid term (2007-2013)	214	Maintenance of a diverse landscape and landscape elements	Study	AT	Study: changes in landscape features (e.g. tree rows, hedgerows) are visualised by comparing orthophotos between 1994 and 2008 in 5 regions and are assessed with the participation data of AEMs. Changes in landscapes are assessed qualitatively and additionally, farmers are interviewed regarding their attitude towards AEMs and their impacts on landscape.		
Mid term (2007-2013)	214	Level of impact of the agri-environment payments on maintaining or improving habitats and biodiversity		BG		National, regional	Number of farm holdings and the receiving support, total area under agri-environmental support (ha), total number of contracts, physical area under agri-environmental support (ha), number of actions related to genetic resources. Survey results.
Mid term (2007-2013)	214	Area indicators	CMEF output 7 results, literature review	UK-ENG		Landscape scale (but is poorly defined)	CMEF output and results indicators related to 214, literature review (Primdahl, 2010, Boatman et al, 2010 and ADAS, 2000), surveys from English Heritage (2009).
Mid term (2007-2013)	214 Support for environmentally friendly management-Support for organic farming	Changes in the structure of the landscape in terms of point, linear- and areal elements - Changes in the general upkeep of the farms.	Evaluators	EE	The objective of the indicator is to assess if the application of AES requirements has affected the visual attractiveness, coherence, cultural characteristics and homogeneity/diversity of agricultural land		All elements of the landscape structure must be indicated on the field work map, the condition of the farms is identified by using photos and descriptions. Monitoring activities are carried out on the first and last year of the programme
on going mid term (2007-2013)	214	Measuring the attractiveness of the area: Effect of abandonment on the landscape		FR	There is a casual chain between the link indicator and the programme.	Regional	National statistics on agricultural production and agri-environmental system commitments;
on going mid term (2007-2013)	214	Measuring the attractiveness of the area: Effect on the landscape		FR	There is a casual chain between the link indicator and the programme.	Regional	National statistics on agricultural production and agri-environmental system commitments;
Mid term (2007-2013)	214	Changes of the naturalness of the habitat patches related to AE measures	Evaluation question	HU	Indicator aims at finding correlation between the naturalness of different habitat patches inside the formerly designated landscape districts and parcels contracted under AE	National	IACS contracted parcels, 'MÉTA' - Spatial Database of Habitats in Hungary

					measures. The survey aims to evaluate the percentage of the survey plots (MÉTA hexagons) including different natural/semi natural habitats and AE contracted parcels related to the total number of survey plots per landscape district concerned.		(http://www.novenyzetiterkep.hu/?q=en/english/node/55), coverage of landscape districts
Mid term (2007-2013)	214-Grassland related measures	Characteristic landscape	DLR RNH (rural service center of Rheinhessen-Nahe-Hunsrück)	DEB	Extensification of grassland use increases biodiversity which has positives effects on landscape characteristics (e.g. increased diversity).	Regional	Frida database (DLR RNH): floristic and faunistic survey of 470 selected areas covering AEM participants and non-participants
Ex post (2000-2006)	214 (MEKA)	Farmland under agreement contributing to perceptive/ cognitive, in particular visual, differentiation (homogeneity/diversity) in the landscape (number of sites and hectares/ kilometres) (a) of which due to the visual complexity resulting from land-use/crop patterns influenced by the supported actions (extent, spatial arrangement including height, colours) (%) (b) of which due to environmental features such as flora, fauna or habitats directly/indirectly resulting from the supported actions (%) (c) of which due to man-made objects (hedgerows, ditches, tracks) introduced/preserved by the supported actions or the possibility, thanks to support for vegetation management, of	EC	DE1		Regional (Federal State)	IACS data, Ha of promoted areas.

		viewing the landscape differentiation (homogeneity /diversity) (%)					
Ex post (2000-2006)	214	Farmland under agreement contributing to perceptive /cognitive, in particular visual, differentiation (homogeneity /diversity) in the landscape (number of sites and hectares/ kilometres) (a) of which due to the visual complexity resulting from land-use/crop patterns influenced by the supported actions (extent, spatial arrangement including height, colours) (%)(b) of which due to environmental features such as flora, fauna or habitats directly/indirectly resulting from the supported actions (%)(c) of which due to man-made objects (hedgerows, ditches, tracks) introduced/preserved by the supported actions or the possibility, thanks to support for vegetation management, of viewing the landscape differentiation (homogeneity/diversity) (%)	EC	ITF4	The aim of the impact indicator is to assess the extent to which agri-environmental activities can contribute to the protection / enhancement of the landscape, this is the link with the measure 214 that promotes the agri-environmental activities.	Regional	Land use Puglia Region
Ex post (2000-2006)	214	Farmland under agreement contributing to the maintenance/enhancement of cultural/historical characteristics of the zone (number of sites/objects, and hectares/ kilometres) (a) of which due to	EC	ITF4	The aim of the impact indicator is to assess the extent to which agri-environmental activities can contribute to the protection / enhancement of the landscape, this is the link with the measure 214 that promotes the agri-environmental activities.	Regional	

