

Promoting the Transition to a Green Economy

ENRD Thematic Group on Resource Efficiency

Working document

Summary of relevant good practice examples

1. Context and background

The ENRD Thematic Group (TG) on Resource Efficient Rural Economy was set up in autumn 2016 and has concluded its planned work in July 2017. The work of the TG throughout the year concentrated on how to support the integration of resource efficient activities and thinking relating to soils and water into the implementation of rural development programmes. The focus of the work was on the use and management of soils and water and more specifically the sub-themes of soil nutrients, soil carbon, and water availability. In addition to these three sub-themes, the work of the TG identified three horizontal / cross-cutting guiding topics on which it focused the research efforts. These were the motivation gap; knowledge gap; and policy gap. To address these issues, three related but distinct strands of work were undertaken in the context of the TG activities:

1. **Framing background analysis of the content and focus of RDPs across the EU** with respect to resource efficiency, examining the design and implementation of measures;
2. **A comparative regional analysis** to investigate the approaches taken in different RDP regions to address resource efficiency, with reference to the broader policy and institutional setting;
3. **Identification and collection of good practice examples** where resource efficiency has been improved through the use of EAFRD and other funding and support through RDPs.

This document provides an overview of the third work strand, namely the identification and collection of resource efficiency relevant good practices. It presents the complete list of relevant projects along with a short collection of typical examples per thematic category.

2. Summary information

The collection of good practices was mandated by the members of the TG who acknowledged the existence of a large number of relevant projects examples from which the group could learn from. At the same time the TG pointed out possible limitations of this strand of work. TG members considered that although a very large number of examples and case studies does exist, they often do not contain the level of detail or specificity necessary to understand why and how initiatives developed and worked in practice. In this context, a thorough investigation of the good practice examples from different sources was undertaken. The objectives of this exercise were to:

- **Collate relevant projects** already available;
- **Identify possible success factors or bottlenecks;** and
- **Formulate possible recommendations for discussion** for the TG.

Overall, more than 100 relevant projects from 22 Member States were identified from the projects databases of the ENRD, EIP AGRI, LIFE and projects that were provided by the TG members. Out of these projects 40 were financed by the EAFRD, 49 were financed by the LIFE programme and 14 from other sources, including European research funding sources i.e. Horizon 2020 and its predecessor FP7, and private initiatives. Most the projects focused on water availability and soil nutrients (43 and 40 projects respectively), while 10 projects focused on soil carbon. Another 10 addressed simultaneously more than one of the three themes. In budgetary terms, the total value of the examined projects amounted to 142.5 mil EUR. The value of water availability related projects was 71.6 mil EUR, while 40.5 mil EUR concerned projects on soil nutrients. Projects addressing soil carbon issues amounted to 16.1 mil EUR projects and 14.3 mil EUR concerned projects addressing combinations of the three themes.

The below table presents information concerning the number of projects examined per theme, origin of funding, Member State distribution and budgetary data.



Collected projects per Member State and theme and origin of funding

	Water availability			Soil nutrients			Soil carbon			Multiple objectives			
	EAFRD	LIFE	Other	EAFRD	LIFE	Other	EAFRD	LIFE	Other	EAFRD	LIFE	Other	
AT				1									1
BE	1			2							1		4
BG				1									1
CY	1	1											2
CZ				1									1
DE	2	1	1			1						1	6
DK		1		1	1								3
EE			1										1
EL	3	1			3			1					8
ES	1	5		1	3			5			2		17
FI	1			3	1			1	1				7
FR	1			9	1								11
IT	1	7	4		2			1			4		19
LV		1											1
MT		1											1
NL	2			1		1							4
PL					3								3
PT	2												2
SE	1	1		1								1	4
SK							1						1
SI		1											1
UK				1									1
Various MS			1			2				1			1
Total	16	20	7	22	14	4	1	8	1	1	7	2	103
Total budget (mil EUR)	39.6	32.1	n.a.	8.9	31.5	n.a.	0.46	15.6	n.a.	0.09	14.2	n.a.	142.5

3. Findings deriving from the Examples

The projects which were identified through the screening process were systematically reviewed and some also discussed at the Thematic Group meetings. The findings derived from this work strand of the Thematic Group are shown below, organised into the three horizontal / cross-cutting topics on which the working approach was based.

Motivation gap

- **Preference for easy and familiar solutions** - The project LESELAM (FR) highlighted that discussions and interest among farmers were often not so much about new innovative techniques, but about sharing practice that already exists locally.

- **Complexity of tools** - Project IES (ES) considered the current generation of irrigation simulation tools not adequate for the task. Some of them were too complex for use by farmers, or even technicians, whilst others were based on such simple models that the data produced can be used as no more than a reference.
- **'Upscaling to commercial'** - The LIFE Seq-Cure project (IT) highlighted that although testing the use of wood/fibre and raw vegetable oil chains for biogas produced interesting results, the up-scaling to commercial production proved unfeasible due factors like technological limits or implementation costs.

