AGFORWARD
Agroforestry for Europe

AGFORWARD
Third Periodic Report
1 July 2016 - 31 December 2017

Grant Agreement number: 613520
Project acronym: AGFORWARD
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Period covered: 1 July 2016 to 31 December 2017
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AGFORWARD (Grant Agreement N° 613520) is co-funded by the European Commission, Directorate General for Research & Innovation, within the 7th Framework Programme of RTD. The views and opinions expressed in this report purely those of the writers and may not in any circumstances be regarded as stating an official position of the European Commission

Reference:
Burgess PJ, den Herder M, Dupraz C, Garnett K, Giannitsopoulos M, Graves AR, Hermansen JE, Kanzler M, Liagre F, Moreno G, Mosquera-Losada MR, Palma JHN, Pantera A, Plieninger T (2018). AGFORWARD Third Periodic Report: July 2016 to December 2017. Cranfield University: AGFORWARD.

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Funding Scheme: Collaborative Project

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Photo on the front page is of a site visit at a French silvoarable system by Pierre Honoré

Declaration by the scientific representative of the project coordinator

I, as scientific representative of the coordinator of this project and in line with the obligations as stated in Article II.2.3 of the Grant Agreement declare that:

- The attached periodic report represents an accurate description of the work carried out in this project for this reporting period;
- The project (tick as appropriate):

  ☑ has fully achieved its objectives and technical goals for the period;

  ☐ has achieved most of its objectives and technical goals for the period with relatively minor deviations.

  ☐ has failed to achieve critical objectives and/or is not at all on schedule.

- The public website, if applicable

  ☑ is up to date

  ☐ is not up to date

- To my best knowledge, the financial statements which are being submitted as part of this report are in line with the actual work carried out and are consistent with the report on the resources used for the project (submitted electronically) and if applicable with the certificates on financial statement.
- All beneficiaries, in particular non-profit public bodies, secondary and higher education establishments, research organisations and SMEs, have declared to have verified their legal status. Any changes have been reported under section B.10 (Project Management) in accordance with Article II.3.f of the Grant Agreement.

Name of scientific representative of the Coordinator: Paul Burgess

Date: 1 March 2018

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List of acronyms

Participant no.	Participant organisation name	Acronym	Country
1.	Cranfield University	CRAN	UK
2.	European Forest Institute	EFI	International
	Third party : Sveriges Lantbruksuniveritet	SLU	Sweden
3	Association de Coordination Technique Agricole	ACTA	France
	Third party: Centre National de la Propriete Forestiere	IDF	France
	Third party: Institut de L'elevage	IDELE	France
4	University of Santiago de Compostela	USC	Spain
5	TEI Stereas Elladas	TEI	Greece
6	Institut National de la Recherche Agronomique	INRA	France
7	Organic Research Centre	ORC	UK
8	BTU Cottbus-Senftenberg	BTU	Germany
9	Universidad de Extremadura	UEX	Spain
10	Instituto Superior de Agronomia, University of Lisbon	ISA	Portugal
11	University of Copenhagen	UCPH	Denmark
12	Research Station FDEA-ART Zurich	FDEA	Switzerland
13	Werkgroep voor Rechtvaardige en Verantwoorde Landbouw (Wervel vzw)	WER	Belgium
14.	Aarhus University	AU	Denmark
15	Agri Food and Biosciences Institute	AFBI	UK
16	Consiglio per la Ricerca e la Sperimentazione in Agricoltura *Renamed:* Consiglio per la Ricerca in Agricoltura e l'Analisi dell'Economia Agraria	CREA	Italy
17	Louis Bolk Institute	LBI	The Netherlands
18	Consiglio Nazionale delle Ricerche	CNR	Italy
19	Nyugat-Magyarorszagi Egyetem Kooperacios Kutatasi Kozpont Nonprofit KFT *Renamed*: Soproni Egyetem Kooperacios Kutatasi Kozpont Nonprofit KFT	NYME	Hungary
20	Universitatea Babes Bolyai	UBB	Romania
21	Veneto Agricoltura *Renamed:* Agenzia Veneta Per L'Innovazione nel Settore Primario	VEN	Italy
22	Agroof	AGROOF	France
23	Assemblée Permanente des Chambres d'Agriculture	APCA	France
24	Association Française d'AgroForesterie	AFAF	France
25	World Agroforestry Centre (International Centre for Research in Agroforestry)	ICRAF	International
26	European Agroforestry Federation	EURAF	Pan-European

Note on the numbering of milestones and deliverables

In the original AGFORWARD Description of Work (19 September 2013), the milestones and deliverables of the project were given two numbers: the number of the work-package and the number of the milestone or deliverable within the work-package. Hence Deliverable or Milestone 9.2 was the second deliverable or milestone in work-package 9.

However, there is a different numbering system for the milestones and deliverables on the European Commission (EC) portal. For example Deliverable 9.2 became Deliverable 9.25, a deliverable from work-package 9 and the 25th deliverable on the project (Table A.1). In the new system, the milestones are now numbered in order (Table A.2). For example Milestone 9.2 becomes MS39. This report uses the numbering system on the EC Portal. A summary of the conversions are provided in the tables below.

Table A.1. Numbering of the deliverables in the Description of Work (DOW) and the new numbering system in this report to match the EC portal system (EC)

DOW	EC	DOW	EC	DOW	EC	DOW	EC	DOW	EC
D1.1	D1.1	D3.2	D3.8	D5.3	D5.15	D7.4	D7.22	D9.5	D9.29
D1.2	D1.2	D3.3	D3.9	D6.1	D6.16	D8.1	D8.23	D9.6	D9.30
D1.3	D1.3	D4.1	D4.10	D6.2	D6.17	D8.2	D8.24	D9.7	D9.31
D2.1	D2.4	D4.2	D4.11	D6.3	D6.18	D9.1	D9.25		
D2.2	D2.5	D4.3	D4.12	D7.1	D7.19	D9.2	D9.26		
D2.3	D2.6	D5.1	D5.13	D7.2	D7.20	D9.3	D9.27		
D3.1	D3.7	D5.2	D5.14	D7.3	D7.21	D9.4	D9.28		

Table A.2. Numbering of the milestones in the Description of Work (DOW), and the new numbering system in this report to match the EC portal system (EC)

DOW	EC	DOW	EC	DOW	EC	DOW	EC	DOW	EC
M1.1	MS1	M3.3	MS10	M4.6	MS19	M6.3	MS28	M8.2	MS37
M2.1	MS2	M3.4	MS11	M5.1	MS20	M6.4	MS29	M9.1	MS38
M2.2	MS3	M3.5	MS12	M5.2	MS21	M6.5	MS30	M9.2	MS39
M2.3	MS4	M3.6	MS13	M5.3	MS22	M7.1	MS31	M9.3	MS40
M2.4	MS5	M4.1	MS14	M5.4	MS23	M7.2	MS32	M10.1	MS41
M2.5	MS6	M4.2	MS15	M5.5	MS24	M7.3	MS33	M10.2	MS42
M2.6	MS7	M4.3	MS16	M5.6	MS25	M7.4	MS34		
M3.1	MS8	M4.4	MS17	M6.1	MS26	M7.5	MS35		
M3.2	MS9	M4.5	MS18	M6.2	MS27	M8.1	MS36		

SECTION A: PROJECT OBJECTIVES FOR THE PERIOD

Project context

The European Union has targets to improve the competitiveness of European agriculture and forestry, whilst improving the environment and the quality of rural life. At the same time there is a need to improve our resilience to climate change and to enhance biodiversity. During the twentieth century, large productivity advances were made by managing agriculture and forestry as separate practices, but often at a high environmental cost. In order to address landscape-scale issues such as biodiversity and water quality, we argue that farmers and society will benefit from considering land-use as a continuum including both agriculture and trees, and that there are significant opportunities for European farmers and society to benefit from a closer integration of trees with agriculture. Agroforestry is the practice of deliberately integrating woody vegetation (trees or shrubs) with crop and/or animal systems to benefit from the resulting ecological and economic interactions.

Project goal and objectives

The AGFORWARD project (Grant Agreement N° 613520) is co-funded by the European Commission, Directorate General for Research & Innovation, within the 7th Framework Programme of RTD, Theme 2 - Biotechnologies, Agriculture & Food. The project started in January 2014 and ended in December 2017. The overall goal of the project was to promote agroforestry practices in Europe that will advance sustainable rural development, i.e. improved competitiveness, and social and environmental enhancement.

The project had four objectives which were addressed through ten work packages:

1. To understand the **context** and extent of agroforestry in Europe (work-package 1);
2. To **identify, develop and field-test innovations** to improve the benefits and viability of agroforestry systems in Europe. This was achieved through four participatory networks focused on four sectors described on the next page (work-packages 2 to 5);
3. To **evaluate** innovative agroforestry designs and practices for locations where agroforestry is currently not practised or is declining and to quantify the opportunities for uptake at a field and farm scale (work-package 6) and at a landscape scale (work-package 7);
4. To **promote** the wider adoption of appropriate agroforestry systems in Europe through policy development (work-package 8) and dissemination (work-package 9).

There was also a project management activity (work-package 10).

The objectives in each work-package for the reporting period are described in the first section of each of the work-package reports on the following pages.

SECTION B: WORK PROGRESS AND ACHIEVEMENTS DURING THE PERIOD

This section provides an overview of the progress of the work in line with the structure of the Grant Agreement. For each of the first nine work-packages, we provide a summary of progress towards the objectives and details of each task, highlighting significant results where appropriate. During the third reporting period (31-48 months) there have been no significant deviations from the plan, and where there are small deviations these are explained.

1 Work package number 1

Work-package number	**1**
Work-package name	**Existing Agroforestry Systems in Europe**
Leader	Michael den Herder
Organisation	European Forest Institute (EFI)
Report period	1 July 2016 to 31 December 2017

Objectives and tasks within work package 1

Michael den Herder led the first work package which sets the context for the project. The work-package comprised four objectives and associated tasks (Table 1.1) and resulted in three deliverables. A delay meant that Deliverable 1.3 was completed in the third reporting period (Table 1.2).

Table 1.1. Work-plan of activities, milestones (M), and deliverables (D) for work-package 2 for month 25 to month 48 (indicated in orange)

Month	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
WP1 Context																								
T1.1 Inventory of AF in EU (D1.2)																								
T1.2 External AF innovations (D1.1)																								
T1.3 Stratification of AF (MS1)																								
T1.4 Framing AF development (D1.3)			D																					
T1.5 Co-ordination of WP1																								

Table 1.2. Summary of the status of milestones and deliverables in work-package 1 for first (Month 0-12), second (Month 13-30), and the third (Month 31-48) reporting periods

Description	Due date	Status
First reporting period		
MS1 Preliminary stratification and quantification of agroforestry use	Dec 2014	Completed
D1.1 Report on possible technology transfer from Mediterranean partner countries to European countries	Dec 2014	Completed
Second reporting period		
D1.2 Current extent and trends of agroforestry in the EU27	June 2015	Completed
D1.3 Report describing the socio-economic framework of agroforestry	Mar 2016	Completed Apr 2017

1.1 Extent of and recent changes of agroforestry systems in Europe (completed)

Objective 1.1 was to provide an inventory and explain the extent and recent changes of agroforestry systems in Europe. This objective was achieved by Task 1.1, which provided an inventory of agroforestry by using existing EU27 land use classifications and surveys. EFI led this work which comprised Deliverable 1.2 (Table 1.3) which was described in detail in the Second Periodic Report. A key conclusion from the work was that the use of pan-European LUCAS Land Use and Land Cover data to estimate the area of European agroforestry resulted in an estimate of 15.4 million ha which is equivalent to 3.6% of the territorial area or 8.8% of the utilised agricultural area. The report was updated in December 2015, and a subsequent version in August 2016 has recently been uploaded to ensure that the values in the website report match those in the den Herder et al. (2017) paper. In February 2017, an additional report describing the extent and trends of agroforestry in France (Malignier & Balaguer 2017) was completed. This report is available on the website as an Annex to Deliverable 1.2.

Table 1.3. References for Deliverable 1.2. The results have also been published as a paper

den Herder M, Moreno G, Mosquera-Losada MR, Palma JHN, Sidiropoulou A, Santiago Freijanes J, Crous-Duran J, Paulo J, Tomé M, Pantera A, Papanastasis V, Mantzanas K, Pachana P, Burgess PJ (2016a). Current extent and trends of agroforestry in the EU27. Deliverable Report 1.2. 15 August 2016. 2nd Edition. 76 pp. http://www.agforward.eu/index.php/en/current-extent-and-trends-of-agroforestry-in-the-eu27.html
den Herder M, Moreno G, Mosquera-Losada MR, Palma JHN, Sidiropoulou A, Santiago Freijanes JJ, Crous-Duran J, Paulo JA, Tomé M, Pantera A, Papanastasis VP, Mantzanas K, Pachana P, Papadopoulos A, Plieninger T, Burgess PJ (2017) . Current extent and stratification of agroforestry in the European Union. Agriculture, Ecosystems and Environment 241: 121–132.
Malignier N, Balaguer F (2017). Annex to Deliverable 1.2: Current extent and trends of agroforestry in France. AGFORWARD 613520. (7 February 2017). 10 pp. http://www.agforward.eu/index.php/en/current-extent-and-trends-of-agroforestry-in-the-eu27.html

1.2 Agroforestry practices bordering Europe (completed)

Objective 1.2 was to identify and describe successful agroforestry practices in areas bordering Europe, which may be used to encourage European agroforestry. The review (Deliverable 1.1), which remains available on the AGFORWARD website, was reported in the First Periodic Report.

1.3 Stratification of the EU28 into regions (completed)

Objective 1.3 was to stratify the EU28 into regions with different combinations of high nature (associated with work-package 2), fruit tree and olive orchards (associated with work-package 3), arable (associated with work-package 4), and livestock (associated with work-package 5) systems. This was completed through Task 1.3 and the stratification can help inform where particular agroforestry systems are most appropriate. The report (Milestone 1) completed in the first reporting period, was made available on the AGFORWARD website on 28 April 2015 and was reported in the Second Periodic Report.

1.4 Framework conditions under which agroforestry operates and develops (completed)

Objective 1.4 was to analyse the framework conditions under which agroforestry operates and develops. As described in the Second Periodic Report an extension was requested for the March 2016 deadline for Deliverable 1.3 to October 2016 because of an illness of one of EFI's specialised employees. A good draft of Deliverable 1.3 was completed in October 2016 and updates to the reports were made in April 2017. The report is now available on the AGFORWARD website, and two papers arising from the research have been published (Table 1.3).

Table 1.4. References for Deliverable 1.3. The results have also been published in two papers

Rois Díaz M, Lovrić N, Lovrić M, den Herder M, Graves AR, Pisanelli A, Mosquera Losada MR, Ferreiro Rodríguez N, García de Jalón S, Vityi A, Varga A, Burgess PJ (2017). Environmental and socio-economic framework conditions of agroforestry in different regions in Europe. Deliverable Report 1.3. 10 April 2017. 100 pp. http://www.agforward.eu/index.php/en/environmental-and-socio-economic-framework-conditions-of-agroforestry-in-different-regions-in-europe.html
Rois-Díaz M, Lovric N, Lovric M, Ferreiro-Domínguez N, Mosquera-Losada MR, den Herder M, Graves A, Palma JHN, Paulo JA, Pisanelli A, Smith J, Moreno G, Garcia de Jalon S, Varga A, Pantera A, Mirck J, Burgess P (2017). Farmers' reasoning behind the uptake of agroforestry practices: evidence from multiple case-studies across Europe. Agroforestry Systems. https://doi.org/10.1007/s10457-017-0139-9
Lovrić M, Rois-Díaz M, den Herder M, Pisanelli A, Lovrić N, Burgess PJ (2018). Driving forces for agroforestry uptake in Mediterranean Europe: application of the analytic network process. Agroforestry Systems. https://doi.org/10.1007/s10457-018-0202-1

This report, led by staff from the European Forest Institute, examines the socio-economic and environmental context for the implementation of agroforestry in Europe. It uses two approaches: i) qualitative interviews with 183 farmers and ii) the development of a detailed multi-criteria model based on the responses of 18 participants working with European agroforestry. The report starts with brief reviews of the agricultural sector in Europe (Section 2) and the current published knowledge on the socio-economic and environmental drivers for agroforestry (Section 3).

Section 4 describes the qualitative interviews carried out with 98 farmers practising agroforestry and 85 farmers not practising agroforestry across eight European countries. The approach used grounded theory to establish 'Why is agroforestry accepted or not? The face-to-face or telephone interviewees were centred on eight questions, which are reported and examined in turn:

- What do farmers understand by agroforestry?
- Why do farmers start implementing agroforestry?
- Have trees been removed from farms and why?
- What are the agroforestry practices implemented?
- What are the main problems that farmers face when implementing agroforestry?
- What are the positive perceptions from farmers of agroforestry systems?
- What are the negative perceptions from farmers of agroforestry systems?
- Do farmers see a need for the labelling of agroforestry products?

The report provides examples of quotes addressing each of these questions and describes the full range of responses to each of these questions.

Section 5 describes the development of an Analytic Network Process (ANP) model based on the responses of 18 participants working with European agroforestry. The participants' understanding of the interactions between the benefits, costs, opportunities and risk of five agroforestry options were examined for a typical farm enterprise scenario for five different European biogeographical regions. The five agroforestry options were implementing: i) agroforestry of high natural cultural value, ii) intercropping or grazing between high value trees, iii) integrating trees with crops, iv) integrating trees with livestock, or v) not implementing agroforestry. The five biogeographical regions were: Atlantic, Boreal, Continental, Mediterranean and Pannonian. The final model relies on 40 criteria where the relative effects of selected inputs on selected outputs were quantified.

Across the five regions and five management options, in terms of environmental benefits, the strongest relationships occurred in terms of lower inputs of pesticides and/or fertiliser. In terms of economic benefits, the strongest relationships were associated with lower labour costs, production of higher quality crops and timber, or lower business risk due to diversification. For social benefits, the strongest relationship was with increased knowledge and information on agroforestry. In terms of costs, the strongest relationships were with increased labour costs or increased competition between crops, trees, and animals. In terms of opportunities, the strongest relationships were with the availability of subsidies or higher employment. Lastly in terms of risks, the strongest relationships were with low market opportunities or lack of subsidies. Across the five biogeographical regions, the option of not implementing agroforestry received its lowest ranking in the Mediterranean region, which is also the region where the implementation of agroforestry is currently highest. The section finally describes how understanding these relationships may be useful in determining appropriate policy interventions.

1.5 Co-ordination and synthesis of work

The fifth task (Task 1.5) in this work-package, led by Michael den Herder, was to co-ordinate and synthesise the research across the work-package. Michael attended the monthly Executive Board meetings held via Skype and joined the Fourth General Assembly in Portugal.

1.6 Use of resources in work-package 1

At the end of project, 57.41 person months had been allocated to work-package 1, equivalent to 137% of the budget (Table 1.5). The increase in the budget was primarily a result of the greater inputs from EFI.

Table 1.5. Person-month inputs to work-package 1

Organisation	First period (Jan to Dec 2014)	Second period (Jan 2015 to Jun 2016)	Third period (Jul 2016 to Dec 2017)	Total	Project budget
EFI	11.46	14.17	8.24	33.87	15
ICRAF	6.00	0.00	1.25	7.25	6
USC[a]	0.20	3.30	2.85	6.35	4
UEX	1.00	2.00	0.20	3.20	3
TEI	0.26	0.51	0.98	1.75	2
CRAN	0.27	0.73	0.00	1.00	1
ISA	0.25	0.75	0.00	1.00	1
CREA	0.12	0.25	0.63	1.00	1
AFAF	0.27	0.68	0.00	0.95	2
EURAF[a]	0.35	0.30	0.00	0.65	3
NYME	0.00	0.25	0.14	0.39	0
UPCH	0.00	0.00	0.00	0.00	3
FDEA	0.00	0.00	0.00	0.00	1
Total	20.18	22.94	14.29	57.41	42

[a]: A budget of 2.35 person months were transferred from EURAF to USC in third reporting period.

1.7 Issues/actions

The outputs from Work-package 1 have been successfully completed.

2 Work package number 2

Work-package number	**2**
Work-package name	**High Nature and Cultural Value Agroforestry**
Leader	Gerardo Moreno
Organisation	Universidad de Extremadura (UEX)
Report period	1 July 2016 to 31 December 2017

Objectives and tasks within work package 2

Gerardo Moreno led this work package which focused on established agroforestry systems that are recognised as having high nature and cultural value (HNCV). During the third reporting period, the focus has been on evaluating the innovations from the 10 stakeholder groups and the creation of lesson learnt reports and guidelines for farmers (Table 2.1; Table 2.2).

Table 2.1. Work-plan of activities, milestones (M), and deliverables (D) for work-package 2 for month 25 to month 48 (indicated in orange)

Month	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
WP2 HNCV agroforestry																								
T2.1 Establish PRD network (MS2) Completed in first period																								
T2.2 Characterise system (D2.4) Completed in second period																								
T2.3 Innovations (MS3) and protocols (MS4) Completed in first/second period																								
T2.4 Test, analyse and interpret innovation (MS5; D2.5)								M						D										
T2.5 Evaluate innovations to produce guidelines (MS6; D2.6)																		M		D				
T2.6 Disseminate results (MS7)																								M
T2.7 Co-ordination of WP2																								

Table 2.2. Summary of the status of milestones and deliverables in work-package 2 for first (Month 0-12), second (Month 13-30), and the third (Month 31-48) reporting periods

Description	**Due date**	**Status**
First progress period		
MS2 Establishment of PRD network	Aug 2014	Completed and on website
MS3 Identification of innovations to be tested	Dec 2014	Completed and on website
Second progress period		
MS4 Establish protocols	Jan 2015	Completed and on website
D2.4 Characterise systems	Dec 2015	Completed and on website
Third reporting period		
MS5 Report on studied innovations	Aug 2016	Completed November 2017
D2.5 Results of innovations	Feb 2017	Completed February 2018
MS6 Initial report on guidelines	Jun 2017	Completed October 2017
D2.6 Guidelines to farmers	Aug 2017	Completed January 2018
MS7 Dissemination of results	Dec 2017	Completed February 2018

2.1 Establish a participatory research and development network (completed)

Objective 2.1 was to identify examples of existing best practice, the key challenges, and possible innovations to improve the resilience and reinforce the ecosystem services of HNCV agroforestry systems across Europe. This objective was achieved by establishing the network and holding stakeholder workshops in selected countries (Task 2.1). The first objective was achieved during the first reporting period through ten stakeholder groups (Figure 2.1) and an associated report was produced to prioritise innovations.

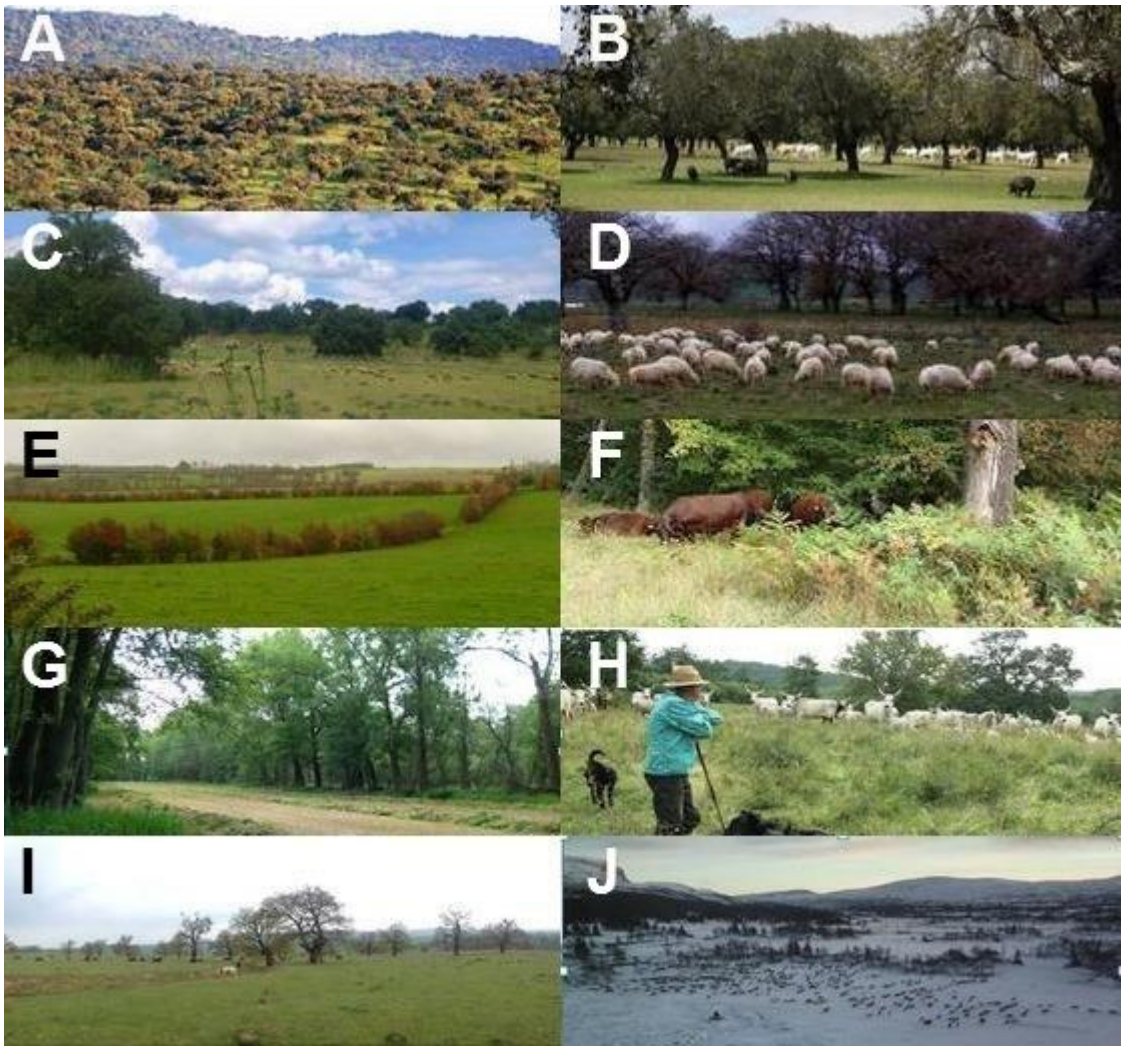


Figure 2.1. Agroforestry systems of high nature and cultural value across Europe; in A) Spain, B) Portugal, C) Greece, D) Sardinia, Italy, E) Brittany, France, F) UK, G) Germany, H) Hungary, I) Romania and J) Sweden

The report synthesising the proposed innovations, comprising Milestone 2**,** was described in the First Periodic Report. The challenges identified by the ten groups were grouped under nine topics: low farm profitability, a need for new system design and management, reduction of the costs of tree protection and regeneration, improvement of pasture quality, adaptation of grazing schemes and cost-efficient herding, increased animal production, measures for nature conservation, more efficient mechanisms for knowledge dissemination among stakeholders, and policy and governance.

2.2 Characterising the systems (completed)

Objective 2.2 was to describe the key inputs, outputs and ecosystem service flows for case study systems in the selected countries. This was completed (Task 2.2) during the second reporting period, and the individual reports (Table 2.3) were synthesised into a single report called Deliverable 2.4 (Table 2.4). Deliverable 2.4 and the associated individual reports describe the components, structure and outputs of the systems.

Table 2.3. References for the ten reports that contributed to Deliverable 2.4

Aviron S, Thenail C, Viaud V (2016). System report: Bocage Agroforestry in France. Contribution to Deliverable 2.4, AGFORWARD project, 20 pp. Available online http://www.agforward.eu/index.php/en/grazed-oak-woodlands-in-sardinia.html http://www.agforward.eu/index.php/en/bocage-agroforestry-in-brittany-france.html

Hartel T, Răzvan P, Rákosy L (2016). System report: Wood-pasture in Southern Transylvania. Contribution to Deliverable 2.4, AGFORWARD project, 18 pp. Available online http://www.agforward.eu/index.php/en/grazed-oak-woodlands-in-sardinia.html http://www.agforward.eu/index.php/en/wood-pastures-in-southern-transylvania-romania.html

Lopez Bernal A, Burgess PJ, Upson M, Garcia de Jalon S (2016). System report: Wood Pasture and Parkland in the UK. Contribution to Deliverable 2.4, AGFORWARD project, 41 pp. Available online http://www.agforward.eu/index.php/en/grazed-oak-woodlands-in-sardinia.html http://www.agforward.eu/index.php/en/wood-pasture-and-parkland-in-the-uk.html

Moreno G, Cáceres Y (2016). System report: Iberian dehesa, Spain. Contribution to Deliverable 2.4, AGFORWARD project, 60 pp. Available online http://www.agforward.eu/index.php/en/dehesa-farms-in-spain.html

Papadopoulos A, Pantera A, Mantzanas K, Papanastasis V, Fotiadis G, Papaspyropoulos K (2016). System report: Valonia Oak Silvopastoral Systems in Greece. Contribution to Deliverable 2.4, AGFORWARD project, 19 pp. Available online http://www.agforward.eu/index.php/en/valonia-oak-silvopastoral-systems-in-greece.html

Paulo JA, Crous-Duran J, Firmino PN, Faias SP, Palma JHN (2016). System report: cork oak silvopastoral systems in Portugal. Contribution to Deliverable 2.4, AGFORWARD project, 28 pp. Available online http://www.agforward.eu/index.php/en/montado-in-portugal.html

Sanna F, Re GA, Franca A (2016). System report: Grazed Oak Woodlands in Sardinia, Italy. Contribution to Deliverable 2.4, AGFORWARD project, 21 pp. Available online http://www.agforward.eu/index.php/en/grazed-oak-woodlands-in-sardinia.html

Tsonkova P, Mirck J (2016). System report: Agroforestry in the Spreewald Floodplain, Germany. Contribution to Deliverable 2.4, AGFORWARD project, 20 pp. Available online http://www.agforward.eu/index.php/en/grazed-oak-woodlands-in-sardinia.html http://www.agforward.eu/index.php/en/agroforestry-in-the-spreewald-flood-plain-germany.html

Valinger E, Lind T (2016). System report: Reindeer Husbandry in Central Sweden. Contribution to Deliverable 2.4, AGFORWARD project, 9 pp. Available online http://www.agforward.eu/index.php/en/grazed-oak-woodlands-in-sardinia.html http://www.agforward.eu/index.php/en/wood-pastures-and-reindeer-in-sweden.html

Vityi A, Varga A (2016). System report: Wood Pasture in Hungary. Contribution to Deliverable 2.4, AGFORWARD project, 13 pp. Available online http://www.agforward.eu/index.php/en/grazed-oak-woodlands-in-sardinia.html http://www.agforward.eu/index.php/en/wood-pasture-in-hungary.html

Table 2.4. A synthesis report of the system descriptions for work-package 2 (Deliverable 2.4)

Moreno G, Aviron S, Berg S, Burgess PJ, Cáceres Y, Crous-Duran J, Faias SP, Firmino PN, Fotiadis G, Franca A, Garcia de Jalon S, Hartel T, Lind T, López Bernal A, Mantzanas K, Mirck J, Palma J, Pantera A, Paulo JA, Papadopoulos A, Papanastasis V, Papaspyropoulos K, Popa R, Porqueddu C, Rákosy L, Re GA, Sanna F, Thenail C, Tsonkova P, Valinger E, Varga A, Viaud V and Vityi A (2016). Agroforestry of High Nature and Cultural Value: Synthesis of System Descriptions. Deliverable 2.4 (2.1) for EU FP7 Research Project: AGFORWARD 613520. 23 pp. http://www.agforward.eu/index.php/en/describing-high-nature-and-cultural-value-agroforestry-systems-a-summary.html

2.3 Identify innovations and establish protocols (completed)

Objective 2.3, addressed through Task 2.3, was to agree within the participative research and development network (PDRN), the key innovations or improvements in quantification that could promote the uptake of high nature and cultural value agroforestry. The outputs were summarised with the release of a report (Milestone 3) on the AGFORWARD website in January 2015 (Table 2.5).

Table 2.5. Reference for the reports describing innovations for high nature and cultural value agroforestry (Milestone 3)

Moreno G, Berg S, Burgess PJ, Camilli F, Crous-Duran J, Franca A, Hao H, Hartel T, Lind T, Mirck J, Palma J, Amaral Paulo J, Pisanelli A, Seddaiu G, Thenail C, Tsonkova P, Upson M, Valinger E, Varga A, Viaud V, Vityi, A (2015). Innovations to be examined for High Nature and Cultural value Agroforestry. Milestone 2.2 (MS 3) for EU FP7 Research Project: AGFORWARD 613520. 20 pp. 20 January 2015. http://www.agforward.eu/index.php/en/innovations-to-be-examined-for-high-nature-and-cultural-value-agroforestry.html

The report highlighted that research was needed both to close the knowledge gap and to undertake new experimental and field-trials work. The closing the knowledge gap, in terms of providing a detailed description of the system is described in the preceding Section 2.2. During early 2015, each of the stakeholder groups developed and wrote up their research and development plans in terms of a protocol. Each of the protocols went through a process of review, were finally approved and placed on the website by June 2015 (Table 2.6). A summary of the protocols was produced in October 2015 (Table 2.7).

Table 2.6. Reports (Milestone 4) describing the research and development protocol for each group

Franca A, Seddaiu G, Porqueddu C (2015). Research and Development Protocol for Grazed Oak Woodlands in Sardinia. March 2015. 8 pp. http://www.agforward.eu/index.php/en/grazed-oak-woodlands-in-sardinia.html
Hartel T, Popa R, Rákosy L (2015). Research and Development Protocol for Wood Pastures in Southern Transylvania, Romania. July 2015. 19 pp. http://www.agforward.eu/index.php/en/wood-pastures-in-southern-transylvania-romania.html
Moreno G, Cáceres Y, Juárez E, Bertomeu M, Pulido F, Gaspar P, Mesías FJ, Escribano M, Bustos P (2015). Research and Development Protocol for Iberian Dehesas in Spain. February 2015. 71 pp. http://www.agforward.eu/index.php/en/dehesa-farms-in-spain.html
Papadopoulos A, Pantera A, Mantzanas K, Papanastasis V (2015). Research and Development Protocol for Valonia oak silvopastoral system. March 2015. 12 pp. http://www.agforward.eu/index.php/en/valonia-oak-silvopastoral-systems-in-greece.html
Paulo JA, Faias SP, Tomé M, Palma JHN (2015). Research and Development Protocol for Cork Oak Woodlands in Portugal. February 2015. 10 pp. http://www.agforward.eu/index.php/en/montado-in-portugal.html
Thenail C, Viaud V, Aviron S (2015). Research and Development Protocol for Bocage agroforestry in Brittany. June 2015. 13 pp. http://www.agforward.eu/index.php/en/bocage-agroforestry-in-brittany-france.html
Tsonkova P, Mirck J (2015). Research and Development Protocol for Agroforestry in the Spreewald Floodplain, Germany. May 2015. 11 pp. http://www.agforward.eu/index.php/en/agroforestry-in-the-spreewald-flood-plain-germany.html
Upson M, Burgess PJ (2015). Research and Development Protocol for the Wood Pastures and Parkland in the UK. April 2015. 9 pp. http://www.agforward.eu/index.php/en/wood-pasture-and-parkland-in-the-uk.html
Valinger E, Lind T, Berg S (2015). Research and Development Protocol for the Wood Pastures and Reindeer in Sweden. March 2015. 10 pp. http://www.agforward.eu/index.php/en/wood-pastures-and-reindeer-in-sweden.html
Vityi A, Varga A (2015). Research and Development Protocol for Wood Pastures in Hungary. March 2015. 10 pp. http://www.agforward.eu/index.php/en/wood-pasture-in-hungary.html

Table 2.7. A synthesis report of the research and development protocols for work-package 2 (Milestone 4) was produced in October 2015.

Moreno G, Aviron S, Berg S, Bertomeu M, Bustos P,Cáceres Y, Escribano M, Franca A, Gaspar P, Hartel T, Juárez E, Lind T, Mantzanas K, Mesías FJ, Mirck J, Pacheco Faias S, Palma JHN, Pantera A, Papadopoulos A, Papanastasis V, Paulo JA, Popa R, Porqueddu C, Pulido F, Rákosy L, Seddaiu G, Thenail C, Tomé M, Tsonkova P, Upson M, Valinger E, Varga A, Viaud A, Vityi A, Burgess PJ (2015). Synthesis of the Research and Development protocols related to High Nature and Cultural Value Agroforestry. Milestone Report 4 (2.3) for EU FP7 Research Project: AGFORWARD 613520. 16 October 2015. 22 pp. http://www.agforward.eu/index.php/en/synthesis-of-the-research-and-development-protocols-related-to-high-nature-and-cultural-value-agroforestry.html

2.4 Test and analyse innovations to provide guidelines (completed)

From December 2014 onward, field tests of the proposed innovations were initiated by different stakeholder groups, and the key activity became the field testing and then the analysis and interpretation of the results. This was achieved through Task 2.4 involving experiments with replicates, and through Task 2.5 on-farm demonstrations. Milestone 5 report (Table 2.8) summarized the preliminary results. The final findings and lessons learnt were summarised in Deliverable 2.5 that compiles the ten lesson learnt reports from the ten stakeholder groups (Table 2.9). In addition to the Deliverable, a number of scientific papers specifically related to work-package 2 have been produced (Table 2.10).

Table 2.8. Report (Milestone 5) summarizing results of the field test of innovations carried out by the ten stakeholder groups

Moreno G, Aviron S, Berg S, Burgess PJ, Caceres Y, Faias SP, Franca A, Garcia de Jalon S, Hartel T, Lind T, Mantzanas K, Mirck J, Palma JHN, Pantera A, Paulo JA, Papadopoulos A, Re GA, Sanna F, Thenail C, Tsonkova P, Valinger E, Varga A, Viaud V, Vityi A (2017). Initial report on studied innovations for agroforestry of high nature and cultural value. Milestone Report 5 (2.4) for EU FP7 Research project: AGFORWARD 613520 (7 November 2017). 45 pp. http://www.agforward.eu/index.php/en/initial-results-on-studied-innovations-of-agroforestry-with-high-value-trees.html

Table 2.9. Reference for the synthesis of lesson learnt reports (Deliverable 2.5) and the references for the reports included within Deliverable 2.5

Moreno G, Aviron S, Berg S, Bertomeu M, Cáceres Y, den Herder M, Escribano M, Faias S, Firmino P, Fotiadis G, Franca A, Garcia de Jalon S, Gaspar P, Giannitsopoulos M, Graves A, Hartel T, Hernández A, Kanzler M, Lind T, López ML, Măcicășan V, Maloș C, Mantzanas K, Mesias FJ, Mirck J, Morales S, Palma JHN, Papadopoulos A, Pantera A, Papanastasis V, Papaspyropoulos K, Paulo JA, Poblaciones MJ, Porqueddu C, Pulido F, Rákosy L, Re GA, Sanna S, Santamaría O, Seddaiu G, Thenail C, Tomé M, Tsonkova P, Upson M, Valinger E, Varga A, Viaud V, Vityi A, Burgess PJ (2018). Agroforestry of high nature and cultural value: Results of innovations. Deliverable 2.5 (2.2) for the AGFORWARD project. 12 January 2018. 15 pp. http://www.agforward.eu/index.php/en/agroforestry-of-high-nature-and-cultural-value-results-of-innovations.html
Burgess P, Chinery F, Eriksson G, Pershagen E, Pérez-Casenave C, Lopez AB, Upson M, Garcia de Jalon S, Giannitsopoulos M, Graves A (2017). Lessons learnt – Wood pasture and parkland in the UK Contribution to Deliverable 2.5, AGFORWARD project. 26 pp. http://www.agforward.eu/index.php/en/wood-pasture-and-parkland-in-the-uk.html
Faias SP, Firmino P, Tomé M, Palma JHN, Paulo JA (2017). Lessons learnt: Montados in Portugal. Contribution to Deliverable 2.5, AGFORWARD project. 13 pp. http://www.agforward.eu/index.php/en/montado-in-portugal.html
Franca A, Porqueddu C, Sanna F, Seddaiu G, Re GA (2017). Lessons learnt for grazed oak wood pasture in Sardinia, Italy. Contribution to Deliverable 2.5, AGFORWARD project. 17 pp. http://www.agforward.eu/index.php/en/grazed-oak-woodlands-in-sardinia.html
Hartel T, Măcicășan V, Maloș C, Rákosy L (2017). Lessons learnt: Wood-pastures in Transylvania, Romania. Contribution to Deliverable 2.5, AGFORWARD project. 18 pp. http://www.agforward.eu/index.php/en/wood-pastures-in-southern-transylvania-romania.html
Moreno G, Bertomeu M, Cáceres Y, Escribano M, Gaspar P, Hernández A, López ML, Mesias FJ, Morales S, Poblaciones MJ, Pulido F, Santamaría O (2017c). Lessons learnt: Iberian dehesas. Contribution to Deliverable 2.5, AGFORWARD project. 64 pp. http://www.agforward.eu/index.php/en/dehesa-farms-in-spain.html

Papadopoulos A, Pantera A, Mantzanas K, Papanastasis V, Fotiadis G, Papaspyropoulos K (2017). Lessons learnt: Valonia oak silvopastoral systems in Greece. Contribution to Deliverable 2.5, AGFORWARD project. 12 pp. http://www.agforward.eu/index.php/en/valonia-oak-silvopastoral-systems-in-greece.html

Thenail C, Aviron S, Viaud V (2017). Lessons learnt: Bocage agroforestry in France. Contribution to Deliverable 2.5, AGFORWARD project. 31 pp. http://www.agforward.eu/index.php/en/bocage-agroforestry-in-brittany-france.html

Tsonkova P, Mirck J, Kanzler M (2017). Lessons learnt: Agroforestry in the Spreewald flood plain, Germany. Contribution to Deliverable 2.5, AGFORWARD project. 14 pp. http://www.agforward.eu/index.php/en/agroforestry-in-the-spreewald-flood-plain-germany.html

Valinger E, Berg S, Lind T, den Herder M (2017). Lessons learnt: Reindeer husbandry in Sweden. Contribution to Deliverable 2.5, AGFORWARD project. 11 pp. http://www.agforward.eu/index.php/en/wood-pastures-and-reindeer-in-sweden.html

Varga A, Vityi A (2017). Lessons learnt: Wood pastures in Hungary. Contribution to Deliverable 2.5, AGFORWARD project. 15 pp. http://www.agforward.eu/index.php/en/wood-pasture-in-hungary.html

Table 2.10. List of publications that analyse specific innovations and lessons learnt for agroforestry systems of high nature and cultural value. Some of the Agroforestry Systems paper have been published on-line and will form part of a special issue. They are still awaiting page numbers.