		the presence of traditional crops or traditional domestic animals as influenced by the supported actions (%) (b) of which due to man-made linear objects (hedgerows, ditches, tracks) reintroduced/preserved by the supported actions (%) (c) of which due to man-made point/singular features reintroduced/preserved by the supported actions (e.g., presence of patches of trees or the possibility of viewing heritage thanks to vegetation management, etc) (%) (d) of which due to opportunities for experiencing traditional farm activities (herding, transhumance, haymaking, etc) reintroduced/preserved by the supported actions (%)					
Ex post (2000-2006)	214	Evidence of societal benefits/value resulting from the protected/improved landscape structures and functions (description)	EC	ITF4	The aim of the impact indicator is to assess the extent to which agri-environmental activities can contribute to the protection / enhancement of the landscape, this is the link with the measure 214 that promotes the agri -environmental activities	Regional	
Mid term (2007-2013)	214	'Willingness to pay' for the conservation of components and landscape attributes		ITF4	There is a casual chain between the link indicator and the programme	Regional	Land use from the Veneto Region and ISTAT database, interviews made to a representative sample of the Veneto population
Ex post (2000-2006)	214	Farmland under agreement contributing to perceptive/cognitive, in particular visual, differentiation (homogeneity/diversity) in the	EC	ITH3	The aim of the impact indicator is to assess the extent to which agri-environmental activities can contribute to the protection / enhancement of the landscape, this is the link with the measure 214 that promotes the agri-environmental activities.	Regional	Land use Veneto Region

		landscape (number of sites and hectares/ kilometres)					
Mid term (2007-2013)	214	'Willingness to pay' for the conservation of components and landscape attributes		ITH3	There is a casual chain between the link indicator and the programme	Regional	Land use from the Veneto Region and ISTAT database, interviews made to a representative sample of the Veneto population
Ex post (2004-2006)	214	Preservation of traditional landscape features	Additional	LT	(There was no environmental impact indicators used for 2004-2006. The title is given from the contextual information)	National	Surveys, monitoring data from RDP administrating organization
Mid term (2007-2013)	214	Preservation of traditional landscape features	Additional	LT	From contextual information can be concluded that indicator is based on prerequisite, that schemes which determine particular requirements from environmental point of view are important also for preservation of landscape. Therefore supports for territories where those schemes are applied allow to preserve landscape.	National	Declarations (area under support)
Mid term (2007-2013)	214	Area under AEMs	CMEF output	NL			Monitoring system (area under AEMs), expert interviews and literature research.
Mid term (2007-2013)- Report product index, result index and impact for axis 2 RDP 2007-2013, 2010	214	Number of beneficiaries receiving AEP	CMEF output	PL	This indicator has link with provision public good, it refers to raise landscape.	National	Number of beneficiaries, amount of payment realised
Mid term (2007-2013)- Report product index, result index and impact for axis 2 RDP	214	Area under AEMs	CMEF output	PL	This indicator has link with provision public good, it refers to raise landscape.	National	Area covered by the measure

2007-2013, 2010							
Mid term (2007-2013)- Report product index, result index and impact for axis 2 RDP 2007-2013, 2010	214	LU/ha traditional race livestock		PL	This indicator has link with provision public good, it refers to raise landscape.	National	LU/ha traditional race livestock
Mid term (2007-2013)- Report product index, result index and impact for axis 2 RDP 2007-2013, 2010	214	Land under organic farming		PL	This indicator has link with provision public good, it refers to raise landscape.	National	Land under organic farming
Mid term (2007-2013)- Report product index, result index and impact for axis 2 RDP 2007-2013, 2010	214	Patch Density Index (PDI)		PL		National	Number of complex with mosaic UAA, forest on areas covered by measure
Mid term (2007-2013)	214	Area under AE support and number of contracts	CMEF output	UKM	Impact assessment is based on Evaluation Question. Answers include: contributions to improvement of landscape (hedgerows, diversity of habitat, enhancing wildlife, visual aesthetics and public access)	Farm level/cross farm	Survey responses of beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government

							reporting data.
Midterm (2007-2013)	216	Area under successful land management	CMEF result	NL	Assessment is based on evaluation questions		Survey from beneficiaries and interviews with statutory bodies
Midterm (2007-2013)	221	Area under measure and amount of public expenditure realised		AT	Afforestation changes the landscape as it is restricted to areas with minimal or low forest cover.		Budget and promoted area
Ex post (2000-2006)	221	Employment in the short/medium term outside holdings (logging, initial processing and marketing, and further local, small scale processing and marketing) directly or indirectly depending on assisted actions (full time equivalents/year)	EC	ITF4	The aim of the impact indicator is to assess the extent to which agri-environmental activities can contribute to the protection / enhancement of the landscape, this is the link with the measure 214 that promotes the agri-environmental activities.	Regional	Land use Puglia Region
Ex post (2000-2006)	221	Additional attractive/valuable area or sites due to assistance	EC	ITF4	The relationship between the areas that received the aid and the measure is given by the assessment of the monetary help and the impact on the agricultural landscape	Regional	ISTAT database
Ex post (2000-2006)	221	Resources/assets enjoying improved protection due to assisted forest actions (hectare):(c) of which villages, tourist facilities (%, plus type & magnitude of interest – e.g., expressed approximately as number of inhabitants, night beds, etc)	EC	ITF4		Regional	
Mid term (2007-2013)	221	Area of afforestated land	CMEF output	NL	Impact assessment is based on the three EU evaluation questions through analysis management agreements, monitoring output indicators and survey/interviews with experts.		Survey with beneficiaries and interview experts to analyse the management agreements
Mid term (2007-2013)	221	Number of Ha of afforestated land	CMEF output	PL	Area under successful land management contributes to avoidance of marginalisation and land abandonment. Afforestated area and number of beneficiaries have a significant impact on landscape.	National	Number of operations, amount of payment realised.
Mid term (2007-2013)	221	Number of beneficiaries receiving afforestation aid	CMEF output	PL	Area under successful land management contributes to avoidance of marginalisation and land abandonment.	National	Number of operations, amount of payment realised.