Knowledge gap

- **Understanding and misconceptions** - CropsforBetterSoil project (ES) pointed out that organic agriculture continues to be scarcely applied, especially in poor-soil areas mainly due to insufficient knowledge about optimal application techniques and the perception of low economic benefits unless supported by subsidies.
- **Awareness** – The Erosion prevention project (ES) underlined the lack of knowledge among farmers with regard to the problems related with soil erosion and the need to use more suitable agricultural practices. The project DEMETER (BE) commented the need for raised awareness among policymakers on the principles and benefits of sustainable soil and nutrient management, which will help with the implementation of the Soil Framework Directive.
- **Importance of data** - The work of the EIP Operational Groups 'Valoriser les Potentiels céréaliers en climat méditerranéen' (FR) emphasised that regional production potentials are still far from being fully exploited. This would require large amounts of regional related data that are not easily collected.

Policy gap

- **Policy delivery** - Projects Aquor (IT) and ROEM-plus (ES) indicated the need for improved monitoring, assessment and dissemination of resource efficiency related results. Monitoring of changes requires time that exceeds projects duration according to the projects Aquabrava (SE) and WAMAR (ES). The project HydroSense (EL) mentioned the need for delineation of management zones and spatially-variable application systems. Project MANEV (ES) remarked that cost-effective solutions require integrated policies.
- **Role of the private sector** – Projects from Spain (ROEM-plus, AQUAVAL) focused on the private sector's role by commenting that the private sector could implement solutions when public authorities can't deliver, while linking private entities with public administrations could accelerate the diffusion of technologies and methodologies.
- **Stakeholder engagement** – A project on planting buffer strips in the Czech Republic, suggested that brokers could facilitate the uptake of resource efficient measures and be part of policy delivery systems. The project TRUST (IT) underlined that agreements could be established with stakeholders for the provision of monitoring data.

N.	MS	Start	End	Theme	Project name	Description	Funding	Total Budget	link
1	BE	2007	2010	Water availability	Preventing River Pollution from Farming Activities in the Dommel and Warmbeek River Basin	The project supported the creation of natural buffer zones of 6 to 12 metres grass strips managed by local farmers, for preventing harmful fertilisers and pesticides from polluting the river water, thus improving water quality and protecting biodiversity.	EAFRD	€ 565 800	http://enrd.ec.europa.eu/enrd-static/policy-in-action/rdp_view/en/view_project_3280_en.html
2	CY	2008	2010	Water availability	Automated Irrigation System for Mediterranean Horticulture	The EAFRD supported the final stages of a major modernisation programme at a leading seedling nursery in Cyprus with co-financing for the installation of a modern new 'smart' irrigation system that is both saving costs and reduces water use.	EAFRD	€1 708 601	http://enrd.ec.europa.eu/enrd-static/policy-in-action/rdp_view/en/view_project_841_en.html
3	DE	2009	2011	Water availability	Stabilising the Water Balance for Agriculture and Wildlife	This project sought to improve the ground water balance through modernizing rift systems and thus improve the agricultural conditions and well as the habitat for numerous species in Brandenburg's Böllrich meadows.	EAFRD	€269 673	http://enrd.ec.europa.eu/enrd-static/policy-in-action/rdp_view/en/view_project_8540_en.html
4	DE	2009	2014	Water availability	Improving Groundwater Protection through the LEADER Approach	This LEADER project brings together hop growers, a water users association and experts from both public and private sectors to find new and innovative ways to adapt hop production to the Water Framework Directive.	EAFRD	€ 223 000	http://enrd.ec.europa.eu/enrd-static/policy-in-action/rdp_view/en/view_project_9921_en.html
5	EL	2009	2013	Water availability	Supporting the implementation of the EU Water Framework Directive in Greece	A large infrastructure project in Greece assisted with EAFRD co-financing helped implement the EU legislation regarding the protection and sustainable management of vulnerable water resources, including those used for irrigation purposes.	EAFRD	€ 4 400 000	http://enrd.ec.europa.eu/enrd-static/policy-in-action/rdp_view/en/view_project_2640_en.html
6	EL	2008	2012	Water availability	Construction Works for the artificial Enrichment of the Carstic System of Ypereia and Orfana	Surface waters storage works, irrigation networks redesign and artificial recharge of underground aquifers significantly contribute to sustainable irrigation water management when environmental concerns are considered in the design process.	EAFRD	€ 6 940 000	http://enrd.ec.europa.eu/enrd-static/policy-in-action/rdp_view/en/view_project_2660_en.html
7	EL	2009	2011	Water availability	Modernisation of the Irrigation System in the Municipality of Velventos	EAFRD funding aided the Velventos Local Organisation of Land Improvement to introduce a new system of electronic water abstraction and irrigation. This has resulted in high financial benefits and the better use of resources.	EAFRD	€ 602 085	http://enrd.ec.europa.eu/enrd-static/policy-in-action/rdp_view/en/view_project_7861_en.html
8	ES	2008	2011	Water availability	Modernising the irrigation system in the Flumen Canal of Huesca	The project supported the modernisation of the irrigation facilities in 3,070 hectares. It replaced traditional surface irrigation systems with a new irrigation network using a sprinkling method, resulting in water savings and higher yields.	EAFRD	€ 23 233 634	http://enrd.ec.europa.eu/enrd-static/policy-in-action/rdp_view/en/view_project_8240_en.html