Peer reviewed papers that have been published

Franca A, Re GA, Sanna F (2018). Effects of grazing exclusion and environmental conditions on the soil seed bank of a Mediterranean grazed oak pasture. Agroforestry Systems. https://doi.org/10.1007/s10457-018-0203-0

Gallé R, Urák I, Nikolett G-S, Hartel T (2017). Sparse trees and shrubs confers a high biodiversity to pastures: Case study on spiders from Transylvania. PLoS ONE 12(9): e0183465. https://doi.org/10.1371/journal.pone.0183465

Garrido P, Elbakidze M, Angelstam P, Plieninger T, Pulido F, Moreno G (2017). Stakeholder perspectives of wood-pasture ecosystem services: A case study from Iberian dehesas. Land Use Policy 60: 324–333. https://doi.org/10.1016/j.landusepol.2016.10.022

Gaspar P, Escribano M, Mesias FJ (2016). A qualitative approach to study social perceptions and public policies in dehesa agroforestry systems. Land Use Policy 58, 427–436. https://doi.org/10.1016/j.landusepol.2016.06.040

Hartel T, Reti KO, Craioveanu C (2017). Valuing scattered trees from wood-pastures by farmers in a traditional rural region of Eastern Europe. Agriculture, Ecosystems & Environment 236, 304-311. https://doi.org/10.1016/j.agee.2016.11.019

Moreno G, Aviron S, Berg S, Crous-Duran J, Franca A, García de Jalón S, Hartel T, Mirck J, Pantera A, Palma JHN, Paulo JA, Re GA, Sanna F, Thenail C, Varga A, Viaud V, Burgess PJ (2017). Agroforestry systems of high nature and cultural value in Europe: provision of commercial goods and other ecosystem services. Agroforestry Systems https://doi.org/10.1007/s10457-017-0126-1

Paulo JA, Pereira H, Tomé M (2016). Analysis of variables influencing tree cork caliper in two consecutive cork extractions using cork growth index modelling. Agroforestry Systems. Available on-line. http://dx.doi.org/10.1007/s10457-016-9922-2.

Paulo JA, Tomé M (2017). Does debarking intensity in the first cork extraction affect future cork thickness? Annals of Forest Science http://rdcu.be/whf0

Paulo JA, Tome M (2017). Using the SUBER model for assessing the impact of cork debarking rotation on equivalent annual annuity in Portuguese stands. Forest Systems 26:1 http://revistas.inia.es/index.php/fs/article/view/9931

Seddaiu G, Bagella S, Pulina A, Cappai C, Salis L, Rossetti I, Lai R, Roggero PP (2018). Mediterranean cork oak wooded grasslands: synergies and trade-offs between plant diversity, pasture production and soil carbon. Accepted by Agroforestry Systems.

Tolgyesi Cs, Batori Z, Galle R, Urak I, Hartel T (2017). Shrub encroachment under the trees diversifies the herb layer in a Romanian sylvopastoral system. Rangeland Ecology and Management. https://doi.org/10.1016/j.rama.2017.09.004

Valinger E, Berg S, Lind T (2018) Economical evaluation of the use of GPS collars in reindeer husbandry – the Njaarke case study. Accepted by Agroforestry System subject to minor corrections.

The following papers encompasses inputs from work-packages 2, 3, 4 and 5

García de Jalón S, Burgess PJ, Graves A, Moreno G, McAdam J, Pottier E, Novak S, Bondesan V, Mosquera-Losada R, Crous-Duran J, Palma JHN, Paulo JA, Oliveira TS, Cirou E, Hannachi Y, Pantera A, Wartelle R, Kay S, Malignier N, van Lerberghe P, Tsonkova P, Mirck J, Rois M, Kongsted AG, Thenail C, Luske B, Berg S, Gosme M, Vityi A (2017). How is agroforestry perceived in Europe? An assessment of positive and negative aspects by stakeholders. 'Agroforestry Systems'. https://doi.org/10.1007/s10457-017-0116-3

Camilli F, Pisanelli A, Seddaiu G, Franca A, Bondesan V, Rosati A, Moreno GM, Pantera A, Hermansen JE, Burgess PJ (2017). How local stakeholders perceive agroforestry systems: an Italian perspective. *Agroforestry Systems* https://doi.org/10.1007/s10457-017-0127-0

Papers and posters presented at the World Congress on SilvoPastoral Systems. 27-30 September 2016, Evora, Portugal

Cáceres Y et al. (2016). Evaluation of cost-efficient shelters to regenerate trees in silvo-pastoral systems Mantzanas K et al. (2016). Effects of livestock grazing on understory vegetation in relation to animal sheds in a valonia oak silvopastoral system of western Greece.

Faias SP, Paulo JA, Tomé M (2016). Is cork growth affected by different understory management options: lupine pasture versus shrubs encroachment?

Hernández A et al. (2016). Persistence of legumes in Dehesa system: influence on productivity and quality pasture

Paulo JA, Palma JHN, Gomes AA, Faias SP, Tomé M (2016). Predicting site index from climate and soil variables for cork oak (*Quercus suber* L.) stands in Portugal

Pulido F et al. (2016). Can rodent acorn dispersal be manipulated to promote tree regeneration? A test using woody debris as shelter for dispersers and seedlings in grazed oak woodlands.

Moreno G et al. (2016). Challenges and potential innovations to improve the resilience European wood-pastures

Moreno G et al. (2016). Potential changes on pasture productivity and grazing intensity in iberian dehesas driven by atmospheric nitrogen deposition

Papers and posters presented at the International Congress on Cork Oak Trees and Woodlands and 3° National (Italian) Congress of Cork. 25-26 May 2017. Sassari, Italy

Palma JHN, Paulo JA, Tomé M (2017). Webcorky – an online decision support tool to decide when stand debarking should occur.

Crous-Duran J, Paulo JA, Graves AR, Tomé M, Palma JHN (2017). Carbon balance estimation in cork oak woodlands compared to land use alternatives.

Faias SP, Paulo JA, Tomé M (2017). Tree diameter growth model for cork oak stands in Portugal

Faias SP, Paulo JA, Tomé M (2017). Competition pattern in young cork oak stands

Papers and posters present at 15th International Conference on Environmental Science And Technology, 31 August to 2 September 2017, Rhodes, Greece.

Pantera A et al. (2017). Land cover changes in a valonia oak silvopastoral system in W. Greece – ecological and sociological implications.

Papadopoulos A, Pantera A (2017). Effects of grazing and understorey clearing on regeneration of a valonia oak silvopastoral system in Western Greece.

Papadopoulos A et al. (2017). Stand structure analysis of *Quercus ithaburensis* subsp. *Macrolepis* silvopastoral systems in Greece.

Papers and posters presented at the 19th Symposium of the European Grassland Federation, 7-10 May 2017, Sassari , Italy

Porqueddu C, Franca A et al. (2017). The role of grasslands in less favoured areas.

Hernández A et al. (2017).Sown permanent pastures rich in legumes in Iberian Dehesas: influence on biodiversity and soil carbon sequestration

Papers and posters presented at the 7th Spanish Forestry Congress, 26-30 June 2017, Plasencia, Spain

Hernández A et al. (2017). Selection of legume species to improve pastures as management practice for the mitigation and adaption of climate change.

Cáceres Y et al. (2017). Assisted regeneration of dehesas under different grazing schemes: evaluation of cost-efficient approaches

Others presentations and posters related to work-package 2

Santamaría O et al. Tree effects on the production and quality of forage by different cultivars of Triticale in dehesas (in Spanish). 56ª meeting of the Spanish Grassland Society (Sociedad Española para el Estudio de los Pastos)

Papadopoulos A. (2016) Valonia oak forest of Xeromero – Aetolakarnania, the largest silvopastoral system of the species in Greece: ecological and socio-economical aspects. Sfécologie, Marseille, France.

Paulo JA, Palma JHN, Firmino PN, Pereira H, Tomé M (2016). Assessing the impact of induced stress by cork oak tree debarking in cork caliper and tree growth: first results on long term monitoring experiments. 5th International Ecosummit. Montpellier, Franc e. DOI: 10.13140/RG.2.2.30378.41929

Paulo JA, Faias SP, Firmino P, Tomé M (2017). Impacto de diferentes alternativas de gestão na biomassa do subcoberto e no crescimento da árvore e da cortiça. Centro de Estudos Florestais (CEF) conference from research to practice. Subject: The Role of Agroforest Management Practices in the Prevention and Recovery After Fire in Montado. Organization: CEF and ANSUB. http://hdl.handle.net/10400.5/14412

Papadopoulos A and Pantera A. (2017). Ecological, silvicultural and management characteristics of the valonia oak silvopastoral system in Xeromero Aetoloakarnania and its development potential under the framework of agroforestry (in Greek). 18th Forestry Panhellenic conference, Edessa, Greece.

Valinger E. (2017) Forskning kring rennäring och skogsbruk vid SLU. Swedish Forest Agency Conference, Lulea, Sweden.

Hartel T, Craioveanu C, Réti KO (2016). Tree hay as source of economic resilience in traditional social-ecological systems from Transylvania. The Museum of the Romanian Peasant Anthropology Review – Revue d'Anthropologie du Musée du Paysan Roumain (MARTOR) 21: 53-64. [pdf]

2.5 Evaluate innovations to produce guidelines (completed)

A key focus during the final 18 months was to provide guidelines for farmers to support the wider adaption of appropriate agroforestry systems in Europe. A report (Milestone 6; Moreno 2017. Agroforestry of high nature and cultural value: draft guidelines, 4 October 2017, 4 pp) described the initial outcomes of the technical innovations. The finalised 15 "Agroforestry Innovation" leaflets related to agroforestry of high nature and cultural value are reported in Deliverable 2.6 (Table 2.11). The Deliverable provides a summary of the leaflets and includes each leaflet in an Annex. Table 2.12 gives an overview of the leaflets and Table 2.13 gives the relevant references.

Table 2.11. Reference for the synthesis of the innovation leaflets (Deliverable 2.6) for agroforestry systems of high nature and cultural value

Moreno G, Amaral Paulo J, Aviron S, Berg S, Burgess PJ, Cáceres Y, Catalán M, Chinery F, Crous-Duran J, Eriksson E, Faias S, Firmino P, Franca A, Giannitsopoulos M, Guéhenneuc T, Hartel T, Hernández-Esteban A, Lind T, Menguy C, Mirck J, Oliveira TS, Palma JHN, Palomo G, Papadopoulos A, Pérez-Casenave C, Pershagen E, Poblaciones MJ, Pulido F, Re GA, Sanna F, Rodrígo S, Santamaría O, Thenail C, Tsonkova P, Valinger E, Varga A, Viaud V (2018). Agroforestry of high nature and cultural value: Guidelines for farmers. Deliverable 2.6. 7 January 2018. 37 pp. file:///C:/Users/Gerardo/Downloads/D2_6%20Agroforestry%20of%20HNCV%20guidelines%20for%20farmers%20with%20annex.pdf

Table 2.12. Overview of the innovation leaflets addressing innovations for agroforestry systems of high nature and cultural value (see Table 2.13 for authorships)

Number	Stakeholder group & Lead Partner	Title of leaflets
1	Spanish dehesa (UEX)	Establishing pastures rich in legumes
2		Triticale in Iberian dehesas
3		Fast rotational intensive grazing
4		Tree regeneration in grazed wood pastures
5	Portuguese montado (ISA)	Managing shrub encroachment in cork oak montado
6		Modelling livestock carrying capacity in montados
7	Greek Valonian oak woodlands (TEI)	Rediscovering valonia oak acorns
8	Italian open oak woodlands (CRAN)	Shade tolerant legumes
9	French bocage (INRA)	Multi-functional hedgerows in the bocage systems of France
10	British wood pastures (CRAN)	Invisible fencing in wood pastures
11	German Spreewald floodplain (BTU)	Trees and the restoration of waterways in the Spreewald floodplain
12	Hungarian wood pastures (NYME)	Restoration of abandoned wood pasture
13	Transylvanian wood pastures (BBU)	Protecting large old trees in wood-pastures
14		Grazing and biodiversity in Transylvanian wood-pastures
15	Scandinavian Reindeer husbandry (EFI)	Enhancing reindeer husbandry in boreal Sweden

Table 2.13. References for the 15 “Agroforestry Innovation” leaflets, listed in leaflet order, that contributed to Deliverable 2.6

Hernández-Esteban A, Moreno G (2017). Agroforestry Innovation leaflet 01: Establishing pastures rich in legumes. AGFORWARD project 2 pp. http://www.agforward.eu/index.php/en/dehesa-farms-in-spain.html

Santamaría O, Rodrígo S, Poblaciones MJ, Moreno G (2017). Agroforestry Innovation leaflet 02: Triticale in Iberian dehesas. AGFORWARD project 2 pp. http://www.agforward.eu/index.php/en/dehesa-farms-in-spain.html

Catalán M, Palomo G, Moreno G (2017). Agroforestry Innovation leaflet 03: Fast rotational intensive grazing. AGFORWARD project 2 pp. http://www.agforward.eu/index.php/en/dehesa-farms-in-spain.html

Cáceres Y, Pulido F, Moreno G (2017). Agroforestry Innovation leaflet 04: Tree regeneration in grazed wood pastures. AGFORWARD project 2 pp. http://www.agforward.eu/index.php/en/dehesa-farms-in-spain.html

Paulo JA, Faias S, Firmini P, Palma JHN (2017). Agroforestry Innovation leaflet 05: Managing shrub encroachment in cork oak montado. AGFORWARD project 2 pp. http://www.agforward.eu/index.php/en/montado-in-portugal.html

Palma JHN, Oliveira TS, Moreno G, Crous-Duran J, Paulo JA (2017). Agroforestry Innovation leaflet 06: Modelling livestock carrying capacity in montados. AGFORWARD project 2 pp. http://www.agforward.eu/index.php/en/montado-in-portugal.html

Papadopoulos A (2017). Agroforestry Innovation leaflet 07: Rediscovering valonia oak acorns. AGFORWARD project 2 pp. http://www.agforward.eu/index.php/en/valonia-oak-silvopastoral-systems-in-greece.html

Franca A, Re A, Sanna F (2017). Agroforestry Innovation leaflet 08: Shade tolerant legumes. AGFORWARD project 2 pp. http://www.agforward.eu/index.php/en/grazed-oak-woodlands-in-sardinia.html

Thenail C, Aviron S, Viaud V, Guéhenneuc T, Menguy C (2017). Agroforestry Innovation leaflet 09: Multi-functional hedgerows in the bocage systems of France. AGFORWARD project 2 pp. http://www.agforward.eu/index.php/en/bocage-agroforestry-in-brittany-france.html

Burgess P, Chinery F, Eriksson G, Pershagen E, Pérez-Casenave C, Giannitsopoulos M (2017). Agroforestry Innovation leaflet 10: Invisible fencing in wood pasture. AGFORWARD project 2 pp. http://www.agforward.eu/index.php/en/wood-pasture-and-parkland-in-the-uk.html

Tsonkova P, Mirck J (2017). Agroforestry Innovation leaflet 11: Trees and the restoration of waterways in the Spreewald floodplain. AGFORWARD project 2 pp. http://www.agforward.eu/index.php/en/agroforestry-in-the-spreewald-flood-plain-germany.html

Varga A (2017). Agroforestry Innovation leaflet 12: Restoration of abandoned wood pasture. AGFORWARD project 2 pp. http://www.agforward.eu/index.php/en/wood-pasture-in-hungary.html

Hartel T (2017a). Agroforestry Innovation leaflet 13: Protecting large old trees in wood-pastures. AGFORWARD project 2 pp. http://www.agforward.eu/index.php/en/wood-pastures-in-southern-transylvania-romania.html

Hartel T (2017b). Agroforestry Innovation leaflet 14: Grazing and biodiversity in Transylvanian wood-pastures. AGFORWARD project 2 pp. http://www.agforward.eu/index.php/en/wood-pastures-in-southern-transylvania-romania.html

Berg S, Lind T, Valinger E (2017). Agroforestry Innovation leaflet 15: Enhancing reindeer husbandry in boreal Sweden. AGFORWARD project 2 pp. http://www.agforward.eu/index.php/en/wood-pastures-and-reindeer-in-sweden.html

2.6 Dissemination of results (completed)

During the final period, each stakeholder group held dissemination activities to show and discuss with stakeholders the lessons learnt and to provide technical recommendations to implement innovations that could increment economic and ecological resilience of agroforestry systems of high nature and cultural value through Europe. These activities are compiled in the Milestone 7 report

Table 2.14. Reference for Milestone 7 describing dissemination activities related to work-package 2

Moreno G, Paulo JA, Varga A, Tsonkova P, Pantera A, Franca A, Thenail C, Hartel T, Burgess PJ (2018). Agroforestry of high nature and cultural value: dissemination of results and recommendations. Milestone 7. 4 February 2018. 26 pp http://www.agforward.eu/index.php/en/agroforestry-of-high-nature-and-cultural-value-results-of-innovations.html.

2.7 Co-ordination of the work in work-package 2

During the reporting period, the work-package leader (Gerardo Moreno) actively participated in Executive Board (skype meetings). All partners attended and participated actively at the work-package 2 meeting held during the Fourth General Assembly in Portugal on 17-19 May 2017.

2.8 Use of resources in work-package 2

At the end of project (December 2017), 132.23 person months had been allocated to work-package 2, equivalent to 121% of the total planned (Table 2.14). Some participants exceeded their person month budget (UEX, INRA, and CNR). Where there was a reduced person month allocation (e.g. CRAN, NYME) this did not undermine the ability to deliver milestones and deliverables.

Table 2.14. Person-month inputs to work-package 2 for the first (Jan to Dec 2014), second (Jan 2015 to June 2016) and third (July 2016 to December 2017) reporting periods

	First period (Jan-Dec 2014)	Second period (Jan 2015–June 2016)	Third period (Jul 2016 to Dec 2017)	Sub-total	Project budget
UEX	6.10	24.00	12.00	42.10	28
INRA	5.34	6.10	5.47	16.91	11
CNR	2.25	3.38	7.04	12.67	9
ISA	2.50	4.55	2.36	9.41	10
UBB	1.07	3.19	6.68	10.94	9
TEI	1.21	2.24	5.56	9.01	9
BTU	3.14	4.03	1.02	8.19	8
NYME	1.64	3.26	1.82	6.72	9
CRAN	2.93	3.02	0.50	6.45	8
EFI	1.47	2.51	0.44	4.42	6
EFI (SLU)	1.24	1.93	0.00	3.17	
USC	0.00	0.00	1.70	1.70	[a]0
EURAF	0.20	0.10	0.00	0.30	[a]2
AFBI[b]	0.00	0.00	0.24	0.24	0
Total	29.09	58.31	44.83	132.23	109

[a]: 1.70 person months were reallocated from EURAF to USC in the third reporting period

[b]: 0.24 person months from AFBI were allocated to work-package 2; these inputs were related to carbon sequestration measurements within a grazed woodland system.

2.9 Issues and actions

The work-package resulted in peer-reviewed papers, technical reports, guidelines and local dissemination events.

3 Work package number 3

Work-package number	**3**
Work-package name	**Agroforestry for High Value Tree Systems**
Leader	Anastasia Pantera
Organisation	TEI Stereas Elladas (TEI)
Report period	1 July 2016 to 31 December 2017

Objectives and tasks within work package 3

Anastasia Pantera led this work package that focused on intercropping or grazing in high value tree systems such as apple orchards, olive and orange groves or walnut and chestnut trees. The key objective during months 30 to 48 has been to report on the studied innovations and to provide guidelines for farmers (Table 3.1; Table 3.2).

Table 3.1. Work-plan of activities, milestones (M), and deliverables (D) for work-package 3 for month 25 to month 48 (indicated in orange)

Month	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
WP3 High value tree agroforestry																								
T3.1 Establish PRD network (MS8) Completed in first period																								
T3.2 Characterise system (D3.7) Completed in second period																								
T3.3 Identify innovations (MS9) and establish protocols (MS10) Completed in first/second period																								
T3.4 Test, analyse and interpret innovation (MS11; D3.8)								M						D										
T3.5 Evaluate innovations to produce guidelines (MS12; D3.9)																		M		D				
T3.6 Disseminate results (MS13)																								M
T3.7 Co-ordination of WP3																								

Table 3.2. Summary of the status of milestones and deliverables in work-package 3 for first (Month 0-12), second (Month 13-30), and the third (Month 31-48) reporting periods

Description	**Date**	**Status**
First progress period		
MS8 Establishment of PRD network	Aug 2014	Completed and on website
MS9 Identification of innovations to be tested	Dec 2014	Completed and on website
Second progress period		
MS10 Establishment research protocols	Jan 2015	Completed and on website
D3.7 System descriptions	Dec 2015	Completed and on website
Third reporting period		
MS11 Report on studied innovations	Aug 2016	Completed Aug 2017
D3.8 Results of innovations	Feb 2017	Completed Feb 2018
MS12 Report with guidelines	Jun 2017	Completed Sept 2017
D3.9 Guidelines for farmers	Aug 2017	Completed Jan 2018
MS13 Dissemination of results	Dec 2017	Completed Feb 2018

3.1 Establish a participatory research and development network (completed)

Objective 3.1 was to identify examples of existing best practice, the key challenges, and possible innovations to address those challenges, within stakeholder working groups within this Participatory Research and Development Network (PDRN). As reported in the First Periodic Report, this was achieved by establishing 10 relevant stakeholder groups (Task 3.1), and confirmed by Milestone 8, which comprised an initial stakeholder report from each group (Table 3.3).

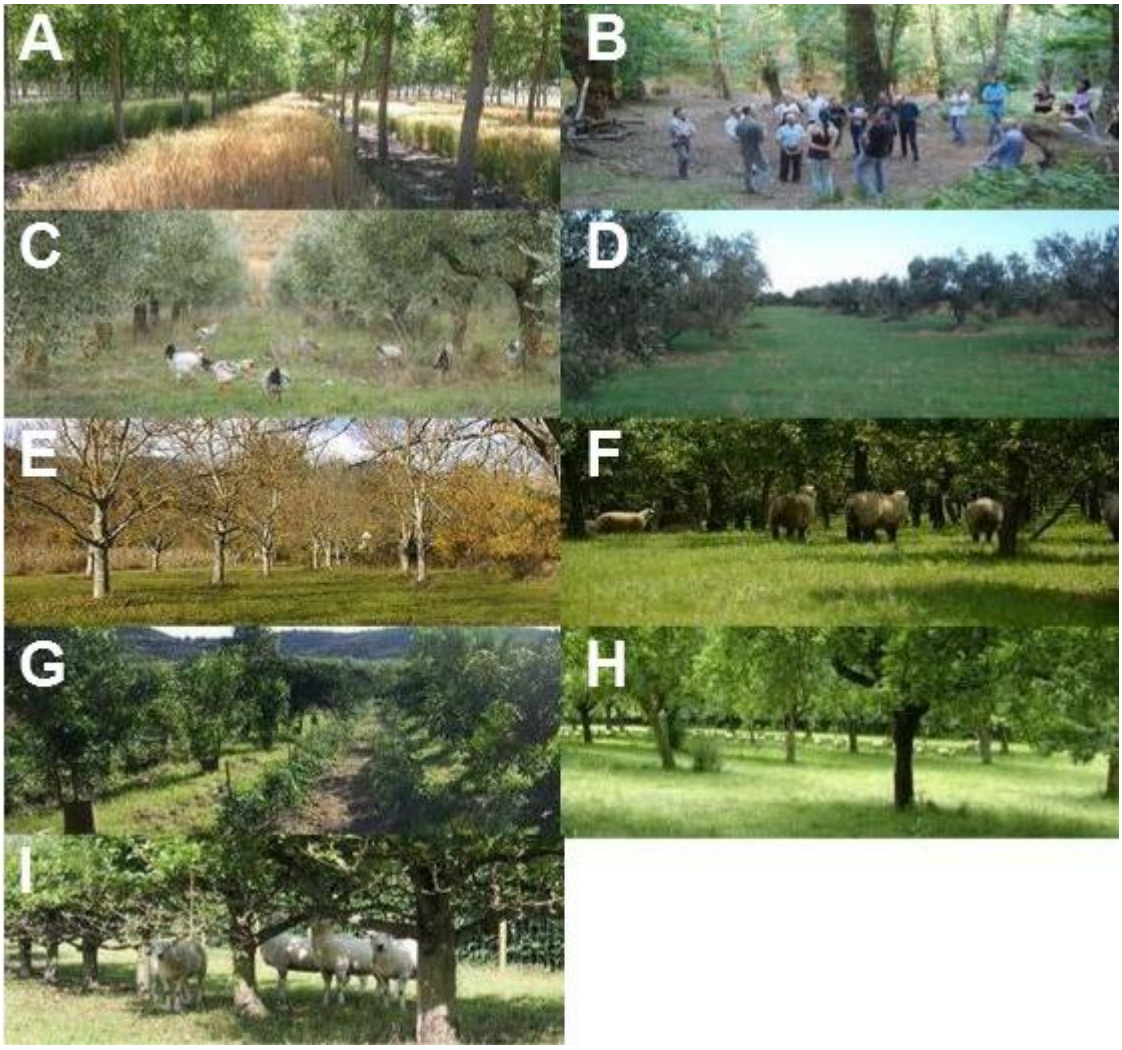


Figure 3.1. Agroforestry systems of high nature and cultural value across Europe; in A) Western Spain, B) Galicia, Spain, C) Italy, D) Greece, E) Greece, F) Normandy, France, G) Crete, Greece, H) England, UK and I) Northern Ireland, UK

Table 3.3. References for the ten stakeholder reports (Milestone 8) produced in work-package 3

Moreno G (2014). Initial Stakeholder Meeting Report Grazing and intercropping of plantation trees in Spain. 17 September 2014. 12 pp. Available online: http://www.agforward.eu/index.php/en/grazing-and-intercropping-of-plantation-trees-in-spain.html

Mosquera Losada R, Ferreiro-Domínguez N, Fernández Lorenzo JL, González-Hernández P, Rigueiro Rodríguez A (2014). Initial Stakeholder Meeting Report: Chestnut agroforestry in Galicia, Spain. 23 September 2014. 9 pp. Available online: http://www.agforward.eu/index.php/en/chestnut-agroforestry-in-galicia-spain.html

Rosati A (2014). Initial Stakeholder Meeting Report Intercropping and grazing of olive orchards in Italy. 6 August 2014. 7 pp. Available online: http://www.agforward.eu/index.php/en/intercropping-and-grazing-of-olive-orchards-in-italy.html

Pantera A (2014). Initial Stakeholder Meeting Report: Intercropping of olive groves in Greece (Kassandreia). 20 October 2014. 8 pp. Available online: http://www.agforward.eu/index.php/en/intercropping-of-olive-groves-in-greece.html

Pantera A (2014). Initial Stakeholder Meeting Report: Intercropping of olive groves in Greece (Molos). 20 October 2014. 9 pp. Available online: http://www.agforward.eu/index.php/en/intercropping-of-olive-groves-in-greece.html

Pantera A (2014). Initial Stakeholder Meeting Report: Intercropping of Walnut Trees in Greece. 20 October 2014. 8 pp. Available online: http://www.agforward.eu/index.php/en/intercropping-of-walnut-trees-in-greece.html

Pantera A (2014). Initial Stakeholder Meeting Report Intercropping of Orange Groves in Greece. 18 November 2014. 7 pp. Available online: http://www.agforward.eu/index.php/en/intercropping-of-orange-groves-in-greece.html

Corroyer N (2014). Initial Stakeholder Meeting Report: Grazed Orchards in France. 1 December 2014. 8 pp. Available online: http://www.agforward.eu/index.php/en/grazed-orchards-in-france.html

Burgess PJ (2014). Initial Stakeholder Meeting Report: Grazed Orchards in the UK. 18 July 2014. 8 pp. Available online: http://www.agforward.eu/index.php/en/Grazed_Orchards.html

McAdam J (2014). Initial Stakeholder Meeting Report: Grazed orchards in Northern Ireland, UK. 4 December 2014. 9 pp. Available online: http://www.agforward.eu/index.php/en/grazed-orchards-in-northern-ireland-uk.html

3.2 Characterising the systems (completed)

Objective 3.2 was to describe the key inputs, outputs and ecosystem service flows for the selected systems. This has been a key focus of work (Task 3.2) during 2015. Each stakeholder group has produced a report (Table 3.4) which has been synthesised in a report (Deliverable 3.7) (Table 3.5) describing the components, structure and outputs of the systems.

Table 3.4. References for the ten system description reports which was used to produce Deliverable 3.7

Burgess PJ, Upson M, Graves A, Garcia de Jalon S (2016). System Report: Grazed Orchards in England and Wales. April 2016. 23 pp. http://www.agforward.eu/index.php/en/Grazed_Orchards.html

Corroyer N (2016). System Report: Grazed Orchards in France. January 2016. 15 pp. http://www.agforward.eu/index.php/en/grazed-orchards-in-france.html

McAdam J, Ward, F (2015). System Report: Grazed Orchards in Northern Ireland. November 2015. 12 pp. http://www.agforward.eu/index.php/en/grazed-orchards-in-northern-ireland-uk.html

Moreno G, López-Díaz ML, Bertomeu García M (2015). System Report: Silvopastoral Management for Quality Wood Production in Spain. September 2015. 16 pp. http://www.agforward.eu/index.php/en/grazing-and-intercropping-of-plantation-trees-in-spain.html

Fernández Lorenzo JL, Rigueiro Rodríguez A, Ferreiro Domínguez N, González Hernández P, Mosquera Losada MR (2016). System Report: Chestnut Agroforestry in Spain. January 2016. 13 pp. http://www.agforward.eu/index.php/en/chestnut-agroforestry-in-galicia-spain.html

Pantera A, Papadopoulos A, Kitsikopoulos D, Mantzanas K, Papanastasis V, Fotiadis G (2016a). System Report: Olive Agroforestry in Molos, Central Greece. January 2016. 9 pp. http://www.agforward.eu/index.php/en/intercropping-of-olive-groves-in-greece.html

Pantera A, Papadopoulos A, Kasselaki M, Papanastasis V, Mantzanas K, Fotiadis G (2016b). System Report: Agroforestry with Orange Groves in Crete, Greece. January 2016. 9 pp. http://www.agforward.eu/index.php/en/intercropping-of-orange-groves-in-greece.html

Mantzanas K, Papanastasis V, Pantera A, Papadopoulos A (2015). System Report: Olive Agroforestry in Kassandra, Chalkidiki, Greece. December 2015. 8 pp. http://www.agforward.eu/index.php/en/intercropping-of-olive-groves-in-greece.html

Rosati A, Mantovani D (2015). System Report: Intercropping of Olive Orchards in Italy. November 2015. 8 pp. http://www.agforward.eu/index.php/en/intercropping-and-grazing-of-olive-orchards-in-italy.html

van Lerberghe P, Malignier N (2016). System Report: Traditional Pollard Agroforestry in South-West France. May 2016. 11 pp. http://www.agforward.eu/index.php/en/bordure-trees-in-france-1375.html

Table 3.5. A synthesis report of the system descriptions for work-package 3 (Deliverable 3.7)

Pantera A, Burgess PJ, Corroyer N, Ferreiro-Domínguez N, Fernández Lorenzo JL, González-Hernández P, Graves A, Malignier N, McAdam J, Moreno G, Mosquera-Losada MR, Rigueiro Rodríguez A, Rosati A, Upson M, van Lerberghe P (2016). Agroforestry for High Value Trees: Synthesis of System Descriptions. Deliverable 3.7 (3.1) for EU FP7 Research Project: AGFORWARD 615320. June 2016. 10 pp. http://www.agforward.eu/index.php/en/describing-agroforestry-systems-with-high-value-trees-a-summary.html

3.3 Identify testable innovations and establish protocols (completed)

Objective 3.3 was to agree, within the PDRN, the key innovations or improvements in quantification that could promote the uptake of agroforestry involving high value tree systems. Agreement on the innovations to be tested (Task 3.3) was achieved with the completion of Milestone 9 in January 2015 which was reported in the First Periodic Report.

During early 2015, each stakeholder group in work-package 3 developed a research and development protocol which, as reported in the Second Periodic Report, was uploaded to the AGFORWARD webpage by June 2015. During 2015, it was decided to report the research being completed on pollarded trees by APCA within work-package 3. A synthesis report of the research and development protocols (Milestone 10) (Table 3.6) was produced in October 2015 in the second reporting period

Table 3.6. A synthesis report of the research and development protocols for work-package 3 (Milestone 10) was produced in October 2015

Pantera A, Mosquera Losada MR, Ferreiro-Domínguez N, Fernández Lorenzo JL, González-Hernández P, Rigueiro Rodríguez A, Corroyer N, McAdam J, Rosati A, Moreno G, Graves A, and Burgess PJ (2015). Synthesis of the Research and Development protocols related to Agroforestry for High Value Tree Systems. Milestone Report 10 (3.3 for EU FP7 Research Project: AGFORWARD 613520. (2 October 2015). 10 pp. http://www.agforward.eu/index.php/en/synthesis-of-the-research-and-development-protocols-related-to-agroforestry-with-high-value-trees.html

3.4 Develop and test, analyse and interpret innovations (completed)

Objective 3.4 was to develop and test the innovations and then to analyse and interpret the results. Milestone Report 11 by Pantera et al. (2017) described the initial results from the work of the ten stakeholder groups (Table 3.7). The initial results demonstrated that the tree diameter increments of walnut trees in plantations in Spain can be greater in grazed, than ungrazed, plots, and greater with a legume than an unfertiliser grassland understorey. Intercropping orange trees with chickpeas, also in Greece, was also reported to provide benefits for orange production. The initial research on the grazing of apple orchards showed that it was technically possible where the tree trunks are pruned to a height of at least 1-2.

Table 3.7. Reference for Milestone Report 11 which described the initial results

Pantera A, Mosquera Losada MR, Ferreiro-Domínguez N, Fernández Lorenzo JL, González-Hernández P, Rodríguez AR, Corroyer N, McAdam J, Rosati A, Moreno G, Graves A, Burgess PJ (2017). Initial report on studied innovations of agroforestry with high value trees. Milestone Report 11. 7 August 2017. 26 pp. https://www.agforward.eu/index.php/en/initial-results-on-studied-innovations-of-agroforestry-with-high-value-trees.html

The ten groups within the PDRN in work-package 3 can be grouped into four categories (Table 3.8). Each of the ten stakeholder groups produced a lesson learnt report, with the exception of the pollard group in South-West France where due to the poor health of one of the researchers the main research results were derived from the system report (Table 3.10). A final summary of the lessons learnt from the ten stakeholder groups was provided in Deliverable 3.8 (Table 3.10).

Table 3.8. Titles and references for the lessons learnt reports related to agroforestry for high value tree systems

Group	Title of report	Reference
High value trees for timber	Lessons learnt: Silvopastoral management of Mediterranean timber plantations	López-Díaz et al. (2017)
	Lessons learnt: Chestnut agroforestry in Galicia, Spain	Mosquera-Losada et al. (2018)
Intercropping of olive groves and orange orchards	Lessons learnt - Wild asparagus and other crops in olive orchards in Italy	Rosati (2017)
	Lessons learnt: Olive agroforestry in Molos, Central Greece	Pantera et al. (2017a)
	Lessons learnt: Olive agroforestry in Kassandra, Chalkidiki, Greece	Mantzanas et al. (2017)
	Lessons learnt: intercropping of orange groves in Greece	Pantera et al. (2017b)
Grazed orchards	Lessons learnt: Grazed orchards in France	Corroyer (2017)
	Lessons learnt – Grazed orchards in England and Wales	Burgess et al. (2017)
	Lessons learnt: Grazed orchards in Northern Ireland	McAdam (2018)
Hedgerow trees	System Report: Traditional Pollard Agroforestry in South-West France	Van Lerberghe and Malignier (2016)

Table 3.9. Deliverable 3.8 builds on the 10 lesson learnt reports from the work-package 3 stakeholder groups

Burgess P, Chinery F, Eriksson G, Pershagen E, Pérez-Casenave C, Upson M, García de Jalón S, Giannitsopoulos M, Graves A (2017). Lessons learnt – Grazed orchards in England and Wales. Contribution to Deliverable 3.8, AGFORWARD project. 22 pp. Available on-line: https://www.agforward.eu/index.php/en/Grazed_Orchards.html

Colin J, Van Lerberghe P, Balaguer F (2017). Agroforestry Innovation Leaflet No. 26: Farming with pollards. AGFORWARD project 2 pp. http://www.agforward.eu/index.php/en/bordure-trees-in-france-1375.html

Corroyer N (2017). Lessons learnt: Grazed orchards in France. Contribution to Deliverable 3.8, AGFORWARD project. 8 pp. Available on-line: https://www.agforward.eu/index.php/en/grazed-orchards-in-france.html

López-Díaz ML, Bertomeu M, Moreno G (2017). Lessons learnt: Silvopastoral management of Mediterranean timber plantation. Contribution to Deliverable 3.8, AGFORWARD project. 28 pp. Available on-line: https://www.agforward.eu/index.php/en/grazing-and-intercropping-of-plantation-trees-in-spain.html

Mantzanas K, Papanastasis V, Pantera A, Papadopoulos A, Kapsalis D, Papaporfyriou P, Koutsoulis D, Ispikoudis S, Delapre L (2017). Lessons learnt: Olive agroforestry in Kassandra, Chalkidiki, Greece. Contribution to Deliverable 3.8, AGFORWARD project. 10 pp. Available on-line: https://www.agforward.eu/index.php/en/intercropping-of-olive-groves-in-greece.html

McAdam J (2018). Lessons learnt: Grazed orchards in Northern Ireland. Contribution to Deliverable 3.7 (3.1): Agroforestry for High Value Tree Systems: Results of Innovations. 14 pp. Available on-line: https://www.agforward.eu/index.php/en/grazed-orchards-in-northern-ireland-uk.html

Mosquera-Losada MR, Santiago Freijanes JJ, Ferreiro Domingues N, Rigueiro-Rodriguez A (2018). Lessons learnt: Chestnut agroforestry in Galicia, Spain. Contribution to Deliverable 3.8, AGFORWARD project. 12 pp. available online: https://www.agforward.eu/index.php/en/chestnut-agroforestry-in-galicia-spain.html

Pantera A, Papadopoulos A, Kitsikopoulos D, Mantzanas K, Papanastasis V, Fotiadis G (2017a). Lessons learnt: Olive agroforestry in Molos: Contribution to Deliverable 3.8, AGFORWARD project. 11 pp. Available online: https://www.agforward.eu/index.php/en/intercropping-of olive-groves-in-greece.html

Pantera A, Papaporfyriou P, Kapsalis D, Papadopoulos A, Papaspyropoulos K, Mitsou M (2017b). Lessons learnt: intercropping of orange groves in Greece. Contribution to Deliverable 3.8, AGFORWARD project. 6 pp. Available online: https://www.agforward.eu/index.php/en/intercropping-of-orange-groves-in-greece.html

Rosati A (2017). Lessons learnt: Wild asparagus and other crops in olive orchards in Italy. Contribution to Deliverable 3.8, AGFORWARD project. 8 pp. Available on-line: https://www.agforward.eu/index.php/en/intercropping-and-grazing-of-olive-orchards-in-italy.html

Table 3.10. Reference for Deliverable 3.8 on the results of the innovations

Pantera A, Mosquera Losada MR, Burgess PJ, Graves A, Ferreiro-Domínguez N, Corroyer N, McAdam J, Rosati A, López-Díaz ML, Mantzanas K, Moreno G, Papadopoulos A, Papanastasis V, Giannitsopoulos M (2018). Agroforestry for high value tree systems: Results of innovations. Deliverable 3.8. 30 January 2018. 11 pp. http://www.agforward.eu/index.php/en/agroforestry-for-high-value-tree-systems-results-of-innovations.html

The main results within Deliverable 3.8 can be summarised against six headings:

Sowing legume intercrops and grazing rather than cultivation of high value timber systems. It is often common practice to cultivate between the trees in high value timber plantations in Spain. Intercropping with legume forage crops can reduce cultivation costs; although this reduced soil water content there was no measureable negative effect on the trees. Intercropping with a legume was shown to increase the level of soil nitrogen and potassium and decrease the level of phosphorus in the soil and in tree leaves. Whilst unmanaged pasture resulted in an annual yield of 3 Mg ha^{-1} y^{-1} and could support around 0.6 LU ha^{-1} y^{-1}, sowing rich-legume pasture in the alleys could roughly double the stocking rate without compromise the tree growth. Overall silvopastoral management was shown to be compatible with high quality timber production and sowing legume-rich forages did not reduce tree growth relative to the control unfertilized trees.