					Afforestated area and number of beneficiaries have a significant impact on landscape.		
Mid term (2007-2013)	221	Increase in forested area in relation to the existing forests		PL	Area under successful land management contributes to avoidance of marginalisation and land abandonment. Afforestated area and number of beneficiaries have a significant impact on landscape.	National	Number of operations, amount of payment realised.
Mid term (2007-2013)	221	Increase in the share of the areas supported by the measure in relation to the RDP 2004-2006		PL	Area under successful land management contributes to avoidance of marginalisation and land abandonment. Afforestated area and number of beneficiaries have a significant impact on landscape.	National	Number of operations, amount of payment realised.
Mid term (2007-2013)	221	Increase in the number of beneficiaries receiving payments in relation to RDP 2004-2006		PL	Area under successful land management contributes to avoidance of marginalisation and land abandonment. Afforestated area and number of beneficiaries have a significant impact on landscape.	National	Number of operations, amount of payment realised.
Mid term (2007-2013)	221	Degree of implementation of the afforestation plan		PL	Area under successful land management contributes to avoidance of marginalisation and land abandonment. Afforestated area and number of beneficiaries have a significant impact on landscape.	National	Number of operations, amount of payment realised.
Mid term (2007-2013)	221	Increase in the number of forest corridors		PL	Area under successful land management contributes to avoidance of marginalisation and land abandonment. Afforestated area and number of beneficiaries have a significant impact on landscape.	National	Number of operations, amount of payment realised.
Mid term (2007-2013)	221	Relationship between the index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI)		PL	The Transition index (TI) is the ratio of the share of area under afforestation in individual soil quality classes to the share of afforestated area in all arable land. It is expected that afforestation is preferentially concentrated on land with low agricultural suitability, therefore TI will be bigger for worse soil quality classes measured by the index of Valorisation of Agricultural Production Space (WWRPP).	National	Index adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI).
Mid term (2007-2013)	221	Carbon sequestration through afforestation		PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of operations, amount of payment realised.
Mid term (2007-2013)	221	Area of afforestated land	CMEF output	UKM		Farm level	Measure specific survey of Rural Priority and Land Manager's Options beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish

							Government reporting data
Mid term (2007-2013)	223	Increased areas of forests	CMEF output	BG		National, regional	Financial parameters of the proposals/contracts. Additional indicators that have been used: number of beneficiaries receiving afforestation aid, number of hectares of afforested land. Survey from beneficiaries.
Mid term (2007-2013)	223	Number of Ha of afforestated land	CMEF output	PL	Area under successful land management contributes to avoidance of marginalisation and land abandonment. Afforestated area and number of beneficiaries have a significant impact on landscape.	National	Number of operations, amount of payment realised.
Mid term (2007-2013)	223	Number of beneficiaries receiving afforestation aid	CMEF output	PL	Area under successful land management contributes to avoidance of marginalisation and land abandonment. Afforestated area and number of beneficiaries have a significant impact on landscape.	National	Number of operations, amount of payment realised.
Mid term (2007-2013)	223	Increase in forested area in relation to the existing forests		PL	Area under successful land management contributes to avoidance of marginalisation and land abandonment. Afforestated area and number of beneficiaries have a significant impact on landscape.	National	Number of operations, amount of payment realised.
Mid term (2007-2013)	223	Increase in the share of the areas supported by the measure in relation to the RDP 2004-2006		PL	Area under successful land management contributes to avoidance of marginalisation and land abandonment. Afforestated area and number of beneficiaries have a significant impact on landscape.	National	Number of operations, amount of payment realised.
Mid term (2007-2013)	223	Increase in the number of beneficiaries receiving payments in relation to RDP 2004-2006		PL	Area under successful land management contributes to avoidance of marginalisation and land abandonment. Afforestated area and number of beneficiaries have a significant impact on landscape.	National	Number of operations, amount of payment realised.
Mid term (2007-2013)	223	Degree of implementation of the afforestation plan		PL	Area under successful land management contributes to avoidance of marginalisation and land abandonment. Afforestated area and number of beneficiaries have a significant impact on landscape.	National	Number of operations, amount of payment realised.
Mid term (2007-2013)	223	Increase in the number of forest corridors		PL	Area under successful land management contributes to avoidance of marginalisation and land abandonment. Afforestated area and number of beneficiaries have a significant impact on landscape.	National	Number of operations, amount of payment realised.
Mid term	223	Relationship between the index		PL	The Transition index (TI) is the ratio of the share of area	National	Index adjustment of agricultural soils