N.	MS	Start	End	Theme	Project name	Description	Funding	Total Budget	link
9	FI	2015	2019	Water availability	Ravinnerenki project	The objective of this project is to promote nutrient recycling and water protection. The project promotes the best available measures for nutrient recycling, soil management and runoff water management.	EAFRD 2014-2020	n.a.	https://pohjois-karjala.proagria.fi/hankkiet/ravinnerenki-6555
10	FR	2008	2013	Water availability	Using Agri-Environment Payments to Reduce the Use of Pesticides	The farm Métairie Neuve SCEA implemented a multi-annual agri-environmental scheme and thanks to the project, the use of pesticides was reduced continuously and minimised residues in the water.	EAFRD	€ 23 320	http://enrd.ec.europa.eu/enrd-static/policy-in-action/rdp_view/en/view_project_10181_en.html
11	IT	2012	2014	Water availability	IRRINATE - IRRIFRAME	Irriframe is an expert system for Irrigation Scheduling, developed by the CER implementing the results of more than 50 years of research on plant/water relation and sustainable irrigation management. The project was supported and co-funded by the Emilia-Romagna Region with the aim to progressively reduce water use for irrigation.	EAFRD	€ 134 000	http://enrd.ec.europa.eu/projects-practice/irrinate-irriframe-sustainable-irrigation-management-0_en
12	NL	2013	2015	Water availability	Moisture management	The project aims to respond on how to manage moisture availability by making maximum use of systems/methods which will hold water and can release it during a long period to the crop. Project activities include on farm experiments and developing new practices with farmers.	EAFRD	n.a.	http://ec.europa.eu/eip/agriculture/en/content/moisture-management
13	NL	2012	2013	Water availability	Reconstruction of the Averlosche Leide canal	A canal stream was reconstructed to get extra water storage capacity and to improve the water quality and biodiversity in the surrounding area.	EAFRD	€ 1 300 000	http://enrd.ec.europa.eu/projects-practice/reconstruction-averlosche-leide-canal_en
14	PT	n.a.	n.a.	Water availability	New Technologies in Irrigation for Quality Wheat Production	The objective of this project was to validate different solutions that have been identified by researchers to improve the efficiency of some productions factors, namely water and nitrogen. Also, to work on the selection of new varieties with high genetic yield potential and technological value for bread and pasta industries, adapted to the Mediterranean pattern of the cereal production areas of Portugal.	EAFRD	n.a.	http://ec.europa.eu/eip/agriculture/en/content/novas-tecnologias-de-produ%C3%A7%C3%A3o-de-trigo-de-qualidade-em-regadio
15	PT	n.a.	n.a.	Water availability	Information system for maize irrigation in Alentejo, Sorraia and Tagus Valley	Corn farmers identified the need to obtain information on watering needs to increase the effectiveness and efficiency of water use, maximizing cost / benefit ratio.	EAFRD	n.a.	http://ec.europa.eu/eip/agriculture/en/content/implementa%C3%A7%C3%A3o-dum-sistema-de-informa%C3%A7%C3%A3o-para-rega-do-milho-para-t%C3%AAs-regi%C3%B5es-alentejo-regi%C3%A3o

N.	MS	Start	End	Theme	Project name	Description	Funding	Total Budget	link
16	SE	2011	2013	Water availability	Water preservation project 'AQUABRAVA'	This LEADER-funded project created several small wetlands and helped raise awareness of and interest in water protection among landowners. It also contributed to increasing the amount of available water in the island of Gotland.	EAFRD	€ 154 554	http://enrd.ec.europa.eu/projects-practice/water-preservation-project-%E2%80%98aquabrava%E2%80%99_en
17	CY	2010	2012	Water availability	WINEC	Demonstration of techniques and actions to improve the environmental performance of wineries in Cyprus.	LIFE	€ 1 371 357	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3479
18	DE	2006	2009	Water availability	FLOODSCAN	New technology for fast, precise and cost-efficient modelling of flood hazard areas through a combination of laser scanning with remote sensing data.	LIFE	€ 2 748 053	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3080
19	DK	2012	2016	Water availability	Stream of Usserød	Promoting and enhancing intermunicipal cooperation for sustainable water management and climate change adaptation in the Stream of Usserød (DK).	LIFE	€ 2 530 689	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=4268
20	EL	2010	2012	Water availability	HydroSense	Demonstration of innovative precision technologies for optimised irrigation and integrated crop management in a water-limited agrosystem.	LIFE	€ 1 747 825	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3466
21	ES	2012	2015	Water availability	IES - Irrigation Expert Simulator	Development of a web platform for training and supporting farmers in developing personalised irrigation schedules.	LIFE	€ 1 015 368	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=4220
22	ES	2011	2015	Water availability	IRRIGESTLIFE	Demonstration of a smart irrigation system for green spaces in urban areas.	LIFE	€ 2 817 737	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=4206
23	ES	2010	2012	Water availability	ENSAT	Enhancement of soil aquifer treatment to improve the quality of recharged water in the Llobregat river delta aquifer	LIFE	€ 1 240 358	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3429
24	ES	2010	2013	Water availability	AQUAVAL	Test and promotion of Sustainable Urban Drainage Systems in the province of Valencia (ES).	LIFE	€ 1 228 618	http://ec.europa.eu/environment/life/project/Pr