Thinning and pollarding: the research in Spain demonstrated a slight positive effect of thinning on walnut tree growth. Pollarding in Spain had neither positive nor negative effects on tree growth, but the incidence of cavitation was reduced. The stakeholder group in France sought ways of estimating and maximizing the cost-effective production of firewood from pollarded ash trees. The results demonstrated that the biomass of the crown was closely related to the circumference of the trunk, and that pollarding can stimulate trunk diameter growth and branch wood production.

Introducing pigs to chestnut woodlands: substantial areas of chestnuts exist in the Galicia region of Spain. The research demonstrated that these stands could be grazed, but the trees need to be adequately protected and pro-active management is required. If successful, the agroforestry system can provide additional revenue for the farmer was preserving biodiversity and increasing nutrient cycling.

Development of new grafting techniques: the research in Spain demonstrated that micro-grafting techniques can provide a quicker way of multiplying the stock of specific chestnut clones than conventional propagation.

Understorey crops for olive and orange groves: the research in Italy demonstrate that wild asparagus (*Asparagus acutifolius*) can be successfully grown as an understorey crop in olive groves. Although yields are lower beneath the olive trees than in an open field, the proportion of edible tender part of the spear increases and the overall revenue from the grove is increased. Narcissus and tulips were identified as two alternative understorey crops. In Greece, sowing nitrogen-fixing chickpeas or a mixture of barley with common vetch beneath olives was shown to reduce fertiliser requirement and can provide an additional source of revenue. During parts of an orange tree rotation when the tree canopy is small (perhaps because of the grafting of new scions), sowing chickpeas can reduce fertiliser requirements and enhance soil health.

Grazing of apple orchards: such systems can be successful if due consideration is given to four points. Firstly there is a need to consider the apple tree structure (as sheep are likely to damage the canopy of young bush orchards where the canopy starts below 1.2 m). Secondly orchard systems with zero or minimal levels of spray are likely to be more suitable for grazing because a high level of spraying requires greater movement of the sheep. Thirdly the behaviour of sheep breeds can vary substantially. Some lowland breeds are relatively sedentary whereas some upland breeds can behave like goats and are able to get on their two hind legs to reach browse. Lastly a successful grazed orchard system requires a manager or a management arrangement that pays attention to the health of the apple trees and the daily monitoring of the sheep and the availability of grass. Where the above requirements are met, farmers can benefit from orchard grazing because of the reduced mowing costs, reduced feed costs for sheep production, and the opportunity to use grassland elsewhere between April and July to produce, for example, a hay crop.

3.5 Develop and test, analyse and interpret innovations (completed)

Objective 3.5 was to provide and promote guidelines for farmers. Milestone Report 12 (Pantera 2017. Agroforestry for high value tree systems: draft guidelines. 4 September 2017. 4 pp) described the initial guidelines from the proposed innovation leaflets. The finalised 10 "Agroforestry Innovation" leaflets related to agroforestry with high value tree systems are reported in Deliverable 2.6 (Table 3.11). The Deliverable provides a summary of the leaflets and includes each leaflet in an Annex. Table 3.14 gives the relevant references for the leaflets.

Table 3.11. Reference for Deliverable 3.9 which describes guidelines for the intercropping and grazing of high value tree systems and includes the innovation leaflets

Pantera A, Burgess PJ, Mosquera-Losada MR, Rosati A, Moreno G, McAdam J, Mantzanas K, Corroyer N, Van Lerberghe P, Ferreiro-Domingues N, López ML, Santiago Freijanes JJ, Rigueiro-Rodriguez A, Fernandez-Lorenzo JL, Gonzalez-Hernandez P, Fraga-Gontan P, Martinez-Cabaleiro M, Chinery F, Eriksson G, Pershagen E, Perez-Casenave C, Giannitsopoulos M, Colin J, Balaguer F (2018). Agroforestry for High Value Tree Systems: guidelines for farmers. Deliverable 3.9. 17 January 2018. 30 pp. http://www.agforward.eu/index.php/en/agroforestry-for-high-value-tree-systems-guidelines-for-farmers.html

Table 3.12. References for the ten "agroforestry innovation" leaflets related to the intercropping and grazing of high value tree systems

Moreno G. Lopez ML (2017). Agroforestry Innovation leaflet 16: Grazing sheep under walnut trees. 2 pp. http://www.agforward.eu/index.php/en/grazing-and-intercropping-of-plantation-trees-in-spain.html

Mosquera Losada MR, Santiago Freijanes JJ, Ferreiro-Domingues N, Rigueiro-Rodriguez A (2017). Agroforestry Innovation leaflet 17: Protecting trees in chestnut stands grazed with Celtic pigs. 2 pp. http://www.agforward.eu/index.php/en/chestnut-agroforestry-in-galicia-spain.html

Fernandez-Lorenzo JL, Rigueiro-Rodriguez A, Ferreiro-Domingues N, Gonzalez-Hernandez P, Fraga-Gontan P, Martinez-Cabaleiro M, Mosquera Losada MR (2017). Agroforestry Innovation leaflet 18: New approaches to producing selected varieties of chestnut. 2 pp. http://www.agforward.eu/index.php/en/chestnut-agroforestry-in-galicia-spain.html

Rosati A (2017). Agroforestry Innovation leaflet 19: Wild asparagus in olive orchards. 2 pp. http://www.agforward.eu/index.php/en/intercropping-and-grazing-of-olive-orchards-in-italy.html

Pantera A (2017a). Agroforestry Innovation leaflet 20: Olive trees intercropped with chickpeas. 2 pp. http://www.agforward.eu/index.php/en/intercropping-of-olive-groves-in-greece.html

Mantzanas K (2017). Agroforestry Innovation leaflet 21: Olive trees intercropped with cereals and legumes. 2 pp. http://www.agforward.eu/index.php/en/intercropping-of-olive-groves-in-greece.html

Pantera A (2017b). Agroforestry Innovation leaflet 22: Orange trees intercropped with legumes. 2 pp. http://www.agforward.eu/index.php/en/intercropping-of-orange-groves-in-greece.html

Corroyer N (2017). Agroforestry Innovation leaflet 23: Apple orchards grazed in France. 2 pp. http://www.agforward.eu/index.php/en/grazed-orchards-in-france.html

Burgess P, Chinery F, Eriksson G, Pershagen E, Perez-Casenave C, Giannitsopoulos M (2017). Agroforestry Innovation leaflet 24: Economic benefits of grazed apple orchards in England. 2 pp. http://www.agforward.eu/index.php/en/Grazed_Orchards.html

McAdam J (2017). Agroforestry Innovation leaflet 25: Key challenges of orchard grazing. 2 pp. http://www.agforward.eu/index.php/en/grazed-orchards-in-northern-ireland-uk.html

Colin J, Van Lerberghe P, Balaguer F (2017). Agroforestry Innovation leaflet No. 26: Farming with pollards. 2 pp. http://www.agforward.eu/index.php/en/bordure-trees-in-france-1375.html

The leaflets explain that combined production of annual crops with tree crops can provide additional revenue and diversify the range of farm products. Annual revenues provided by, for example a marketable crop (e.g. Leaflet 22), can improve farm profitability whilst slowly-maturing trees reach maturity. Planting leguminous species between trees can reduce nitrogen fertilizer costs and sometimes can enhance tree growth and production (e.g. Leaflets 16, 20, 21 and 22). Intercropping and grazing can also enhance carbon sequestration and reduce mowing or cultivation costs. In some conditions, intercropping and grazing can reduce the level of pests (e.g. Leaflets 18 and 23). The complications of combining the grazing or intercropping of tree crops with pesticide use, means that grazing and intercropping of tree crops is easier in system where there is no or minimal pesticide use. The successful introduction of intercrops or grazing to a high value tree systems can be profitable and successful, but it requires careful planning because, particularly in the case of grazing, some interventions are unsuccessful (Leaflet 25).

3.6 Dissemination of results (completed)

The final task in the work-package (Task 3.6) was to disseminate the results from the ten stakeholder groups. Some of the activities undertaken to disseminate the results within the stakeholder groups is described in Milestone 13 (Table 3.13).

Table 3.13. Reference for Milestone 13 describing dissemination activities related to work-package 3

Pantera A, Burgess PJ, Papadopoulos A, Papanastasis V, Mantzanas K, Graves A, Mosquera Losada MR, Rosati A, Moreno G, McAdam J, Corroyer N, Van Lerberghe P, Ferreiro-Domingues N, López-Díaz ML, Santiago Freijanes JJ, Rigueiro-Rodriguez A, Fernandez-Lorenzo JL, Gonzalez-Hernandez P, Fraga-Gontan P, Martinez-Cabaleiro M, Giannitsopoulos M, Colin J, Balaguer F, Ward F (2018). Agroforestry for high value tree systems: dissemination of results and recommendations. Milestone report 13. 12 February 2018. 21 pp. http://www.agforward.eu/index.php/en/agroforestry-for-high-value-tree-systems-results-of-innovations.html

3.7 Co-ordination of the work in work-package 3

During the third reporting period, the work-package leader (Anastasia Pantera) has actively participated in Executive Board meetings and presented an update on the ongoing work for work-package 3 at the Fourth General Assembly meeting in Montemor, Portugal.

3.8 Use of resources in work-package 3

At the end of the project, 112.88 person months had been allocated to work-package 3, equivalent to 100% of the budgeted total (Table 3.14).

Table 3.14. Person-month inputs to work-package 3 for the first (Jan – Dec 2014), second (Jan 2015-June 2016) and third (July 2016 to December 2017) reporting periods

Organisation	First period (Jan-Dec 2014)	Second period (Jan 2015-Jun 2016)	Third period (Jul 2016 to Dec 2017)	Sub-total	Project budget
CREA	5.25	16.25	6.50	28.00	28.0
TEI	3.92	6.93	12.15	23.00	23.0
USC	1.80	9.70	2.00	13.50	[b]12.0
AFBI[a]	2.53	2.51	6.89	11.93	5.5
Cranfield	2.70	7.88	0.54	11.12	12.0
UEX	2.05	5.10	2.50	9.65	8.0
APCA	0.68	1.50	1.38	3.56	3.0
AFAF	0.41	1.48	1.19	3.08	3.5
ISA	0.25	1.69	0.64	2.58	3.0
ACTA (IDF)	0.44	1.86	0.20	2.50	1.0
UCPH	0.00	0.00	1.80	1.80	0.0
ORC	1.34	0.00	0.00	1.34	6.0
EURAF	0.20	0.30	0.00	0.50	[b]2.0
FDEA	0.18	0.14	0.00	0.32	6.0
Total	21.75	55.34	35.79	112.88	113.0

[a]: The WP3 total for AFBI has been corrected from 2.09 to 2.53 for the first period.
[b]: 1.50 person months was reallocated from EURAF to USC in the third reporting period.

3.8 Issues and actions

The work-package has successfully produced the milestones and deliverables as planned.

4 Work package number 4

Work-package number	**4**
Work-package name	**Agroforestry for Arable Farmers**
Leader	Michael Kanzler and Jaconette Mirck
Organisation	Brandenburg University of Technology Cottbus-Senftenberg
Report period	1 July 2016 to 31 December 2017

Objectives and tasks within work package 4

The focus of this work-package, led by Michael Kanzler who took over from Jaconette Mirck during the third period, was to develop innovations that promote agroforestry for arable farmers. The first periodic report highlighted the establishment of the participatory research and development network and the identification of testable innovations (Table 4.1; Table 4.2). The second reporting period included the development of research protocols, system descriptions, and the initial implementation of the research.

Table 4.1. Work-plan of activities, milestones (M), and deliverables (D) for work-package 4 for month 25 to month 48 (indicated in orange)

Month	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
WP4 Agroforestry for arable crops																								
T4.1 Establish PRD network (MS14)																								
T4.2 Characterise system (D4.10)																								
T4.3 Identify innovations (MS15) and establish protocols MS16)																								
T4.4 Test, analyse, interpret and cost innovation (MS17; D4.11)								M						D										
T4.5 Evaluate innovations to produce guidelines (MS18; D4.12)																		M		D				
T4.6 Disseminate results (MS19)																								M
T4.7 Co-ordination of WP5																								

Table 4.2. Summary of the status of milestones and deliverables in work-package 4 for first (Month 0-12), second (Month 13-30), and the third (Month 31-48) reporting periods

Description	**Date**	**Status**
First reporting period		
MS14 Establishment of PRD network	Aug 2014	Completed and on website
MS15 Identification of innovations to be tested	Dec 2014	Completed and on website
Second reporting period		
MS16 Establishment research protocols	Jan 2015	Completed and on website
D4.10 System descriptions	Dec 2015	Completed and on website
Third reporting period		
MS17 Report on studied innovations	Aug 2016	Completed (March 2017)
D4.11 Results of innovations	Feb 2017	Completed (January 2018)
MS18 Initial report with guidelines	Jun 2017	Completed (August 2017)
D4.12 Guidelines to farmers	Aug 2017	Completed (January 2018)
MS19 Dissemination of results	Dec 2017	Completed (February 2018)

4.1 Establish a participatory research and development network (completed)

Objective 4.1 was to identify examples of existing best practice, the key challenges, and possible innovations to address those challenges, within stakeholder working groups within a Participatory Research and Development Network (PRDN). As reported in the first periodic report, Deliverable 4.10 was this was achieved by establishing (Task 4.1) 13 stakeholder groups (Figure 4.1). Spain, Southern France and the UK developed two stakeholder working groups. As reported in the first periodic report, each stakeholder group produced an initial stakeholder report which comprised Milestone 14.

Figure 4.1. Silvoarable systems across Europe; in A) Spain, B) Italy, C) Western France, D) UK, E) Switzerland, F) Southern France, G) Greece, H) Western France, I) Germany and J) Hungary

4.2 Characterising the systems (completed)

Objective 4.2 was to describe the key inputs, outputs and ecosystem service flows for the selected systems. This was the focus of work (Task 4.2) during 2015 and the first half of 2016 and was reported in the second periodic report. Each stakeholder group produced a system report which is available on-line. As reported in the second periodic report, Jaconette Mirck synthesised the system descriptions in Deliverable 4.10 (Table 4.3).

Table 4.3. A synthesis report of the system descriptions for work-package 4 (Deliverable 4.10)

Mirck J (2016). Agroforestry for arable systems: synthesis of system descriptions. Deliverable 4.10. 13 May 2016. 15 pp. http://www.agforward.eu/index.php/en/describing-agroforestry-systems-for-arable-farmers-a-summary.html

4.3 Identify testable innovations and establish protocols (completed)

Objective 4.3 was to agree, within the PDRN, the key innovations or improvements in quantification that could promote the uptake of agroforestry involving arable systems. As reported in the First Progress Report, the innovations to be tested were reviewed and reported and placed on the AGFORWARD website in January 2015 (Milestone 15; Table 4.4).

Table 4.4. Report (Milestone 15) describing innovations for agroforestry for arable farmers

Mirck J, Cirou E, Camilli F, Crossland M, Dalla Valle C, Fernandez Lorenzo JL, Ferreiro-Dominguez Lorenzo N, Gonzalez-Hernandez P, Gosme M, Hannachi Y, Herzog F, Howlett S, Jäger M, Mosquera Losada MR, Moreno G, Pantera A, Paris P, Pisanelli A, Rigueiro Rodriguez A, Smith J, Tsonkova P, Vityi A, Wartelle R, Wolfe M, Burgess PJ (2014). Agroforestry Innovations to be evaluated for arable farmers. Milestone 15. 20 January 2015. 11 pp. http://www.agforward.eu/index.php/en/agroforestry-innovations-to-be-evaluated-for-arable-farmers.html

Between January and June 2015, each stakeholder group completed a research and development protocol for each system. Each report followed a review process before approval and being uploaded to the AGFORWARD website. In total 13 protocols were established across 10 groups as reported in the second periodic report. A report (Milestone 16) summarizing the research protocols was reviewed and placed on the AGFORWARD website in October 2015 (Table 4.5).

Table 4.5. Report (Milestone 16) summarizing the research and development protocols for arable farmers

Mirck J, Burgess PJ (2015). Synthesis of the research and development protocols related to agroforestry for arable systems. Milestone 16. 1 October 2015. 13 pp. http://www.agforward.eu/index.php/en/agroforestry-innovations-to-be-evaluated-for-arable-farmers.html

4.4 Test and analyse innovations to provide guidelines (completed)

Since 2015, the participants have progressed Objective 4.4 which is to implement the protocols, to develop and test the proposed innovations, and to analyse and interpret the results. This has been achieved through experiments and on-farm trials and led to two reports.

Milestone 17, placed on-line in March 2017, describes the preliminary results of the innovations (Table 4.6). The final lessons learnt from the innovation is summarised in Deliverable 4.11 which contains a summary of the 13 lessons learnt reports derived from the participative research and development network (PRDN) focused on the use of agroforestry in arable systems (Table 4.6). The references for the 13 lesson learnt reports are provided in Table 4.7. A summary of the lessons learnt is provided in Box 4.1.

Table 4.6. Report (Milestone 17) provided a preliminary summary of the results of the innovations which were updated in Deliverable 4.11

Mirck J. (2017). Initial report on studied innovations of agroforestry for arable farmers. Milestone 17. 31 March 2017. 31 pp http://www.agforward.eu/index.php/en/initial-report-on-studied-innovations-of-agroforestry-for-arable-farmers.html
Kanzler M et al. (2018a). Agroforestry for arable farmers: results of innovations. Deliverable 4.11. 28 January 2018. 16 pp. http://www.agforward.eu/index.php/en/agroforestry-for-arable-farmers-results-of-innovations.html

Table 4.7. The 13 lesson learnt reports that contributed to Deliverable 4.11

Arenas-Corraliza MG, López-Díaz ML, Moreno G (2017). Lessons learnt: Cereal crops within walnut plantations in Mediterranean Spain. 12 October 2017. 26 pp. Available online: http://www.agforward.eu/index.php/en/silvoarable-systems-in-spain.html
Gosme M, Desclaux D (2017). Lessons learnt: Screening of durum wheat cultivars for agroforestry. 25 September 2017. 16 pp. Available online: http://agforward.eu/index.php/en/mediterranean-silvoarable-systems-in-france.html
Jäger M (2017). Lessons learnt: Agroforestry-systems with fruit trees in Switzerland. 28 September 2017. 10 pp. Available online: http://www.agforward.eu/index.php/en/integrating-trees-with-arable-crops-switzerland.html
Kanzler M, Mirck J (2017). Lessons learnt – Alley cropping in Germany. 28 July 2017. 12 pp. Available online: http://agforward.eu/index.php/en/alley-cropping-systems-in-germany.html
Mantzanas K, Papanastasis V, Pantera A, Papadopoulos A (2017). Lessons learnt: Silvoarable Agroforestry in Greece. 17 October 2017. 9 pp. Available online: http://agforward.eu/index.php/en/trees-with-arable-crops-and-grassland-in-greece.html
Mézière D, Boinot S, de Waal L (2018). Lessons learnt: Mediterranean silvoarable agroforestry weed survey. Available online: http://agforward.eu/index.php/en/mediterranean-silvoarable-systems-in-france.html
Mosquera Losada MR, Ferreiro Domínguez N, Fernández Lorenzo JL, González Hernández P, Rigueiro Rodríguez A (2017a). Lessons learnt: Maize in silvoarable systems in Galicia, Spain. 6 November 2017. 10 pp. Available online: http://agforward.eu/index.php/en/silvoarable-systems-in-spain.html
Mosquera Losada MR, Ferreiro Domínguez N, Fernández Lorenzo JL, González Hernández P, Rigueiro Rodríguez A (2017b). Lessons learnt: Medicinal plants in silvoarable systems in Galicia, Spain. 6 November 2017. 8 pp. Available online: http://agforward.eu/index.php/en/silvoarable-systems-in-spain.html

Paris P, Lauteri M, Ciolfi M, Chiocchini F, Leonardi L, Cherubini M, Spaccino L, Dalla Valle C (2017). Lessons learnt: Trees for timber with arable crops in Italy. 11 September 2017. 16 pp. Available online: http://agforward.eu/index.php/en/trees-for-timber-intercropped-with-cereals-445.html

Smith J, Costanzo A, Fradgeley N, Mullender S, Wolfe M (2017a). Lessons learnt: Silvoarable agroforestry in the UK. 12 November 2017. 15 pp. Available online: http://www.agforward.eu/index.php/en/silvoarable-agroforestry-in-the-uk.html

Smith J, Westaway S, Venot C, Cathcart-James M (2017b). Lessons learnt: Silvoarable agroforestry in the UK (Part 2). 8 September 2017. 18 pp. Available online: http://www.agforward.eu/index.php/en/silvoarable-agroforestry-in-the-uk.html

Vityi A, Kiss Szigeti N, Schettrer P, Marosvölgyi B (2017). Lessons learnt: Alley cropping in Hungary. 28 September 2017. 24 pp. Available online: http://agforward.eu/index.php/en/alley-cropping-systems-in-hungary.html

Wartelle R, Mézière D, Gosme M, Ia-Laurent L, Muller L (2017). Lessons learnt: Weeds and silvoarable agroforestry in Northern France. 13 November 2017. 9 pp. Available online: http://agforward.eu/index.php/en/agroforestry-for-arable-farmers-in-northern-france.html

Box 4.1: Lessons learnt from the agroforestry for arable farmers group

In **Deliverable 4.11**, Kanzler et al. 2018 summarises the results of thirteen "lesson-learnt" reports within the participative research and development network focused on agroforestry for arable farmers. One of the main objectives addressed by these reports included investigating agroforestry design for improved productivity. The effect of integrating trees on arable crop yields, soil properties, and the microclimate, as well as the dispersal of weeds, and the management of the tree understory were discussed in detail.

Most of the alley cropping systems were relatively new; with most of the trees being planted within the last 20 years in relatively straight lines to enable continued use of standard arable machinery to plant, managed and harvest the arable crops. Understanding the range of alley widths is important in understanding the rationale for the systems and the responses of the crops in the system. Many of the systems with relatively narrow alley widths have been developed on organic farms, often selling high value crops, and where farmers seek to derive high value products per unit area and have experience of using high labour inputs per unit area (Smith et al. 2017a, 2017b). The wider alley cropping systems tend to occur on conventionally-managed farms where use of mineral fertilizer and agrochemicals where required. Some of these systems occur on relatively flat land and an important consideration is the use of tree lines as wind-breaks to reduce wind speed and soil erosion and improve microclimate.

The alley width for the studied silvoarable systems ranged from (A) 10 m for one system in the UK to (B) 96 m on open wind-exposed land in eastern Germany

Positive interactions between trees and crops were reported. At three sites there was some evidence that yield in the centre of the cropped alleys was greater than that achieved in more open areas without trees. It should be noted that it is difficult to establish this statistically because of the problem in replicating pairs of control areas and areas of alley cropping. Two of these responses were obtained in Germany and Hungary where the alley cropping systems were established on relatively open land and where the trees provided wind protection (Kanzler and Mirck 2017; Vityi et al. 2017). The other area where there was a positive response was under the relatively high temperatures found in Mediterranean Spain (Arenas-Corraliza et al. 2017). The combination of trees and crops is crucial for the success of the system. Two of the studies provide some evidence that it may be possible to select cultivars that perform relatively better than other cultivars under shaded rather than unshaded conditions (Arenas-Corraliza et al. 2017; Gosme and Desclaux 2017). Furthermore, the quality of some crops, e.g. plants grown for medicinal use, can also increase due to the lower temperatures associated with tree cover (Mosquera Losada et al. (2017b).

Despite several examples of positive interactions, in many cases competition from the trees for solar radiation and water reduce arable crop yields. Across six studies, a decline in yields were reported for the arable crops planted in close proximity to the trees (Arenas-Corraliza et al. 2017; Gosme and Desclaux 2017; Kanzler and Mirck 2017; Mosquera Losada et al. 2017a; Paris et al. 2017; Smith et al. 2017a). It can be argued that it may be possible to offset the negative effects of the trees on crop yields by the revenue generated by the trees. Many of the systems focused on trees being grown for timber and although it is possible to model the potential returns, the actual return can be difficult to quantify. However there are systems where the trees provide short to medium-term revenue. At Wakelyns in the UK, some of the tree rows were being harvested for short rotation coppice (Smith et al. 2017a). In addition in Switzerland, apple trees were being grown for fruit (Jäger 2017).

The need of farmers experience and training in agroforestry was stressed, since intercropping is more complex than growing trees and crops separately (Mantzanas et al. 2017). In Italy, the intercrop management, in terms of machinery movement along the alleys and distribution of fertilizers and herbicides was not negatively affected by tree rows planted along drainage ditches (Paris et al. 2017). One of the clearest lessons learnt is that the environmental impact of integrating trees in arable systems is almost always positive in terms of wind speed reduction for soil erosion control (Kanzler and Mirck 2017), increased biodiversity (Smith et al. 2017b), improved water and nutrient retention (Jäger 2017; Paris et al. 2017; Vityi et al. 2017) and carbon storage (Jäger 2017).

4.5 Evaluate innovations to produce guidelines (completed)

Objective 4.5 from work-package 4 was to provide and promote guidelines for farmers to support the wider adoption of appropriate agroforestry systems in Europe. This was achieved through a report (Milestone 18) (available on the AGFORWARD intranet) identifying the relevant leaflets that could be produced and Deliverable 4.12 containing an overview of the leaflets and an annex with the leaflets (Table 4.8). Table 4.9 provided the titles for the 12 innovation leaflets and Table 4.10 provides the references.

Table 4.8. Deliverable 4.12 provides a synthesis of the guidelines developed on agroforestry for arable farmers

Kanzler M, Tsonkova P, Arenas G, Dalla Valle C, Desclaux D, Feirreiro-Dominguez N, Guérin O, Herzog F, Jäger M, Kiss-Szigeti N, Mantzanas K, Marosvölgyi B, Mézière D, Mirck J, Moreno G, Mosquera-Losada MR, Panozzo A, Paris P, Rigueiro-Rodriguez A, Romero-Franco R, Schettrer P, Smith J, Vityi A, Wartelle R, Westaway S, Wolfe M, Burgess PJ (2017). Agroforestry for arable farmers: guidelines. Deliverable 4.12. 17 January 2018. 33 pp. http://www.agforward.eu/index.php/en/agroforestry-for-arable-farmers-guidelines.html

Table 4.9. Overview of the 12 innovation leaflets on agroforestry for arable farmers

No	Title of leaflet	Reference	Stakeholder group
27	Cropping cereals among timber trees	Moreno and Arenas-Corraliza (2017)	Cereal production beneath walnut in Spain (UEX, Spain)
28	Productivity and quality of maize under cherry trees	Feirreiro-Dominguez et al. (2017)	Silvoarable systems in Spain (UEX, Spain)
29	Intercropping medicinal plants under cherry timber trees	Mosquera-Losada et al. (2017)	Silvoarable systems in Spain (USC, Spain)
30	Organic crops in olive orchards	Panozzo and Desclaux (2017)	Mediterranean Silvoarable systems in France (INRA, France)
31	Understorey management in alley cropping systems in France	Mézière et al. (2017)	Mediterranean Silvoarable systems in France (INRA and APCA, France)
32	Hybrid poplar and oak along drainage ditches	Paris and Dalla Valle (2017)	Trees for timber with arable crops in Italy (CNR and VEN, Italy)
33	Walnut and cherry trees with cereals in Greece	Mantzanas (2017)	Silvoarable agroforestry in Greece (TEI, Greece)
34	Agroforestry and decentralised food and energy production	Wolfe (2017)	Silvoarable agroforestry in the UK (ORC, UK)
35	Trees and crops: making the most of the space	Westaway and Smith (2017)	Silvoarable agroforestry in the UK (ORC, UK)
36	Yield and climate change adaptation using alley cropping	Mirck (2017)	Alley cropping systems in Germany, (BTU, Germany)
37	Agroforestry with standard fruit trees in Switzerland	Jäger and Herzog (2017)	Silvoarable agroforestry in Switzerland (EVD with AGRIDEA, Switzerland)
38	Weed suppression in alley cropping in Hungary	Vityi et al., (2017)	Alley cropping in Hungary (SoE-KKK, Hungary)

Table 4.10. References for the 12 leaflets that contributed to Deliverable 4.12

Feirreiro-Dominguez N, Riguireo-Rodriguez A, Mosquera-Losada MR (2017). Agroforestry Innovation leaflet 28: Productivity and quality of maize under cherry trees. AGFORWARD project. 2 pp. http://www.agforward.eu/index.php/en/silvoarable-systems-in-spain.html

Jäger M, Herzog F (2017) 37 Agroforestry Innovation leaflet: Agroforestry with standard fruit trees in Switzerland. AGFORWARD project. 2 pp. http://www.agforward.eu/index.php/en/integrating-trees-with-arable-crops-switzerland.html

Mantzanas K (2017). Agroforestry Innovation leaflet 32: Walnut and cherry trees with cereals in Greece. AGFORWARD project. 2 pp. http://www.agforward.eu/index.php/en/trees-with-arable-crops-and-grassland-in-greece.html

Mézière D, Guérin O, Wartelle R (2017). Agroforestry Innovation leaflet 31: Understory management in alley cropping systems in France. AGFORWARD project. 2 pp. http://www.agforward.eu/index.php/en/mediterranean-silvoarable-systems-in-france.html

Mirck J (2017). Agroforestry Innovation leaflet 36: Yield and climate change adaption using alley cropping. AGFORWARD project. 2 pp. http://www.agforward.eu/index.php/en/alley-cropping-systems-in-germany.html

Moreno G, Arenas G (2017). Agroforestry Innovation leaflet 27: Cropping cereals among timber trees. AGFORWARD project. 2 pp. http://www.agforward.eu/index.php/en/silvoarable-systems-in-spain.html

Mosquera-Losada MR, Feirreiro-Dominguez N, Romero-Franco R, Riguireo-Rodriguez A (2017). Agroforestry Innovation leaflet 29: Intercropping medical plants under cherry timber trees. AGFORWARD project. 2 pp. http://www.agforward.eu/index.php/en/silvoarable-systems-in-spain.html

Panozzo A, Desclaux D (2017). Agroforestry Innovation leaflet 30: Organic crops in olive orchards. AGFORWARD project. 2 pp. http://www.agforward.eu/index.php/en/mediterranean-silvoarable-systems-in-france.html

Paris P, Dalla Valle C (2017). Agroforestry Innovation leaflet 32: Hybrid poplar and oak along drainage ditches. AGFORWARD project. 2 pp. http://www.agforward.eu/index.php/en/trees-for-timber-intercropped-with-cereals-445.html

Westaway S, Smith J (2017). Agroforestry Innovation leaflet 35: Trees and crops: making the most of the space. AGFORWARD project. 2 pp. http://www.agforward.eu/index.php/en/silvoarable-agroforestry-in-the-uk.html

Wolfe M (2017). Agroforestry Innovation leaflet 34: Agroforestry and decentralised food and energy production. AGFORWARD project. 2 pp. http://www.agforward.eu/index.php/en/silvoarable-agroforestry-in-the-uk.html

Vityi A, Schettrer P, Kiss-Szigeti N, Marosvölgyi B (2017). Agroforestry Innovation leaflet 38: Weed suppression in alley cropping in Hungary. AGFORWARD project. 2 pp. http://www.agforward.eu/index.php/en/alley-cropping-systems-in-hungary.html

4.6 Dissemination of results (completed)

A report was produced (Milestone 19) summarizing the dissemination activities carried out in work-package 4 (Table 4.11). Results were presented at a variety of conferences during 2016 and 2017 which are described in Table 9.12). Other key dissemination activities included website/social media, television and radio, field visits, policy development, technology transfer, and education.

Table 4.11. Milestone 19 provides a description of some of the dissemination activities

Kanzler M, Tsonkova P, Desclaux D, Ferreiro Domínguez N, Gosme M, Jäger M, Mézière D, Mantzanas K, Mirck J, Moreno G, Mosquera Losada MR, Pantera A, Paris P, Smith J, Vityi A, Wartelle R (2018). Agroforestry for arable farmers: Dissemination of results and recommendations. Milestone 19. 7 February 2018. 18 pp. http://www.agforward.eu/index.php/en/agroforestry-for-arable-farmers-results-of-innovations.html

4.7 Co-ordination of the work in work-package 4

The work-package leader Michael Kanzler replaced Jaconette Mirck during the third project period because of her maternity leave. He participated in Executive Committee meetings, as well as in all the physical meetings that took place in the third project period.

4.8 Use of resources in work-package 4

At the end of December 2017, 206.05 person months had been allocated to work-package 4, equivalent to 157% of the total (Table 4.12). Most of the additional input was provided at INRA.

Table 4.12. Person-month inputs to work-package 4 for the first (Jan – Dec 2014), second (Jan 2015-June 2016) and third (July 2016 to December 2017) reporting periods

Organisation	First period (Jan-Dec 2014)	Second period (Jan 2015 to Jun 2016)	Third period (July 2016 to Dec 2017)	Sub-total	Project total
INRA	8.19	42.37	35.40	85.96	25
BTU	6.69	13.36	13.49	33.54	32
ORC	3.90	9.48	8.09	21.47	12
UEX	1.65	5.40	5.00	12.05	[a]9
NYME	2.13	3.73	5.17	11.03	9
USC	1.80	7.10	1.60	10.50	9
CNR	1.50	2.25	3.50	7.25	6
TEI	1.48	3.13	1.39	6.00	6
APCA	1.29	1.55	1.96	4.80	6
AFAF	0.24	2.04	0.95	3.23	3.5
ACTA (IDF)	0.34	2.65	0.23	3.22	1
ISA	0.25	1.61	0.72	2.58	3
VEN	0.66	1.18	0.61	2.45	2
FDEA	0.49	0.32	0.41	1.22	4
EURAF	0.20	0.30	0.00	0.50	[a]2
CRAN	0.00	0.07	0.18	0.25	1
Total	**30.81**	**96.54**	**78.70**	**206.05**	**130.50**

[a]: 1.5 person months of budget was transferred from EURAF to USC in the third reporting period.

4.9 Issues and actions

There were no major issues with this work-package and the work has been completed to plan.

5 Work package number 5

Work package number	**5**
Work package name	**Agroforestry for Livestock Farmers**
Leader	John E Hermansen
Organisation	Aarhus University
Report period	1 July 2016 to 31 December 2017

Objectives and tasks within work package 5

The focus of this work-package was agroforestry practices appropriate for livestock farmers. During the third reporting period the key activities were to analyse and interpret the results from the tested innovations and to provide guidance to farmers on how to implement and improve agroforestry systems with livestock (Table 5.1; Table 5.2).

Table 5.1. Work-plan of activities, milestones (M), and deliverables (D) for work-package 5 for month 25 to month 48 (indicated in orange)

Month	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
WP5 Agroforestry for livestock																								
T5.1 Establish PRD network (MS20) Completed in first period																								
T5.2 Characterise system (D5.13)																								
T5.3 Identify innovations (MS21) (completed in first period) and establish protocols MS22)																								
T5.4 Test, analyse, interpret and cost innovation (MS23; D5.14)								M						D										
T5.5 Evaluate innovations to produce guidelines (MS24; D5.15)																		M		D				
T5.6 Disseminate results (MS25)																								M
T5.7 Co-ordination of WP5																								

Table 5.2. Summary of the status of milestones and deliverables in work-package 5 for the first (Month 0-12), second (Month 13-30), and the third (Month 31-48) reporting periods

Description	**Date due**	**Status**
First reporting period		
MS20 Establishment of PRD network	Aug 2014	Completed
MS21 Identification of innovations to be tested	Dec 2014	Completed
Second reporting period		
MS22 Establishment of research protocols	Jan 2015	Completed
D5.13 Systems description	Jan 2016	Completed
Third reporting period		
MS23 Preliminary results discussed with stakeholders	Aug 2016	Completed Jan 2017
D5.14 Results of innovations	Feb 2017	Completed Feb 2018
MS24 Report of results of tested innovation	Jun 2017	Completed Sep 2017
D5.15 Guidelines to producers	Aug 2017	Completed Jan 2018
MS25 Dissemination of results	Dec 2017	Completed Feb 2018

5.1 Establish participatory research and development network (completed)

Objective 5.1 was to identify examples of existing best practice, the key challenges, and possible innovations within stakeholder working groups. This objective was achieved by establishing a network (Task 5.1) comprising groups related to the use of agroforestry for i) poultry (UK, Netherlands, Denmark), ii) ruminants (UK, France, Netherland), and iii) pigs (Denmark, Italy and Spain). As reported in the First Progress Report, 10 stakeholder reports were produced as established by Milestone 20.