(2007-2013)		adjustment of agricultural soils (WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI)			under afforestation in individual soil quality classes to the share of afforestated area in all arable land. It is expected that afforestation is preferentially concentrated on land with low agricultural suitability, therefore TI will be bigger for worse soil quality classes measured by the index of Valorisation of Agricultural Production Space (WWRPP).		(WWRPP) and the rate of preferential exclusion of soils due to afforestation (TI).
Mid term (2007-2013)	223	Carbon sequestration through afforestation		PL	Afforestated area and number of beneficiaries have a significant impact on soil quality.	National	Number of operations, amount of payment realised.
Mid term (2007-2013)	223	Area of afforestated land	CMEF output	UKM		Farm level	Measure specific survey of Rural Priority and Land Manager's Options beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data
Midterm (2007-2013)	224	Area under measure and amount of public expenditure realised	CMEF input & output	AT	Afforestation changes the landscape as it is restricted to areas with minimal or low forest cover.		Budget and promoted area
Mid term (2007-2013)	224	Preservation of traditional landscape features	Additional	LT	From contextual information can be concluded that indicator is based on prerequisite, that schemes which determine particular requirements from environmental point of view are important also for preservation of landscape. Therefore support for territories where those schemes are applied allow to preserve landscape.	National	Declarations (area under support)
Midterm (2007-2013)	225	Area under measure and amount of public expenditure realised	CMEF input & output	AT	Improvement of landscape through the promotion of valuable forest ecosystems.		Budget and promoted area
Mid term (2007-2013)	225	Preservation of traditional landscape features	Additional	LT	From contextual information can be concluded that indicator is based on prerequisite, that schemes which determine particular requirements from environmental point of view are important also for preservation of landscape. Therefore support for territories where those schemes are applied allow to preserve landscape.	National	Declarations (area under support)
Mid term (2007-2013)	225	Area under forest environment support	CMEF input	UKM		Farm level	Measure specific survey of Rural Priority and Land Manager's Option beneficiaries, stakeholder consultation (including relevant scheme managers),

							industrial representatives, Scottish Government reporting data
Midterm (2007-2013)	226	Area under measure and amount of public expenditure realised	CMEF input & output	AT	Afforestation changes the landscape as it is restricted to areas with minimal or low forest cover.		Budget and promoted area
Mid term (2007-2013)	226	Area of restored forestry/ supported area of damaged forests	CMEF output	PL	The prevention/restoration actions contribute to avoidance of marginalisation and land abandonment.	Local	Number of beneficiaries, area covered by the measure
Mid term (2007-2013)	226	Forest land potentially affected by biotic factors associated with the occurrence of diseases and pests		PL	The prevention/restoration actions contribute to avoidance of marginalisation and land abandonment.	Local	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	226	Number of prevention/restoration actions	CMEF output	PL	The prevention/restoration actions contribute to avoidance of marginalisation and land abandonment.	Local	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	226	The proposed length of forest roads - fire commute		PL	The prevention/restoration actions contribute to avoidance of marginalisation and land abandonment.	Local	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	226	Number of districts in the division of the degree of fire risk in accordance with the rules of this prevention action		PL	The prevention/restoration actions contribute to avoidance of marginalisation and land abandonment.	Local	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	226	Total volume of investments for restoring forestry potential and introducing prevention action	CMEF output	PL	The prevention/restoration actions contribute to avoidance of marginalisation and land abandonment.	Local	Number of beneficiaries, area covered by the measure.
Mid term (2007-2013)	227	Number of supported forest holders	CMEF output	UKM	Improved and enhanced access (in ha and in km path) as additional indicator.	Farm level	Measure specific survey of Rural Priority and Land Manager's Option beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data
Ex ante (2007-2013)	311	Net value creation in rural areas on the basis of power parity purchasing		FR	Impact indicators could be added population growth or migration in rural areas if we admit that it is an indicator relevant to improving the quality of life in these areas (increasing population or its maintenance constitutes a minimum quality of animation and local life, attractiveness factor). The causal link between the measure and the indicator however, is not easy.	Programme level (PDRH), regional	National statistics on agricultural production and agri-environmental system commitments

Ex ante (2007-2013)	311	Measuring the attractiveness of the area, from the economic residential and tourist point of view	Additional	FR	The relationship between the areas that received the aid and the measure is given by the assessment of the monetary help and the impact on the agricultural landscape	Programme level (PDRH)	National statistics on agricultural production and agri-environmental system commitments
Mid term (2007-2013)	311	Number of diversification activities (tourism)		NL	The investment in non-agricultural activities has a significant focus on tourism & recreation, which makes it relevant to the public good landscape. The impact is like with other measures based on EU evaluation questions and output/result indicators without clear causal relationships.		Survey among beneficiaries, output/result indicators
Ex ante (2007-2013)	312	Net value creation in rural areas on the basis of power parity purchasing		FR	Impact indicators could be added population growth or migration in rural areas if we admit that it is an indicator relevant to improving the quality of life in these areas (increasing population or its maintenance constitutes a minimum quality of animation and local life, attractiveness factor). The causal link between the measure and the indicator however, is not easy.	Programme level (PDRH), regional	National statistics on agricultural production and agri-environmental system commitments
Ex ante (2007-2013)	312	Measuring the attractiveness of the area, from the economic residential and tourist point of view	Additional	FR	The relationship between the areas that received the aid and the measure is given by the assessment of the monetary help and the impact on the agricultural landscape	Programme level (PDRH)	National statistics on agricultural production and agri-environmental system commitments
Ex post (2000-2006)	313	Farmland under agreement Contributing to perceptual / cognitive, In Particular visual, differentiation (homogeneity / diversity) in the landscape (number of locations and hectares / km)	EC	FR	The aim of the impact indicator is to assess the extent to which agri-environmental activities can contribute to the protection / enhancement of the landscape, this is the link with the measure 214 that promotes the agri-environmental activities	Programme level (PDRN)	Data used: rating landscape in 30 municipalities in disadvantaged areas. Period: 2000-2005
Ex ante (2007-2013)	313	Net value creation in rural areas on the basis of power parity purchasing		FR	Impact indicators could be added population growth or migration in rural areas if we admit that it is an indicator relevant to improving the quality of life in these areas (increasing population or its maintenance constitutes a minimum quality of animation and local life, attractiveness factor). The causal link between the measure and the indicator however, is not easy.	Programme level (PDRH), regional	National statistics on agricultural production and agri-environmental system commitments
Ex ante (2007-2013)	313	Measuring the attractiveness of the area, from the economic	Additional	FR	The relationship between the areas that received the aid and the measure is given by the assessment of the monetary help	Programme level	National statistics on agricultural production and agri-environmental