N.	MS	Start	End	Theme	Project name	Description	Funding	Total Budget	link
									objects/index.cfm?fuseaction=search.dspPage&n_proj_id=3448
25	ES	2009	2012	Water availability	WATER CHANGE	Demonstration of medium and long-term water resources modelling tools for planning and adaptation to climate change. Application to the Llobregat Basin.	LIFE	€ 1 238 280	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3276
26	IT	2011	2015	Water availability	AQUOR	Implementation of a water saving and artificial recharging strategy for the quantitative groundwater layer rebalance of the upper Vicenza's plain.	LIFE	€ 1 814 548	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3994
27	IT	2010	2013	Water availability	PALM	Development of a decision-support tool to help water companies in reducing water losses.	LIFE	€ 1 589 690	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3738
28	IT	2011	2013	Water availability	AQUA	Development of a methodology and establishment of public-private partnerships to promote water efficiency and increase water recycling in the agro-industry sector.	LIFE	€ 807 720	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3753
29	IT	2010	2013	Water availability	WIZ	Development of decision-support tools to facilitate drinking water planning.	LIFE	€ 1 896 540	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3692
30	IT	2010	2012	Water availability	WATACLIC	Demonstrating the effectiveness of fiscal and communication activities to reduce water and energy consumption in urban areas.	LIFE	€ 767 545	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3499
31	IT	2009	2011	Water availability	SALT	Sustainable management of the Esino river basin to prevent saline intrusion in the coastal aquifer in consideration of climate change.	LIFE	€ 1 447 112	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3273
32	IT	2009	2011	Water availability	TRUST	Demonstration of innovative actions to assess and improve groundwater storage in adaptation to climate change.	LIFE	€ 1 838 380	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3252

N.	MS	Start	End	Theme	Project name	Description	Funding	Total Budget	link
33	LV	2010	2012	Water availability	HydroClimateStrategy Riga	Development of an integrated strategy for the city of Riga to adapt to the hydrological processes intensified by climate change phenomena.	LIFE	€ 662 240	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3413
34	MT	2011	2014	Water availability	Investing in Water	Promoting reduction of water consumption among Maltese businesses.	LIFE	€ 334 642	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=4026
35	SE	2009	2013	Water availability	GreenClimeAdapt	Demonstration of green tools for urban climate adaptation.	LIFE	€ 3 166 264	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3263
36	SL	2009	2012	Water availability	INCOME	Improved management of contaminated aquifers by integrating source tracking, monitoring tools and decision strategies.	LIFE	€ 1 804 915	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3267
37	DE	n.a.	n.a.	Water availability	WAgriCO	Developing teaching material regarding water protection, integrating water protection into the vocational education of farmers. Overall, the aim is to strengthen the implementation of the WFD, and through the teaching material help farmers to understand the legal framework and how to implement it.	Other	n.a.	www.wagrico.de/
38	EE	2015	2015	Water availability	Safe use of sewage sludge and sewage sludge for the production of high-efficiency biomass in high-speed energy shale	The project aimed to enable an efficiency increase in Short-Rotation-Plantation (SRP) biomass production up to 3 times throughout Europe, by reusing wastewater and sewage sludge for irrigation and fertilisation, and to enable the safe and efficient application of wastewater and sewage sludge in SRPs.	Other	n.a.	http://ec.europa.eu/eip/agriculture/en/content/reovee-ja-ij%C3%A4%C3%A4kmuda-ohutu-kasutuse-v%C3%B5imalused-k%C3%B5rge-efektiivsusega-biomassitootmiseks
39	IT	2013	2015	Water availability	FIGARO	The objective of the FIGARO project is to significantly reduce the use of fresh water on farm level through developing a cost-effective, precision irrigation management platform.	Other	n.a.	www.figaro-irrigation.net/fileadmin/user_upload/figaro/docs/D8_2-8_3_Final1_2.pdf
40	IT	2015	Ongoing	Water availability	LIFE ReQpro	The LIFE ReQpro project will contribute to the protection of water resources through efficient reclamation and reuse of wastewater for irrigation of agricultural land, substituting surface water and groundwater resources. This objective will be achieved by	Other	n.a.	http://ec.europa.eu/eip/agriculture/en/content/life-reqpro-modello-di-recupero-e-riutilizzo-