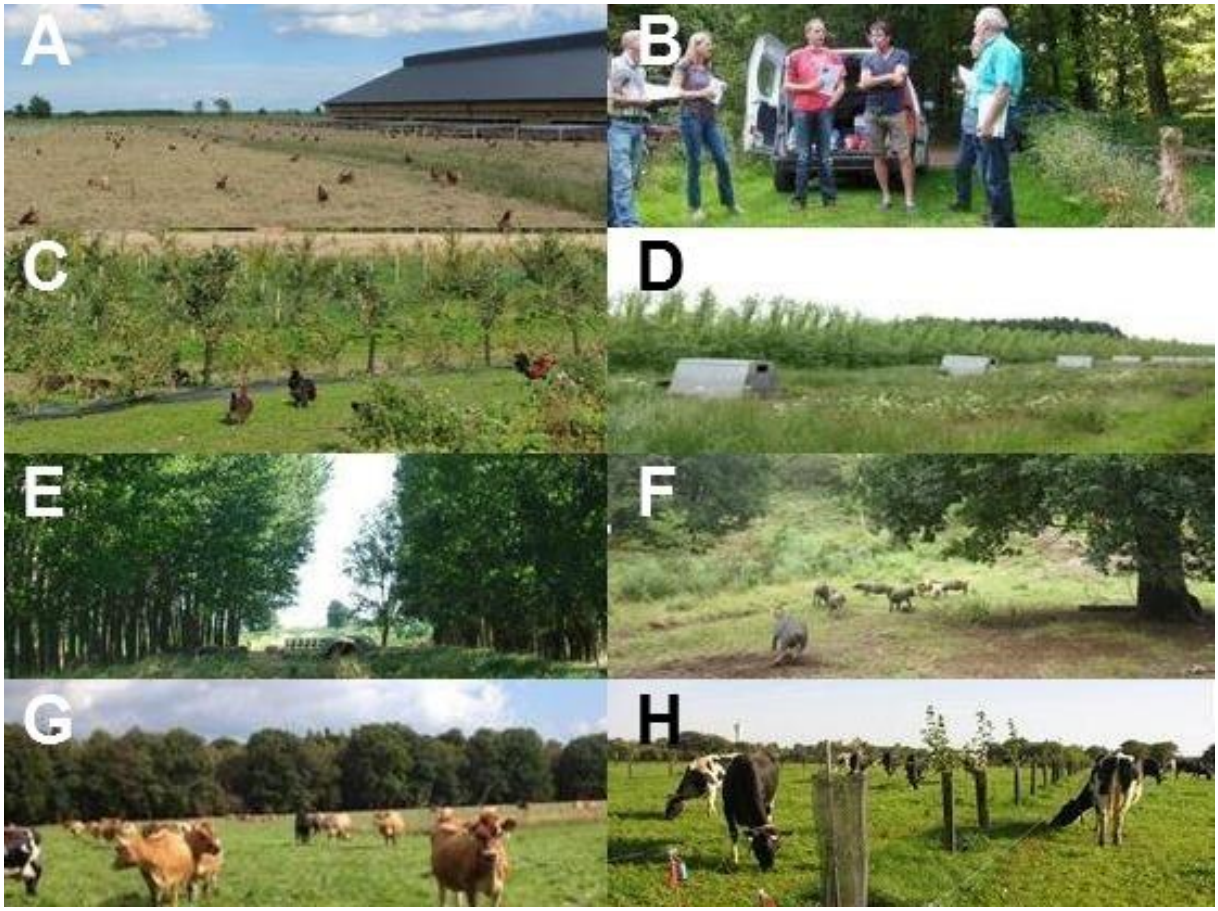


Figure 5.1. Agroforestry for poultry systems in A) the UK, B) the Netherlands and C) Italy, and agroforestry systems for pigs in D) Denmark, E) Italy, and F) Spain, and livestock systems in G) the Netherlands, and H) France

5.2 Characterising the systems (completed)

Objective 5.2 was to describe the key inputs, outputs and ecosystem service flows for the selected systems. This was the key focus of work (Task 5.2) during 2015 culminating in eight reports, followed by a concise synthesis report (Deliverable 5.13). This was reported in the First Periodic Report.

5.3 Identify testable innovations and establish protocols (completed)

Objective 5.3 was to agree, within the participative research and development network (PRDN), the key innovations or improvements in quantification that could promote the uptake of agroforestry by livestock farmers. This was achieved (Task 5.3) by agreeing the innovations to be tested by each group either at experimental sites or on-farm. Milestone 21 comprising a report of the innovations was placed on the AGFORWARD website in January 2015. Between January and June 2015, individual research and development protocols were developed for each group, and a synthesis of the nine protocols was provided in Milestone 22 in October 2015. This was reported in the Second Periodic Report.

5.4 Test and analyse innovations and interpret results (completed)

A key activity in the third reporting period has been to address Objective 5.4: to develop and test the proposed innovations, and to analyse and interpret the results. This was achieved through experiments (Task 5.4) and on-farm testing (Task 5.5) and led to a report (Milestone 23) describing the preliminary results of the innovations and wider perspectives in August 2016. Eventually a total eight lesson learnt reports were produced (Table 5.3) encompassing a range of activities (Table 5.4).

Table 5.3. Titles and references for the lessons learnt reports related to agroforestry for livestock farmers

Group	Title of report	Reference
Poultry	Agroforestry for organic and free-range egg production in the Netherlands	Bestman (2017)
	Poultry agroforestry in the UK	Smith et al. (2017a)
Pigs	Agroforestry for free-range pig production in Denmark	Kongsted et al. (2017)
	Agroforestry for free-range pig production in Veneto Region, Italy	Bondesan and Ricardi (2017)
	Fodder tree evaluation in Galicia, Spain	Mosquera Losada et al. (2017)
Ruminants	Agroforestry for ruminants in the Netherlands	Luske et al. (2017a)
	Agroforestry with ruminants in France	Novak et al. (2017)
	Agroforestry for ruminants in England	Smith et al. (2017b)

In addition LBI expanded an existing database regarding feed values of tree components in terms of more tree species and feed quality characteristics with input from all partners (Luske et al. 2017b).

Table 5.4. Focus of agroforestry innovation activities

Activity	Partner(s)	Type of work
Poultry		
Poultry combined with fruit trees	Louis Bolk Institute; Netherlands	Analyses from existing farm network
Poultry combined with biomass trees	Louis Bolk Institute; Netherlands	Analyses from existing farm network
Shade tolerant sward mix.	Organic Reseach Centre, UK	Comparative study with different understory in native broad leaves and conifers
Pigs		
Poplar in the paddocks for lactating sows	Aarhus University, Denmark	Comparative study (+/- poplar in lactation paddocks) in relation to animal behaviour and risk for nitrogen leaching
Tree protection with growing pigs	Veneto Agricoltura, Italy	Comparative studies on tree protection measures and potential wood chip production
Morus alba and *Morus nigra* as protein sources	University of Santiago de Compostela, Spain	Comparative study of growth potential on different agroecological zones in Spain
Ruminants		
Nutritive value of trees and scrub	National Institute for Agronomic Research (INRA), France	Detailed analyses of 13 species
Spatial organization of trees in an AF dairy system	National Institute for Agronomic Research (INRA), France	Comparative study (three types of organization for high stern trees pollards, and coppiced trees)
Dairy cows and fodder trees	Louis Bolk Institute, the Netherlands	Farm observations on organic dairy farm in existing network
Cattle (non lactating) in short rotation coppice	Organic Research Centre, UK	Comparative experiment with different tree species in an alley cropping system

Table 5.4 provides the reference for Deliverable 5.14, Table 5.5 provides the references for the lesson learnt report that contributed to Deliverable 5.14, and Table 5.6 describes some of the published papers describing the research related to agroforestry for livestock.

Table 5.4. Reference for Deliverable 5.14

Hermansen JE, Smith J, Bestman M, Kongsted AG, Novak S, Mosquera Losada MR, Luske B, Bondesan, V, Burgess PJ (2017). Agroforestry for livestock farmers: Results of innovations. Deliverable 5.14. 15 January 2018. 9 pp. http://www.agforward.eu/index.php/en/agroforestry-for-livestock-farmers-results-of-innovations.html

Table 5.5. The lesson learnt reports that contributed to Deliverable 5.14

Bestman M (2017). Lessons learnt - Agroforestry for organic and free-range egg production in the Netherlands. 2 October 2017. 15 pp. http://www.agforward.eu/index.php/en/agroforestry-for-poultry-systems-in-the-netherlands.html

Bondesan V, Ricardi F (2017). Lessons learnt - Agroforestry for free-range pig production in Veneto Region, Italy. 24 September 2017. 11 pp. http://www.agforward.eu/index.php/en/free-range-pigs-with-energy-crops-italy.html

Kongsted AG, Andersen, HM-L. and Hermansen JE (2017). Lessons learnt - Agroforestry for free-range pig production in Denmark. 10 July 2017. 10 pp. http://www.agforward.eu/index.php/en/free-range-pigs-integrated-with-energy-crops.html

Luske B, van Eekeren N, Vonk M, Kondylis AA, Roelen S (2017a). Lessons learned - Agroforestry for ruminants in the Netherlands. 15 August 2017. 16 pp. http://www.agforward.eu/index.php/en/fodder-trees-for-cattle-and-goats-in-the-netherlands.html

Mosquera-Losada RM, Dominguez NF, Lorenzo JLF, Hernandez PG, Rodriguez AR (2017). Lessons learnt – Fodder tree evaluation in Galicia, Spain. 28 September 2017. 9 pp. http://www.agforward.eu/index.php/en/agroforestry-with-pigs-in-galicia-spain.html

Novak S, Emile JC, Pottier E (2017). Agroforestry for ruminant systems in France. 20 July 2017. 23 pp. http://www.agforward.eu/index.php/en/agroforestry-with-ruminants-in-france.html

Smith J, Westaway S, Kling C (2017a). Lessons learnt: Poultry agroforestry in the UK. 2 October 2017. AGFORWARD project. 8 pp. http://www.agforward.eu/index.php/en/Poultry-systemUK.html

Smith J, Whistance L, Constanzo A, Deremetz V (2017b). Lessons learnt: agroforestry for ruminants in England. 2 October 2017. 20 pp. http://www.agforward.eu/index.php/en/agroforestry-with-ruminants-uk.html

Table 5.6. References for papers describing research on agroforestry for livestock related to work-package 5

Bestman M, de Jong W, Wagenaar JP, Weerts T (2017). Presence of avian influenza risk birds in and around poultry free-range areas in relation to range vegetation and openness of surrounding landscape. Agroforestry Systems. https://doi.org/10.1007/s10457-017-0117-2

Jørgensen U, Thuesen J, Eriksen J, Horsted K, Hermansen JE, Kristensen K, Kongsted AG. (2018). Nitrogen distribution as affected by stocking density in a combined production system of energy crops and free range pigs. Agroforestry Systems, Accepted

Luske B, van Meir I, Kondylis AA, Roelen S, van Eekeren N (2017b). Online fodder tree database for Europe. Louis Bolk Institute and Stichting Duinboeren, the Netherlands. 24 November 2017. http://www.agforward.eu/index.php/en/news-reader/id-24-november-2017.html

Luske B, van Eekeren N (2017c). Nutritional potential of fodder trees on clay and sandy soils. Agroforestry Systems https://link.springer.com/article/10.1007%2Fs10457-017-0180-8

Westaway S, Kling C, & Smith, JA (2017). A comparison of the performance of three sward mixtures sown under trees in a silvopoultry system in the UK. Agroforestry Systems. https://doi.org/10.1007/s10457-017-0142-1

5.5 Evaluate innovations to produce guidelines

Objective 5.5 was to provide guidelines for farmers to support the wider adaption of appropriate agroforestry systems in Europe. This was achieved through a report (Milestone 24) identifying the relevant leaflets that could be produced and Deliverable 5.15 containing an overview of leaflets produced as well as the main messages from the leaflets. Table 5.6 gives an overview of the leaflets and Table 5.7 gives the relevant references.

Table 5.6. Overview of the innovation leaflets associated with work-package 5

Leaflet No	Title of leaflet	Authors	Organisation	Stakeholder group
39	Commercial apple orchards in poultry free-range areas	Monique Bestman and Bart Timmermans	Louis Bolk Institute, The Netherlands	Agroforestry for poultry systems, the Netherlands
40	Silvopoultry: establishing a sward under the trees	Sally Westaway	Organic Research Center, UK	Agroforestry for poultry systems, UK
41	Lactating sows integrated with energy crops	Anne Grete Kongsted, Heidi M-L Andersen, Malene Jakobsen and John E. Hermansen	Aarhus University, Denmark	Free-range pigs integrated in energy crops, Denmark
42	Pigs and poplars	Valerio Bondesan	Veneto Agricoltura, Italy	Free-range pigs integrated with energy crops, Italy
43	Mulberry (Morus spp.) for livestock feeding	María Rosa Mosquera-Losada, Juan Luis Fernandez-Lorenzo, Antonio Riguerio-Rodriguez and Nuria Ferreiro-Dominguez	University of Santiago de Compostela, Spain	Agroforestry for pigs, Galicia, Spain
44	Fodder trees for micronutrient supply in grass-based dairy systems	Boki Luske, Andreas Altinalmanzis Kondylis and Suzanne Roelen	Louis Bolk Institute, The Netherlands	Fodder trees for cattle and goats, the Netherlands
45	Fodder trees on dairy farms	Sandra Novak	French National Institute of Agronomic Research INRA), France	Fodder trees for cattle, France
46	Combining organic livestock and bioenergy production	Jo Smith	Organic Research Centre, UK	Agroforestry with ruminants in UK

Table 5.7. References for the eight agroforestry innovation leaflets that contributed to Deliverable 5.15

Bestman M, Timmermans B (2017). Agroforestry Innovation leaflet 39: Commercial apple orchards in poultry free-range areas. 2 pp. http://www.agforward.eu/index.php/en/agroforestry-for-poultry-systems-in-thenetherlands.html
Bondesan V (2017). Agroforestry Innovation leaflet 42: Pigs and poplars. 2 pp. http://www.agforward.eu/index.php/en/free-range-pigs-with-energy-crops-italy.html
Kongsted AG, Andersen ML, Jakobsen M, Hermansen JE (2017). Agroforestry Innovation leaflet 41: Lactating sows integrated with energy crops. 2 pp. http://www.agforward.eu/index.php/en/free-range-pigs-integrated-with-energy-crops.html
Luske B, Altinalmazis Kondylis A, Roelen S (2017). Agroforestry Innovation leaflet 44: Fodder trees for micronutrient supply in grass-based dairy systems. 2 pp. http://www.agforward.eu/index.php/en/fodder-trees-for-cattle-and-goats-in-thenetherlands.html
Mosquera-Losada MR, Fernandez-Lorenzo JL, Rigueiro-Rodriguez A, Feirreiro-Dominguez N (2017). Agroforestry Innovation leaflet 43: Mulberry (*Morus* spp.) for livestock feeding. 2 pp. http://www.agforward.eu/index.php/en/agroforestry-with-pigs-in-galiciaspain.html
Novak S (2017). Agroforestry Innovation leaflet 45: Fodder trees on dairy arms. 2 pp. http://www.agforward.eu/index.php/en/agroforestry-with-ruminants-infrance.html
Smith J (2017). Agroforestry Innovation leaflet 46: Combining organic livestock and bioenergy production. 2 pp. http://www.agforward.eu/index.php/en/agroforestry-with-ruminants-uk.html
Westaway S (2017). Agroforestry Innovation leaflet 40: Silvopoultry: establishing a sward under the trees. 2 pp. http://www.agforward.eu/index.php/en/PoultrysystemUK.html

5.6 Dissemination of results

A report was produced (Milestone 25) summarizing the dissemination activities carried out in work-package 5 (Table 5.8).

Table 5.8. Milestone 25 provides a description of some of the dissemination activities

Hermansen JE, Novak S, Smith J, Bondesan V, Bestman M, Kongsted AG, Mosquera Losada MR, Ferreiro-Domingues N (2018). Agroforestry for livestock farmers: dissemination of results and recommendations. Milestone Report 25. 26 January 2018. 16 pp. http://www.agforward.eu/index.php/en/agroforestry-for-livestock-farmers-results-of-innovations.html

5.7 Co-ordination of the work in work-package 5

The work-package leader (John Hermansen) participated in Executive Board meetings and WP5 Skype meetings. He also led a session at the General Assembly in Portugal.

5.8 Use of resources in work-package 5

At the end of December 2017, 112.17 person months had been spent in work-package 5, equivalent to 122% of the original budgeted input. This was possible due to higher co-financing of some of the experimental activities than original planned that have added value to the project (Table 5.9).

Table 5.9. Person-month inputs to work-package 5 for each reporting period

	First period (Jan-Dec 2014)	Second period (Jan 2015 to June 2016)	Third period (July 2016 to Dec 2017)	Sub-total	Project budget
INRA	3.54	7.90	14.50	25.94	14
ORC	4.49	7.11	8.45	20.05	14
AU	1.50	3.64	14.12	19.26	17
LBI	1.94	6.86	7.18	15.98	13
VEN	1.57	3.29	4.13	8.99	9
USC	1.80	5.10	1.60	8.50	[a]7
ACTA (IDELE)	1.60	2.03	3.49	7.12	5
AFBI	0.00	2.77	0.65	3.42	8
ISA	0.25	1.07	1.09	2.41	3
EURAF	0.20	0.30	0.00	0.50	[a]2
Total	16.89	40.07	55.21	112.17	**92**

[a]: 1.5 person months was reallocated from EURAF to USC in the third reporting period.

5.9 Issues and actions

There are no major issues with this work-package and the work has been completed to plan.

6 Work package number 6

Work-package number	**6**
Work-package name	**Field- and farm-scale evaluation of innovations**
Leader	João HN Palma
Organisation	Instituto Superior de Agronomia, Universidade de Lisboa
Report period	1 July 2016 to 31 December 2017

Objectives and tasks within work package 6

João Palma led this work package which evaluated agroforestry innovations at a field- and farm-scale. The key outputs during the third reporting period were Deliverables 6.17 and 6.18 (Table 6.1; Table 6.2).

Table 6.1. Work-plan of activities, milestones (M), and deliverables (D) for work-package 6 for month 25 to month 48 (indicated in orange)

Month	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	56	47	48
WP6 Field and Farm Evaluation																								
T6.1 Collate climate database (MS26) Completed in first period																								
T6.2 Identify practices to model (MS27)																								
T6.3 Collate market-values (MS28)																								
T6.4 Collate non-market data (MS28)																								
T6.5 Improve models (MS29;MS30)																								
T6.6/7 Collect biophysical data (MS28)																								
T6.8 Model innovations (D6.16, D6.17 and D6.18)		D										D								D				
T6.9 Co-ordinate WP6																								

Table 6.2. Summary of the status of milestones and deliverables in work-package 5 for the first (Month 0-12), second (Month 13-30), and the third reporting periods (Month 31-48)

Description	Due date	Status
First reporting period		
MS26 Project database of climate data	June 2014	Completed and on internet
Second reporting period		
MS27 Systems and innovations to be modelled	Feb 2015	Completed and on internet
MS28 Database of system description	June 2015	Completed and on internet
MS29 Improvement of Yield-SAFE	Aug 2015	Completed and on internet
MS30 Improvement of Hi-sAFe	Aug 2015	Completed and on internet
D6.16 Initial modelled outputs	Feb 2016	Completed and on internet
Third reporting period		
D6.17 Modelled outputs at field- and farm-scale	Dec 2016	Completed October 2017
D6.18 Economic farm-scale modelled outputs	Aug 2017	Completed October 2017

6.1 Establish a participatory research and development network (completed)

The first activity (Task 6.1) of work-package 6 was to develop a pan-European database of current and future climate data for biophysical model use. In the first period we reported that the database was produced and made available on the intranet (Milestone 26). During the second reporting period we made the climate data tool available on the AGFORWARD website. In mid-2015 the tool was updated with new datasets from IPCC Assessment Report 5 in order to consider new carbon concentrations scenarios (RCP 4.5 and RCP 8.5, as well as historical and evaluation reference datasets for climate change assessments). The performance of the tool in terms of the speed of retrieval was also improved. During the third period, a description of the tool was published in a peer-review scientific publication and another publication assessing the quality of the datasets for calibration/modelling assessments has been submitted (Table 6.3).

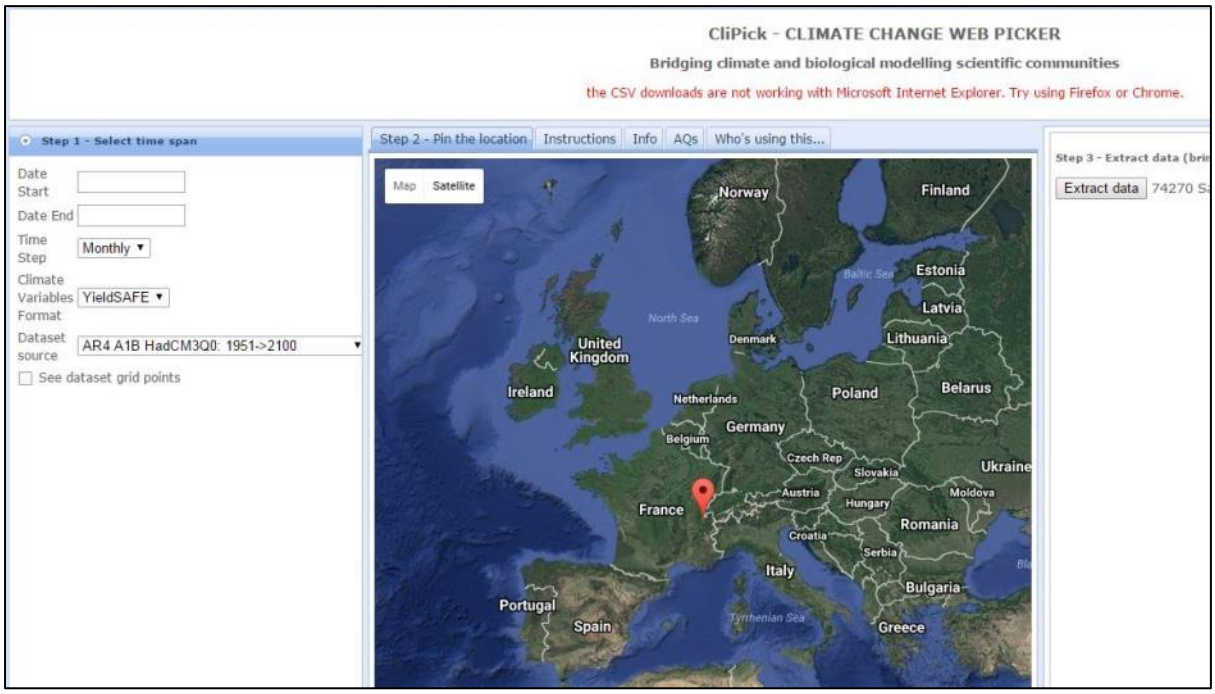


Figure 6.1. The CliPick database is now available on the AGFORWARD website. It allows the extraction of climate data for any location in Europe with a resolution of 9 km.

Table 6.3. The climate database tool publications developed within the AGFORWARD project

Palma JHN (2015). CliPick: project database of pan-European climate data for default model use. Milestone Report 26 (6.1) for EU FP7 Research Project: AGFORWARD 613520. 10 October 2015. 22 pp. http://www.agforward.eu/index.php/en/clipick-project-database-of-pan-european-simulated-climate-data-for-default-model-use.html
Palma JHN (2017). CliPick – climate change web picker. A tool bridging daily climate needs in process based modelling in forestry and agriculture. Forest Systems 26:1–4. doi: 10.5424/fs/2017261-10251
Palma JHN, Cardoso RM, Soares PMM, Oliveira TS, Tomé M. Using high-resolution simulated climate projections on forest process based modelling. Submitted to Agricultural and Forest Meteorology

6.2 Identify innovation practices to model (completed)

The second task (Task 6.2) was to identify the agroforestry systems and practices to model. A report describing the systems to be modelled (Milestone 27) was completed in June 2015, and following review was placed on the AGFORWARD website on 30 September 2015 (Table 6.4).

Table 6.4. Reference for the report describing the agroforestry systems and innovations to model (Milestone 27)

Palma J, Graves A, Crous-Duran J, Paulo JA, Upson M, Dupraz C, Gosme M, Lecomte I, Ben Touhami H, Mézière D, Burgess PJ (2015). Identification of agroforestry systems and practices to model. Milestone Report 27. 25 September 2015. 38 pp. http://www.agforward.eu/index.php/en/identification-of-agroforestry-systems-and-practices-to-model.html

6.3 Database for physical parameters for the agroforestry systems (completed)

The third activity (Task 6.3) was to develop a database for the consistent description of the agroforestry systems (Milestone 28). During 2015, staff from ISA and Cranfield University collated a report, produced in October 2015, which included the characteristics of 27 systems in a common "factsheet" format which was made available on the AGFORWARD website (Table 6.5).

Table 6.5. Reference for a database for physical parameters for the agroforestry systems (Milestone 28)

Palma JHN, Crous-Duran J, Graves AR, Burgess PJ (2015). Database of agroforestry system descriptions. Milestone Report 28. 20 October 2015. 81 pp. http://www.agforward.eu/index.php/en/database-of-agroforestry-system-descriptions.html

6.4 Database for non-market ecosystem values (completed)

The fourth task (Task 6.4) was to determine the impact of the systems on ecosystem services, and many of these do not have a readily-available market value. This was undertaken to achieve Objective 6.4 which is to evaluate the "supporting" and "regulating" services of agroforestry systems, and Objective 6.5 which was to evaluate the cultural service provided by agroforestry systems. Dr Silvestre Garcia de Jalon was recruited to the post of Research Fellow in Agroforestry Modelling at Cranfield in October 2015. The perceptions of the positive and negative aspects of agroforestry from stakeholders were reported by Garcia de Jalón et al. (2017a) (Table 6.6). The Yield-SAFE and Farm-SAFE models were also developed to include non-market values and a paper was published on the modelling and valuation of regulating ecosystem services in the Agroforestry Systems journal (Garcia de Jalón et al. 2017b) (Table 6.6). Dr Michail Giannitsopoulos took over the role of Research Fellow in Agroforestry at Cranfield University in May 2017.

Table 6.6. References regarding work on estimating non-market values of agroforestry

García de Jalón S, Burgess PJ, Graves AR, et al (2017a). How is agroforestry perceived in Europe? An assessment of positive and negative aspects by stakeholders. Agroforestry Systems. doi: 10.1007/s10457-017-0116-3
García de Jalón S, Graves AR, Palma JHN, Williams A, Upson M, Burgess PJ (2017b). Modelling and valuing the environmental impacts of arable, forestry and agroforestry systems: a case study. Agroforestry Systems on-line : doi: 10.1007/s10457-017-0128-z

6.5 Improving the Yield-SAFE and Hi-sAFe models (completed)

The fifth task (Task 6.5) was to improve two existing biophysical models (Yield-SAFE and Hi-sAFe) which describe the interactions between trees and crops, in the context of different climatic, soil, and management conditions. Improvements to the Yield-SAFE and Hi-sAFe models were presented during the Second Reporting Period in Milestone 29 and Milestone 30 respectively (Table 6.7).

Table 6.7. Improvements to Yield-SAFE are reported in Milestone 29 and a peer review scientific paper, and improvements to Hi-sAFe are reported in Milestone 30

Improvements to Yield-SAFE

Palma JHN, Graves AR, Crous-Duran J, Upson, M, Paulo JA, Oliveira TS, Garcia de Jalón S, Burgess PJ (2016). Yield-SAFE Model Improvements. Milestone Report 29. 5 July 2016. 30 pp. http://www.agforward.eu/index.php/en/yield-safe-model-improvements.html

Palma JHN, Crous-Duran J, Graves AR, Garcia de Jalon G, Upson M, Oliveira TS, Paulo JA, Ferreiro-Domínguez N, Moreno G, Burgess PJ (2017). Integrating belowground carbon dynamics into Yield-SAFE, a parameter sparse agroforestry model. Agroforestry Systems online: https://doi.org/10.1007/s10457-017-0123-4

Improvements to Hi-sAFe

Lecomte I, Dupraz C, Gosme M, Blitz C (2016). Improvement of the Hi-sAFe model. Milestone Report 30. 21 July 2016. 7 pp. http://www.agforward.eu/index.php/en/improvement-of-the-hi-safe-model.html

6.5.1 Yield-SAFE

Yield-SAFE is a daily-time-step model which can describe the yields of crops and trees in agricultural, agroforestry, and forestry systems. The improvements are described in Milestone 29 which describes model improvements made during AGFORWARD modelling workshops held in 1) Monchique in Portugal in May 2015; 2) Kriopigi in Greece in June 2015; 3) Lisbon in Portugal in November 2015 and 4) Lisbon in February 2016. These developments can be categorized into: improvements to model usability, microclimate assessment, and understorey, livestock, and tree product assessment. Results of assessments were presented during the Third European Agroforestry Conference in Montpellier in 2016 (Table 6.8). The integration of a soil carbon content model (RothC) into the Yield-SAFE model resulted in a scientific publication (Table 6.8). Another scientific publication describing this new version of Yield-SAFE (termed EcoYield-SAFE) is in preparation.

During the AGFORWARD project, a prototype of Yield-SAFE was developed under a web interface after its recoding into Python programming language. This approach to a more user friendly version of the model was also described in Milestone 29 (Table 6.7) and it is anticipated that further improvements will be made. Current progress can be seen at www.isa.ulisboa.pt/proj/ecoyieldsafe. Furthermore, the coding of the model in Python (Operation System independent), and the experience gained with the CliPick interface (Table 6.3), using the High Performance Computing (HPC) platform under the European Grid Infrastructure through the Portuguese processors farm at http://grid.lip.pt/, allows the use of the model under large computational efforts, e.g. sensitivity analysis or continental scale simulations.

Table 6.8. Dissemination and publication of the Yield-SAFE improvements

Crous Duran J, Moreno G, Oliveira TS, Paulo JA, Palma JHN (2016). Modelling holm oak acorn production in South-Western Iberia. III EURAF Conference, Montpellier 23-25 May 2016.
Palma JHN, Graves AR, Crous-Duran J, Paulo JA, Oliveira TS, Garcia de Jalon S, Kay S, Burgess PJ (2016). Keeping a parameter-sparse concept in agroforestry modeling while integrating new processes and dynamics: New developments in Yield-SAFE, III EURAF Conference, Montpellier 23-25 May 2016.
Palma JHN, Crous-Duran J, Graves AR, Garcia de Jalon G, Upson M, Oliveira TS, Paulo JA, Ferreiro Domínguez N, Moreno G, Burgess PJ (2017). Integrating belowground carbon dynamics into Yield SAFE, a parameter sparse agroforestry model, Agroforestry Systems, first online 16 September DOI10.1007/s10457-017-0123-4
Crous-Duran J, Graves AR, Paulo JA, Mirck J, Oliveira TS, Kay S, García de Jalón S, Palma JHN (2018). Modelling tree density effects on provisioning ecosystem services. Agroforestry Systems, accepted subject to corrections
Oliveira TS, Crous-Duran J, Graves AR, García de Jalón S, Moreno G, Paulo JA, Palma JHN (2018). Using a process based model to assess trade-offs between different holm oak densities and livestock carrying capacity, Agroforestry Systems, accepted subject to corrections

6.5.2 Farm-SAFE

The original Farm-SAFE model was developed in 2005 as part of the European Union sponsored SAFE project (2001-2005). It was developed to compare arable, forestry and silvoarable systems across four areas of a farm in order to determine the feasibility of silvoarable systems on European farms. During the AGFORWARD project we have created an updated version (called Farm-SAFE_Jun2016) (Table 6.9) which links Farm-SAFE to an on-line version of the Yield-SAFE biophysical model and the CliPick climate data set (Table 6.3).

Developments within the modified Farm-SAFE model include the addition of new farm operations (e.g. short rotation coppice and fruit harvest) and an enhanced database of new systems (e.g. poplar short rotation coppice in Germany and cherry for fruit production in grassland in Switzerland, and organic silvoarable agroforestry with willow short rotation coppice in the UK). The Farm-SAFE model is available on the AGFORWARD web-site where it can be downloaded (Table 6.9).

Deliverable 6.18 (Table 6.2) presented in August 2017 and available at the AGFORWARD website, briefly describes the Farm-SAFE model, shows the improvements developed within the AGFORWARD project and presents results for various agroforestry, arable and forestry systems in Europe. This is followed by a peer-reviewed paper that uses the Farm-SAFE model to predict the environmental impact of agroforestry relative agriculture and forestry (Table 6.9). Deliverable 6.18 also introduces the Forage-SAFE model which has been produced within the framework of work-package 6 and resulted in a publication. The report describes in detail how the model works as well as its applicability. It assesses the economic impact of managerial decisions on the profitability of wood pastures (e.g. tree cover density and carrying capacity).

The new version of Farm-SAFE was presented by Dr. Anil Graves and Dr Michail Giannitsopoulos in two modelling workshops at the Organic Research Centre (ORC) in Newbury in the UK on 18 July 2017 and 15 November 2017.

Table 6.9. References regarding work on Farm-SAFE and Forage-SAFE

García de Jalón S, Graves AR, Moreno G, Palma JHN, Crous-Duran J, Kay S, Burgess PJ (2018). Forage-SAFE: a model for assessing the impact of tree cover on wood pasture profitability. Ecological Modelling 372:24–32. doi: 10.1016/j.ecolmodel.2018.01.017

Garcia de Jalon S, Graves AR , Palma JHN, Williams A, Upson M, Burgess PJ (2017). Modelling and valuing the environmental impacts of arable, forestry and agroforestry systems: a case study, Agroforestry Systems (https://doi.org/10.1007/s10457-017-0128-z)

Graves A, Palma J, Garcia de Jalon S, Crous-Duran J, Liagre F, Burgess PJ (2016). Web-application of the Yield-SAFE and Farm-SAFE Model: Farm-SAFE_Jun2016. Microsoft Excel worksheet model developed as part of the AGFORWARD project. Deliverable 9.27 40 MB. June 2016. http://www.agforward.eu/index.php/en/web-application-of-yield-safe-and-farm-safe-models.html

6.5.3 Hi-sAFe

Hi-sAFe is a mechanistic computer-based model, originally developed in the SAFE project (2001-2005), which can simulate tree and crop productivity in agroforestry systems in three dimensions. Initial development of Hi-sAFe during AGFORWARD project was delayed because INRA initially employed a post-doctoral fellow who did not stay in position. However INRA has subsequently employed Isabel Lecomte, who was also involved with the original development of the model. INRA has corrected various bugs, has made significant improvements and the model is now stable and fully replicable (Table 6.10):

- **Updating of the STICS soil-crop module** - The former version of Hi-sAFe included an old version of STICS (V5, 2004). V5 had to be translated in C before being incorporated in Hi-sAFe. The new version is not only updated, but it is also much easier to manage and debug, it uses much less memory and is faster and it will be possible to incorporate new versions of STICS. Hence a total of 21 crops can be modelled in Hi-sAFe: alfalfa, banana, barley, durum-wheat, fescue, flax, grass, lettuce, maize, mustard, pea, potato, oilseed rape, ryegrass, sorghum, soybean, sugar beet, sugar cane, sunflower, tomato, wheat. Strawberries, vines and apples need some more work before use.
- **Speeding the model and improving the code** - Numerous improvements have been included to speed the model, simplify its flow, and improve the ease of use. Hi-sAFe is now available on all platforms, including Windows, MacOs and Linux. Hi-sAFe can now be launched on high performance computers (HPC) thanks to the Linux version. It is now easy to perform sensitivity analyses or complex virtual experiments requiring numerous runs of the model. The HPC at the University of Montpellier (https://hpc-lr.umontpellier.fr/) with a computation server with 80 cores and 1 To of RAM can be used.
- **Improvements of specific modules** - The idea to replace the voxels (20 cm or more thick) in the soil by the STICS minicouches (1 cm thick) was not successful. We gave up this idea as the progress achieved in model speed did not make it relevant to modify this point. The crop modules of STIVS V8 were calibrated to secure that the Hi-sAFe water extraction parameters for the crops are calibrated to reproduce exactly the water extraction by the crops as in the stand-

alone STICS crop model, on a Hi-sAFe scene with no trees (model consistency). Two new modules were added: 1) A snow module. It is now possible to use the model in snowy environments, which enlarges largely the geographical domain of validity of the model; 2) A pollard module. It is now possible to simulate pollards (regularly topped trees) and the impact of pollarding on both tree growth and crop productivity. This module needs some more progress to describe accurately the tree growth after pollarding and the current version is only provisional.

- **Improvements of the use of the model** - A hunt for concealed parameters was performed in the code, and all fixed values are now included in the parameters files. The batch mode is now more powerful and easy to use. Exports are also much more flexible and exports at different time frequencies for different variables is now possible; exports of annual totals or averages for all variables is now available. There is also an improved "stop and go" facility i.e. it is now possible in the batch mode to stop a simulation at a given date, change controls, and start the simulation again. This allows the exploration of different scenarios that differ only after a given date, without having to run again the simulations from the start. A large library of R routines is now available to run the model and explore the output data.
- **A new, updated, on line documentation of the model** – Hi-sAFe has now a dedicated internet site: https://www1.montpellier.inra.fr/wp-inra/hi-safe/ with installation guidebook, a user guidebook, a technical description of the model, a compilation guidebook for STICS, a guidebook for the use of the High speed calculator (MUSE HPC@LR).

During AGFORWARD, a successful Hi-sAFe seminar (23-25 May 2016) was organised alongside the European Agroforestry Conference in Montpellier, with 14 participants from countries including the USA and China. A new seminar is scheduled at the next European Conference in Nijmegen in May 2018.

Hi-sAFe is probably the most detailed 3-D process-based agroforestry model available for temperate agroforestry systems, and it can simulate a large range of agroforestry systems: alley-cropping, isolated trees, tree hedges, scattered trees, forest edges. This was possible due to the support of the European Union (SAFE and AGFORWARD projects) and the French Fondation de France. The model is now available for use by partners on a free base. An on-demand service for simulations with the Hi-sAFe model is now available for researchers.

Table 6.10. Publications related to the improvements to Hi-sAFe within the AGFORWARD project

Dupraz C, Lecomte I (2017) Evolution et valorisation du modèle de simulation agroforestier Hi-sAFe. INRA, UMR System, University of Montpellier, p 236
Dupraz C, Blitz C, Lecomte I, Molto Q, Gosme M (2018). Influence of latitude on the light availability for intercrops in an agroforestry alley-cropping system. Agroforestry Systems accepted for publication.

6.6 Collecting the biophysical data for model validation and calibration (completed)

In Task 6.6, staff from ISA, INRA, and CRAN worked with other project partners to collect the biophysical information that was needed to validate and calibrate the use of the Yield-SAFE and Hi-SAFE models to evaluate the efficacy and cost-effectiveness of the innovations identified by work-packages 2, 3, 4 and 5. Some of the initial modelling data was presented in Milestone 28 (Table 6.5). During the third reporting period, the collection of biophysical data continued, including a workshop in Newbury in the UK (on the 18 July and 15 November 2017) to collect data from work-package 5 partners for the use and validation of this data.

6.7 Collecting management/economic data for validation and calibration (completed)

Task 6.7 was similar to Task 6.6 except that the focus is on management and economic parameters. Some of the initial data were reported in Milestone 28 (Table 6.5). However data collection was continued during the third reporting period to support Task 6.8.

6.8 Modelling of agroforestry management options (completed)

Objective 6.7 was to compare the long-term financial impact of the proposed agroforestry systems relative to a base-line, which are often monoculture systems. Objective 6.8 focused on the long-term ecosystem services impact, Objective 6.9 focused on risk and uncertainty, and Objective 6.10 is to use such evaluations to identify how and when agroforestry can offer benefits. Each of these objectives is addressed by Task 6.8 which comprises the modelling of a range of stakeholder-defined management options.

Some initial modelled outputs at a field-scale are described in Deliverable 6.16 by Gosme et al. 2016 (Table 6.11). As reported in the Second Periodic Report, Deliverable 6.16 included abstracts from two papers published in peer-reviewed journals (Palma et al. 2014 and Sereke et al. 2015), an abstract from a paper about to be submitted, and copies of four papers presented at the Third European Agroforestry Conference (Crous Duran et al. 2016; Dupraz et al. 2016; Palma et al. 2016, and Garcia de Jalon et al. 2016) (Table 6.12).

Table 6.11. Reference for Deliverable 6.16

Gosme M, Blitz-Frayret C, Burgess PJ, Crous-Duran J, Dupraz C, Dux D, Garcia de Jalon S, Graves AR, Herzog F, Lecomte I, Moreno G, Oliveira T, Palma J, Paulo JA, Sereke F, Tomé M (2016). Initial modelled outputs at field scale to support best management practices for resource efficiency of agroforestry systems. Deliverable 6.16. 23 August 2016. 29 pp. http://www.agforward.eu/index.php/en/initial-modelled-outputs-at-field-scale.html

Table 6.12. The six manuscripts included in Deliverable 6.16 included a provisional abstract, and four papers presented at the Third European Agroforestry Conference

Provisional abstract

Dupraz C, Blitz-Frayret C, Lecomte I, Molto Q, Gosme M. Influence of latitude on the light availability for intercrops in an agroforestry alley-cropping system.