		residential and tourist point of view			and the impact on the agricultural landscape	(PDRH)	system commitments
Mid term (2007-2013)	313	Created tourism/recreational infrastructure (km)		NL		National	Monitoring data and questionnaires
Mid term (2007-2013)	313	Improved tourism/recreational infrastructure (km)		NL		National	Monitoring data and questionnaires
Midterm 2007-2013	321	Maintenance of valuable landscape elements (e.g. mountain pastures, dry grassland, pollarded willows, old trees)		AT			Budget and promoted area
Ex ante (2007-2013)	321	Net value creation in rural areas on the basis of power parity purchasing		FR	Impact indicators could be added population growth or migration in rural areas if we admit that it is an indicator relevant to improving the quality of life in these areas (increasing population or its maintenance constitutes a minimum quality of animation and local life, attractiveness factor). The causal link between the measure and the indicator however, is not easy.	Programme level (PDRH), regional	National statistics on agricultural production and agri-environmental system commitments
Ex ante (2007-2013)	321	Measuring the attractiveness of the area, from the economic residential and tourist point of view	Additional	FR	The relationship between the areas that received the aid and the measure is given by the assessment of the monetary help and the impact on the agricultural landscape	Programme level (PDRH)	National statistics on agricultural production and agri-environmental system commitments
Midterm 2007-2013	322	Maintenance of valuable landscape elements (e.g. mountain pastures, dry grassland, pollarded willows, old trees)		AT			Budget and promoted area
Ex ante (2007-2013)	322	Measuring the attractiveness of the area, from the economic residential and tourist point of view	Additional	FR	The relationship between the areas that received the aid and the measure is given by the assessment of the monetary help and the impact on the agricultural landscape	Programme level (PDRH)	National statistics on agricultural production and agri-environmental system commitments
Ex ante (2007-2013)	322	Net value creation in rural areas on the basis of power parity purchasing		FR	Impact indicators could be added population growth or migration in rural areas if we admit that it is an indicator relevant to improving the quality of life in these areas (increasing population or its maintenance constitutes a minimum quality of animation and local life, attractiveness	Programme level (PDRH), regional	National statistics on agricultural production and agri-environmental system commitments

					factor). The causal link between the measure and the indicator however, is not easy.		
Mid term (2007-2013)	322	Conservation and upgrading of the rural heritage		ITF4	There is a casual chain between the link indicator and the programme	Regional	Land use from the Veneto Region and ISTAT database
Midterm (2007-2013)	322	Number of villages where actions took place (Number of applications)	CMEF output	PL		National	Number of operations, amount of payments
Midterm 2007-2013	322	Total volume of investments	CMEF output	PL		National	Number of operations, amount of payments
Midterm (2007-2013)	323	Maintenance of valuable landscape elements (e.g. mountain pastures, dry grassland, pollarded willows, old trees)		AT			Budget and promoted area
Mid term (2007-2013)	323	Conservation and upgrading of the rural heritage		ITF4	There is a casual chain between the link indicator and the programme	Regional	Land use from the Puglia Region and ISTAT database
Mid term (2007-2013)	323	Conservation and upgrading of the rural heritage		ITH3	There is a casual chain between the link indicator and the programme	Regional	Land use from the Veneto Region and ISTAT database
Mid term (2007-2013)	323	Created natural areas (ha)		NL		National	Monitoring data, questionnaire or interviews.
Mid term (2007-2013)	323	Ecological network connections (km)		NL		National	Monitoring data, questionnaire or interviews.
Mid term (2007-2013)	323	Number of villages where actions took place (Number of applications)	CMEF output	PL		National	Number of operations, amount of payments
Mid term (2007-2013)	323	Total volume of investments	CMEF output	PL		National	Number of operations, amount of payments
Mid term (2007-2013)	323	Number of rural heritage actions	CMEF output	UKM			Measure specific survey of Rural Priority and Land Manager's Options beneficiaries, stakeholder consultation (including relevant scheme managers), industrial representatives, Scottish Government reporting data
Ex ante (2007-2013)	331	Measuring the attractiveness of the area, from the economic residential and tourist point of	Additional	FR	The relationship between the areas that received the aid and the measure is given by the assessment of the monetary help and the impact on the agricultural landscape	Programme level (PDRH)	National statistics on agricultural production and agri-environmental system commitments