N.	MS	Start	End	Theme	Project name	Description	Funding	Total Budget	link
						developing a specific model of water reclamation and reuse for irrigation of high quality crops.			delle-acque-reflue-produzioni-vegetali-di
41	IT	n.a.	n.a.	Water availability	In.Te.R.R.A.	A two years of experimental field activity carried out in two different demo-places in Southern Italy. Municipal wastewater treatment plants were used to irrigate different vegetable crops with treated wastewater and conventional water pumped from wells, for comparing the effects of the different water sources on soil and vegetables.	Other	n.a.	http://ec.europa.eu/eip/agriculture/en/content/interra-tecnologie-innovative-il-reimpiego-irriguo-delle-acque-reflue
42	IT	n.a.	n.a.	Water availability	HydroTech and BlueLeaf projects	The main objective of the project is to develop a decision support system (DSS) for irrigation management at farm level.	Other	n.a.	http://ec.europa.eu/eip/agriculture/en/content/progetto-hydrotech-blueleaf
43	Multiple	n.a.	n.a.	Water availability	APMed	The project focused on how water restriction can be managed in apple and peach orchards. Research has been carried out i) to gain knowledge of the genetic ability of apple and peach trees to survive in water stressed environment and ii) to better define irrigation thresholds to reduce water use while maintaining high fruit quality.	Other	n.a.	http://ec.europa.eu/eip/agriculture/en/content/apmed-managing-water-scarcity-apple-and-peach-orchards-mediterranean-environment-profitable
44	AT	2016	2019	Soil & nutrients	OG-BIOBO	The objective of OG-BIO is to develop and assess approaches to solutions for the implementation of reduced soil tillage in connection with green manuring measures and organic fertilisation contributing to a long-term increase in yield and incomes.	EAFRD (EIP AGRI) 2014-2020	€ 485 000	http://ec.europa.eu/eip/agriculture/en/content/og-biobo-ertragsentwicklung-und-humusaufbau-%C3%BCber-reduzierte-bodenbearbeitung-und-organische
45	BE	2016	2018	Soil & nutrients	SOCROSense	The aim of SOCROSense is supporting pioneer farmers who have experience with the use of GPS close-sensing techniques, focused on soil and crop sensors. Together with actors from research institutes an analysis shall be made on how data of sensors can be used by farms and exchanged between farmers.	EAFRD (EIP AGRI) 2014-2020	€ 33 400	http://ec.europa.eu/eip/agriculture/en/content/socrosense-soil-and-crop-sensing-technologies
46	BE	2016	2017	Soil & nutrients	Controlled Traffic Farming	Controlled traffic lanes prevent soil structure damage and soil compaction in the seedbed between the tracks. This results in optimal growing conditions for soil life and roots and better water storage capacity of soils. This project will support farmers to implement CTF on their specific farm.	EAFRD (EIP AGRI) 2014-2020	€ 33 250	http://ec.europa.eu/eip/agriculture/en/content/controlled-traffic-farming
47	BG	2009	2012	Soil & nutrients	Afforestation of Non-Agricultural Land by the State Hunting Enterprise	The State Hunting Enterprise "Dikchan" in cooperation with local authorities implemented this project with the aim to afforest non-agricultural land and protect the land from the risk of erosion and desertification.	EAFRD	€ 36 235	http://enrd.ec.europa.eu/enrd-static/policy-in-action/rdp_view/en/view_project_11162_en.html

N.	MS	Start	End	Theme	Project name	Description	Funding	Total Budget	link
48	CZ	2007	2013	Soil & nutrients	Planting Fodder Strips on Arable Land to Protect Wildlife, Biodiversity and Soil Quality	Hunters helped persuade farmers to plant fodder strips as to improve wildlife habitats, biodiversity and soil quality where flora and fauna were previously diminishing due to intensive monocropping.	EAFRD	€ 1140 000	http://enrd.ec.europa.eu/enrd-static/policy-in-action/rdp_view/en/view_project_9980_en.html
49	DK	2012	2014	Soil & nutrients	Promoting land stewardship at Sønderup Stream Valley	A farmer's association provided support on planning and facilitation of land stewardship, with particular focus on grazing in Sønderup river valley.	EAFRD	€ 38 200	http://enrd.ec.europa.eu/projects-practice/promoting-land-stewardship-s%C3%B8nderup-stream-valley_en
50	ES	2008	2013	Soil & nutrients	Preservation of Arable Lands (Erosion Prevention)	This project created strips of vegetal cover by planting bushes and sowing a mixture of cereals to control soil erosion. As a result, there is also better management of water and more plant diversity.	EAFRD	€ 3 009 065	http://enrd.ec.europa.eu/enrd-static/policy-in-action/rdp_view/en/view_project_4200_en.html
51	FI	2016	2018	Soil & nutrients	Teho-lanta	The objective of this project is to increase efficiency in use of poultry manure and sustainability. The project examines the possibilities of energy use, more precise use of nutrients, technologies and life cycle assessment.	EAFRD 2014-2020	n.a.	www.maaseutu.fi/fi/kaytannon-oiuulluksia/hankkeet/Sivut/siivekkaiden_lanta_hyotykyttoon.aspx
52	FI	2016	2018	Soil & nutrients	Vilkku	The project promotes measures to manage soil quality, winter time plant cover and water protection measures. The project is planned by farmers in co-operation with researchers.	EAFRD 2014-2020	n.a.	www.vhvsy.fi/files/upload_pdf/6547/VILKKU%20esitys_vhvsy%20syyskokous30112016.pdf
53	FI	2015	2018	Soil & nutrients	Osmo -project	Farmers are supported to learn to assess soil quality, gain increased knowledge and be provided with practical examples on how to maintain soil quality.	EAFRD 2014-2020	€ 700 000	http://luomu.fi/tietopankki/osmo-osaamista-maan-kasvukunnon-hoitoon-2015-2018/
54	FR	2015	2018	Soil & nutrients	Coteaux pentus	The main purpose of this operation is to evaluate the technical and economical feasibility of the "banquette" earthwork to mechanize grassing in substitution of chemical herbicides.	EAFRD (EIP AGRI) 2014-2020	€ 73 077	http://ec.europa.eu/eip/agriculture/en/content/coteaux-pentus
55	FR	2016	2020	Soil & nutrients	GUAYUL-LR	The project supported guayule crop field trials on four locations of different climatic conditions and types of soil on former vine land. It also supported knowledge transfer to farmers towards increasing their interest on the crop which reduces soil erosion and risks of fires, the production of seeds and supply with guayule biomass to an extraction plant and a feasibility study.	EAFRD (EIP AGRI) 2014-2020	€ 227 319	http://ec.europa.eu/eip/agriculture/en/content/implantation-de-parcelles-de-d%C3%A9monstration-de-culture-de-guayule-parthenium-argentatum-en
56	FR	2015	2019	Soil & nutrients	Valoriser les Potentiels céréaliers en climat méditerranéen.	The project aims to develop a forecast tool in real time that will forecast the evolution of the potential yield and inform farmers	EAFRD (EIP AGRI) 2014-2020	€ 406 057	http://ec.europa.eu/eip/agriculture/en/content/valoriser-les-