Abstract of published papers

Palma JHN, Paulo JA, Tomé M (2014). Carbon sequestration of modern Quercus suber L. silvoarable agroforestry systems in Portugal: a YieldSAFE-based estimation. Agroforestry Systems 88: 791–801. doi: 10.1007/s10457-014-9725-2.

Sereke F, Graves AR, Dux D, Palma JHN, Herzog F (2015). Innovative agroecosystem goods and services: key profitability drivers in Swiss agroforestry. Agronomy for Sustainable Development 35: 759–770. doi: 10.1007/s13593-014-0261-2.

Copy of published conference papers

Crous Duran J, Moreno G, Oliveira TS, Paulo JA, Palma JHN (2016). Modelling holm oak acorn production in South-Western Iberia. In: 3rd European Agroforestry Conference Book of Abstracts, pp. 344-346 (Eds. Gosme, M. et al.). Montpellier, France, 23-25 May 2016.

Dupraz C, Lecomte I, Molto Q, Blitz-Frayret C, Gosme M (2016). Agroforestry at all latitudes? Unexpected results about best designs to allow more light to the crops at various latitudes. In: 3rd European Agroforestry Conference Book of Abstracts, pp. 359-362 (Eds. Gosme, M. et al.). Montpellier, France, 23-25 May 2016

Palma JHN, Oliveira TS, Crous-Duran J, Paulo JA (2016). Using Yield-SAFE model to assess hypothetical eucalyptus silvopastoral systems in Portugal. In: 3rd European Agroforestry Conference Book of Abstracts, pp. 348-351 (Eds. Gosme, M. et al.). Montpellier, France, 23-25 May 2016.

Garcia de Jalon S, Graves A, Kaske KJ, Palma J, Crous-Duran J, Burgess PJ (2016). Assessing the environmental externalities of arable, forestry, and silvoarable systems: new developments in Farm-SAFE. In: 3rd European Agroforestry Conference Book of Abstracts, pp. 363-366 (Eds. Gosme, M. et al.). Montpellier, France, 23-25 May 2016.

Deliverable 6.17 describes the modelled outputs of the assessment of agroforestry at field- and farm-scale (Table 6.13). A description of the deliverable is provided in Box 6.1.

Table 6.13. Reference for Deliverable 6.17

Palma JHN, Oliveira T, Crous-Duran J, Graves AR, Garcia de Jalon S, Upson M, Giannitsopoulos M, Burgess PJ, Paulo JA, Tomé M, Ferreiro-Domínguéz N, Mosquera-Losada MR, Gonzalez-Hernández P, Kay S, Mirk J, Kanzler M, Smith J, Moreno G, Pantera A, Mantovani D, Rosati A, Luske B, Hermansen J (2017). Modelled agroforestry outputs at field and farm scale to support biophysical and environmental assessments. Deliverable 6.17. 18 October 2017. 162 pp. http://www.agforward.eu/index.php/en/modelled-agroforestry-outputs-at-field-and-farm-scale-to-support-biophysical-and-environmental-assessments.html

Box 6.1. Brief description of Deliverable 6.17: Modelled outputs at field and farm-scale

Deliverable 6.17 in the AGFORWARD project brings together examples of modelled outputs at field and farm scale to support the biophysical, social, and environmental assessment of the innovations selected from work-packages 2 to 5.

After an introduction, the report provides a summary of the main questions, which could be addressed through modelling, that arose from four participative research and development networks in the AGFORWARD project. The networks focused on agroforestry systems of high nature and cultural value, agroforestry with high value tree systems, agroforestry for arable systems, or agroforestry for livestock systems. The report explains how modelling workshops were held in Portugal, Greece and UK to enable data collection and improve the understanding of the management of the systems to be modelled.

The third section of the report describes the additional developments made to the Yield-SAFE model. An important development has been the creation of the CliPick tool to provide daily climate data (needed to run the Yield-SAFE model) for any location in Europe and published by Palma (2017). The Yield-SAFE model has also been developed to include a livestock component based on the utilisable metabolisable energy of the animal feed produced in agricultural, agroforestry or plantation systems (Section 3.2.1). The model also includes an assessment of the possible requirement of livestock for shade (Section 3.2.2) and the production of fruit by trees (Section 3.2.3). The Yield-SAFE model has also been modified to include the effect of trees in modifying the micro-climate and thereby the seasonal production of pasture (Section 3.3). Two publication considering these new improvements to the Yield-SAFE model were submitted and accepted to a peer-reviewed journal (Crous-Duran et al 2018 and Oliveira et al 2018). Also substantial work has also been undertaken to include the RothC model (describing soil carbon dynamics) within the model (Section 3.4) and the subsequent scientific publication (Palma et al 2017b). A full list of the additional variables and outputs included in the updated version of the model is described in Annex VII.

The fourth section briefly describes the steps in calibrating the model to include a new tree or crop species (Section 4). Although the section is short, it describes the approach used to establish a range of calibrations described in the Annexes. These include the default Yield-SAFE soil (Annex I), tree (Annex II), crop (Annex III), livestock (Annex IV) and Roth-C (Annex V) parameters.

Annex VIII describes updated calibrations for three types of pasture and five crop species (see Table below).

Crop	Country
Natural Mediterranean pasture/grass	Portugal
Pasture (80% Dactylis glomerata)	Spain
Wheat	UK
Barley	UK
Barley for RothC calibration	UK
Grassland	Switzerland
Winter rye	Switzerland
Sugar beet	Italy
Asparagus	Italy

Annex VII describes new calibrations for ten additional tree species (see Table below).

Common name	Latin name
Blue gum	*Eucalyptus globulus*
Holm oak	*Quercus rotundifolia*
Black walnut	*Juglans major*
Spruce	*Picea abies*
Cherry tree (for fruit production)	*Prunus avium*
Cherry tree (for timber production)	*Prunus avium*
Apple tree	*Malus domestica*
Poplar in short rotation coppice	*Populus species*
Willow in short rotation coppice	*Salix species*
Radiata pine	*Pinus radiata*
Chestnut	*Castanea sativa*

The fifth section of the report (Section 5) describes the use of the updated Yield-SAFE model to describe the provisioning ecosystem services (in terms of food, materials and energy) of agricultural, agroforestry and forestry systems in four situations: montado in Portugal, cherry tree pastures in Switzerland, silvoarable systems in the UK, and short rotation coppice systems in Germany. The results generally show that an increase in tree density led to an increase in the “extractable” energy in the Swiss, British and German systems; in the Portuguese system it was assumed that the bioenergy stored in the trees would not be harvested.

The final section (Section 6) provides a synthesis of the work. It argues that agroforestry system assessment is now supported by an enhanced suite of modelling tools. This includes the improvement of Yield-SAFE and bespoke models such as “Forage-SAFE” and “EcoYield-SAFE”. The process has also enabled a new cohort of European researchers to develop, use, and publish the results of using the models to inform on-farm decisions.

Crous-Duran J, Graves A, Paulo JA et al. (2018) Modelling tree density effects on provisioning ecosystem services Submitted to Agroforestry Systems.

Oliveira T, Crous-Duran J, Graves A et al. (2018) Using a process based model to assess trade-offs between different holm oak densities and livestock carrying capacity. Submitted to Agroforestry Systems.

Palma JHN, Crous-Duran J, Graves AR, Garcia de Jalon G, Upson M, Oliveira TS, Paulo JA, Ferreiro Domínguez N, Moreno G, Burgess PJ (2017). Integrating belowground carbon dynamics into Yield SAFE, a parameter sparse agroforestry model, Agroforestry Systems, first online 16 September DOI: 10.1007/s10457-017-0123-4

Deliverable 6.18 (García de Jalón et al. 2017) of work-package 6 assesses the economics of agroforestry systems at field- and farm-scales and compares them with alternative land uses such as arable cropping, pasture and forestry (Table 6.14).

Table 6.14. Reference for Deliverable 6.18

García de Jalón S, Graves AR, Palma JHN, Crous-Duran J, Giannitsopoulos M, Burgess PJ (2017). Modelling the economics of agroforestry at field- and farm-scale. Deliverable 6.18. 13 October 2017. 85 pp. http://www.agforward.eu/index.php/en/modelling-the-economics-of-agroforestry-at-field-and-farm-scale.html

Section 3 of Deliverable 6.18 describes the Farm-SAFE Microsoft Excel-based spreadsheet model and the results generated in terms of the financial benefits and costs of alternative arable, silvoarable, and tree monoculture systems are described for i) poplar and arable systems in Bedfordshire, UK, ii) cherry trees in Schwarzbubenland, Switzerland, iii) a short rotation coppice poplar system in Neu Sacro, Germany, iv) an apple tree system in Cambridgeshire, UK, v) a holm oak system in Extremadura, Spain, vi) walnut trees at Restinclières in France, and vii) willow short rotation coppice in Suffolk, UK.

Section 4 includes a copy of a paper entitled “Modelling and valuing the environmental impacts of arable, forestry and agroforestry systems: a case study” (Table 6.15). The paper compares the economic benefits and costs of an arable, silvoarable and forestry system in the UK, including carbon sequestration, soil erosion control, and regulation of nitrogen and phosphorus losses. The results showed that the arable system was the most financially profitable land use but produced the most negative externalities. The inclusion of the economic value of greenhouse gas emissions, carbon sequestration and loss of soil, nitrogen and phosphorus showed that silvoarable systems provided a similar societal benefit as the arable system, and a greater benefit that the forestry system.

Section 5 of the report describes the use of the Forage-SAFE model that simulates the daily balance between the produced and demanded food for livestock in a wood pasture system to estimate annual farm net margins (Table 6.15). Section 6 describes the results of a methodology developed to up-scale farm-level results to the regional level, using a case study focused on soil erosion in Britany in France. The results show that increasing tree cover in treeless areas on pasture, but particularly on arable land, could provide significant economic benefits when externalities are evaluated at a regional level.

Table 6.15. References for two of the papers presented within Deliverable 6.18

García de Jalón S, Graves A, Palma JHN, Williams A, Upson MA, Burgess PJ (2017). Modelling and valuing the environmental impacts of arable, forestry and agroforestry systems: a case study. Agroforestry Systems DOI: 10.1007/s10457-017-0128-z
García de Jalón S, Graves A, Moreno G, Palma JHN, Crous-Duran J, Oliveira T, Burgess PJ (2017). Forage-SAFE: a tool to assess the management and economics of wood pasture systems. Paper presented to the 15th International Conference on Environmental Science and Technology in Rhodes, Greece in 31st August - 2nd September 2017.

6.9 Co-ordination of the work-package

The last task (Task 6.9) of this work-package was to co-ordinate and synthesise the work. This was undertaken by João Palma (ISA) who also hosted the General Assembly meeting in Lisbon (May 2017). In order to make progress as work-package 6 leader, Joao Palma organised the workshops with work-package 5 partners in Newbury in the UK (on the 18 July and on 15 November 2017). He also participated in the work-package 7 workshop in Arosa in Switzerland (4-8 September 2017) and the work-package 9 workshop in Anduze in France (28 February to 4 March 2017).

6.10 Use of resources in work-package 6

At the end of the project, 182.98 person months were used, equivalent to 101% of the original budget (Table 6.16). UCPH, ACTA and ICRAF reported no person months in work-package 6.

Table 6.16. Person-month inputs to work-package 6 for the first (Jan – Dec 2014), second (Jan 2015-June 2016), and third reporting periods (July 2016-Dec 2017)

Organisation	**First period (Jan-Dec 2014)**	**Second period (Jan 2015 to Jun 2015)**	**Third period (Jul 2016-Dec 2017)**	**Sub-total**	**Project budget**
ISA	11.64	23.31	27.32	62.27	53.5
CRAN	2.13	16.54	29.68	48.35	44.0
INRA	0.00	16.16	18.58	34.74	41.0
AGROOF	0.20	1.50	9.89	11.59	1.7
BTU	1.78	0.50	3.91	6.19	6.0
UEX	0.10	1.30	3.00	4.40	6.0
AU	0.00	0.00	4.00	4.00	4.0
TEI	0.56	0.53	1.57	2.66	3.0
ORC	0.11	0.90	1.21	2.22	3.0
USC	0.10	1.90	0.00	2.00	2.0
LBI	0.00	0.58	0.65	1.23	1.0
CREA	0.13	0.25	0.62	1.00	1.0
CNR	0.20	0.37	0.43	1.00	1.0
AFBI	0.00	0.83	0.04	0.87	2.0
EFI	0.37	0.04	0.01	0.42	3.0
FDEA	0.04	0.00	0.00	0.04	1.0
ACTA	0.00	0.00	0.00	0.00	3.0
UPCH	0.00	0.00	0.00	0.00	2.0
ICRAF	0.00	0.00	0.00	0.00	2.0
Total	17.36	64.71	100.91	**182.98**	180.2

6.11 Issues and actions

Work-package 6 has been successfully completed.

7 Work package number 7

Work-package number	**7**
Work-package name	**Landscape-scale evaluation of innovative agroforestry**
Leader	Tobias Plieninger, with support of Nora Fagerholm
Organisation	University of Copenhagen
Report period	1 July 2016 to 31 December 2017

Objectives and tasks within work package 7

The University of Copenhagen (UCPH) led this work package to evaluate agroforestry at a landscape-scale. The key objective during the last 18 months has been to analyse ecosystem services of agroforestry systems and the trade-offs and synergies based on previously developed protocols on the chosen study areas (Table 7.1; Table 7.2).

Table 7.1. Work-plan of activities, milestones (M), and deliverables (D) for work-package 7 for month 25 to month 48 (indicated in orange)

Month	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
WP7 Landscape-scale evaluation																								
T7.1 Synthesise existing knowledge; create protocols (MS31; D7.19)																								
T7.2 Select and characterise systems/landscapes (MS32; MS33)																								
T7.3 Assess biodiversity and ecosystem systems under scenarios (MS34; D7.20)														D										
T7.4 Economic analysis (MS35)						M																		
T7.5 Identify synergies (D7.21)																								D
T7.6 Upscale and map results (D7.22)																								D
T7.7 Co-ordinate WP7																								

Table 7.2. Summary of the status of milestones and deliverables in work-package 7 for the first (Month 0-12), second (Month 13-30) and third (Month 31-48) reporting periods

Description	**Due date**	**Status**
First reporting period		
MS31 Standardised protocol for biodiversity, ecosystem services and farm profitability	Dec 2014	Completed and on intranet
MS32 Selection of key agroforestry systems and 12 sample landscapes for landscape evaluation	Dec 2014	Completed and on intranet
Second reporting period		
D7.19 Synthesis of existing European agroforestry	Dec 2015	Completed and on web
MS33 Spatial characterization of sample landscapes	Dec 2015	Completed and on web
MS34 Definition of scenario framework	Dec 2015	Completed and on intranet
MS35 Database for cost benefit analysis	Jun 2016	Completed and on intranet
Third reporting period		
D7.20 Report on ecosystems and profitability	Feb 2017	Updated Feb 2018
D7.21 Report on profitability	Dec 2017	Completed December 2017
D7.22 Scenario maps	Dec 2017	Completed Feb 2018

7.1 Biodiversity, ecosystem services and profitability of agroforestry (completed)

Objective 7.1 was to systematise existing knowledge of the outcomes of European agroforestry systems in terms of biodiversity, ecosystem services and farm profitability. A standardised protocol for describing biodiversity, ecosystem services, and profitability (Milestone 31) was completed in December 2014 and was reported in the First Periodic Report. A synthesis report (Deliverable 7.19) of existing knowledge on European agroforestry systems was achieved through three papers which were published as peer-reviewed papers (Table 7.3). The papers have also been made publicly available through the AGFORWARD website.

Table 7.3. References for the three peer-reviewed papers and for Deliverable 7.19

Fagerholm N, Torralba M, Burgess PJ, Plieninger T (2015). A systematic map of ecosystem services assessments around European agroforestry. Ecological Indicators 62: 47-65 http://dx.doi.org/10.1016/j.ecolind.2015.11.016
Torralba M, Fagerholm N, Burgess PJ, Moreno G, Plieninger T (2016). Do European agroforestry systems enhance biodiversity and ecosystem services? A meta-analysis. Agriculture, Ecosystems and Environment 230: 150-161. http://dx.doi.org/10.1016/j.agee.2016.06.002
Plieninger T, Hartel T, Martín-López B, Beaufoy G, Bergmeier E, Kirby K, Montero MJ, Moreno G, Oteros-Rozas E, Van Uytvanck J (2015). Wood-pastures of Europe: Geographic coverage, social-ecological values, conservation management, and policy implications. Biological Conservation 190: 70-79. http://dx.doi.org/10.1016/j.biocon.2015.05.014
Plieninger T, Fagerholm N, Torralba M, Moreno G, Hartel T, Burgess PJ (2016). Synthesis of Existing European Agroforestry Performance. Deliverable 7.19 for EU FP7 Research Project: AGFORWARD 613520. July 2016. 87 pp. http://www.agforward.eu/index.php/en/synthesis-of-european-agroforestry-performance-in-terms-of-biodiversity-ecosystem-services-and-profitability.html

7.2 Selection of sample landscapes (completed)

Objective 7.2 was to select 12 sample landscapes in Mediterranean, Continental, Atlantic and Northern Europe for a landscape-scale analysis of agroforestry systems. As reported in the First Periodic Report, 12 sample landscapes were identified and were reported in Milestone 32. During 2015, it became clear that ACTA could not secure a landscape site to investigate “agroforestry systems for arable lands” within the Atlantic region. Hence after discussion, it was agreed to re-allocate some of the remaining work-package 7 funds for ACTA to Cranfield University who identified a sample landscape in “the Brecks” of Eastern England. Some of the ACTA funds and person-months were also allocated (through the Second Amendment) to TEI in Greece, where landscape test sites had been identified (Table 7.4).

Table 7.4. Description of the sample sites identified for the landscape analysis and the link partner. A replacement Atlantic site was identified by Cranfield in Eastern England.

Agroforestry system	Agro-ecological zone			
	Mediterranean	**Continental**	**Atlantic**	**Others**
Agroforestry systems of high nature and cultural value (WP2)	Cork Oak Montado, Portugal (ISA)	Wood pasture Romania (UBB)	Bocage France (INRA)	Fennoscandian wood pastures (UCPH)
Agroforestry systems with high value tree (WP3)	Olive tree system Greece (TEI)	Cherry orchards (FDEA)	Chesnut soutos Spain (USC)	
Agroforestry systems for arable lands (WP4)	Intercrop walnut Spain (UEX)	Intensive arable system with trees/ woodlands Germany (UCPH)	Silvoarable systems in the Brecks of Eastern England (CRAN)	
Agroforestry systems for livestock (WP5)	Dehesa, Spain (UEX) (Cattle, sheep and pig)	Wood pastures Switzerland (FDEA) (Horses and cattle)		

The spatial characterisation of the sample landscape sites was led by Gerardo Moreno and the report (Milestone 33) was made available on the AGFORWARD website in April 2017 (Table 7.5).

Table 7.5. Reference for Milestone 33

Moreno G, Aviron S, Burgess P, Chouvardas D, Crous-Durán J, Ferreiro N, Franchella F, Francon-Smith P, Hartel T, Galanou E, García de Jalón S, Giralt Rueda JM, Graves AR, Juárez E, Kay S, Louviot Q, Macicasan V, Pantera A, Petrucco G, Santiago Freijanes JJ, Szerencsits E, Torralba M, Viaud V, (2016). Spatial characterization of sample landscapes. Milestone 33 (7.3) for the AGFORWARD project. 4 January 2017. 53 pp https://www.agforward.eu/index.php/en/spatial-characterization-of-sample-landscapes.html

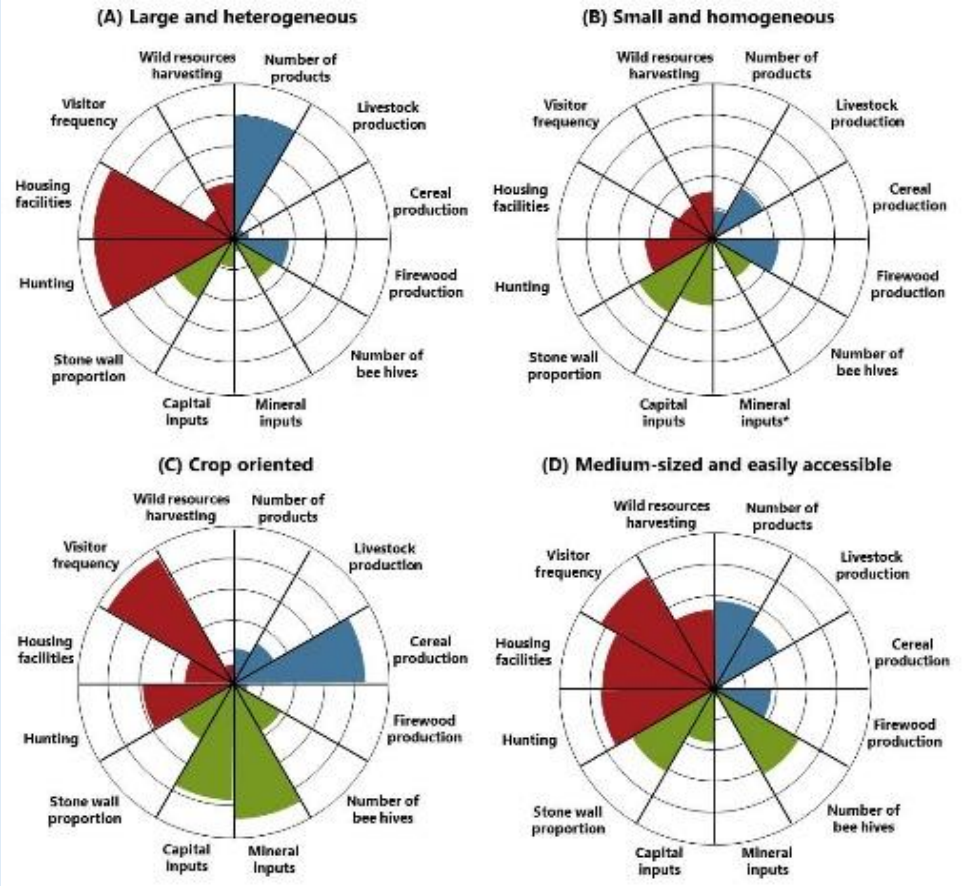
7.3 Assessment of biodiversity and ecosystem services (completed)

Objective 7.3 was to assess the biodiversity and ecosystem services provided by agroforestry in the sample landscapes (Table 7.4). This work was led by UPCH and FDEA. Following the procedures described in the protocol (Milestone 31), the assessments were carried out and results reported in Deliverable 7.20 in March 2017 (Table 7.6). In this deliverable pilot studies testing different ecosystem service valuation approaches are reported. The deliverable consists of six papers, of which four have been published in scientific journals and two are manuscripts that have been or will be soon submitted to scientific journals (Table 7.7). A paper describing the role of management in Spanish wood pastures is described in Box 7.1.

Box 7.1. Description of the paper: “Exploring the role of management in the coproduction of ecosystem services from Spanish wooded rangelands” by Torralba et al. (2017).

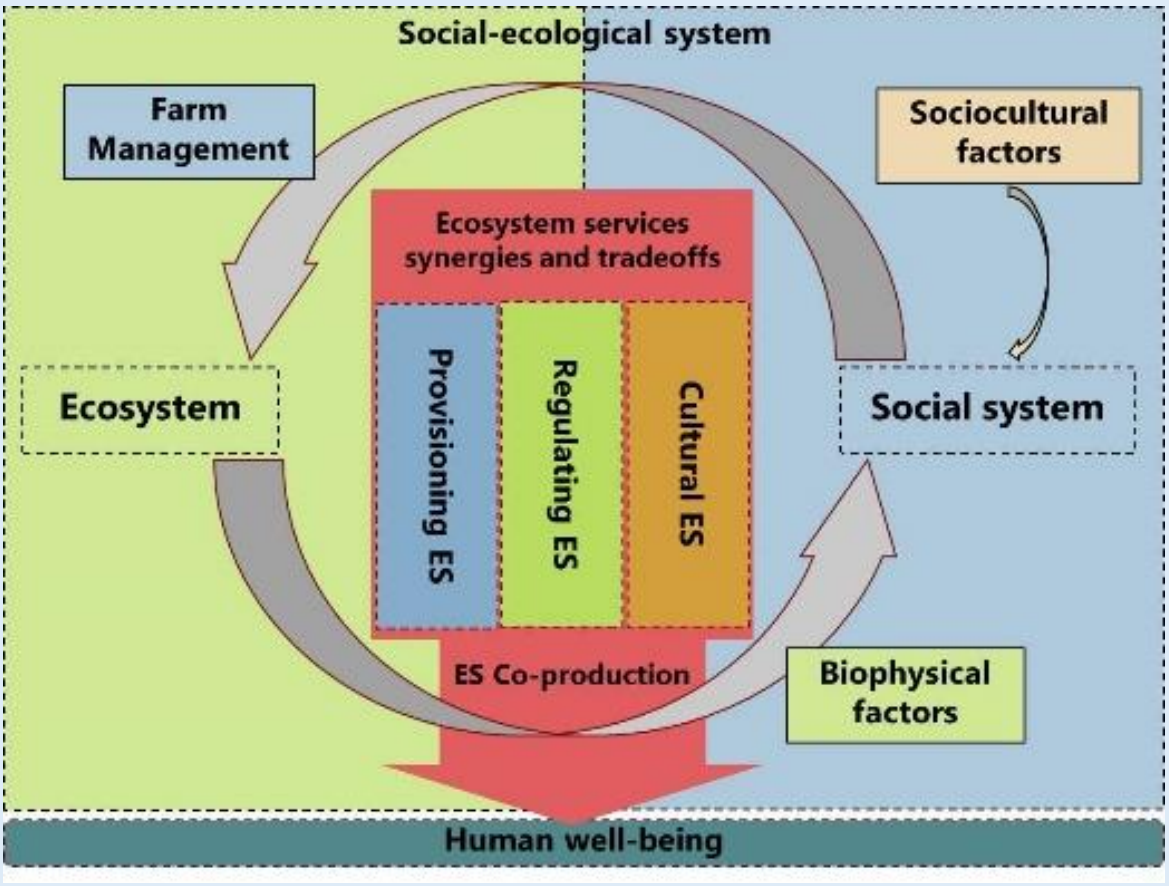
Wood-pastures of the South-western Iberian Peninsula are oak-based silvopastoral systems managed for grazing, cropping, and other forms of production. Generally known as dehesas, they are complex social-ecological systems resulted from the long-term interaction of society and landscape. Traditionally characterized by multifunctional low-intensity management that enhances a wide range of ecosystem services, current management has shifted from the traditional toward more intensified models, in a process that might be hampering the provision of ecosystem services. This study engaged with local managers and landowners in a dehesa dominated region to explore how management influences the coproduction of ecosystem services. In particular, this study identifies and characterizes dehesas in relation to their management and explores the synergies and trade-offs associated with management.

Results indicate that based on their characteristics and management there are four main dehesa types in regards to their ecosystem service provision: large heterogeneous dehesas with diverse production; small and homogeneous dehesas focused on a reduced number of products; medium-large properties focused on crop production; and midsized dehesas with easy public access. Management is the result of the dynamics of interacting biophysical and sociocultural factors that influence manager priorities and investments.



Flower diagrams illustrating the quantification for each management indicator by petal length. Colours of the petals refer to the ecosystem service category with which the management indicator has been associated (red-cultural, green-regulating, blue-provisioning).

Results also show how management decisions generate multiple trade-offs and synergies of ecosystem services, which can be group around four main dimensions of management: (1) the degree of multifunctionality of the dehesa, (2) the relative importance of crop production, (3) the degree of grazing pressure in the system, and (4) how restrictive public access policy is. Management decisions will be the result of interrelated dynamics between biophysical and sociocultural factors that influence manager priorities and investments. On the one hand, these decisions will be based on the natural resources involved available in the landscape, its potential and limitations, while; on the other hand, they are also shaped by sociocultural and socioeconomic factors, often external to the individual operation, such as the governance context or the access to the markets.



The two sides of the social-ecological system feed back into each other in the provision of ecosystem services. The social system shapes the ecosystem through management, while the ecosystem sets the boundaries and limits the management through biophysical factors. The interaction between all these elements generates trade-offs and synergies in ecosystem services that define the dehesa management model and result in the provision of management-associated bundles of ecosystem services.

For further reading: Torralba M, Oteros-Rozas E, Moreno G, Plieninger T. Exploring the role of farm management in the coproduction of ecosystem services in wood pastures. In Press. Rangeland Ecology & Management. https://doi.org/10.1016/j.rama.2017.09.001

Table 7.6. References for Deliverable 7.20

Fagerholm N, Torralba M, Kay S, Herzog F, García de Jalón S, Hartel T, Burgess PJ, Plieninger T (2018). Ecosystem services and profitability of agroforestry practices. Deliverable 7.20. 12 February 2018. 126 pp. https://www.agforward.eu/index.php/en/ecosystem-services-and-profitability-of-agroforestry-practices.html

Table 7.7. References for the peer-reviewed papers in Deliverable 7.20

Paper targeting bio-physical assessment (section 3): Kay S, Herzog F, Szerencsits E, Crous-Duran J, García de Jalón S. Landscape-scale modelling of agroforestry ecosystems services: A methodological approach. Submitted to Landscape Ecology Paper targeting economic assessment (section 4): García de Jalón S, Graves A, Moreno G, Palma J, Crous-Duran J, Kay S, Burgess P (2018). Forage-SAFE: a model for assessing the impact of tree cover on wood pasture profitability. Ecological Modelling 372, 24-32. https://doi.org/10.1016/j.ecolmodel.2018.01.017 Papers targeting socio-cultural assessment (sections 5, 6, 7): Torralba M, Oteros-Rozas E, Moreno G, Plieninger T (2017). Exploring the role of farm management in the coproduction of ecosystem services in wood pastures. Rangeland Ecology & Management. https://doi.org/10.1016/j.rama.2017.09.001 Fagerholm N, Oteros-Rozas E, Raymond CM, Torralba M, Moreno G, Plieninger T (2016). Assessing linkages between ecosystem services, land-use and well-being in an agroforestry landscape using public participation GIS. Applied Geography 74, 30-46. http://dx.doi.org/10.1016/j.apgeog.2016.06.007 Hartel T, Réti K-O, Craioveanu C (2016). Valuing scattered trees from wood-pastures by farmers in a traditional rural region of Eastern Europe. Agriculture, Ecosystems & Environment 236, 304-311.http://dx.doi.org/10.1016/j.agee.2016.11.019 Garrido P, Elbakidze M, Angelstam P, Plieninger T, Pulido F, Moreno G (2017). Stakeholder perspectives of wood-pasture ecosystem services: A case study from Iberian dehesas. Land Use Policy 60, 324–333. http://dx.doi.org/10.1016/j.landusepol.2016.10.022

7.4 Cost-benefit analysis at farm- and landscape-scales (completed)

Objective 7.4 was to perform a financial and economic cost-benefit analysis at farm and landscape scales. As reported in the Second Periodic Report the structure and content of the database has been reported in Milestone 35 which is available on the AGFORWARD intranet (Table 7.8).

Table 7.8. Reference for Milestone 35

Garcia de Jalon S, Graves AR, Burgess PJ (2016). Database for Cost Benefit Analysis of Selected Agroforestry Systems at Farm and Regional Scales. Milestone 35 (7.5) for the AGFORWARD project. 30 June 2016. 11 pp.

7.5 Synergies and trade-offs (completed)

Objective 7.5 was to identify synergies and trade-offs between biodiversity, ecosystem services and profitability at landscape scale. This task, led by FDEA, was reported in Deliverable 7.21 (Table 7.9) and includes a range of bio-physical, economic and socio-cultural approaches. The Deliverable includes a series of five papers and two manuscripts (Table 7.10) and contributes to improving our understanding of the approaches in ecosystem service assessment in European agroforestry. The results of the first paper which describes the spatial similarities between European agroforestry systems at a landscape scale are described in Box 7.2.

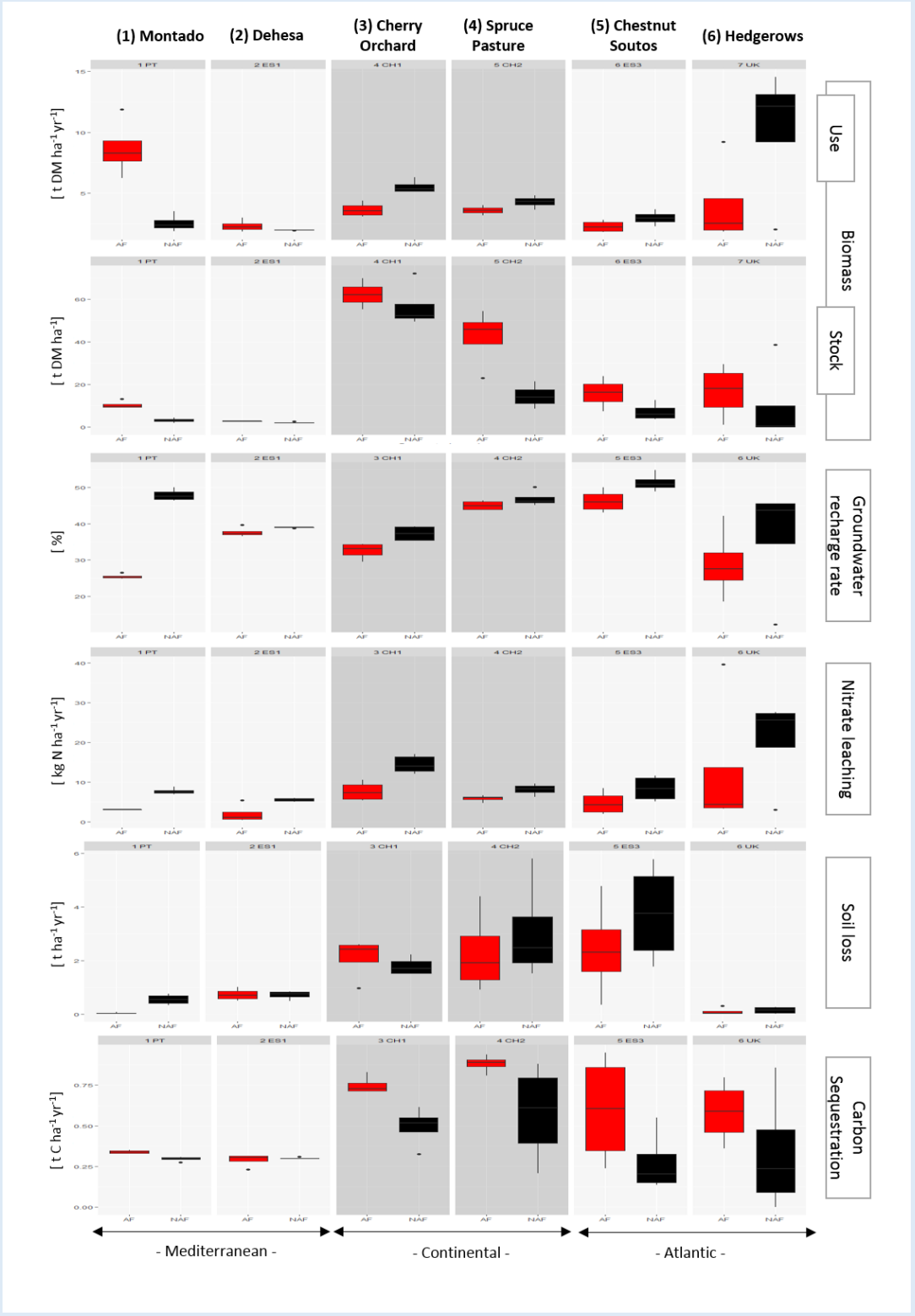
Table 7.9. Reference for Deliverable 7.21

Roces-Días JV, Kay S, Fagerholm N, Hartel T, Graves A, Burgess PJ, Plieninger T, Herzog F (2017). Profitability, biodiversity and ecosystem services of agroforestry at landscape scale. Deliverable 7.21. 31 December 2017. 29 pp. https://www.agforward.eu/index.php/en/profitability-biodiversity-and-ecosystem-services-of-agroforestry-at-landscape-scale.html

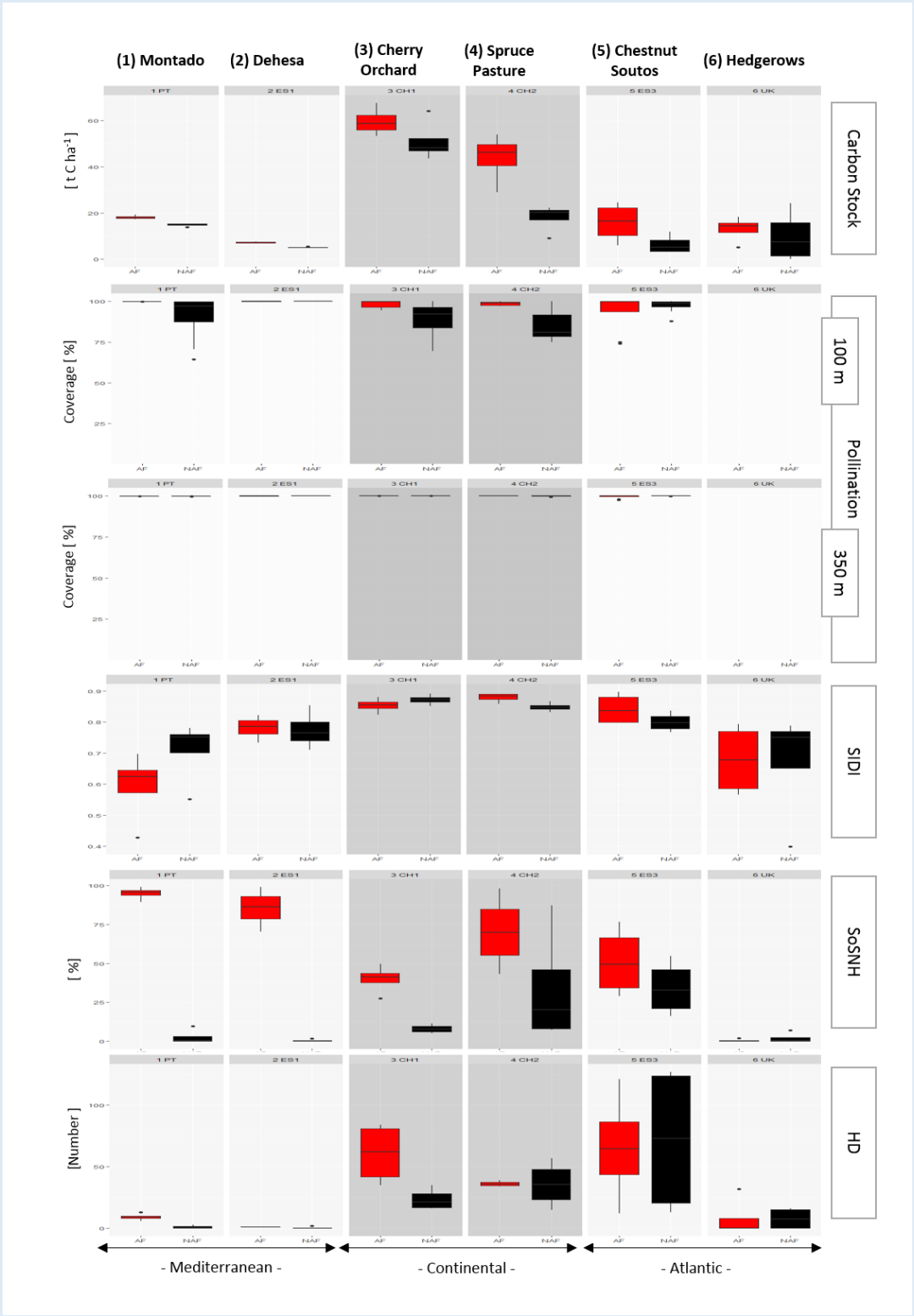
Box 7.2. Description of some of the results from the paper: "Spatial similarities between European agroforestry systems and ecosystem services at the landscape scale" by Kay et al. (2017).