		view					
Mid term (2007-2013)	413	Number of Local Action Groups (LAG)	CMEF output	PL	No direct causal chain.	National	Number of operations, amount of payments
Mid term (2007-2013)	413	Total size of the LAG area (km²)	CMEF output	PL	No direct causal chain.	National	Number of operations, amount of payments
Mid term (2007	413	Total population in LAG area	CMEF output	PL	No direct causal chain.	National	Number of operations, amount of payments
Mid term (2007	413	Number of projects financed by LAG	CMEF output	PL	No direct causal chain.	National	Number of operations, amount of payments
Mid term (2007-2013)	413	Number of beneficiaries supported	CMEF output	PL	No direct causal chain.	National	Number of operations, amount of payments
Annual report from realisation RDP 2007-2013	413	Amount of implemented payments	CMEF input	PL	No direct causal chain.	National	Number of operations, amount of payments
Annual report from realisation RDP 2007-2013	413	Number of beneficiaries supported	CMEF output	PL	No direct causal chain.	National	Number of operations, amount of payments
Ex post (2000-2006)	Programme level	Budget of relevant support measures (in Mio. Euro) and its share of the total programme budget (in %).		AT	Although the evaluation differentiates according to EC indicators, the evaluation mainly assesses the budget of relevant support measures (in Mio. Euro) and its share of the total programme budget (in %).		Amount of budget spent on measures relevant to landscape.
SEA	Programme level	Degree of distribution of forestry in lowlands (forest area and other wooded land) (0-100 m), the hills (100-600 m) and mountain (600 meters above sea level and up)	(ARPAV, Regional Environmental Protection Agency)	ITH3		Regional	
SEA	Programme level	Density (ratio) of the communications infrastructure (roads and railways) present in Natura 2000 sites**)**	(Natura 2000 - ARPAV, Regional Environm	ITH3		Regional	

			ental Protection Agency				
SEA	Programme level	Density (ratio) construction (residential and non-) present in Natura 2000 sites	(Natura 2000 - ARPAV, Regional Environmental Protection Agency)	ITH3		Regional	

Table A7 List of indicators for Animal Welfare

Report	Measure/ Programme	Indicator	Type-origin of indicator	Country	Causal chain	Level	Data
Mid term (2007-2013)	111	Number of participants in training	CMEF output	BG	The indicator is indirectly linked to animal welfare. The training curriculum for livestock breeding includes modules dedicated to animal welfare, as well as examples of best practices. This could help farmers to take advantages of this knowledge, to implement and face the requirements of the EU regarding animal welfare. According to the survey results more than 70 % of beneficiaries under the RDP have no specific agricultural education and training. Farmers who completed training will be aware of the requirements of the EU.	National, regional	Number of participants, survey results
Mid term (2007-2013)	111	Number of training days received	CMEF output	BG	The indicator is indirectly linked to animal welfare. The training curriculum for livestock breeding includes modules dedicated to animal welfare, as well as examples of best practices. This could help farmers to take advantages of this knowledge, to implement and face the requirements of the EU regarding animal welfare. According to the survey results more than 70 % of beneficiaries under the RDP have no specific agricultural education and training. Farmers who completed training will be aware of the requirements of the EU.	National, regional	Number of training days, survey results
Mid term (2007-2013)	111	Number of participants in training schemes	output	UK-ENG	This measure is too indirectly assessed through additional output indicators related to financial support contributing to animal health, with no information on impacts directly provided.		Secondary data from regional agencies and also scientific literature
Mid term (2007-2013) - Annual report from realisation RDP 2007-	111	Number of trainings on animal welfare	According to CMEF output	PL		National	Number of training days, number of beneficiaries, amount of payments realised, annually.

2013, MARD							
Mid term (2007-2013)	114	Number of farmers who use advisory services	CMEF output	BG		National, regional	Number of farmers who use advisory services. Survey results.
Mid term (2007-2013) - Annual report from realisation RDP 2007-2013, MARD	114	Number of farmers who use advisory services	CMEF output	PL		National	Number of farmers who use advisory services on sustainable land management and sustainable management of natural resources, amount of payments realised.
Ex post (2000-2006)	121	A large set of ethological indicators differentiated by functions (social behaviour, movement, rest and sleep, food intake, excretion, reproduction, comfort and exploration) and animal species (cattle, pigs).	Evaluators (based on national assessment framework for husbandry systems was developed by the Association for Technology and Structures in Agriculture-KTBL)	AT	Animal welfare changes or different levels of animal welfare can be observed and measured through behavioural indicators. Different husbandry systems affect animal behaviour and allow animals to show different extents of natural behaviour patterns which can be measured through ethological indicators. Ethological indicators are widely accepted as a sensitive measure of animal welfare.	Regional (Federal States)	IACS data, since sufficient husbandry data are not available from secondary data, hence, a farmer survey was carried out to collate husbandry data.
Mid term (2007-2013)	121	Level of improvement of the overall performance of the agricultural holdings (competitiveness, sustainability and protection of environment)	CMEF output	BG	Investments in agricultural holdings meet the requirements of the EC about animal welfare and hygiene.	National	Number of holdings supported and number of holdings in livestock breeding, number of farms meeting the requirements of the nitrate Directive 91/676/EEC were used as additional indicators. Survey results.