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						regularly and guide the adjustment of nitrogenous fertilization and irrigation.			potentiels-c3%A9r%C3%A9alier-s-en-climat-m%C3%A9diterran%C3%A9en
57	FR	2015	2019	Soil & nutrients	Système innovant de conduite des grandes cultures avec des légumineuses	Two experimental fields were set in order to evaluate the agronomic impact of the drought in Hérault and water excess in Gard. Rotation systems on chick peas are tested in Hérault while seeding systems with permanent cover of leguminous crop are tested in Gard.	EAFRD (EIP AGRI) 2014-2020	€ 225 478	http://ec.europa.eu/eip/agriculture/en/content/syst%C3%A8me-innovant-de-conduite-des-grandes-cultures-avec-des-l%C3%A9gumineuses
58	FR	2015	2017	Soil & nutrients	Patate douce (Ipomea batatas)	Testing different potato varieties for two different markets (fresh consumption and transformed in chips or beer) to respond to the changing demands of the consumer market for local ecological and/or organic products.	EAFRD (EIP AGRI) 2014-2020	€ 131 737	http://ec.europa.eu/eip/agriculture/en/content/patate-douce-ipomea-batatas-culture-de-diversification-en-languedoc-roussillon
59	FR	2015	2018	Soil & nutrients	Zéro herbicides en cultures pérennes méditerranéennes	The project is about evaluating and promoting an innovative weed management system, using under row cover crops. Cover crops naturally protect the soil and require less intervention.	EAFRD (EIP AGRI) 2014-2020	€ 469 000	http://ec.europa.eu/eip/agriculture/en/content/z%C3%A9ro-herbicides-en-cultures-p%C3%A9rennes-m%C3%A9diterran%C3%A9ennes
60	FR	2015	2017	Soil & nutrients	Bioferm	The project will contribute to the sustainability of mixed agricultural production systems joining agriculture and husbandry by offering innovative technological itineraries for local production of alimentary resources and animal fodder.	EAFRD (EIP AGRI) 2014-2020	€ 101 853	http://ec.europa.eu/eip/agriculture/en/content/gestion-conservatoire-des-biomasses-des-nutriments-et-de-la-fertilit%C3%A9-des-sols-dans-les
61	FR	2015	2017	Soil & nutrients	Fighting against soil erosion in Mayotte (LESELAM)	A cooperation project brought together local farmers, inhabitants and public services managers to jointly define and promote soil preservation techniques adapted to the local environment.	EAFRD 2014-2020	€ 1 100 000	http://enrd.ec.europa.eu/projects-practice/fighting-against-soil-erosion-mayotte-leselam_en
62	FR	2015	2016	Soil & nutrients	Preserving peatland and wet meadows in Auvergne	Farmers in France's Auvergne region used EAFRD support to preserve peatland and wet meadows in two Natura 2000 areas where over a hundred farmers raise cattle.	EAFRD 2014-2020	€ 439 866	http://enrd.ec.europa.eu/projects-practice/preserving-peatland-and-wet-meadows-auvergne_en