Agroforestry systems are known to provide ecosystem services which differ in quantity and quality from conventional agricultural practices and could enhance rural landscapes. In this study we compared ecosystem services provision of agroforestry and non-agroforestry landscapes in case study regions from three European biogeographical regions: Mediterranean (montado and dehesa), Continental (orchards and wooded pasture) and Atlantic agroforesty systems (chestnut soutos and hedgerows systems). Seven ecosystem service indicators (two provisioning and five regulating services) were mapped, modelled and assessed.

Clear variations in amount and provision of ecosystem services were found between different types of agroforestry systems. Nonetheless regulating ecosystems services were improved in all agroforestry landscapes, with reduced nitrate losses, higher carbon sequestration, reduced soil losses, higher functional biodiversity focussed on pollination and greater habitat diversity reflected in a high proportion of semi-natural habitats. The results for provisioning services were inconsistent. While the annual biomass yield and the groundwater recharge rate tended to be higher in agricultural landscapes without agroforestry systems, the total biomass stock was reduced. These broad relationships were observed within and across the case study regions regardless of the agroforestry type or biogeographical region. Overall our study underlines the positive influence of agroforestry systems on the supply of regulating services and their role to enhance landscape structure.



Comparison of agroforestry (AF - red) and non-agroforestry (NAF - black) landscape test sites on the level of the use and stock of biomass, groundwater recharge, nitrate leaching, soil loss and carbon sequestration within six case studies across Mediterranean, Continental and Atlantic regions. The horizontal line in the bars indicate mean values.



Comparison of agroforestry (AF - red) and non-agroforestry (NAF - black) landscape test sites on carbon stocks, pollination and three measures of diversity. Pollination services could not be evaluated for the UK. The bar graphs indicate mean values (horizontal line).

Table 7.10. Description and references for the papers in Deliverable 7.21

Paper 1 (Kay et al. 2017) described in Box 7.2 examines the value of provisioning and regulating ecosystem services and their spatial relationships among different European agroforestry areas. Paper 2 (Fagerholm et al.) analyses how society perceives ecosystem services from different European agroforestry landscapes. Paper 3 (Roces-Diaz et al.) describes the use of National Forest Inventory Data to assess spatial distribution of agroforestry systems dominated by *Castanea sativa* Mill. in northwestern Spain. Paper 4 (Plieninger et al.) analyzes how different ecosystem services trade-offs, synergies and bundles derived from social and environmental drivers in different landscapes of Europe. Paper 5 (Hartel et al) has the goal to propose social-ecological archetypes for understanding current European rangelands and their potential for sustainability. The remaining two manuscripts describe the initial finding of two pieces of research. José Roces-Diaz describes the analysis of the relationships among ecosystem services identified by using bio-physical modelling methods and those perceived by society in different rural landscapes of Europe. The last manuscript led by Sonia Kay compares the profitability and the societal value of agroforestry and non-agroforestry landscapes in different parts of Europe. Kay S et al. (2017). Spatial similarities between European agroforestry systems and ecosystem services on landscape scale. Agroforestry Systems (in press). https://doi.org/10.1007/s10457-017-0132-3 Fagerholm N et al. European cross-site comparison of place-based ecosystem services in multifunctional rural landscapes. Submitted to Global Environmental Change. Roces-Diaz J.V., et al. Sweet chestnut agroforestry systems in North-western Spain: classification, spatial distribution and an ecosystem services assessment. Submitted to Forest Systems. Plieninger T et al. Mediation of ecosystem services synergies, trade-offs and bundles by social and environmental drivers in European agricultural landscapes. To be submitted to Landscape Ecology. Hartel T et al. Forum: Social-ecological system archetypes for European rangelands. Resubmitted to Rangeland Ecology & Management.

7.6 Upscaling the landscape results (completed)

Objective 7.6 was to upscale the findings to assess the potential of agroforestry at national and European scales, and to provide guidance for agroforestry policy development. This activity (Task 7.6) builds on the work being undertaken by EFI in work-package 1. A scenario framework was defined and synthesised in Milestone 34 as reported in the Second Period Report.

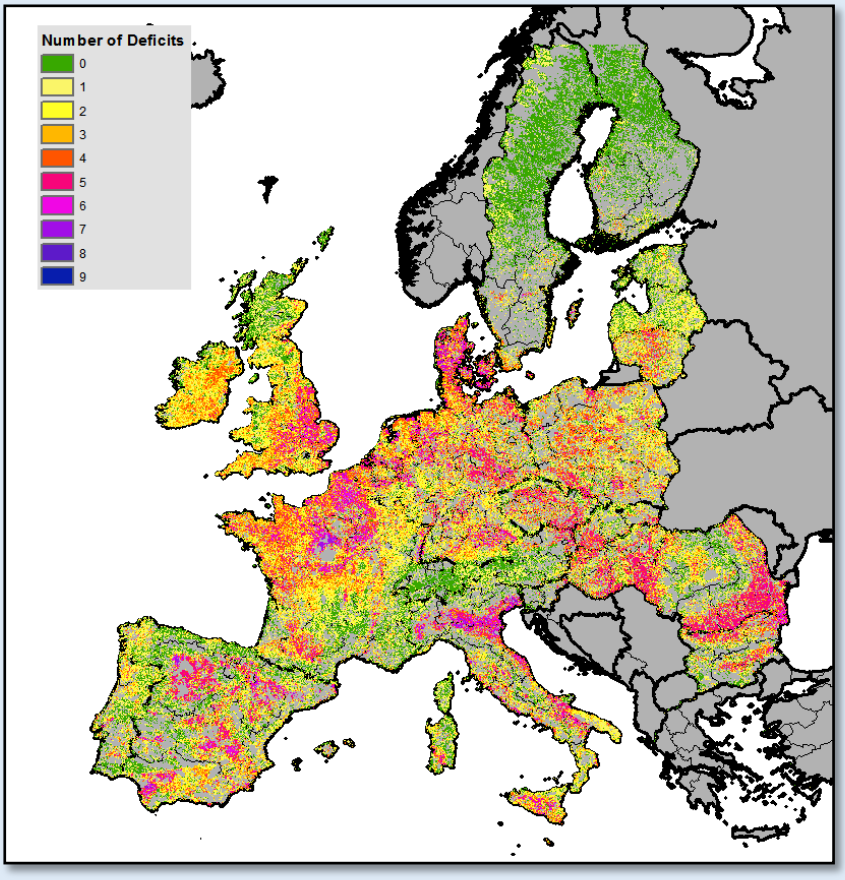
Deliverable 7.22 reports on the results of studies that test the impacts of an uptake of agroforestry on economic benefits at the farm scale and ecosystem service delivery at the European scale (Table 7.11; Table 7.12). A description of some of the content of the first manuscript is provided in Box 7.3. A second manuscript examines if environmental costs created by agriculture can be compensated by implementing agroforestry. A final manuscript examines if agroforestry in southern Mediterranean countries could help in mitigating forest fire risk. The deliverable has been produced in the form of four manuscripts that have been or will be soon submitted to scientific journals.

Table 7.11. Reference for Deliverable 7.22

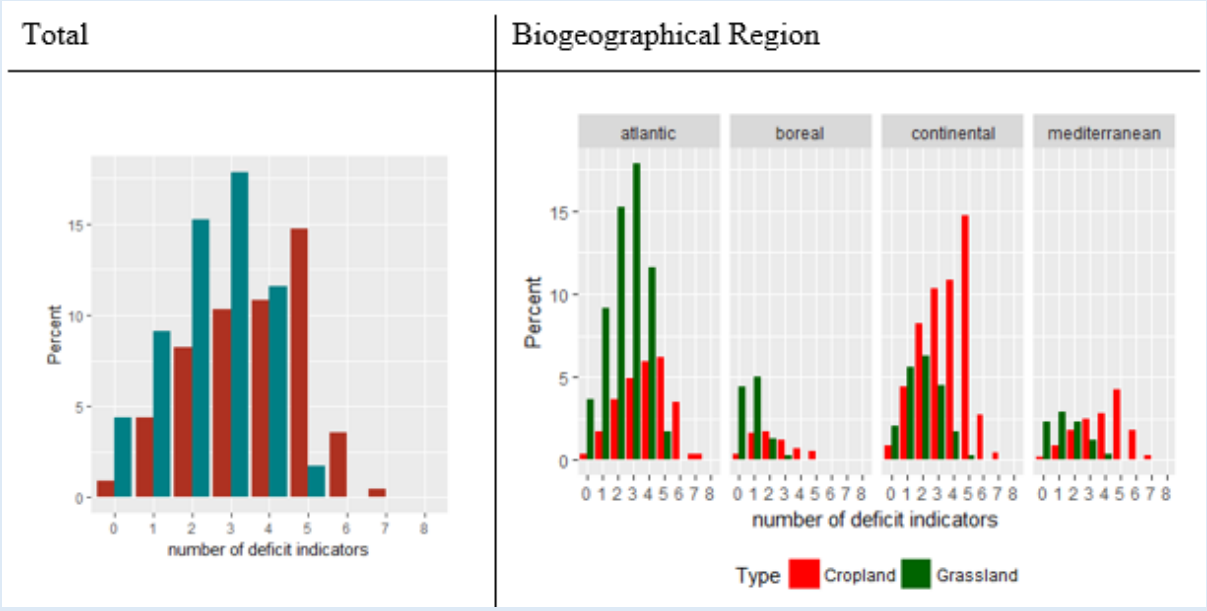
den Herder M, Giannitsopoulos ML, Kay S, Damianidis C, Burgess PJ, Pantera A, Roces-Diaz J, Crous-Duran J, Palma JHN, Graves AR, Rois-Diaz M, Santiago Freijanes JJ, Garcia de Jalon S, Herzog F, Moreno G, Szerencsits E, Mosquera-Losada MR, Papadopoulos A, Pisanelli A, Camilli F (2018). Predicting the impact of the widespread uptake of agroforestry on ecosystems and farm profitability. Deliverable 7.22 for AGFORWARD project 613520. 26 February 2018. 11 pp. http://www.agforward.eu/index.php/en/uptake.html

Box 7.3. Description of some of the content from the manuscript: "What can agroforestry do to help reaching future goals of European Common Agricultural Policy?" by Kay et al.

Agroforestry can play an important role in future agricultural policy to mitigate critical emissions: agroforestry systems are known to simultaneously provide food, fodder and material whilst providing ecosystem services such as soil protection, water regulation, landscape diversity and (functional) biodiversity (Torralba et al. 2016). They are mentioned as measures with the greatest potential for climate change mitigation and adaption (Hart et al. 2017). Against this background, the European AGFORWARD project (www.agforward.eu) tried to answer the question what agroforestry can do to help reaching the above mentioned CAP goals. The study is organised into three steps: First, based on literature review and existing digital cartography information (GIS datasets) we spatially identify areas with potential (overlapping) environmental deficits in European agricultural land. Secondly, agroforestry experts were consulted to propose agroforestry to mitigate the extracted deficits within the regions. In a last step, we rated their impacts and calculated the contribution of agroforestry to CAP 2020+ goals, focussing on climate change and carbon sequestration.



Heat map for environmental deficits.



Number of deficits indicators occurred in European grassland and cropland in percentage (left) and for each biogeographical region (right).

In total, more than half of European agricultural land is in good condition. For the area tending to show environmental threats, grasslands are less affected than croplands. Regional hotspot areas for environmental deficits are the north-western part of France, Denmark, the middle of Spain, the North (Po region), and the south-west (Sicily) of Italy and the eastern part of Romania. The study provides an indication where agroforestry can mitigate environmental problems and help to reach future European goals of the Common Agricultural Policy (CAP).

Table 7.12. Working references for the four manuscripts prepared for Deliverable 7.22.

Paper targeting European assessment:
Kay S et al. What agroforestry can do to help reaching future goals of European Common Agricultural Policy?
Paper targeting economic assessment:
Giannitsopoulos, M. et al. Economic comparison of arable, agroforestry and tree-only systems in three European countries at a plot scale.
Paper targeting environmental costs:
Giannitsopoulos, M. et al. How agroforestry can compensate environmental costs of arable farming in Europe
Paper targeting mitigating forest fire impacts:
Damianidis, C. et al. Agroforestry as a measure to reduce forest fires in the Mediterranean areas

7.7 Co-ordination of the work-package (completed)

Tobias Plieninger led Task 7.7 and has co-ordinated work-package 7, and he (or a deputy) has attended the monthly Executive Board meetings. A work-package 7 workshop was held in Arosa-Maran, Switzerland in September 2017 and during the Fourth General Assembly in Lisbon (17 May 2017).

7.8 Use of resources in work-package 7

At the end of 2017, 178.29 person months have been allocated to work-package 7, equivalent to 143% of the budgeted total (Table 7.13). Cranfield utilised Master students to complete some of its tasks and this allowed it to produce its outputs with less person month input that originally planned.

Table 7.13. Person-month inputs to work-package 7

	First period (Jan-Dec 2014)	Second period (Jan 2015 to Jun 2016)	Third period (Jul 2016 to Dec 2017)	Total	Project budget
FDEA	2.95	19.43	35.67	58.05	28
UCPH	15.00	14.49	21.60	51.09	35
UEX	1.50	9.60	6.50	17.60	10
INRA	8.18	6.44	1.68	16.30	11
UBB	0.71	4.31	6.57	11.59	10
EFI	0.33	2.92	3.15	6.40	9
ISA	1.00	2.50	1.73	5.23	6
CRAN	0.71	0.69	3.10	4.50	7.42[a]
ACTA	1.26	1.31	0.54	3.11	2.16[a]
USC	0.50	1.94	0.56	3.00	3
TEI	0.00	0.00	1.42	1.42	1.42[a]
ICRAF	0.00	0.00	0.00	0.00	1
Total	**32.14**	**63.63**	**82.52**	**178.29**	**124**

[a]:2.84 person-months of the budget for ACTA (which was reduced from 5 to 2.16) was reallocated to Cranfield (which increased from 6 to 7.42) and to TEI (which increased from 0 to 1.42)

7.9 Issues and actions

The work-package has been successfully completed.

8 Work package number 8

Work-package number	**8**
Work-package name	**Policy**
Leader	Rosa Mosquera-Losada
Organisation	University of Santiago de Compostela
Report period	1 July 2016 to 31 December 2017

Objectives and tasks within work package 8

Professor Rosa Mosquera-Losada led work-package 8 which focused on policy. Since June 2014, Rosa has also been the President of the European Agroforestry Federation, which also plays a key role in this work-package. The key activity during the reporting period has been the delivery of Deliverable 8.24 and the delayed Deliverables 8.23 (Table 8.1; Table 8.2).

Table 8.1. Work-plan of activities, milestones (M), and deliverables (D) for work-package 8 for month 25 to month 48 (indicated in orange)

Month	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
WP8 Agroforestry policy																								
T8.1 Recent policy (D8.23)																								
T8.2 Policy scenarios for WP7 (MS37)																								
T8.3 Analyse policies to produce map (MS36) and recommendations (D8.24)																		D						
T8.4 Co-ordinate WP8																								

Table 8.2. Summary of the status of milestones and deliverables in work-package 8 for the second (Month 13-30) and third reporting periods (Month 31 to 48)

Description	**Due date**	**Status**
Second reporting period		
MS36: Map of policies	Feb 2015	Completed
D8.23: Report on policy measures	Apr 2015 delayed to October 2015	Completed Dec 2016
MS37: Policy scenarios for WP7	Oct 2015	Completed
Third reporting period		
D8.24 Report on appropriate policy	June 2017	Completed Sept 2017

8.1 Current extent of agroforestry policy measures (Completed)

Objective 8.1 was to describe the current extent of agroforestry measures across the EU. To achieve this (Task 8.1), the project partners identified the key European agroforestry policy measures affecting European countries. Following internal discussion during 2014, it was agreed that a report on the extent and success of current policy measures to promote agroforestry should also consider the wider impacts of Pillar I in the Common Agricultural Policy (CAP) and also of a wider range of measures within Pillar II of the CAP. In the First Periodic Report, it was recommended to delay the delivery of this report (Deliverable 8.23) from April 2015 to October 2015 so that it could also include the measures being adopted within the 2014-2020 Rural Development Programmes.

As detailed in the Second Periodic Report there was a delay in the submission of Deliverable 8.23. The deliverable was eventually completed and uploaded to the AGFORWARD website by 30 September 2016. Some small corrections were made in December 2016 so the current version on the AGFORWARD website is dated from 8 December 2016 (Table 8.3).

Table 8.3. Reference for Deliverable 8.23 on the extent and success of current policy measures to promote agroforestry across Europe. The first version dated 30 September 2016 was updated on 6 December 2018.

Mosquera-Losada MR, Santiago Freijanes JJ, Pisanelli A, Rois M, Smith J, den Herder M, Moreno G, Malignier N, Mirazo JR, Lamersdorf N, Ferreiro Domínguez N, Balaguer F, Pantera A, Rigueiro-Rodríguez A, Gonzalez-Hernández P, Fernández-Lorenzo JL, Romero-Franco R, Chalmin A, Garcia de Jalon S, Garnett K, Graves A, Burgess PJ (2016). Extent and success of current policy measures to promote agroforestry across Europe. Deliverable 8.23. 8 December 2016. 95 pp. http://www.agforward.eu/index.php/en/extent-and-success-of-current-policy-measures-to-promote-agroforestry-across-europe.html

Deliverable 8.23 starts with a definition of agroforestry for policy and establishes a policy classification for agroforestry practices and provides a reference level of regional distribution of agroforestry practices in Europe. Using the same LUCAS (2012) dataset as den Herder et al (2016), the area of silvopastoral and silvoarable practices in Europe was estimated as 15.4 million ha. However this report also highlights an additional 2.7 million hectares of grazed shrubland and 1.8 million hectares of homegardens, both of which are considered as agroforestry by FAO, ICRAF and AFTA. The classification also includes agroforestry practices like riparian buffer strips and forest farming. The third section of the report shows the main international policy framework for European policy and demonstrates how agroforestry can support the achievement of global and European policies to promote sustainable agriculture and rural development. This includes the role of agroforestry to reduce and counteract greenhouse gas emissions (e.g. climate-smart agriculture) and improve biodiversity.

The Common Agricultural Policy in Europe is based on two pillars. Section 4 of the report focuses on agroforestry and the “first pillar” which supports payments to farmers provided they meet Statutory Management Requirements (SMRs) and maintain the land in Good Agricultural and Environmental Condition (GAEC). This can require the maintenance of landscape features such as hedges and isolated trees, and buffer strips along water courses. However Pillar I payments are only made on designated “agricultural” land defined as arable land, grassland, and permanent crops (e.g. fruit

trees and short rotation coppice). The report explains how wide hedges or having more than a certain number of trees per hectare can mean that arable land (independent of the level of production) can become ineligible for payments. The eligibility of grassland areas with trees is more flexible as it can take account of locally established practices, but this depends on national or regional implementation of that option. The report argues that the uptake and maintenance of agroforestry practices (and the associated societal benefits) depend on agroforestry remaining eligible for Pillar I payments if grassland and arable lands are considered.

Section 5 of the report focuses on the second pillar of the Common Agricultural Policy. This includes measures to support rural development such as agri-environmental payments. The report takes a broad brief and examines a full range of measures that supported or supports the integration of trees and shrubs with farming in the 2007-2013 and/or the initial activation (December 2015) of the 2014-2020 rural development programmes. This includes measures to support forest farming, silvoarable practices (forest strips and small stands, hedgerows, and isolated trees), and silvopasture practices (silvopastoralism and permanent crops, and mountain pastoralism). The report highlights that there are about 27 measures associated with agroforestry practices demonstrating that policy makers recognise the role of agroforestry (in its broad definition) in supporting rural development and sustainable agriculture.

The section also includes a more detailed review of the specific "agroforestry" measures 222 (2007-2013) and 8.2 (2014-2020) to support the establishment of widely spaced trees on arable land. In France, measure 222 mainly promoted silvoarable practices but not silvopasture, but the opposite happened in Hungary. Most of the beneficiaries establishing agroforestry under measure 222 established agroforestry on grassland (99 beneficiaries from 120), especially in Hungary; and broadleaves were the most utilised tree species (in 1196 out of 1212 ha). There was no maintenance payment associated with agroforestry under measure 222 during 2007-2013. Pisanelli et al. (2014)(Table 8.4) explains that the uptake of measure 222 in the 2007-2013 rural development programme was low, with only 3.4% of the resources allocated to measure 222 being spent. Pisanelli et al. related to low implementation rate "*to i) lack of knowledge and awareness of farmers, consultants and managing authorities concerning agroforestry, ii) the limited range of agroforestry systems that was supported by the measure (only silvoarable systems for timber or biomass production)…, iii) the lack of funding to cover management costs of the systems, and iv) the conflict between the measure 222 and other CAP instruments such as the single farm payment, according to which the presence of trees reduces the amount of direct farm payments*"

Table 8.4. Reference for Pisanalli et al. (2014).

Pisanelli A, Marandola D, Marongiu S, Paris P, Rosati A, Romano R (2014). The role of rural development policy in supporting agroforestry systems in EU. In: 2nd European Agroforestry Conference Book of Abstract (Eds. Palma JHN et al.) Cottbus, Germany 4-6 June 2015.

8.2 Policy scenarios for scaling-up exercise (Completed)

Task 8.2 was to recommend policy scenarios for the scaling-up exercise in work-package 7. Some policy scenarios were discussed and agreed during the Third General Assembly in Montpellier (26-27 May 2016) and these were reported in a brief report (Milestone 37) on the AGFORWARD intranet (Table 8.5). One of the scenarios proposed was an environment-driven scenario to determine the impact on carbon sequestration and the implementation of LULUCF regulations mandating 50, 100 or 200 trees per ha on arable and grassland. A second scenario was to determine the economic and financial benefits of increasing the agroforestry area on farms by an additional 20%.

Table 8.5. Reference for Milestone 37

Mosquera-Losada RM, den Herder M, Herzog F, Plieninger T, Santiago-Freijanes JJ, Ferreiro Domínguez N, Burgess PJ (2016). Milestone 37 (8.2): Definition of Policy Scenarios to be used in WP7. Report for AGFORWARD project. 30 June 2016. 4 pp.

8.3 Guidance on future policy developments (Completed)

Objective 8.3 was to provide guidance on how future policy development could help optimise the contribution of agroforestry to sustainable rural development. To aid this process, staff at EURAF and USC created a series of maps to illustrate agroforestry policies across Europe (Milestone 36) which was made available on the AGFORWARD website in January 2016 (Table 8.6).

Table 8.6. Reference for Milestone 36

Santiago-Freijanes JJ, Mosquera-Losada MR, Pisanelli A, Ferreiro-Domínguez N, González-Hernández MP, Fernández-Lorenzo JL, Romero-Franco R, Rigueiro-Rodríguez A and Burgess PJ (2016). Maps and indicators of rural development measures potentially related to agroforestry, across the EU (2007-2013). Milestone 36 for EU FP7 Research Project: AGFORWARD 613520. (14 January 2016). 28 pp. http://www.agforward.eu/index.php/en/maps-and-indicators-of-rural-development-measures.html

A key focus during the third reporting period has been the creation of Deliverable 8.24 focused on how can policy support the uptake of agroforestry in Europe? Developing policy guidance has involved substantial discussion amongst partners through Skype meetings and discussions at the Fourth General Assembly. After substantial dialogue a final report was produced on 7 September 2017.

Table 8.7. Reference for Deliverable 8.24

Mosquera-Losada MR, Santiago Freijanes JJ, Pisanelli A, Rois M, Smith J, den Herder M, Moreno G, Lamersdorf N, Ferreiro Domínguez N, Balaguer F, Pantera A, Papanastasis V, Rigueiro-Rodríguez A, Aldrey JA, Gonzalez-Hernández P, Fernández-Lorenzo JL, Romero-Franco R, Lampkin N, Burgess PJ (2017). How can policy support the appropriate development and uptake of agroforestry in Europe? Deliverable 8.24. 7 September 2017. 21 pp. http://www.agforward.eu/index.php/en/how-can-policy-support-the-uptake-of-agroforestry-in-europe.html

Deliverable 8.24 comprises seven sections and makes 15 recommendations. Section 1 explains that the objective is to provide guidance to policy makers in Europe on how modifications to policy can

increase the uptake of agroforestry. Section 2 highlights why agroforestry should be supported as it is a sustainable land management option that delivers a large number of the market and non-market goods and services needed to address many high-policy-level societal goals.

Section 3 defines agroforestry and the major types or practices of agroforestry in Europe. It defines agroforestry as "*the deliberate integration of woody vegetation (trees and/or shrubs) as an upper storey on land, with pasture (consumed by animals) or an agricultural crop in the lower storey. The woody species can be evenly or unevenly distributed or occur on the border of plots. The woody species can deliver forestry or agricultural products or other ecosystem services (i.e. provisioning, regulating or cultural).*" The five major types of agroforestry across Europe are: silvopasture; silvoarable; hedgerows, windbreaks and riparian buffer strips; forest farming and homegardens.

Section 4 focuses on cross-compliance and recommends that woody vegetation promotion and preservation linked to landscape features should be simplified with clearly stated objectives.

Section 5 describes agroforestry in Pillar I of the Common Agricultural Policy and its relationship with cross-compliance, basic and greening payment. The report provides recommendations on how agroforestry should be supported on i) arable land, ii) permanent grassland, and with iii) permanent crops. A recommended mechanism to allow farmers to establish, maintain and improve agroforestry practices, whilst retaining full Pillar I payments, is through the use of agroforestry management plans. It is also recommended that a fourth section called "agroforestry" is included as part of the future greening payment because it is one of the most effective way of mitigating and adapting agriculture to climate change.

Section 6 focuses on Pillar II measures related to agroforestry. Building on Deliverable 8.23, it recommends that the 27 measures associated with agroforestry practices should be presented as a single unique measure. It recommends that there should be Pillar II support for agroforestry establishment and management on both i) agricultural land and ii) forest land. It also recommends the use of other activities or measures to encourage agroforestry through result-based payments at farm- and landscape-levels, through co-operation within the value chain, and the support of agroforestry knowledge at all education levels. A final global conclusion is that one way to advance the above to the wider benefit of Europe is through the development of a European Agroforestry strategy.

In addition to Deliverables 8.23 and 8.24, partners in AGFORWARD have been playing an active role in improving the development and implementation of policies related to agroforestry across Europe. Rosa Mosquera-Losada as President of the European Agroforestry Federation has attended various meetings across Europe to improve European policies affecting agroforestry. Paul Burgess, Sonia Kay and Rosa Mosquera Losada made a presentation on the results of the AGFORWARD project to about 25 staff members from DGs within the European Commission in Brussels on 17 October 2017. Paul made a presentation to a UK Minister of State of Agriculture in the UK on 1 November 2017, and Rosa gave a presentation on the policy recommendations at the European Parliament meeting on 29 November 2017.

8.4 Co-ordination of the work-package (completed)

Rosa, as leader of work-package 8, has continued to contribute to regular Executive Committee Meetings and she led a session on agroforestry policy at the Fourth General Assembly in Portugal.

8.5 Use of resources in work-package 8

At the end of December 2017, 52.34 person months had been allocated to work-package 8, equivalent to 88% of the budgeted total. The shortfall in person-month allocation did not negatively impact the capacity to produce the required milestones and deliverables.

Table 8.8. Person-month inputs to work-package 8 for each budget period

	First period (Jan to Dec 2014)	Second period (Jan 2015 to Jun 2016)	Third period (Jul 2016 to Dec 2017)	Total	Project budget
USC	1.70	11.30	11.02	24.02	[b]16
EFI	0.76	0.96	2.28	4.00	2
EURAF	2.60	0.90	0.50	4.00	[b]12
ORC	0.15	0.76	2.20	3.11	6
CNR	0.50	0.75	1.20	2.45	2
TEI	0.26	0.75	0.99	2.00	2
CREA	0.25	0.25	1.50	2.00	2
BTU	0.00	0.00	2.00	2.00	2
AFAF	0.12	0.79	0.79	1.70	5
ISA	0.50	0.55	0.56	1.61	2
LBI	0.00	0.48	0.73	1.21	1
Wervel[c]	0.07	0.06	1.05	1.18	1
UEX	0.10	0.60	0.30	1.00	1
UBB	0.00	0.00	1.00	1.00	1
AFBI[a]	0.01	0.41	0.30	0.72	0.5
NYME	0.08	0.26	0.00	0.34	1
UCPH	0.00	0.00	0.00	0.00	2
ICRAF	0.00	0.00	0.00	0.00	1
Total	**7.10**	**18.82**	**26.42**	**52.34**	**59.5**

[a]: The WP8 person months for AFBI in the first period has been corrected to 0.01 from 0.00.
[b]: 8.50 person months of budget was reallocated from EURAF to USC in the third reporting period.
[c]: A correction from 0.08 to 0.06 made to the Wervel person month calculation for second reporting period

8.6 Issues and actions

Through substantial dialogue and discussion, the project has successfully delivered the outputs of work-package 8.

9 Work package number 9

Work-package number	**9**
Work-package name	**Dissemination**
Leader	Fabien Liagre
Organisation	AGROOF
Report period	1 July 2016 to 31 December 2017

Fabien Liagre, from AGROOF, led the dissemination work package through seven tasks (Table 9.1). This work-package has delivered a steady stream of milestones and deliverables (Table 9.2).

Table 9.1. Work-plan of activities, milestones (M), and deliverables (D) for work-package 9 for month 25 to month 48 (indicated in orange)

Month	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	45	47	48
WP9 Dissemination																								
T9.1 Establish engagement protocol (M38) (Completed in first period)																								
T9.2 Establish (D9.25) web platform and produce updates (M39)			M			M			M			M			M			M			M			M
T9.3 Produce material for groups maps of network (D9.26), ass-ociations (D9.28), Farmer applicable leaflets (D9.30)																				D				
T9.4 Stakeh'r communication (M40)			M			M			M			M			M			M			M			
T9.5 Produce research (D9.27) and education tools (D9.27, D9.29)						D																		
T9.6 Coordinate conference (D9.31)																								D
T9.7 Co-ordinate WP9																								

Table 9.2. Summary of the status of milestones and deliverables in work-package 9 for first (Month 0-12), second (Month 13-30) and third (Month 31-48) reporting periods

Description	Due date	Status
First reporting period		
M38 Dissemination protocol	Mar 2014	Completed
D9.25 Interactive platform	June 2014	Completed
D9.26 Agroforestry map	Dec 2014	Completed
Second reporting period		
M39 Quarterly website updates	Quarterly	Completed
M40 Quarterly newsletter	Quarterly	Completed
D9.27 Web-application of Yield-SAFE and Farm-SAFE models	June 2015	Completed
D9.28 National associations	December 2015	Completed
D9.29 Education tool	June 2015	Completed
Third reporting period		
D9.30 Booklet	July 2017	Completed January 2018
D9.31 Final conference	December 2017	Completed December 2017

9.1 Dissemination and stakeholder engagement protocol

The first activity (Task 9.1) of this work-package was to develop a dissemination and stakeholder protocol. The dissemination protocol (Milestone 38) was completed in April 2014 and was reported in the First Progress Report.

9.2 Interactive internet platform

The second activity (Task 9.2) was to develop an interactive internet platform detailing how agroforestry can provide social, environmental, and economic benefits. The www.agforward.eu platform includes copies of each of the deliverables on the project, news items, newletters, interactive maps, a respository of photos, and videos. A major addition between July 2016 and December 2017 has been the uploading of the lesson learnt reports and innovation leaflets from each stakeholder group.

9.2.1 Translation of the internet platform

Since the second progress report, the top pages of the project web-page (www.agforward.eu) have continued to be translated into each of 12 languages, with Polish being an additional language (Figure 9.1). Agroof has organized the translation for the non-English speaking countries: a tutorial to access the website backend and insert the translation was sent to appropriate partners.

State of translations AGFORWARD.EU 01/02/2018

translated
Not translated
Partially translated

Page / Lg	home	wp1	4 pages report WP1	Farmer net-works	40 pages Farmer groups	wp 2	5 pages report wp2	wp3	5 pages report wp3	wp4	5 pages report wp4	wp5	6 pages report wp5	wp6	10 pages report WP6	wp7	3 pages report wp7	wp 8	3 page report wp8	wp9	7 pages with wp9	Partners	Contact	Menu	Main pages made on 13 pages	Pages made on 101 pages
fr							2		2		1		2		2		1		1		2				13	88
es																									11	11
gr							2		2		1		2		2		1		1		2				13	88
ro																									9	9
hu																									12	12
de																					1				12	53
pt							2		1		1		2		2						1 4				13	86
dk																									1	1
nl			1 3																						2	3
it					37 3																				12	49
pl																									11	11

Figure 9.1. Green shading indicates the completion of translation of web-pages on the AGFORWARD website (www.agforward.eu). The highest level of translation has been into Portuguese, French, and Greek.

9.2.2 News items

Cranfield and AGROOF have ensured approximately monthly updates to the web-page including the news item page (http://www.agforward.eu/index.php/en/news.html) (Table 9.3).

Table 9.3. Updates made to the news pages between month 31 and month 48

Date	Description of news item
13-14 Jul 2016	Agroforestry at International Farming Systems Association Conference
31 Aug 16	Second Periodic Report
30 Sep 16	Extent and Success of Current Policy Measure
30 Nov - 1 Dec 2016	First Meeting of the EIP European Focus Group on Agroforestry.
01 Dec 16	Diversified fodder for dairy cows at Lusignan in France
02 Feb 17	Agroforestry at Organic Producers' Conference
20 Mar 17	Agroforestry in Northern Italy
21-22 March 2017	Second Meeting of the EIP European Focus Group on Agroforestry
22 Mar 17	New paper on extent of agroforestry in EU
26 Mar 17	New papers describing the ecosystem services of agroforestry
04 Apr 17	Agroforestry in the UK
17-18 May 2017	AGFORWARD Fourth General Assembly in Portugal
22 Jun 17	UK Agroforestry 2017 Conference at Cranfield University
23 Jun 17	Practical Agroforestry in the UK and Ireland
31 Aug - 2 Sept 2017	Agroforestry at 15th International Conference of Environmental Science and Technology
16-17 Nov 2017	Agroforestry Conference in Sweden
24 Nov 17	Online fodder tree database for Europe
29 Nov 17	Agroforestry at the European Parliament
04 Jan 18	Agroforestry at the Oxford Real Farming Conference

9.2.3 Website visits

The number of visits to the website has increase during the four years of the project with a cumulative total of 40 000 visitors by December 2017 (Figure 9.2).

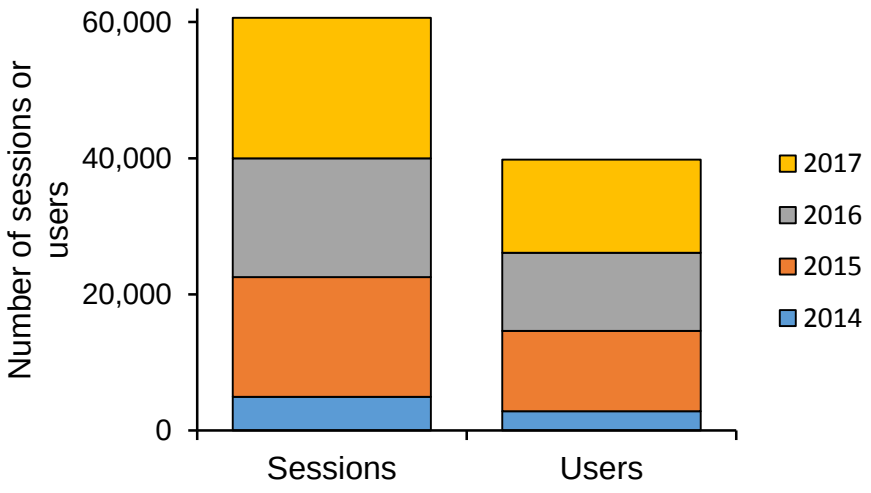


Figure 9.2. Evolution of new visitors for the website: one third of the visitors are returning visitors which indicates that many are engaged with the progress of AGFORWARD

More than 210 000 pages have been seen by the 40 000 visitors in 60 000 sessions. It means than one third of the visitors are returning visitors (not only from the projects partners). The mean session duration was almost 4 minutes.

Visitors to the website were mainly based in the largest European countries involved in AGFORWARD (e.g. France, United Kingdom, Italy, Spain, and Germany) (Figure 9.3). However there was also interest from Brazil and the United States. Four partners from the project were particularly active in referencing the website through their own pages: the Organic Research Centre, EURAF, Agroof and EFI.

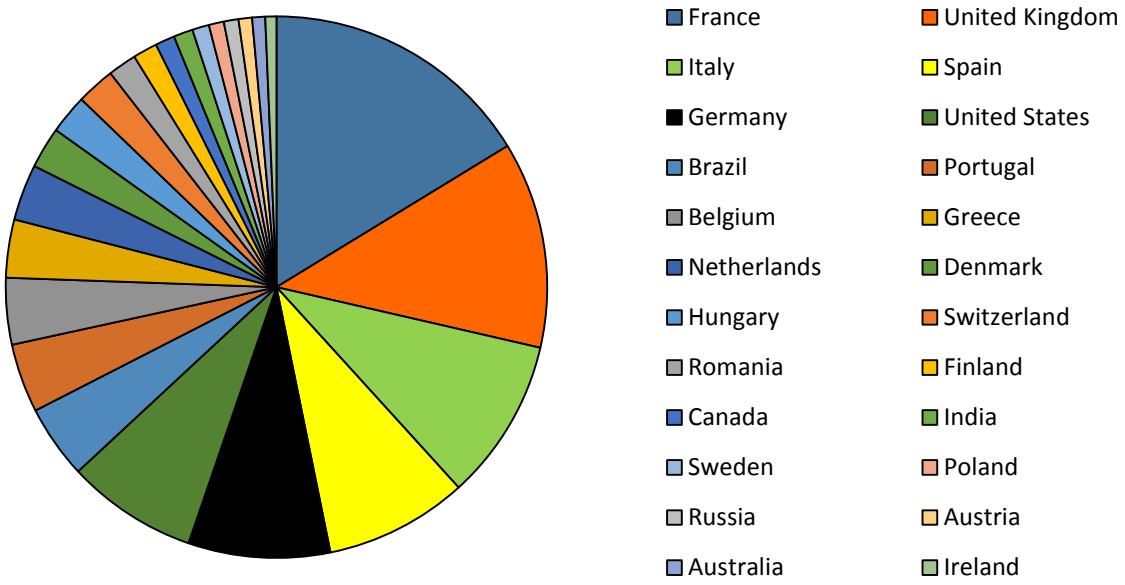


Figure 9.3. Country of residence of visitors to the website

9.3 Literature and guidance for specific user groups

The third task (Task 9.3) was wide-ranging focusing on developing literature and guidance for specific groups. This included i-ii) farmers, land owners and businesses, iii) national agroforestry communities and iv) researchers, policy makers, and extension staff. These are covered in turn.

9.3.1 Farmers, landowners and businesses

The stakeholder groups, detailed in work-packages 2, 3, 4 and 5, have worked with over 800 local stakeholders including farmers, landowners and businesses across 13 countries.

Lesson learnt reports

A key output during the third reporting period has been the production of "lesson learnt" reports for each stakeholder groups and these have been described in work-packages 2, 3, 4, and 5.

Agroforestry innovation leaflets

The creation of 46 "Agroforestry innovation leaflets" has also been described in work-packages 2, 3, 4 and 5. The production of the innovation leaflets was co-ordinated as a work-package 9 activity by AFAF. Each agroforestry innovation leaflet comprises two pages: an introduction, the technical

challenges and a description of the innovation, and some elements and link to go further (Figure 9.4). The geographic extent of the innovations is illustrated in Figure 9.5 and the full title of the leaflets are presented in Table 9.4.

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Figure 9.4. Each agroforestry innovation leaflet comprises two pages: an introduction, the technical challenges and a description of the innovation, and some elements and link to go further.