Ex post (2000-2006)	121	A large set of ethological indicators differentiated by functions (social behaviour, movement, rest and sleep, food intake, excretion, reproduction, comfort and exploration) and animal species (cattle, pigs).	Evaluators (based on national assessment framework for husbandry systems was developed by the Association for Technology and Structures in Agriculture-KTBL)	DE1	Animal welfare changes or different levels of animal welfare can be observed and measured through behavioural indicators. Different husbandry systems affect animal behaviour and allow animals to show different extents of natural behaviour patterns which can be measured through ethological indicators. Ethological indicators are widely accepted as a sensitive measure of animal welfare.	Regional (Federal States)	IACS data, since sufficient husbandry data are not available from secondary data, hence, a farmer survey was carried out to collate husbandry data.
Mid term (2007-2013)	121	Type of animal husbandry system after support: share of particularly animal appropriate husbandry systems; conversion from 'stanchion barns' to 'free stall barn'.	Evaluators	DE1	(Changes in the indicator and impacts on animal welfare have not been assessed. Animal welfare aspects were only referred to in the synopsis of the assessment)	Regional	
Mid term (2007-2013) - Annual report of realisation RDP 2007-2013, MARD	121	Number of farm holdings that received investment support	CMEF output	PL	Support for diversification of agricultural activities, as well as harmonization of conditions of agricultural production with the requirements of environmental protection and animal welfare.	National	Number of beneficiaries, amount of payment realised.
Mid term (2007-2013	121	Number of support projects, including number 'new challenges' project	CMEF output	PL	Support for diversification of agricultural activities, as well as harmonization of conditions of agricultural production with the requirements of environmental protection and animal	National	Number of beneficiaries, amount of payment realised.

					welfare.		
Mid term (2007-2013)	121	Value of 'new challenges' projects	According to CMEF output	PL	Support for diversification of agricultural activities, as well as harmonization of conditions of agricultural production with the requirements of environmental protection and animal welfare.	National	Number of beneficiaries, amount of payment realised.
Annual report of realisation RDP 2007-2013, MARD	121	Type of investments	CMEF output	PL		National	Number of beneficiaries, amount of payment realised.
Annual report of realisation RDP 2007-2013, MARD	121	Type of agricultural branch	CMEF output	PL		National	Number of beneficiaries, amount of payment realised.
Annual report of realisation RDP 2007-2013, MARD	121	Number of farm holdings that received investment support, placed on LFA, NATURA 2000 and under the Nitrates Directive areas	According to CMEF output	PL		National	Number of beneficiaries, amount of payment realised.
Mid term (2000-2006)	132	Proportion of UAA subject to friendly farming systems environment which affected area (a) to organic farming, (b) Integrated production or integrated control agencies harmful, and (c) pasture with less than 2 LU/ha.		FR	For the introduction of innovative management projects aiming to promote and develop methodologies and innovative management and organization system, with specific reference to 'quality certification in agriculture', 'computerization in agriculture' and 'food safety and traceability products', these aspect are linked with the measure and investments in agricultural farms	Programme level (PDRN)	Data were provided by the national monitoring system
Ex post (2000-2006)	132	Share of assisted products sold with quality label (%) (a) of which EU-level labelling schemes (%) animal welfare Join a quality approach		FR	For the introduction of innovative management projects aiming to promote and develop methodologies and innovative management and organization system, with specific reference to 'quality certification in agriculture', 'computerization in agriculture' and 'food safety and traceability products', these aspect are linked with the measure and investments in agricultural farms	Programme level (PDRN)	Data were provided by the national monitoring system
Ex ante	132	Individual aid for quality: quality	According	FR		Programme	

(2007-2013)		label	to CMEF output			level (PDRH)	
Mid term (2007-2013)	132	Animal welfare: share of quality products thanks to the certification systems with label, that had been increased during the last period in France	According to CMEF output	FR		Programme level (PDRH)	
Ex ante (2007-2013)	133	Individual aid for quality: quality label	According to CMEF output	FR		Programme level (PDRH)	
Ex post (2000-2006)	133	Share of assisted products sold with quality label (%) (a) of which EU-level labelling schemes (%) (b) of which national level labelling schemes (%) (c) of which other labelling schemes (%)		ITH3	The introduction of innovative management projects are aiming to promote and develop methodologies and innovative systems management and organization, with specific reference to 'quality certification in agriculture', 'computerization in agriculture' and 'food safety and traceability', these aspects are linked with the measure and investments in agricultural farms.	Regional	Regional monitoring system, (ISTAT) and regional database of the Italian network of agricultural accounting (RICA)
Ex post (2000-2006)	133	Share animals on assisted holdings enjoying improved welfare thanks to assisted investments (%) (a) of which with animal welfare as a direct aim (%) (b) of which with animal welfare as a collateral effect (e.g., due to new housing or equipment acquired mainly for other reasons) (%) (c) of which related to welfare standards (%) (d) of which related to EU-welfare standards (%)		ITH3	The measure 133 is related to the producer group support for information and promotion activities of agricultural quality products, is linked with the impact indicator for the improvement of animal welfare conditions occur indirectly through assisted investments.	Regional	Regional monitoring system, the sources also report uses national statistics (ISTAT) and the regional database of the Italian network of agricultural accounting (RICA) provided by INEA for the years 2000-2006.
Mid term (2007-2013)	141	Number of semi-subsistence farm holdings which entered the market and meet the obligatory Community standards related to veterinary and phyto-sanitary requirements, animal welfare,		BG		National, regional	Monitoring data and survey results