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63	NL	2015	2015	Soil & nutrients	Mechanistic modelling of the vertical soil organic matter profile	The aim of this thesis is to develop a dynamic and mechanistic representation of the vertical SOM profile that can be applied for large scale simulations as a part of global ecosystem and earth system models.	EAFRD (EIP AGRI) 2014-2020	n.a.	http://ec.europa.eu/eip/agriculture/en/content/mechanistic-modelling-vertical-soil-organic-matter-profile
64	SE	2011	2014	Soil & nutrients	Greppa Näringen	An advisory programme on reducing nutrient pollution, implemented at county level, helps minimise the impact of agriculture on the environment.	EAFRD	€ 165 775	http://enrd.ec.europa.eu/projects-practice/greppa-naringen-advice-preventing-fertilizer-runoff-gotland-sweden_en
65	UK	2016	ongoing	Soil & nutrients	Cover crop management	Different cover crop management strategies could have different impacts on soil biology, both positive and negative. The operational group is seeking to compare the impact of different methods of cover crop management on soil biology.	EAFRD (EIP AGRI) 2014-2020	€ 122 000	http://ec.europa.eu/eip/agriculture/en/content/cover-crop-management-improved-soil-biology
66	EL	2009	2012	Soil & nutrients	PROSODOL	Strategies to improve and protect soil quality from the disposal of olive mills' wastes in the Mediterranean region.	LIFE	€ 1 664 986	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3297
67	EL	2010	2014	Soil & nutrients	SAGE10	Development of an Environmental Impact Assessment tool for sustainably managing agroecosystems: the case of Mediterranean olives.	LIFE	€ 2 109 442	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3681
68	EL	2009	2012	Soil & nutrients	Soil Sustainability (So.S)	Development of tools for improved soil management regarding soil erosion, organic matter decline, salinisation, contamination and sealing.	LIFE	€ 1 572 745	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3305
69	ES	2012	2016	Soil & nutrients	ROEM-plus	Demonstration of an innovative approach for the management and reduction of surface water eutrophication in rural areas.	LIFE	€ 1 933 584	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=4219
70	ES	2011	2015	Soil & nutrients	MANEV	Development of tools for assessing and improving manure management and treatment technologies for environmental protection and sustainable livestock farming.	LIFE	€ 4 165 832	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3651

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71	ES	2006	2011	Soil & nutrients	ES-WAMAR	Environmentally-friendly management of swine waste in agriculture based on innovative techniques.	LIFE	€ 6 899 568	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3070
72	FI	2010	2013	Soil & nutrients	GISBLOOM	Development of an integrated model for monitoring, forecasting and control of environmental and socio-economic impacts of eutrophication and algal blooms in river basins districts.	LIFE	€ 3 060 856	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3719
73	FR	2006	2010	Soil & nutrients	ArtWET	Mitigation of agricultural nonpoint-source pesticide pollution and phytoremediation in artificial wetland ecosystems.	LIFE	€ 3 878 621	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3099
74	IT	2015	Ongoing	Soil & nutrients	LIFE HelpSoil	The project seeks to achieve the testing and the demonstration of Conservation Agriculture techniques combined with innovative management practices of agricultural soils. The aim is to strengthen the ecological functions of the soils (carbon sequestration, increase of fertility and edaphic biodiversity, protection against erosion); favour efficiency in the use of irrigation water, increase the efficiency of fertilization; reduce the use of pesticides for the control of plant pests and diseases.	LIFE	n.a.	http://ec.europa.eu/eip/agriculture/en/content/migliorare-i-suoli-e-l%E2%80%99adattamento-al-cambiamento-climatico-attraverso-sostenibili-tecniche
75	IT	2010	2014	Soil & nutrients	AQUA	Demonstration of innovative practices for reducing the environmental impact of nutrients (N, P) from intensive farming in water bodies.	LIFE	€ 2 634 689	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3645
76	PL	2012	2015	Soil & nutrients	Biorewit	New soil improvement products for reducing the pollution of soils and waters and revitalizing edaphic systems.	LIFE	€ 1 863 195	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3918
77	PL	2010	2015	Soil & nutrients	EKOROB	Ecohydrological methods for the reduction of diffuse pollution in the Pilica river basin.	LIFE	€ 1 316 987	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3496
78	PL	2009	2010	Soil & nutrients	Lake recult. in Gniezno	Improving water quality in Jelonek and Winiary lakes by inactivation of phosphorus in bottom sediments.	LIFE	€ 431 861	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3260

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79	DE	n.a.	n.a.	Soil & nutrients	Making Sense	A partnership for developing decision support systems on soil fertility and crop fertilization, based on: physical, chemical, biological processes; Soil & Crop sensor data; Weather data; Soil and Crop models.	Other	n.a.	http://ec.europa.eu/eip/agriculture/en/content/making-sense
80	DK	n.a.	n.a.	Soil & nutrients	Billund biorefinery	Billund BioRefinery is a project that aims to educate and show the way to a more sustainable cycle with better utilization of wastewater and utilization of energy and nutrients in wastewater and organic waste.	Other	n.a.	www.billundbiorefinery.dk/
81	Multiple	2015	2019	Soil & nutrients	LANDMARK	LANDMARK is a European Research Project for the sustainable management of land and soil in Europe. It aims to respond to the issue on how to ensure that soils can continue to deliver as expected, in terms of primary production (agriculture and forestry); water purification and regulation; carbon sequestration; provision of functional and intrinsic biodiversity; provision and cycling of nutrients.	Other	n.a.	http://ec.europa.eu/eip/agriculture/en/content/landmark-land-management-assessment-research-knowledge-base-eu-h2020-project
82	n.a.	2015	2015	Soil & nutrients	Maintenance of soil fertility and organic substance	The long-term goal of this project is to develop strategies to keep soil fertility and organic matter at an equal level in order to maintain productivity and soil quality can be guaranteed.	Other	n.a.	http://ec.europa.eu/eip/agriculture/en/content/maintenance-soil-fertility-and-organic-substance
83	NL	2009	2013	Soil & nutrients	Teelt de grond uit	The project focused on developing cost effective closed cultivation systems for outdoor horticulture that comply with European regulations for water quality. It investigated cost effective ways with minimal emission from fertilisers and pesticides.	Other	n.a.	http://ec.europa.eu/eip/agriculture/en/content/teelt-de-grond-uit
84	SK	2014	2015	Soil carbon	Improving the sustainability of a Slovak forest	A Slovak state enterprise used EAFRD funding to plant new forest seedlings and develop a forest road for maintenance activities, strengthening the forest's sustainability.	EAFRD	€ 460 383	http://enrd.ec.europa.eu/projects-practice/improving-sustainability-slovak-forest_en
85	EL	2010	2012	Soil carbon	SMART-CHP	Demonstration of a small-scale mobile agricultural residue gasification unit for decentralized combined heat and power production.	LIFE	€ 947 287	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3472
86	ES	2010	2014	Soil carbon	SOIL-Montana	Development of tools for soil and biodiversity conservation in mountain and bottom valley grazing areas.	LIFE	€ 1 649 448	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=4064
87	ES	2012	2013	Soil carbon	AgriClimateChange	Demonstration and promotion of sustainable farming practices that contribute to combating climate change.	LIFE	€ 1 588 990	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=4064