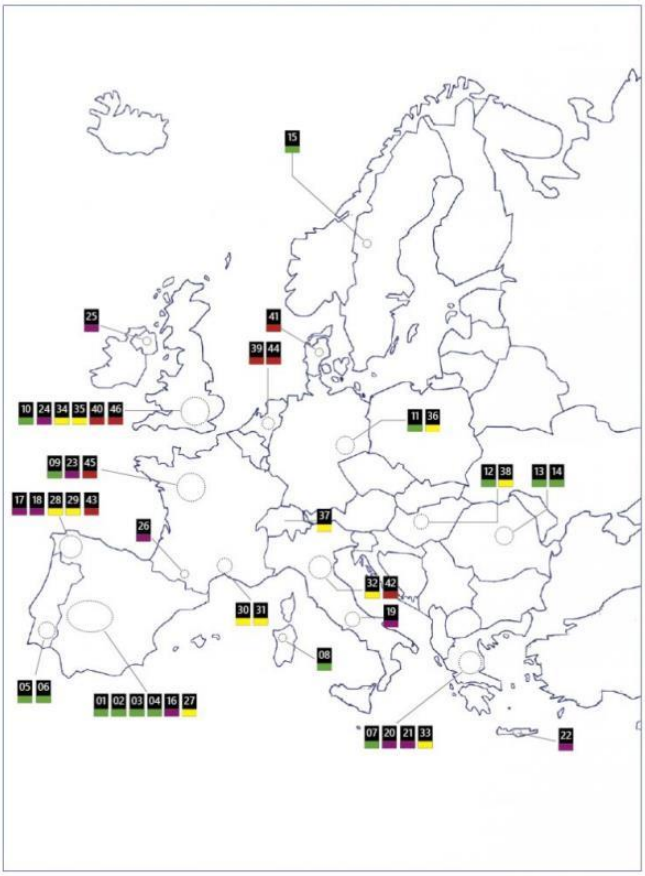


Figure 9.5. The 46 “Agroforestry innovation” leaflets covered systems across 13 countries

Table 9.4. List of agroforestry innovation leaflets

01 Establishing pastures rich in legumes (625.6 KiB)
02 Triticale in iberian dehesas (669.8 KiB)
03 Fast rotational intensive grazing (379.8 KiB)
04 Tree regeneration in grazed wood pastures (508.1 KiB)
05 Managing shrub encroachment in cork oak montado (458.0 KiB)
06 Modelling livestock carrying capacity in montados (501.9 KiB)
07 Rediscovering valonia oak acorns (532.3 KiB)
08 Shade tolerant legumes (553.5 KiB)
09 Multi-functional hedgerows in the bocage system in France (1.6 MiB)
10 Invisible fencing in wood pasture (568.5 KiB)
11 Trees and the restoration of waterways in the Spreewald floodplain (724.1 KiB)
12 Restoration of abandoned wood pasture (518.3 KiB)
13 Protecting large old trees in wood pastures (475.0 KiB)
14 Grazing and biodiversity in Transylvanian wood pastures (472.1 KiB)
15 Enhancing reindeer husbandry in boreal Sweden (453.5 KiB)
16 Grazing sheep under walnut trees (548.3 KiB)
17 Protecting trees in chestnut stands grazed with Celtic pigs (472.8 KiB)
18 New approaches for producing selected varieties of chestnut (482.7 KiB)
19 Wild asparagus in olive orchards (560.2 KiB)
20 Olive trees intercropped with chickpeas (456.6 KiB)
21 Olive trees intercropped with cereals and legumes (497.3 KiB)
22 Orange trees intercropped with legumes (608.2 KiB)
23 Apple orchards grazed in France (550.3 KiB)
24 Economic benefits of grazed apple orchards in England (528.0 KiB)
25 Key challenges of orchard grazing (504.6 KiB)
26 Farming with pollards (500.0 KiB)
27 Cropping cereals among timber trees (442.5 KiB)
28 Productivity and quality of maize under cherry trees (530.3 KiB)
29 Intercropping medicinal plants under cherry timber trees (530.6 KiB)
30 Organic crops in olive orchards (650.5 KiB)
31 Understorey management in alley cropping systems in France (552.5 KiB)
32 Hybrid poplar and oak along drainage ditches (501.1 KiB)
33 Walnut and cherry trees with cereals in Greece (865.5 KiB)
34 Agroforestry and decentralised food and energy production (525.7 KiB)
35 Managing the tree understorey for food and biodiversity (591.7 KiB)
36 Yield and climate change adaptation using alley cropping (540.2 KiB)
37 Agroforestry with standard fruit trees in Switzerland (481.8 KiB)
38 Weed suppression in alley cropping in Hungary (481.4 KiB)
39 Commercial apple orchards in poultry free-range areas (565.2 KiB)
40 Silvopoultry establishing a sward under the trees (501.4 KiB)
41 Lactating sows integrated with energy crops (579.6 KiB)
42 Pigs and poplars (465.2 KiB)
43 Mulberry Morus spp for livestock feeding (542.9 KiB)
44 Fodder trees for micronutrient supply in grass based dairy systems (580.7 KiB)
45 Fodder trees on dairy farms (529.0 KiB)
46 Combining organic livestock and bioenergy production (587.2 KiB)

Creation of an agroforestry folder

A specific action attributed to work-package 9 was the production of a series of "Agroforestry best practice" leaflets that are available through the AGFORWARD website. The creation of a folder (Deliverable 9.30) including the 46 innovation leaflets and 10 best practice leaflets is an important output of the project (Table 9.5; Figure 9.6). A working group, involving AFAF, Cranfield University, ACTA (IDF) and Agroof staff, was established in line with the dissemination protocol (Milestone 38). The format of the reports was a key item discussed at the Third General Assembly where it was agreed to create a portfolio of leaflets in a folder (Figure 9.6).

Table 9.5. Reference for Deliverable 9.30

Liagre F, Van Leberghe P, Balaguer F, Waldie K, Girardin N, Pagella T, Moreno G, Pantera A, Kanzler M, Hermansen J, Burgess PJ (2018). Deliverable 9.30 (9.6) Agroforestry folder for farmers and advisors. 26 January 2018. 45 pp. https://www.agforward.eu/index.php/en/best-practices-leaflets.html

Figure 9.6. A key output has been the production of the folder of agroforestry innovation and best practice leaflets

Best practice leaflets

Based on substantial field experience, Philippe Van Lerberghe from ACTA (IDF) with colleagues from the French Agroforestry Association, the World Agroforestry Centre and the other AGFORWARD partners created 10 "Agroforestry Best Practice" leaflets (Figure 9.7). Although the focus was on the successful establishment and management of trees on arable farms, many of the practices are relevant to trees on livestock farms and agroforestry with permanent crops. The first leaflet focuses on the importance of thinking through your objectives. Subsequent leaflets cover the selection of appropriate tree species and planting material; appropriate designs; land preparation; tree planting and protection, and weed control. The last leaflet focuses on the role of pruning to increase the value of wood being grown for timber.

Figure 9.7. Ten "Agroforestry best practice" leaflets were created to accompany the 46 "Agroforestry innovation" leaflets

Videos

*T*he project has produced 25 videos from the European Agroforestry Conference in Montpellier in 2016. These videos show interviews of researchers, technicians, farmers about the main goals of the research in Agroforestry and the main question about its development in Europe. All the videos are posted on the AGFORWARD YouTube channel (Figure 9.8).

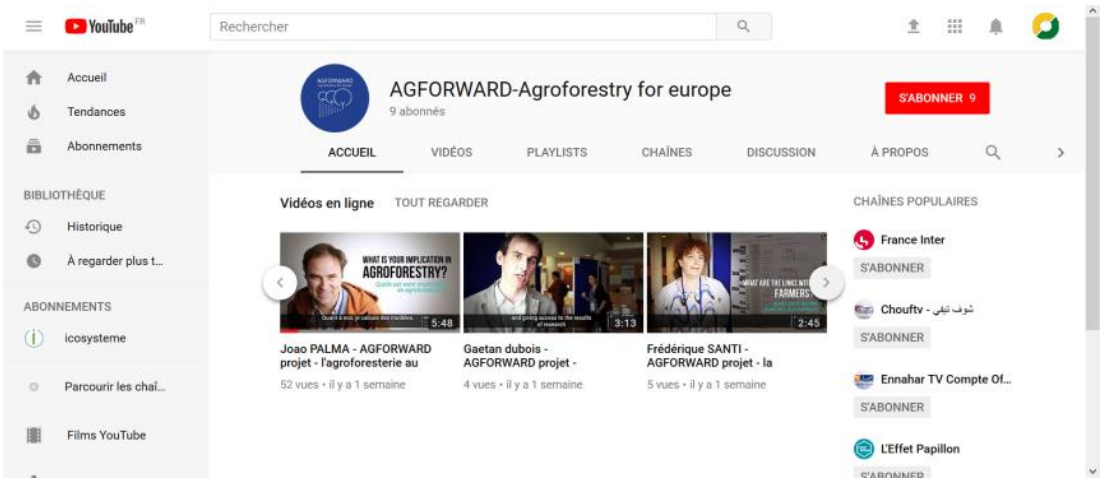


Figure 9.8. Screen shot of the AGFORWARD YouTube video site, https://www.youtube.com/channel/UCKMVZuFsp9qSfSHtUm0ubCQ

Table 9.6. List of the interviewed persons during the Montpellier Congress (as of 28 Feb 2018, 15 had been created as YouTube videos)

Name	Post and organisation (where appropriate)	Video	Audio	Subtitles
Adolfo Rosati	Researcher (CREA)	https://www.youtube.com/watch?v=nD-XN34zTPw	English	French
Alain Olivier	Researcher University Laval – Quebec	https://www.youtube.com/watch?v=oblxvKRQ18g	French	English
Andrea Pisanelli	Researcher IBAF, Porano, Italy	https://www.youtube.com/channel/UCKMVZuFsp9qSfSHtUm0ubCQ	Italian	English
Andrea Vityi	Researcher – University of West Hungary – Hu	https://www.youtube.com/watch?v=FyXp1aZNpjM	English	French
Andy Gordon	Researcher University of Guelph Canada	https://www.youtube.com/watch?v=ZXurac-HiuU&list=UUKMVZuFsp9qSfSHtUm0ubCQ&index=7	English	French
Christophe Pinard	Officer – Ministry of Agriculture, Fr	https://www.youtube.com/watch?v=kmGAYU5Ztgg	French	English
E. Torquebiau	Researche CIRAD Fr	https://www.youtube.com/watch?v=crGqBPUwMCI&index=23&list=UUKMVZuFsp9qSfSHtUm0ubCQ	French	English
Fabien Liagre	SCOP Agroof	https://www.youtube.com/watch?v=UiY_XQe8GB4	French	English
Felix Herzog	Researcher – Agroscope Zurich (CH)	https://www.youtube.com/watch?v=iOUUAkQafQY	German	English
Frédérique Santi	Chercheuse, INRA Fr	https://www.youtube.com/watch?v=AQUxfLiCfMQ	French	English
Gaetan Dubois	Scientific Officer, DG Research, EC	https://www.youtube.com/watch?v=xRFRQ_XHSdM	French	English
Gerardo Moreno	Researcher University of Extremadura, Plasencia Es	https://www.youtube.com/channel/UCKMVZuFsp9qSfSHtUm0ubCQ	Spanish	English
Gerry Lawson	Researcher – Vice-President of EURAF (UK)	https://www.youtube.com/watch?v=P6FjqipPmF4	English	French
Jo Smith	Researcher Organic Research Centre – UK	https://www.youtube.com/watch?v=H3GjYDxmAp4	English	French
Joao Palma	Researcher University of Lisboa	https://www.youtube.com/watch?v=7MethE2iMxk	English	French
Khalid Daoui	Researcher, NIAR, Morocco	https://www.youtube.com/watch?v=e6at5pfvLw4&list=UUKMVZuFsp9qSfSHtUm0ubCQ&index=8	French	English
Michael Jacobson	Researcher, Pennsylvania State University USA	https://www.youtube.com/watch?v=mNgPeWtACvE&list=UUKMVZuFsp9qSfSHtUm0ubCQ&index=6	English	French
Naresh Thevathasan	Researcher, University of Missouri USA	https://www.youtube.com/watch?v=cE43105Bh6I&index=1&list=UUKMVZuFsp9qSfSHtUm0ubCQ	English	French
Nils Aguilar	Journaliste – environment	https://www.youtube.com/watch?v=ABvXp30S1Qk	French	English
Odile Sarrazin	Farmer (Hérault - France)	https://www.youtube.com/watch?v=lHShGI5PnW4	French	English
P. Weckenbrock	Independent	https://www.youtube.com/watch?v=IJ6QSr58eLE	German	English
Patrick Worms	ICRAF, Bruxelles	https://www.youtube.com/watch?v=SyJ6_YlJOGI	French	English
Paul Burgess	Researcher, Cranfield University, UK	https://www.youtube.com/watch?v=T3QiyjzML6A&list=UUKMVZuFsp9qSfSHtUm0ubCQ&index=5	English	French
Pierre Pujos	Farmer (Gers – France)	https://www.youtube.com/watch?v=bOB4oOfDm5A	French	English
Ricardo Salazar	Researcher – Tecnologia de Costa Rica	https://www.youtube.com/watch?v=nI5vf1BuT6s&list=UUKMVZuFsp9qSfSHtUm0ubCQ&index=3	Spanish	English

9.3.2 National agroforestry communities

One of the deliverables (Deliverable 9.28), reported in the Second Period Report, was an expansion to twelve national agroforestry associations across Europe. A webpage was created to help this, used for locating the contact details and the statutes of each association. A video from AGROOF to facilitate national and local meetings by associations is provided next to the inter-active map. A brief report has been uploaded to the EC Portal to confirm the expansion to twelve national agroforestry associations (Figure 9.7). A list of the associations is presented in Table 9.5. The most recent additions of national associations have occurred in Ukraine, Hungary and Bulgaria.

Table 9.7. List of national associations and groups as of 31 December 2017

Country	Name	Website link (where available)
	European Agroforestry Association	http://www.agroforestry.eu/
Belgium (Wallonia and Brussels)	AWAF (Association pour l'Agroforesterie en Wallonie et à Bruxelles)	http://www.awaf.be/
Bulgaria	BAA - Bulgarian Association of Agroforestry	
Czech Rep	CSAL (Cesky Spolek Pro Agrolesnictvi)	http://agrolesnictvi.cz/
France	AFAC agroforesteries	http://afac-agroforesteries.fr/
	AFAF (Association Française d'Agroforesterie)	http://www.agroforesterie.fr
Germany	AG Agroforst Deutschland	http://www.agroforst.org/
Greece	HAN (Hellenic Agroforestry Network) (Ελληνικό Αγροδασικό Δίκτυο)	http://www.agroforestry.gr/pages/
Hungary	ACT – Agroerdészeti Civil Tàrsasàg	
Italy	AIAF (Associazione Italiana di Agroforestazione)	http://www.agroforestry.it/
	SISEF - Società Italiana di Selvicoltura ed Ecologia Forestale	https://sisef.org/
the Netherlands	Stichting Agroforestry Nerdeland (Foundation Agroforestry Netherlands)	http://agro-forestry.nl/
Poland	OSA - Ogólnopolskie Stowarzyszenie Agroleśnictwa	http://www.agroforestry.pl/
Portugal	CEF (Centro de Estudos Florestais)	http://www.isa.ulisboa.pt/en/cef/about
Ukraine	UAA - Ukrainian Agroforestry Association	
Spain	AGFE (Asociacion Agroforestal Espanola)	
Sweden	Agroforestry Sverige	http://agroforestry.se/
UK and Ireland	Farm Woodland Forum	http://www.agroforestry.ac.uk/

9.3.3 Researchers, extension staff, and policy makers

An initial useful resource for researchers is a European map of the participative research and development networks (Deliverable 9.26), as reported in the First Progress Report. AGROOF created the structure of the map in December 2014, and a map of stakeholder groups was released on the website on 11 February 2015 (Figure 9.9). During 2016 and 2017, the project has updated the map with details of agroforestry experimental and demonstration plots both within AGFORWARD and within the wider community.

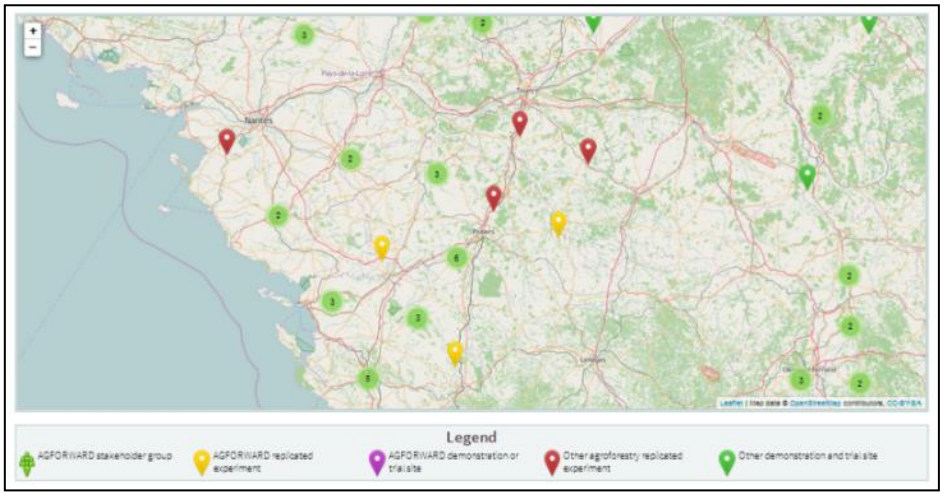


Figure 9.9. Screen shot of the on-line map showing the location of stakeholder groups and agroforestry research and demonstration sites. The site also now includes relevant sites external to AGFORWARD, but which are useful for agroforestry research and demonstration http://www.agforward.eu/index.php/ro/map-of-agroforestry-research-and-demonstration-in-europe.html

One of the key outputs for researchers is a web-application of the Yield-SAFE and Farm-SAFE models (Deliverable 9.27). ISA, AGROOF, and CRAN have worked together to develop the Yield-SAFE and Farm-SAFE models and a downloaded version of Farm-SAFE which links to a web-based version of Yield-SAFE was made available on the AGFORWARD website in June 2016 (Table 9.8). A brief report has also been uploaded to the EC portal. In addition, a link has been put to Hi-sAFe website (available in English/French) https://www1.montpellier.inra.fr/wp-inra/hi-safe/en/.

Table 9.8. Reference for Deliverable 9.27, and a brief report uploaded to the EC research portal confirming the deliverable.

Graves A, Palma J, Garcia de Jalon S, Crous-Duran J, Liagre F, Burgess PJ (2016). Deliverable 9.27 (9.3) Web-application of the Yield-SAFE and Farm-SAFE Model: Farm-SAFE_Jun2016. Microsoft Excel worksheet model developed as part of the AGFORWARD project. 40 MB. June 2016. http://www.agforward.eu/index.php/en/web-application-of-yield-safe-and-farm-safe-models.html
Graves A, Palma J, Garcia de Jalon S, Crous-Duran J, Liagre F, Burgess PJ. (2016). Deliverable 9.27 (9.3) Web-application of the Yield-SAFE and Farm-SAFE Model. 25 July 2016. 3 pp.

During the third period (July 2016 to Dec 2017) AGFORWARD staff have organised 16 conferences including the EU Parliament final conference in Brussels. They also led or contributed to at least 83 field visits and workshops. The participants have also made at least 126 oral presentations and at least 22 poster presentations. On the ec portal, we have also recorded at least 13 news and magazines articles, and details of 10 television and radio programmes. For the third reporting period, we have also reported 37 training activities, the production of at least 20 videos to date (See also Table 9.6), and twelve forms of website/social medial activities including the creation of a mobile application. AGFORWARD participants also contributed to at least nine policy development actions and produced 56 innovation and best practice leaflets (Table 9.9).

Table 9.9. List of the key dissemination activities of the AGFORWARD project by type of activity and then date order.

Types of audience: SC: scientific community (higher education, research), I: Industry; CivS: Civil society; Pol: Policy makers; M: Media, Ed: students and teachers

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
Website/social media								
284	Website	CRAN/ AGROOF	Updating and maintaining the AGFORWARD web-page (www.agforward.eu)	1 Jul 2016-31 Dec 2017	Worldwide web	SC, I, CivS, Pol, M, Ed	1000	World
285	Facebook	CRAN	Updating and maintaining the AGFORWARD Facebook account	1 Jul 2016-31 Dec 2017	Worldwide web	CivS	1000	World
286	Flickr	EFI	Updating and maintaining AGFORWARD Flickr account	1 Jul 2016-31 Dec 2017	Worldwide web	CivS	1000	World
287	Twitter	EFI	Posting updates on AGFORWARD twitter account	1 Jul 2016-31 Dec 2017	Worldwide web	SC, I, CivS, Pol, M, Ed	1000	World
288	Website	LBI	Continuation of Dutch agroforestry website: www.agro-forestry.nl	1 Jul 2016-31 Dec 2017	Worldwide web	I, CivS, PM, M	1000	Belgium, The Netherlands
289	Website	FDEA	Start of the Swiss agroforestry website: www.agroforst.ch	1 Jul 2016-31 Dec 2017	World wide web	I, CivS, Pol, M	1000	Switzerland
290	Website	LBI	Update of table with nutritional value of fodder trees http://www.voederbomen.nl/voederwaarden	Dec 2017	World wide web	I, CivS, PM, Ed	1000	Europe
291	Website	USC	Creation of AGFORWARD items on USC website http://www.usc.es/es/index.html	1 Jul 2016-31 Dec 2017	Worldwide web	SC, I, CivS, M, Ed	1000	Spain
292	Website	TEI	AGFORWARD results presented on AGROF MM ERASMUS+ web-page http://www.velanidodasos.gr/articles/one/201/	3 Oct 2017	Worldwide web	I	25	Greece
293	Website	LBI	Update of AGFORWARD information on LBI website: www.louisbolk.org/sustainable-agriculture/agriculture-and-nature-conservation/agroforestry-2	Oct 2017	Worldwide web	I, CivS, PM, M	1000	Netherlands
294	Website	APCA	Continuation of Hauts-de-France agriculture website: http://www.hautsdefrance.chambres-agriculture.fr/publications/la-publication-en-detail/actualites/biodiversite-en-pratique-lagroforesterie-quelles-influences-sur-les-	1 Jul 2017 to 31 Dec 2017	Worldwide web	SC, I, Pol, M	1000	France

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			adventices/					
295	Facebook	SoE KKK	Continuation of Fás-Legelő-Erdő / Wood pastures in Hungary site: https://www.facebook.com/faslegeloerdo/posts/662827960556723	1 Jul 2016-31 Dec 2017	Worldwide web	I, CivS, Pol, M	1500	Hungary
296	Facebook	ISA	Promotion of AGFORWARD results on ISA AFINET Facebook page https://www.facebook.com/groups/239821656526741/	1 Jul 2017 to 31 Dec 2017	Worldwide web	CivS	308	Portugal
297	Mobile application	BTU	Tsonkova P, Böhm C, Agroforestry systems studied by AGFORWARD used as visualization in a mobile application for agroforestry: http://agroforst-info.de/app/	1 Jul 2017 to 31 Dec 2017	World wide web	I, CivS, Pol, M, Ed	100	Germany
Videos								
298	Video	VEN	G. Mezzalira et al. video on Focus group on agroforestry at Vallevecchi Pilot Farm (In Italian) https://www.youtube.com/watch?v=31wjOEh9LZA	21 Mar 2017	Carole-Venice, Italy	CivS	100	Italy
299	Videos	ORC	Trees and vegetable production: an integrated system https://www.youtube.com/watch?v=Onlo4_dfSiQ	Apr 2017	Worldwide web	I, CivS, M	100	International
300	Videos	ORC	Tolly's agroforestry trials https://vimeo.com/228396780#at=5	Aug 2017	Worldwide	I, CivS, M	100	International
301	Videos	ORC	Vital Veg: agroforestry and vegetable production in North East Scotland https://www.youtube.com/watch?v=gPEMcwK5kds&t=18s	Aug 2017	Worldwide web	I, CivS, M	1--	International
Television and radio								
302	Radio program	UBB	Presentation about the value of large old trees by Tibor Hartel http://kolozsvariradio.ro/2016/06/12/mit-tudnak-az-erdelyi-oreg-fak/	16 Jun 2016	Radio Cluj in	CivS	100000	Hungary
303	TV program	UBB	Presentation of ancient wood-pastures by Tibor Hartel http://www.vajdasag.eu/erdelyi-termeszetvedok-a-kozmediaban	6 Aug 2016	DUNA TV	CivS	100000	Hungary

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
304	TV program	SoE KKK	Anna Varga: Hungarian wood pastures https://www.youtube.com/watch?v=OVeBEYc3tdk	12 Nov 2016	Duna TV	CivS	500000	Hungary
305	TV program	UEX	El papel de la dehesa en la lucha contra el cambio climático. Canal Extremadura "Fuera de tiempo". http://www.canalextremadura.es/alacarta/tv/videos/fuera-de-tiempo-170217	14 Feb 2017	Canal Extremadura	CivS	100000	Spain
306	TV program	UEX	Elaboration for the Extremadura regional television channel of a short film on Landscape mosaics and resilience. Available at: http://www.canalextremadura.es/alacarta/tv/videos/fuera-de-tiempo-020617	02 Jun 2017	Canal Extremadura	CivS	200000	Spain (Region of Extremadura)
307	Radio program	SoE KKK	A Hely: A Kasztói őstölgyes (Ancient oaks at Kasztó)	21 Jun 2017	Kossuth Rádió	CivS	500000	Hungary
308	TV program	SoE KKK	Vándorló fák (Moving trees) http://tudositok.hu/14906/video/Vandorlo_fak	28 Jun 2017	Bogyiszló Tv, Tolna Tv	CivS	500000	Hungary
309	Radio	USC	Radio interview by Rosa Mosquera-Losada about the agroforestry practices and the forest fires in Galicia	Oct 2017	COPE/SER	CivS	1000	Spain
310	TV program	UBB	Presentation of wood-pastures by Tibor Hartel, including the results of the AGFORWARD project regarding the importance of scattered trees for spider communities	3 Nov 2017	Duna TV	CivS	100000	Hungary
311	Radio	AGROOF	Radio interview - RGO	16 Nov 2017	Alès (30)	CivS	5000	France
Conference organisation								
312	Conference session organisation	CRAN	Agroforestry workshop and field visit at the International Farming Systems Association Conference	13 Jul 2016	Harper Adams University, UK	SC	40	Europe
313	Organisation of scientific event	INRA, AGROOF	RMT Agroforesteries event	14-15 sept 2016	Montpellier, France	SC	40	France
314	Organisation of scientific	INRA, AGROOF	RMT Agroforesteries event	31 Jan -1 Feb 2017	Montpellier, France	SC	40	France

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
	event							
315	Conference session organisation	ORC	11th Organic Producers Conference Session: Silvoarable Agroforestry	2 Feb 2017	Aston University, UK	SC, I, Pol	40	UK
316	Conference organisation	CNR	EGF2017 - 19th Symposium of the European Grassland Federation "Grassland resources for extensive farming systems in marginal lands: major drivers and future scenarios". Key notes and oral presentations on AF and AGFORWARD	8-10 May 2017	Alghero (Italy)	SC, Ed, Pol	200	World
317	Festival organisation	– SoE KKK	SoE-KKK with MTA ÖK: Organisation of the festival and agroforestry workshop , oral presentations and field trip Fás legelők napja és Pásztorünnep (Wood Pasture and Herder Festival)	3 Jun 2017	Olaszfalu, Hungary	I, CivS, PM, M, SC	250	Hungary
318	Conference organisation	UCPH	Landscape Futures	19-21 Jun 2017	Copenhagen , Denmark	Sc, I, Ed	250	Europe
319	Conference organisation	CRAN	Host of "UK Agroforestry 2017" conference http://www.agforward.eu/index.php/en/news-reader/id-22-june-2017.html	22 Jun 2017	Cranfield UK	I, SC, CivS, Pol, M, Ed	250	UK, Ireland
320	Conference organisation	CRAN	Organisation of Practical Agroforestry in the UK: Farm Woodland Forum Conference at Cranfield University.	23 Jun 2017	Cranfield University, UK	SC, I, Ed	50	UK, Ireland
321	Conference organisation	SoE KKK	SoE KKK together with NAIK organised the 2nd Hungarian National Agroforestry Forum) (in Co-Organisation with NAIK). Organisation of the forum and oral presentation - Vityi A: Hazai és nemzetközi agroerdészeti kutatások eredményei az AGFORWARD projektben (National and international research results in AGFORWARD project)	6 Jul 2017	Püspökladány, Hungary	I, Pol, CivS, M, SC	150	Hungary
322	Conference organisation	TEI/USC/ /EURAF	Organisation of the agroforestry session "Agroforestry and Environment" at 15th International Conference on Environmental Science and Technology	31 Aug - 2 Sept 2017	Rhodes, Greece	SC, CivS, Ed	100	International
323	Conference	CNR-IBAF	Parallel Session 08: Agroforestry for Rural	12 Oct 2017	Roma, ITA	SC; Pol; Ed	300	Italy

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
	organisation		Development at XI National Congress of SISEF, Società Italiana di Selvicoltura ed Ecologia Forestale, CNR Roma, Oct. 2017, Chair: Pierluigi Paris, CNR-IBAF Porano (Tr)					
324	Conference organisation	USC/TEI/ EURAF	Organisation of the agroforestry session "Agroecology and Agroforestry" at First Agroecology Forum	25-27 Oct 2017	Lyon, France	SC, CivS, Ed	100	International
325	Conference organisation	UEX	Alternative Tree Crops, co-organized with the Cáceres Provincial Council.	13 Nov 2017	Perales del Puerto, Extremadura , Spain	CivS, Pol, Ed	120	Spain
326	Conference organisation	Wer/CRA N/EURAF	"1 + 1 = 3" Agroforestry Meeting at European Parliament	29 Nov 2017	European Parliament, Brussels	SC, I, CivS, Pol, M, Ed	85	Belgium, Rest of EU
327	Conference organisation	EURAF/L BI	Initial meetings preparing for 4th European Agroforestry Federation Conference at Nijmegen (28-31 May 2018)	28-31 May 2018	Nijmegen, Netherlands	SC, I, CivS, Pol, M, Ed	25	Europe
Oral presentations								
328	Oral presentation at scientific event	USC	María Rosa Mosquera-Losada. Agroforestry to mitigate GHG emissions. Presentation at Animal Health Network Workshop, Elsinore, Denmark	15 Mar 2016	Elsinore, Denmark	SC	100	International
329	Oral presentation at scientific event	TEI	Pantera A. et al.: Agroforestry for High Value Tree Systems: systems description at: 13th International Conference on Protection and Restoration of the Environment,	3-8 Jul 2016	Mykonos, Greece	SC	100	International
330	Oral presentation at scientific event	CNR	Paris, P. et al.: Alley coppice: an evaluation of integrating short rotation coppice and timber trees at: IFSA Congress, Harper Adams University	13 Jul 2016	Harper Adams University, UK	SC, Pol	20	Europe
331	Oral presentation at scientific event	VEN/CRA N	Bondesan V, Sartoni A, Ricardi F, Burgess PJ (2016). Consumer perceptions and behaviours regarding traditional pork products from agroforestry pigs in Veneto region (north-east Italy). Paper presented	13 Jul 2016	Harper Adams University, UK	SC, Pol	20	Europe

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			at IFSA Conference 12-15 July 2016.					
332	Oral presentation at scientific event	ORC	Smith J, Wolfe M, Crossland M (2016). Silvoarable agroforestry: an alternative approach to apple production? Paper presented at IFSA Conference 12-15 July 2016.	13 Jul 2016	Harper Adams University, UK	SC, Pol	20	Europe
333	Oral presentation at scientific event	BTU	Mirck J, Kanzler M, Boehm C, Freese D (2016). Sugar beet yields in an alley cropping system during a dry summer. Paper presented at IFSA Conference 12-15 July 2016.	13 Jul 2016	Harper Adams University, UK	SC, Pol	20	Europe
334	Oral presentation at scientific event	ORC	Westaway S, Chambers M, Crossland M, Smith J, Wolton R (2016). Managing traditional hedges for biofuel. Paper presented at IFSA Conference 12-15 July 2016.	13 Jul 2016	Harper Adams University, UK	SC, Pol	20	Europe
335	Oral presentation at scientific event	UBB	T. Hartel presents the conference 'Farming landscapes of Transylvania: perspectives and challenges'. Slides are accessible here: https://www.slideshare.net/harteltibor/peisaje-agrare-abordare-socialecologica	2 Aug 2016	Galeria Posibila, Bucharest		50	Hungary
336	Oral presentation at scientific event	AU	Including trees in pasture-based pig systems to improve animal welfare and eco-efficiency. . Presentation at 67th Annual Meeting of the European Federation of Animal Science	29 Aug 2016	Belfast, UK	SC	40	Europe
337	Oral presentation at scientific event	ISA	Paulo, J. A., Palma, J. H. N., Firmino, P. N., Pereira, H., Tomé, M.Assessing the impact of induced stress by cork oak tree debarking in cork caliper and tree growth: first results on long term monitoring experiments at 5th International Ecosummit. DOI: 10.13140/RG.2.2.30378.41929	29 Aug – 1st Sept 2016	Montpellier, France.	SC	1000	International
338	Oral presentation at scientific event	USC	María Rosa Mosquera-Losada. Amazing grazing in periods of drought. Presentation at 67th Annual Meeting of the European Federation of Animal Science	29 Aug-2 Sept 2016	Belfast, UK	SC	100	Europe
339	Oral presentation	AFBI	Jim McAdam presented "Silvopasture is a sustainable option in grassland systems". Paper	1 Sep 2016	Belfast, UK	SC	100	Europe

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
	at scientific event		presented to the European Association of Animal Production Congress. Session 41					
340	Oral presentation at scientific event	UCPH,	Tobias Plieninger presented: "European wood-pastures in transition – A social-ecological analysis and some reflections on the wood-pastures of Iran", Keynote at University of Kurdistan	10 Sep 2016	Sanandaj, Iran	SC, I, Ed	50	Iran
341	Oral presentation at scientific event	CNR	Paris P, Subsurface Drip Irrigation in Poplar Bioenergy Systems: Biomass Production and Economic Evaluation in Mediterranean Climate, FAO Int. Poplar Commission (IPC)	15 Sep 2016	Berlin, GER	SC, Pol	20	Germany
342	Oral presentation at scientific event	BTU	Jaconette Mirck presented " Poplar and black locust yields from short rotation coppice hedgerows in an alley cropping system" at 25th Session of the International Poplar Commission	13-16 Sept 2016	Berlin, Germany	SC, Pol	150	International
343	Oral presentation at scientific event	CNR	Piero Paris presented "Subsurface drip irrigation in poplar bioenergy systems" at the 15th Meeting of the International Poplar Commission	13-16 Sep 2016	Berlin, Germany	SC, Pol	20	International
344	Oral presentation at scientific event	EVD	Sonia Kay made presentation on "Developing methods for the evaluation of ecosystem services provided by agroforestry at the landscape scale at European Ecosystem Services Conference	20 Sep 2016	Antwerp, Belgium	SC, I, CivS, Pol, M, Ed	90	Europe
345	Oral presentation at scientific event	UCPH	Mario Torralba presented "Do European agroforestry systems enhance biodiversity and ecosystem services? A meta-analysis" at World-Congress on Silvo-Pastoral Systems	26 Sep 2016	Evora, Portugal	SC, Ed	30	International
346	Oral presentation at scientific event	UCPH	Tobias Plieninger presented "Linkages between ecosystem services, land-use and wellbeing in a silvopastoral landscape in Trujillo, Spain" at World-Congress on Silvo-Pastoral Systems	26 Sep 2016	Evora, Portugal	SC, Ed	70	International
347	Oral presentation at scientific event	EFI	Mercedes Rois-Díaz et al presented "Farmers' reasoning behind the uptake of agroforestry practices: evidence from multiple case-studies across Europe" at World Congress on Silvo-Pastoral	27 Sep 2016	Évora, Portugal	SC, Pol, M, Ed	200	International

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			Systems					
348	Oral presentation to a scientific event	ISA	Paulo, J. A., Palma, J. H. N., Gomes, A. A., Faias, S. P., Tomé, M. "Predicting site index from climate and soil variables for cork oak (*Quercus suber* L.) stands in Portugal" at World Congress on Silvo-Pastoral Systems	27-30 Sept 2016.	Evora, Portugal	SC	250	International
349	Oral presentation at scientific event	UEX	Ana Hernández-Esteban presented "Persistence of legumes in dehesa system influence on productivity and pasture quality" at World Congress on Silvo-Pastoral Systems	27-30 Sep 2016	Evora, Portugal	SC	300	International
350	Oral presentation at scientific event	UEX	Gerardo Moreno presented "Potential changes on pasture productivity and grazing intensity in iberian dehesas driven by atmospheric nitrogen deposition" at the World Congress on Silvo-Pastoral Systems	27-30 Sep 2016	Evora, Portugal	SC	300	International
351	Oral presentation at scientific event	UEX	Gerardo Moreno presented "Challenges and potential innovations to improve the resilience European wood-pastures" at the World Congress on Silvo-Pastoral Systems	27-30 Sep 2016	Evora, Portugal	SC	300	International
352	Oral presentation at scientific event	UEX	Fernando Pulido presented "Can rodent acorn dispersal be manipulated to promote tree regeneration? a test using woody debris as shelter for dispersers and seedlings in grazed oak woodlands" at World Congress on Silvo-Pastoral Systems.	27-30 Sep 2016	Évora Portugal	SC	300	International
353	Oral presentation at scientific event	BTU	Kanzler M, Böhm C, Mirck J, Schmitt D, Veste M, Agroforestry land use as a adaption strategy against climate change	28 Sep 2016	Gießen, GER	SC	50	Germany
354	Oral presentation at scientific event	SoE-KKK & EURAF	Vityi A., Mosquera-Losada R, Borek R: The role of agroforestry innovation networks in the rural development of the Eastern European region. at: 14th ERDN Conference	3-5 Oct 2016	Budapest	I, CivS, Pol, M,Ed	100-150	European
355	Oral	EVD	A. Dind made presentation on "The perception of	5 Oct 2016	Zurich,	SC	5	Switzerland

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
	presentation at scientific event		ecosystem services in the wooded pastures of the Swiss Franches-Montagnes: an assessment using public participation GIS"		Switzerland			
356	Oral presentation at scientific event	EVD	Sonia Kay made presentation on spatial-mapping and assessment of ecosystem services on landscape scale provided by agroforestry systems. Presentation at University of Zurich	18 Oct 2016	Zurich, Switzerland	SC, Ed	30	Switzerland
357	Oral presentation at scientific event	TEI	Valonia oak of Xeromero – Aetolakarnania, the largest silvopastoral system of the species in Greece and in the Mediterranean basin: ecological and socioeconomical aspects by Papadopoulos	24-29 Oct 2016	Marseille, France	SC	1000	European, French mostly
358	Oral presentation at technical workshop	INRA-Ferlus	Presentation of the agroforestry system of INRA Lusignan	8 Nov 2016	Boussac, France	I, Pol, Ed	50	France
359	Oral presentation at scientific event	USC	Rosa Mosquera-Losada presented "The innovation in the agroforestry sector: a European perspective" at International Congress of Life ecocitric, Val d`Uixo, Spain	16-17 Nov 2016	Val d`Uixo, Spain	SC	100	Spain
360	Oral presentation at scientific event	EFI	Michael den Herder et al. presented "Current extent and distribution of agroforestry in Europe. Presentation" at the EFI Forum (internal presentation series for whole EFI held on a monthly basis with video connection to regional EFI offices).	27 Nov 2016	Joensuu, Finland	SC	30	Europe
361	Oral presentation at scientific event	USC	Rosa Mosquera-Losada presented "Production of chestnuts under an agroforestry management in Galicia" at II Jornada de Arboricultura Forestal	29 Nov 2016	Caldes de Montbui , Barcelona, Spain	SC	100	Spain
362	Oral presentation at scientific event	BTU	Mirck J, Kanzler M, and Böhm C presented "Yield performance of an alley cropping system with short rotation coppice hedgerows"	1 Dec 2016	Senftenberg, Germany	SC, Ed, Pol, M	120	Germany
363	Oral presentation	EVD	E. Kühn made presentation on „Nahrungsangebot von Kirschbäumen für Bestäuber in	6 Dec 2016	Zurich, Switzerland	I, SC, Ed	20	Switzerland