		environmental protection, hygiene and occupational health and safety					
Ex post (2004-2006) -	141	Amount of farm holdings that received investment support	According to CMEF output	PL		National	Number of beneficiaries, amount of payment realised
Ex post (2004-2006)	141	Structure of beneficiaries due to the declared indirect objective of the support	According to CMEF output	PL		National	Number of beneficiaries, amount of payment realised
Annual report from realisation RDP 2004-2006	141	Number of beneficiaries, whose agricultural holdings are placed on LFAs	According to CMEF output	PL		National	Number of beneficiaries, amount of payment realised
Annual report from realisation RDP 2004-2006	141	Number of farm holdings that received investment support	According to CMEF output	PL		National	Number of beneficiaries, amount of payment realised
Ex post (2004-2006)- Mid term(2007-2013)- Report product index, result index and impact for axis 2 (2010)- Annual report from realisation RDP 2007-2013, MARD-	211	Number of supported holdings in LFAs	CMEF output	PL	The aim of this measure is to improve the environment and the countryside by means of support for land management. The other aim of this measure is to promote sustainable farming systems, especially to maintain extensive farming.	National	Number of beneficiaries

Annual report from realisation RDP 2004-2006, MARD-Case study 2010							
Ex post (2004-2006)-Mid term(2007-2013)-Report product index, result index and impact for axis 2 (2010)-Annual report from realisation RDP 2007-2013, MARD-Annual report from realisation RDP 2004-2006, MARD-Case study 2010	211	Supported agricultural land in LFAs	CMEF output	PL	The aim of this measure is to improve the environment and the countryside by means of support for land management. The other aim of this measure is to promote sustainable farming systems, especially to maintain extensive farming	National	Supported area
Ex post (2004-2006)-Mid term(2007-2013)-	212	Number of supported holdings in LFAs	CMEF output	PL	The aim of this measure is to improve the environment and the countryside by means of support for land management. The other aim of this measure is to promote sustainable farming systems, especially to maintain extensive farming.	National	Number of beneficiaries

Report product index, result index and impact for axis 2 (2010)-Annual report from realisation RDP 2007-2013, MARD-Annual report from realisation RDP 2004-2006, MARD-Case study 2010							
Ex post (2004-2006)-Mid term(2007-2013)-Report product index, result index and impact for axis 2 (2010)-Annual report from realisation RDP 2007-2013, MARD-	212	Supported agricultural land in LFAs	CMEF output	PL	The aim of this measure is to improve the environment and the countryside by means of support for land management. The other aim of this measure is to promote sustainable farming systems, especially to maintain extensive farming	National	Supported area

Annual report from realisation RDP 2004-2006, MARD-Case study 2010							
Mid term (2007-2013)	214	Level of impact of the agri-environment payments on sustainable farming system	CMEF output	BG		National, regional	Number of farm holdings and the receiving support, total area under agri-environmental support (ha), total number of contracts, physical area under agri-environmental support (ha), number of actions related to genetic resources. Survey results.
Ex post (2000-2006)	214	Action 3.3 Breeding animal species in danger of extinction or % of area used for any pets indicates the traditional farm animal species with agri-environmental aid	Additional	ITF4		Regional	UAA and regional agricultural database
Ex post (2000-2006)	214	Area with beneficial lay out of crops, types of crop (including associated livestock), crop-combinations and size of uniform fields maintained/reintroduced thanks to assisted actions (hectares)		ITH3	Assessment indicator of measures aimed at the maintenance low livestock density and animal welfare.	Regional	Regional Database (AVEPA) and ISTAT data.
Mid term (2007-2013)	214	Animals in danger of extinction: number of animals breeds endangered subject of aid	Additional	ITH3		Regional	Data from RICA (FADN)
Mid term (2007-2013)	215	Number of supported farms and number of contracts, and two additional output type indicators were used number of supported animals and area of grazed land	CMEF output & evaluators	AT		National	IACS data
Mid term	215	Payment for animal welfare and		ITF4	Assessment indicator of measures aimed at the maintenance	Regional	

(2007-2013)		product quality			of low livestock density and animal welfare.		
Mid term (2007-2013)	215	Animal welfare: number of animals breeds endangered subject of aid	Additional	ITH3		Regional	Data from RICA, FADN
On going Mid term (2007-2013)	215	Animal welfare: number of animals) breeds endangered subject of aid	Additional	IH5		Regional	Data from RICA, FADN
Ex post (2000-2006)	221	Change the target areas of intervention for the presence of wild animal and plant species typical of the area	Additional	ITF4		Regional	UAA and regional agricultural database
Ex ante (2007-2013)	Programme level	Organic Farming -% of organic UAA in the total regional UAA	IRENA	ITF4		Regional	Census 2006
SEA	Programme level	Relationship between intensification and extensification	IRENA	ITF4		Regional	UAA and regional UAA
SEA	Programme level	Organic Farming -% of organic UAA in the total regional UAA	IRENA	ITF4		Regional	UAA and regional UAA
SEA	Programme level	Number of local breeds and number of animals - equine, beef, sheep and poultry	Region Veneto, AIA, ARAV, ARPAV (Regional Environm ental Protection Agency)	IH3			
SEA	Programme level	Functionality of the ecological network	WWF Italia, Ministero delle ARPAV (Regional Environm ental	ITH3			

			Protection Agency)				