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88	ES	2012	2014	Soil carbon	LIFE+AGRICARBON	Test and promotion of conservation and precision agriculture and demonstration of their benefits to climate adaptation and mitigation.	LIFE	€ 2 674 653	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3441
89	ES	2011	2016	Soil carbon	Crops for better soil	Promotion of organic farming techniques based on traditional crops in semi-arid areas.	LIFE	€ 3 556 642	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3921
90	ES	2010	2015	Soil carbon	MIPOLARE	Reclamation of post-mined polluted soils by means of valorisation of different organic residues.	LIFE	€ 1 791 272	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3657
91	FI	2011	2014	Soil carbon	Climforisk	Improving knowledge on the effects of climate change induced droughts on forest vulnerability and growth.	LIFE	€ 1 485 782	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3722
92	IT	2006	2010	Soil carbon	Seq-Cure	Integrated systems to enhance sequestration of carbon, producing energy crops by using organic residues.	LIFE	€ 1 917 051	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3066
93	FI	n.a.	n.a.	Soil carbon	BioVakka Vehmaa biogas / digestate	Biovakka was established in 2002 by 21 farmers who wanted to find a way to increase pig production in the region and to develop a solution to manage the large quantities of pig manure in an environmentally-friendly way.	Other	n.a.	http://ec.europa.eu/eip/agriculture/sites/agri-eip/files/field_core_attachments/nw_biovakka_20151208_en.pdf
94	Multiple	n.a.	n.a.	Multiple	Evaluation de methodes alternatives de DESHERBAGE EN MARAICHAGE	The project aims to develop proposals of new efficient ecologically acceptable weed control technics with less inputs of pesticides, water, fertilizers etc.	EAFRD (EIP AGRI) 2014-2020	€ 87 942	http://ec.europa.eu/eip/agriculture/en/content/evaluation-de-methodes-alternatives-de-desherbage-en-maraichage
95	BE	2012	2016	Multiple	DEMETER	Development of tools for sustainable soil management in the agricultural sector.	LIFE	€ 1 907 092	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3984

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96	ES	2012	2015	Multiple	sigAGROasesor	Development and demonstration of customised advanced GIS advisory tools for the sustainable management of extensive crops.	LIFE	€ 2 995 848	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=4257
97	ES	2010	2015	Multiple	The Green Deserts	Demonstration of new planting techniques for tree cultivation in desertified environments to face Climate Change.	LIFE	€ 2 074 518	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3654
98	IT	2013	2016	Multiple	Climate changE-R	The project aims to reduce greenhouse gases emitted into the atmosphere by agriculture in Emilia-Romagna region, also giving value to aspects such as water and energy savings, reduced use of chemicals in agriculture, the introduction of advanced power management techniques on farms and livestock manure management.	LIFE	€ 1 800 000	http://agricoltura.regione.emilia-romagna.it/climatechanger
99	IT	2011	2015	Multiple	ZeolIFE	Testing an innovative integrated zeolitic cycle for reducing the nitrogen content in livestock effluents and agricultural soils, and improving the yield and economisation of irrigation water and fertilisers.	LIFE	€ 2 150 839	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3957
100	IT	2010	2013	Multiple	SUMFLOWER	Development and demonstration of a sustainable management system for floriculture and ornamental horticulture production.	LIFE	€ 1 769 416	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3745
101	IT	2009	2012	Multiple	RE-WASTE	Valorisation of olive mill waste waters by recovering high added value bio-products.	LIFE	€ 1 546 500	http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3247
102	SE	n.a.	n.a.	Multiple	REVAQ	Revaq is a certification scheme aimed at reducing the flow of hazardous substances into sewage treatment plants, creating a sustainable nutrient recycling.	Other	n.a.	www.svensktvatten.se/vattentjanster/avlopp-och-miljo/kretslopp-och-uppstromsarbete/revaq-certifiering/
103	DE	n.a.	n.a.	Multiple	Projekt Lebenswandel am Scharmbecker Bach	Local river catchment protection: the main aim is to increase the ecological conditions, increase biodiversity, raising awareness of the local population, individuals can act as sponsors, restoration activities.	Other	n.a.	www.biologische-station-osterholz.de/