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			Agroforstsystemen am Beispiel von B. terrestris und O. Bicornis“					
364	Oral presentation to teachers	INRA SYSTEM	Delphine Mézière presented “Research and Development for Agroforestry Deployment”	15 Dec 2016	Florac, France	SC, CivS	35	France
365	Oral presentation	LBI	Staff from LBI, together with staff from the Dutch Agroforestry Network and Duinboeren, made presentations at the start-up of new agroforestry network: “Fodder trees: why and how?”	15 Dec 2016	Helvoirt, The Netherlands	I, Pol, Ed	35	The Netherlands
366	Oral presentation	ORC	Jo Smith presented “What have we learnt from recent research” in the “Agroforestry – making it happen” session at the Oxford Real Farming Conference.	3 Jan 2017	Oxford, UK	SC, I, CivS, Pol, M, Ed	70	UK
367	Oral presentation at scientific event	INRA-Ferlus	Presentation of the agroforestry system of INRA Lusignan	1 Feb 2017	Paris, France	SC, I, Pol, Ed	100	France
368	Oral presentation at scientific event	CRAN	Paul Burges made presentation on “The Economics of Silvoarable Agroforestry” at the UK Organic Producers Conference	2 Feb 2017	Aston University, UK	I	30	UK
369	Oral presentation at technical workshop	INRA-Ferlus	Presentation of the agroforestry system of INRA Lusignan and the first results on fodder trees and shrubs, at technical workshop on agroforestry	14 Feb 2017	Le Wast, France	I	60	France
370	Oral presentation	EVD	S. Siedler made presentation on „Untersuchungen zur Wurzelverteilung in einem Schweizer Agroforstsystem“	13 Mar 2017	Zurich, Switzerland	I, SC, Ed	20	Switzerland
371	Oral presentation at scientific event	SoE KKK	Kiss-Szigeti Nóra (2017): Az Agrárerdészetről-alapjai, eredete, hazai helyzete, kilátások és kihívások (Agroforestry – history, state-of-the-art, and challenges) University of Sopron at: Zöld Forgatag (Forum of The future of sustainable agriculture in Hungary)	21-22 Mar 2017	Gödöllő, Hungary	I, CivS, SC, Ed	250	Hungary

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
372	Oral presentation at technical workshop	INRA-Ferlus	Presentation of the agroforestry system of INRA Lusignan and the first results on fodder trees and shrubs, at technical workshop on agroforestry for livestock systems	29-30 Mar 2017	Mirabel, France	I, Ed, SC	30	France
373	Oral presentation at scientific event	LBI	Quantification of the nutritional value of fodder trees: a case study	6 Apr 2017	Driebergen, The Netherlands	SC, Ed	30	The Netherlands
374	Oral presentation at scientific event	SoE KKK	SoE KKK with SoE EMKI: Vityi A, Czupy I: Dendromass utilization – System management and carbon sequestration. Workshop. at: Workshop on Carbon-metabolism in Forest Ecosystems	11-12 Apr 2017	Sopron, Hungary	SC, I, Ed	50	Germany, Hungary
375	Oral presentation at public event	UEX	Gerardo Moreno and Fernando Pulido presented ”Challenges for the dehesas” during the ”Green Week for the Dehesa” organized by the Government of Badajoz province	18 Apr 2017	La Cocosa farm, Badajoz	CivS	100	Spain
376	Oral presentation at scientific event	SoEKKK	Gastronomy and conservation: using foodism to change the discourse. Anna Varga’s talk at Conservation Summit in London https://www.conservationoptimism.org/	20-22 April 2017	London	CivS	150	UK
377	Oral presentation at scientific event	UEX	Óscar Santamaría presented ”Tree effects on the production and quality of forage by different cultivars of Triticale in dehesas” at the 56th Scientific meeting of the Spanish Grasslands Society	25-28 Apr 2017	Barcelona, Spain	SC	150	Spain
378	Oral presentation at scientific event	UCPH	Tobias Plieninger presented keynote presentation on “Ecological and social perspectives of European wooded grasslands” at 19th Symposium of the European Grassland Federation	28 Apr 2017	Alghero, Italy	SC, I, Ed	150	Europe
379	Oral presentation at scientific event	CRAN	”Cost-benefit analyses of two silvopastoral agroforestry practices” poster and presentation at the Cranfield Group Project Exhibition	4 May 2017	Cranfield, UK	SC, Ed, I	50	UK
380	Oral presentation	UEX	Gerardo Moreno presented “The eligibility of wood pastures for CAP payments” at a meeting of the	4 May 2017	Salamanca, Spain	CivS, Pol, I	100	Spain

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
	to industrial audience		Spanish Association of Extensive Cattle Breeders (UGAVAN)					
381	Oral presentation at scientific event	CNR	C. Porqueddu and A. Franca et al. made a presentation on "The role of grasslands in less favoured areas" at the 19th Symposium European Grassland Federation	8-10 May 2017	Alghero, Sardinia, Italy	SC, Pol	100	European
382	Oral presentation at scientific event	UEX	Ana Hernández made a presentation on "Sown permanent pastures rich in legumes in Iberian Dehesas: influence on biodiversity and soil carbon sequestration" at the 19th Symposium of the European Grassland Federation	8-10 May 2017	Alghero, Sardinia, Italy	SC	200	Europe
383	Oral presentation at scientific event	UBB	Tibi Hartel presented 'Wood-pastures as social-ecological systems', within the event 'New fronts in Restoration Ecology' organized at Hungarian Academy of Sciences	11 May 2017	Budapest	SC	50	Hungary
384	Oral presentation	LBI	Staff from LBI made a presentation on range plantation and wild birds in free range areas.	17 May 2017	Netherlands	I, Pol	15	Europe
385	Oral presentation	LBI	Staff from LBI, with staff from the Dutch Agroforestry Network made a presentation on experiences with fodder trees, at test locations	18 May 2017	Helvoirt, The Netherlands	I, Ed	35	The Netherlands
386	Oral presentation at scientific event	AFBI	Jim McAdam, made presentation on "Silvopastoral Agroforestry- an option to support delivery of sustainable grassland intensification" at the Wood Meadows and Wood Pastures Conference, Sheffield	24 May 2017	Sheffield Hallam University	SC	40	UK, EU
387	Oral presentation to a scientific event	ISA	Palma J.H.N., Paulo J.A., Tomé M. Webcorky – An online decision support tool to decide when stand debarking should occur. International Congress on Cork Oak Trees and Woodlands and 3° National (Italian) Congress of Cork.	25-26 May 2017	Sassari, Italy	SC	300	International
388	Oral presentation to a scientific event	ISA	Crous-Duran J., Paulo J.A., Graves A.R., Tomé M., Palma J.H.N. Carbon balance estimation in cork oak woodlands compared to land use alternatives. International Congress on Cork Oak Trees and	25-26 May 2017	Sassari, Italy	SC	300	International

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			Woodlands and 3° National (Italian) Congress of Cork.					
389	Oral presentation to a scientific event	ISA	Faias SP., Paulo JA., Tomé M. Tree diameter growth Model for cork oak stands in Portugal. International Congress on Cork Oak Trees and Woodlands and 3° National (Italian) Congress of Cork.	25-26 May 2017	Sassari, Italy	SC	300	International
390	Oral presentation to a scientific event	ISA	Faias SP., Paulo JA., Tomé M. Competition pattern in young cork oak stands. Congress on Cork Oak Trees and Woodlands and 3° National (Italian) Congress of Cork.	25-26 May 2017	International Sassari, Italy	SC	300	International
391	Oral presentation to a scientific event	SoE KKK	Kiss-Szigeti N: The effects of agroforestry systems on biodiversity. at: 7th Hungarian Landscape Ecology Conference	25-27 May 2017	Szeged, Hungary	SC, Ed	50	Hungary
392	Oral presentation to a scientific event	SoE KKK	SoE KKK with MTA ÖK. Anna Varga presented "Past, present and future of the wood pastures in the Bakony-Balaton region and AGFORWARD project.at: Fás legelők napja és Pásztorünnep" (Wood Pasture and Herder Festival)	3 Jun 2017	Olaszfalu, Hungary	I, CivS, PM, M, SC	250	Hungary
393	Oral presentation to a scientific event	SoE KKK	SoE KKK with MTA ÖK. A Vityi presented "Agroerdészeti hálózati együttműködések, hazai és nemzetközi kutatások eredményei az AGFORWARD projektben (Cooperation among stakeholders and R+I results in AGFORWARD project) at: Fás legelők napja és Pásztorünnep (Wood Pasture and Herder Festival)	3 Jun 2017	Olaszfalu, Hungary	principally for farmers but also CivS, PM, M, SC	250	Hungary
394	Oral presentation at scientific event	UEX	Gerardo Moreno presented "Dehesa and Climate Change" at the 5th Seminar of the Spanish Association of Weather presenters	4 Jun 2017	Cáceres	M	40	Spain
395	Oral presentation at scientific event	UCPH	Nora Fagenholm made a presentation entitled "European cross-site comparison of place-based ecosystem services in multifunctional rural landscapes" presentation at the Landscape Futures	19 Jun 2017	Copenhagen, Denmark	SC, I, Ed	5	Europe

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			conference					
396	Oral presentation at scientific event	AU	Staff from AU made presentation on "Integrated production of tree biomass and piglets: Effect of paddock design on sow excretory behavior" at the NJF seminar 495: Organics for tomorrows food systems	19-21 Jun 2017	Mikkeli, Finland	SC, I	40	Finland, Sweden, Denmark, Norway
397	Oral presentation at scientific event	UBB	T. Hartel took part as an invited speaker together with Dr. Eszter Kelemen for plenary presentation entitled 'Ecosystem services on the ground' at the International Congress of the European Society of Ecological Economics. Full video here: https://www.youtube.com/watch?v=6S_nng3r5yY	20-22 Jun 2017	Budapest	SC	150	International
398	Oral presentation at scientific event	CRAN	Paul Burgess presented "Agroforestry in the UK: "Non-market" benefits" at the UK Agroforestry 2017 Conference	22 Jun 2017	Cranfield University, Bedfordshire	SC, I, CivS, Pol, M, Ed	250	UK, Ireland
399	Oral presentation at scientific event	CRAN	Paul Burgess presented "Agroforestry policy and the AGFORWARD project" at 2017 Farm Woodland Forum Meeting at Cranfield University	23 Jun 2017	Cranfield University, UK	SC, I, Ed, Pol	45	UK, Ireland
400	Oral presentation at scientific event	ORC/AFBI/ICRAF	Lawson G, Curran E, McAdam J, Strachan M, Pagella T, Smith J presented 'Policies to encourage trees on farms in the UK and Ireland' at the 2017 Farm Woodland Forum Meeting at Cranfield University, UK	23 Jun 2017	Cranfield University, UK	SC, I, Ed, Pol	45	UK and Ireland
401	Oral presentation at scientific event	UEX	Ana Hernández-Esteban presented "Selection of legume species to improve pastures as management practice for the mitigation and adaption of climate change" at the 7th Spanish Forestry Congress	23-30 Jun 2017	Plasencia, Spain	SC	1000	Spain
402	Oral presentation at scientific event	UEX	Yonathan Cáceres presented "Assisted regeneration of dehesas under different grazing schemes: evaluation of cost-efficient approaches" at the 7th Spanish Forestry Congress	23-30 Jun 2017	Plasencia, Spain	SC	1000	Spain

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
403	Oral presentation at scientific event	USC	María Rosa Mosquera-Losada made a presentation entitled "Agroforestry Policy Forum" at the AFTA Conference	27-29 Jun 2017	Virginia, USA	SC	100	International
404	Oral presentation	INRA DiaScope	Staff from INRA made a presentation on "Participatory approaches in Agroforestry"	4 Jul 2017	Montpellier, France	SC, CivS, I, Pol, Ed	150	France
405	Oral presentation at scientific event	SoE KKK	SoE KKK with NAIK: Vityi A: Hazai és nemzetközi agroerdészeti kutatások eredményei az AGFORWARD projektben (National and international research results in AGFORWARD project) at: 2. Magyar Agrár-erdészeti Fórum (2nd National Agroforestry Forum)	6 Jul 2017	Püspökladány, Hungary	I, CivS, PM, M, SC	150	Hungary
406	Oral presentation at scientific event.	AU	Staff from AU made a presentation on "Effect of paddock design on sow excretory behaviour in a pasture-based system with poplar trees" at the Annual Meeting of the European Association for Animal Production.	28 Aug 2017	Estonia	SC	40	Europe
407	Oral presentation in scientific event	TEI	Anastasia Pantera made a presentation on "Land cover changes in a valonia oak silvopastoral system in W. Greece – ecological and sociological implications" 15th International Conference on Environmental Science and Technology	31 Aug to 2 Sept 2017	Rhodes, Greece	SC	100	European
408	Oral presentation at scientific event	USC	Rosa Mosquera-Losada made a presentation on "Agroforestry and the CAP: a land use system to be promoted to fulfil sustainable development goals" at 15th International Conference on Environmental Science and Technology	31 Aug-2 Sep 2017	Rhodes, Greece	SC	100	International
409	Oral presentation at scientific event	USC	Rosa Mosquera-Losada made a presentation on "Agri-environment measures agroforestry European main agricultural driver is the commons agricultural policy (CAP)" at 15th International Conference on Environmental Science and Technology	31 Aug-2 Sep 2017	Rhodes, Greece	SC	100	International
410	Oral	CRAN	Silvestre Garcia de Jalon made a presentation on	31 Aug – 2	Rhodes,	SC, I, CivS,	30	Greece, EU

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
	presentation at scientific event		"Forage-SAFE: A tool to assess the management and economics of wood pastures" at 15th International Conference on Environmental Science and Technology	Sep 2017	Greece	Ed		
411	Oral presentation at scientific event	TEI	Anastasia Pantera et al. made a presentation on "The traditional agrosilvopastoral valonia oak systems in Kea island - Greece: productivity and ecosystem services" at 15th International Conference on Environmental Science and Technology Rhodes, Greece	31 Aug – 2 Sep 2017	Rhodes, Greece	SC, I, CivS, Ed	30	Greece, EU
412	Oral presentation at scientific event	EVD	Sonia Kay made presentation on "Effects of agroforestry systems on pollination services". at 15th International Conference on Environmental Science and Technology Rhodes	31 Aug – 2 Sep 2017	Rhodes, Greece	SC, I, CivS, Ed	30	Greece, EU
413	Oral presentation at scientific event	INRA	Delphine Mézière and C Chevalier made a presentation on "Weed anagement in alley cropping agroforestry systems" at the "Croisons les regards #2" event organized by the French agroforestry network "RMT AgroforesterieS"	7 Sep 2017	Paris, France	SC, Ed, I	40	France
414	Oral presentation	INRA-Ferlus	INRA-Ferlus staff presented work on the agroforestry system of INRA Lusignan and the first results on fodder trees and shrubs at the "Croisons les regards #2" event organized by the French agroforestry network "RMT AgroforesterieS".	7 Sep 2017	Paris, France	SC, I, Ed	40	France
415	Oral presentation at scientific event	UCPH,	Nora Fagenholm presented "European cross-site comparison of place-based ecosystem services in multifunctional rural landscapes" at the International Association of Landscape Ecology 2017 Conference	14 Sep 2017	Ghent, Belgium	SC, Ed	30	International
416	Oral presentation at scientific event	UCPH	Mario Torralba presented "Exploring the role of farm management in the co-production of ecosystem services in wood pastures of southwest Spain" at the International Association of Landscape Ecology 2017 Conference	14 Sep 2017	Ghent, Belgium	SC, Ed	30	International

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
417	Oral presentation	INRA DiaScope	Staff from INRA Diascope presented "Screening of crop varieties for agroforestry farming: the case of durum wheat in organic olive orchards in southern France"	15 Sep 2017	Toulouse, France	Ed, Sc, I	45	France
418	Oral presentation at scientific event	INRA Drôme	L. Castel, C. Béral, A. Martin-Chave and D. Mézière D. made a presentation of recent agroforestry at the Tech&Bio Conference	21 Sep 2017	Valence, France	Ed, I	80	France
419	Oral presentation at scientific event	EVD	Sonia Kay made presentation on "Bundles of ecosystem services provided by agroforestry in European landscapes" at the 125th IUFRO Congress	18-22 Sept 2017	Freiburg, Germany	SC, I, CivS, Pol, M, Ed	50	Europe
420	Oral presentation at scientific event	EFI	Marko Lovric presented "To implement or not to implement agroforestry practices: An Analytic Network Process approach for European biogeographical regions" at the 125th IUFRO Congress	18-22 Sep 2017	Freiburg, Germany	SC, I, Pol, M, Ed	30	International
421	Oral presentation at scientific event	USC	Rosa Mosquera-Losada presented "Agroforestry a tool to mitigate climate change" at the 125th IUFRO Congress	18-22 Sep 2017	Freiburg, Germany	SC	100	International
422	Oral presentation at scientific event	BTU	Michael Kanzler presented "Agroforestry as a strategy to secure agricultural production in the context of increasing urbanization and climate change effects" [in German: Agroforstliche Nutzungsstrategien zur Sicherung der landwirtschaftlichen Produktion im Kontext steigender Urbanisierung und den Folgen des Klimawandels]	26-28 Sep 2017	Witzenhausen, Germany	SC	60	Germany
423	Oral presentation at scientific event	FDEA	M Jäger made presentation on "Experience with Agroforestry in Switzerland" to the Upper Rhine cluster for Sustainability Research at the University of Freiburg	3 Oct 2017	University of Freiburg, Germany	SC, Ed	25	Germany
424	Oral	USC	Rosa Mosquera-Losada presented "Políticas de	5-6 Oct 2017	Valladolid,	SC	100	Spain

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
	presentation at scientific event		futuro en los cultivos ecológicos extensivos: prácticas agroforestales" at Jornadas de innovaciones agroecológicas en cultivos extensivos y legumbres, Valladolid, Spain		Spain			
425	Oral presentation at scientific event	CNR,	Piero Paris presented "I paesaggi degli alberi. Una rilettura in chiave agroforestale moderna dei paesaggi rurali tradizionali italiani" [The Landscapes of Trees: rivisting traditional rural landscapes with a modern agroforestry approach] at Italian Society of Silviculture and Forest Ecology (SISEF) 11th National Congress	12 Oct 2017	Rome, Italy	SC, Pol, Ed	200	Italy
426	Oral presentation at scientific event	CNR	F. Camilli presented "La conoscenza dei sistemi agroforestali italiani: un'indagine online" [Knowledge of Agroforestry Systems in Italy: an online survey] at Italian Society of Silviculture and Forest Ecology (SISEF) 11th National Congress	12 Oct 2017	Rome, Italy	SC, Pol, Ed	200	Italy
427	Oral presentation at scientific event	CNR	Andrea Pisanelli presented "Opportunities and constraints for the adoption and maintenance of agroforestry systems in Europe within the Common Agricultural Policy (CAP)" at	12 Oct 2017	Rome, Italy	SC, Pol, Ed	200	Italy
428	Oral presentation at scientific event	VEN	V. Bondesan made presentation on "Allevamento biologico di suini allo stato semibrado con sistema agroforestale: esperienze in area di pianura e bassa montagna veneta" *at* Italian Society of Silviculture and Forest Ecology (SISEF) 11th National Congress (short presentation) - SISEF Italian society of forestry and forest ecology –XI° National Congress, 10-13 October, 2017	13 Oct 2017	Rome, Italy	SC, Ed	25	Italy
429	Oral presentation to policy audience	CRAN, EVD, USC	Paul Burgess, Sonia Kay and Rosa Mosquera-Losada made presentation on "Agroforestry – managing complexity: Promoting the wider adoption of appropriate agroforestry systems in Europe through policy development and other initiatives"	17 Oct 2017	European Commission, Brussels	Pol	50	EU

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
430	Oral presentation at scientific event	INRA DiaScope	Anna Panozzo made a presentation on "Screening of crop varieties for agroforestry farming: the case of durum wheat in organic olive orchards in southern France".	24 Oct 2017	Univ of Padova, Italy	Ed, SC, I	45	Italy
431	Oral presentation at scientific event	USC	Rosa Mosquera-Losada presented "Agroforestry and agroecology including woody vegetation in agricultural systems" at First Agroecology Europe Forum	25-27 Oct 2017	Lyon, France	SC	100	International
432	Oral presentation at scientific event	TEI	Anastasia Pantera made a presentation on agroforestry for high value tree systems at First Agroecology Europe Forum	25-27 Oct 2017	Lyon, France	SC	100	International
433	Oral presentation at scientific event	UCPH	Nora Fagenholm presented "European cross-site comparison of place-based ecosystem services in multifunctional rural landscapes" at the Annual Meeting of Finnish Geographers "Geography Days" 2017 conference	26 Oct 2017	Turku, Finland	SC, I, Ed	15	Finland
434	Oral presentation at scientific event	SoE KKK	Varga Anna Varga presented „Fás-erdős legeltetési rendszerek jelenlegi helyzete és természetvédelmi vonatkozásai". (State and nature conservation aspects of wood pasture systems) at the XI. Magyar Termeszetvedelmi Biologiai Konferencia	2-5 Nov 2017	Eger, Hungary	SC, CivS, Ed	250	Hungary
435	Oral presentation at scientific event	UBB	Tibi Hartel made a presentation on "Social-ecological sustainability of agrarian landscapes" at the Hungarian Society of Natural Sciences. Link here (radio interview): http://www.mtte.hu/content/20171108-biodiverzit%C3%A1sr%C3%B3l-m%C3%A1sk%C3%A9pp-konferencia-sorozat-2-r%C3%A9sz?page=0%2C2	8 Nov 2017	Budapest, Hungary	SC	200	Hungary
436	Oral presentation at scientific event	UCPH	Mario Torralba presented "European cross-site comparison of place-based ecosystem services in multifunctional rural landscapes" at the Programme of Ecosystem Change and Society 2017	8 Nov 2017	Oaxaca, Mexico	SC, I, Ed	30	International

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			Conference					
437	Oral presentation	EVD	Sonia Kay made presentation on "Agroforestry in Europe - Impact at landscape-scale"	9 Nov 2017	Herzberg, Switzerland	SC	20	Europe
438	Oral presentation at scientific event	INRA DiaScope	Staff from INRA presented "Participatory plant ecobreeding : a new concept for organic agroforestry" at 19th Organic World Congress	9-11 Nov 2017	New Delhi, India	SC, I, CivS, Pol	50	International
439	Oral presentation at scientific event	LBI	Staff from LBI presented "Less avian influenza risk birds in poultry free-range areas covered with trees" at 19th Organic World Congress	9-11 Nov 2017	New Delhi, India	SC, I, CivS, Pol	50	International
440	Oral presentation at scientific event	ORC	Jo Smith presented "Improving UK agroforestry: A participatory approach to identifying, developing and field-testing innovations" at 19th Organic World Congress	9–11 Nov 2017	New Delhi, India	SC, I, CivS, Pol	50	International
441	Oral presentation at public event	UEX	Manuel Bertomeu presented "Agroforestry systems and practices: socio-economic and environmental benefits" at Seminar on Alternative Tree Crops	13 Nov 2017	Perales del Puerto, Extremadura , Spain	CivS, Pol, Ed	120	Spain
442	Oral presentation at scientific event	USC	Rosa Mosquera-Losada presented "Silvopastoral sytems under chestnut trees" at BIOCASTANEA	16 Nov 2017	Ponferrada, Spain	SC	100	Spain
443	Oral presentation at scientific event	CRAN	Paul Burgess presented "Agroforestry in Europe Practice, research and policy" at the Third National Agroforestry Conference, Swedish University of Agricultural Sciences	16 Nov 2017	Alnarp, Sweden	SC, Pol, Ed I, M,	200	Sweden
445	Oral presentation at scientific event	CRAN	Paul Burgess presented "How can policy promote the uptake of agroforestry in Europe?" at the Third National Agroforestry Conference, Swedish University of Agricultural Sciences	16 Nov 2017	Alnarp, Sweden	SC, Pol	30	Sweden
446	Oral presentation at scientific	AFBI	Jim McAdam presented "Agroforestry, a land use option for sustainable grassland management" to the Systematic Ecology Group Lunchtime Seminar	20 Nov 2017	Queens University Belfast, UK	SC, Ed	60	UK

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
	event		series at Queens University Belfast					
447	Oral presentation at scientific event	SLU	Presentation by Erik Valinger "Forskning kring rennäring och skogsbruk vid SLU" at the Swedish Forest Agency Conference 2017	23 Nov 2017	Lulea, Sweden	SC, I	18	Sweden
448	Oral presentation in EU Parliament	CRAN, AFAF, USC	Paul Burgess, Fabien Balaguer and Rosa Mosquera-Losada made presentations at the "1 + 1 = 3: How agroforestry is boosting the revenue and resilience of Europe's farmers" meeting in the European Parliament	29 Nov 2017	European Parliament, Brussels, Belgium	SC, I, CivS, Pol, M, Ed	85	Belgium, rest of EU
449	Oral presentation at scientific event	AU	B. Holm presented "Fordele og ulemper ved træer i folde" at Økologi Kongres 2017	29-30 Nov 2017	Kolding, Denmark	I, CivS	70	Denmark
450	Oral presentation at scientific event	AU	J.E. Hermansen presented "Bedre grisemiljø, versus lavere klima-og miljøbelastning, eller både og?" at Økologi Kongres 2017	29-30 Nov 2017	Kolding, Denmark	I, CivS	70	Denmark
451	Oral presentation at scientific event	EFI	Michael den Herder et al presented "Increasing carbon sequestration and mitigating carbon emissions - Opportunities provided by agroforestry" at the International Conference Baltic Pathway Towards Low Carbon and Climate Resilient Development.	30 Nov 2017	Riga, Latvia	SC, I, Pol, M	320	Latvia, Estonia, Lithuania, Sweden, Norway, Denmark, Finland
452	Oral presentation at scientific event	INRA	Delphine Mézière and O Guérin presented "Weeds in alley cropping agroforestry systems. Elements for a multifunctional management" at an event organised by the French Agroforestry Association "Afac-Agroforesteries"	13 Dec 2017	Toulouse, France	SC, CivS	60	France
453	Oral presentation at scientific event	UEX	Gerardo Moreno presented "Pasture improvement and Biodiversity in Iberian Dehesas" at the 18th University-Entreprise meeting focussed on solutions for the dehesa and orgaized by the University of Cordoba	14 Dec 2017	Córdoba, Spain	I, SC, Ed, Pol	150	Spain

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
454	Oral presentation to a scientific event		Crous-Duran J, Graves AR, Paulo J, Mirck J, Oliveira TS, Kay S, Garcia de Jalón S, Palma J. Modelling tree density effects on provisioning ecosystem services at 9th Ecosystem Services Partnership (ESP) world conference	11-15 Dec 2017	Shenzen, China	SC	500	International
455	Oral presentation at scientific event	AFBI	McAdam, Jim McAdam made a presentation on "Sustainable Grassland Intensification and Agroforestry" at the invitation of the Grass and Forage Design Laboratory, College of Animal Life Science, Kangwon National University, S Korea	28 Dec 2017	S Korea	SC, CivS	20	UK, Canada, Korea, Iran
456	Oral presentation at public event	CRAN	Paul Burgess made a presentation on"Trees: improving the lives of livestock" workshop at the Oxford Real Farming Conference	4 Jan 2018	Oxford, UK	SC, I, CivS, Pol, Mm Ed	150	UK
Poster								
457	Poster presentation to a scientific event	INRA-Ferlus	Poster presentation of the innovative forage system of the OasYs system experiment, including fodder trees and shrubs at the26th General Meeting of the European Grassland Federation	5-7 Sep 2016	Trondheim, Norway	SC, I	220	Europe
458	Poster presentation to a scientific event	INRA-Ferlus	Poster presentation of the innovative forage system of the OasYs system experiment, including fodder trees and shrubs at the 3rd Regional Meeting on Forage	22 Sep 2016	Montmorillon, France	SC, I, Ed	200	France
459	Poster presentation to a scientific event	UEX	Yonathan Cáceres made a poster presentation on "Evaluation of cost-efficient shelters to regenerate trees in silvo-pastoral systems" at the World Congress on Silvo-Pastoral Systems.	27-30 Sep 2016	Évora Portugal	SC	300	International
460	Poster presentation to a scientific event	ISA	Sonia Faias made a poster presentation "Is cork growth affected by different understory management options: lupine pasture versus shrubs encroachment?" at the World Congress on Silvo-Pastoral Systems. http://www.silvopastoral2016.uevora.pt/wp-	27-30 Sep 2016	Evora, Portugal	SC	300	International

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			content/uploads/2016/11/WG_4_Is-cork-growth-affected-by-different-understory-management_S-Faia-et-al.pdf					
461	Poster presentation to a scientific event	TEI	Kostas Mantzanas presented a poster entitled "Effects of livestock grazing on understory vegetation in relation to animal sheds in a valonia oak silvopastoral system of western Greece" at the World Congress on Silvopastoral Systems	27-30 Sep 2017	Evora, Portugal	SC	300	International
462	Poster presentation to a scientific event	EVD	Sonia Kay made a poster presentation on "Spatial-mapping and assessment of ecosystem services on landscape scale provided by agroforestry systems"	8 Nov 2016	Zurich, Switzerland	SC, Ed	15	Switzerland
463	Poster presentation to a public event	EFI	Michael den Herder made a posted on "Value chain: Livestock agroforestry - combining forestry with livestock husbandry: woodland eggs and poultry" at EIP-AGRI workshop on new value chains from multi-functional forests. Vienna, November 2016. More information: https://ec.europa.eu/eip/agriculture/en/event/eip-agri-workshop-%E2%80%98new-value-chains	10 Nov 2016	Vienna, Austria	SC; Pol; I; M	84	Europe
464	Poster presentation to a scientific event	BTU	Penka Tsonkova made a poster presentation on "A brief overview of the origin and development of woody structures in the landscape" (in German: Ein kurzer Überblick über die Entstehung von Gehölzen in der Landschaft)	30 Nov – 01 Dec 2016	Senftenberg, Germany	SC; Pol; Ed, M	120	Germany
465	Poster presentation to a scientific event	BTU	Michael Kanzler made a poster presentation on "Einfluss agroforstlicher Nutzung auf das Mikroklima, den Ackerfruchtertrag und die potentielle Evaporation" at the 5th German Agroforestry System Forum	30 Nov–1 Dec 2016	Senftenberg, Germany	SC; Pol; Ed, M	120	Germany
466	Poster presentation to a scientific event	BTU	Werwoll J, Piehl M, Jaconette Mirck and BTU staff presented a poster entitled "Einflusse der Gehölzstreifen auf die Wüchsigkeit und den Zuckergehalt von Zuckerrüben eines	30 Nov–1 Dec 2016	Senftenberg, Germany	SC; Pol; Ed, M	120	Germany

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			Agroforstsystems“ at the5th German Agroforestry System Forum					
467	Poster presentation to a scientific event	BTU	Staff from BTU presented “Root distribution of black locust trees in an alley cropping system” at the 5th German Agroforestry System Forum	30 Nov–1 Dec 2016	Senftenberg, Germany	SC; Pol; Ed, M	120	Germany
468	Poster presentation to a scientific event	INRA-Ferlus	Presentation to the Annual Meeting of the French Association of Forage Production on the work of INRA Lusignan on the browsing of fodder trees.	21-22 Mar 2017	Paris, France	SC, I, CivS, Ed, Pol, M	250	France
469	Poster presentation to a scientific event	USC	Nuria Ferreiro-Domínguez presented a poster entitled “Maize yield in silvoarable systems established under *Prunus avium* L. in Galicia (NW Spain)” at the 19th European Grassland Federation Symposium [Prize for Best Poster]	7–10 May 2017	Sardinia, Italy	SC	100	Europe
470	Poster presentation to a scientific event	USC	Rosa Moquera-Losada presented a poster entitled “Mulberry (*Morus* spp) as a fodder source to overcome climate change” at the 19th European Grassland Federation Symposium	7-10 May 2017	Sardinia, Italy	SC	100	Europe
471	Poster presentation to a scientific event	USC	Speaker: Nuria Ferreiro-Domínguez presented a poster entitled “Productivity of silvopastoral systems under Pinus radiata D. Don estimated with the Yield-SAFE model” at the 19th European Grassland Federation Symposium	7-10 May 2017	Sardinia, Italy	SC	100	Europe
472	Poster presentation to a scientific event	INRA-Ferlus	INRA staff presented a posted on “first results on the feeding value of leaves of woody plants for feeding ruminants in summer” at the 19th European Grassland Federation Symposium	7-10 May 2017	Sardinia, Italy	SC, I	100	Europe
	Poster presentation to a scientific event	SoE KKK	Kiss-Szigeti N.: Ecosystem services of agroforestry systems. at: 7th Hungarian Landscape Ecology Conference	25-27 May 2017	Szeged, Hungary	SC, Ed	150-200	Hungary
473	Poster presentation	UEX	Arenas-Corraliza I, López-Díaz ML, and Moreno G presented a poster entitled “Agroforestry to cope	23–30 Jun 2017	Plasencia, Spain	SC	1000	Spain

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
	to a scientific event		with climate change: intercropping cereal among walnut timber trees" to the 7th Spanish Forestry Congress					
474	Poster presentation to a scientific event	TEI	A. Papadopoulos presented a poster entitled "Effects of grazing and understorey clearing on regeneration of valonia oak in Western Greece" at 15th International Conference on Environmental Science and Technology	31 Aug – 2 Sept 2017	Rhodes, Greece	SC	800	Europea
475	Poster presentation to a scientific event	TEI	A Papadopoulos presented a poster entitled "Stand structure analysis of *Quercus ithaburensis* subsp. macrolepis silvopastoral systems in Greece" at 15th International Conference on Environmental Science and Technology	31 Aug – 2 Sept 2017	Rhodes, Greece	SC	800	Europea
476	Poster presentation to a scientific event	USC	Rosa Mosquera-Losada presented a poster entitled "Integration of a soil carbon dynamics module into the Yield-SAFE model" at the 6th International Symposium on Soil Organic Matter	3-7 Sep 2017	Harpenden, UK	SC	100	Europea
477	Poster presentation to a scientific event	AU	AU staff presented a poster on "the inclusion of poplar trees in pasture-based pig systems to reduce the heat load of lactating sows during hot periods" at 7th International Conference on the Assessment of Animal Welfare	5 Sep 2017	Wageningen the Netherlands	SC	50	Europe
478	Poster at scientific event	TEI	TEI staff presented a poster on "Ecological, silvicultural and management characteristics of the valonia oak silvopastoral system in Xeromero Aetoloakarnania and its development potential under the framework of agroforestry" (in Greek) at the 18th Forestry Panhellenic Conference	8-11 Oct 2017	Edessa, Greece	SC	250	Greece, Albania, Serbia
News and magazine articles								
479	Magazine article	UEX	Agroforestría: incluyendo plantas y animales en la producción agroecológica https://www.agroecologia.net/revista-ae-27-agroforesteria/ Agricultura Ecológica 27: 14-15	24 Mar 2017	Journal of the Society of Organic Farming	I, SC, CivS	30000	Spain

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
480	Magazine article	USC	Sistemas agroforestales, silvopastoralismo y agroecología https://www.agroecologia.net/revista-ae-27-agroforesteria/ Agricultura Ecológica 27: 12-13	24 Mar 2017	Journal of Society of Organic Farming	I, SC, CivS	30000	Spain
481	Magazine article	USC	Las prácticas agroforestales y la ecología en Europa https://www.agroecologia.net/revista-ae-27-agroforesteria/ Agricultura Ecológica 27: 48-49	24 Mar 2017	Journal of Society of Organic Farming	I, SC, CivS	30000	Spain
482	Magazine article	ORC	Jo Smith produced an article entitled "Agroforestry: The potential for tree-mendous change" in the Spring 2017 issue of the Soil Association's Living Earth magazine	Spring 2017 issue	Soil Association membership	CivS	20000	UK
483	News article	SoE KKK	News article on Hungarian wood pasture: Bogyiszló - Kasztói fás-legelő bemutatása http://www.fataj.hu/2017/05/091/201705091_Bogyiszlo-Kaszto-faslegelo.php	10 May 2017	Hungary	CivS	250000	Hungary
484	News article	SoE KKK	Kasztó-nap [The Day of Kasztó wood pasture] in Tolnai Népújság [daily newspaper of Tolna county]	11 May 2017	Tolna County, Hungary	CivS	100000	Hungary
485	Magazine article	UEX	Gerardo Moreno. 2017. Retos e innovaciones demandadas por propietarios y gestores de dehesas. Revista Montes 128: 38-42.	1 Jun 2017	Spain	I	10000	Spain
486	News article	SoE KKK	Regional newspaper: Veszprémi Napló, https://veol.hu/kultura/fas-legelok-napja-es-pasztorunnep-olaszfaluban-1839049	4 Jun 2017	Veszprém County, Hungary	CivS	100000	Hungary
487	Interview	USC	La Voz de Galicia: "keys to tackle global warming from agricultural and livestock production" https://www.lavozdegalicia.es/noticia/lemos/2017/06/11/habra-leche-costara-producirla/0003_201706M11C69911.htm	11 Jun 2017	Galicia (NW Spain)	SC, I, CivS, Pol, M, Ed	1000	Spain
488	Interview	AU	Heidi Mai-Lis Andersen gave an interview on the importance of shade for free range pigs for the "Organic Denmark" magazine	23 Jun 2017	Denmark	I, CivS	2000	Denmark

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			http://okologi.dk/oekologi-og-erhverv/nyheder/2017/06/skygge-til-frilandsgrise-er-vigtig					
489	News article	SoE KKK	A bogyiszlói vándorló fákról nyílik kiállítás az Ős-Dráva Látogatóközpontban (Exhibition on the migratory trees of Bogyiszló at the Old-Dráva Visitor Center) http://kadarka.net/cikkek-kat/a-bogyiszloi-vandorlo-fakrol-nyilik-kiallitas-az-os-drava-latogatokozpontban	27 Sep 2017	Hungary	CivS	100000	Hungary
490	News interview	USC	Campo Galego: Limpiar el monte con ganado pastando es diez veces más barato que desbrozarlo mecánicamente http://www.campogalego.com/forestal/limpar-o-monte-con-gando-pacendo-e-dez-veces-mais-barato-que-desbrozalo-mecanicamente/	2 Nov 2017	Galicia, Spain	SC, I, CivS, Pol, M, Ed	1000	Spain
491	Magazine article	UEX	La dehesa encara los retos de futuro. Interview to Gerardo Moreno for the regional journal Periodico Extremadura. http://www.elperiodicoextremadura.com/noticias/economiaverde/dehesa-encara-retos-futuro_1060245.html	19 Dec 2017	Extremadura , Spain	CivS	100000	Spain
Field visits and workshops								
492	Workshop	UBB	Staff from UBB led a wood-pasture workshop within the Conference of Foresters from the Carpathian Basin	27 Jun 2016	Carpathian Basin	I	85	Romania
493	Speech at cultural festival	UBB	Tibi Hartel made a presentation of ancient wood-pastures of Southern Transylvania at Week of Haferland with the Saptamana Haferland community	12 Aug 2016	Saschiz, Romania	CivS	120	Romania
494	Field visit at scientific event	INRA-SYSTEM	Field day on day 5 of EcoSummit international conference	2 Sep 2016	Montpellier, FRA	SC, I	30	International
	Field visit	Ven	G. Mezzalira and C Dalla Valle helped with National Rural Network (Rete Rurale Nazionale) visit to	13 Sep 2016	Masi, Padova, Italy	Sc	10	Italy

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			Casria Farm project site in Masi, Padova					
495	Field visits	INRA-Ferlus	Visit of the agroforestry plots during the open-door events of the INRA Centre of Nouvelle-Aquitaine-Poitiers	13-15 Oct 2016	Lusignan, France	Ed, SC, I, CivS	140	France
496	Field visit	INRA-SYSTEM	Educational visits to the silvoarable systems in Restinclières	17–19 Oct 2016	Montpellier, France	Ed	20	France
497	Stakeholder meeting	LBI	Meeting with organic poultry chain working group on challenges and corresponding demand for research related to organic poultry production	9 Dec 2016	Driebergen, Netherlands	I	10	Netherlands
498	Stakeholder meeting	EVD	S. Kay and F. Herzog led exchanges related to AGFORWARD im Testgebiet “Schwarzbubenland” - Erste Ergebnisse	20 Dec 2016	Sissach, Switzerland	SC, Ed	6	Switzerland
499	Stakeholder meeting	EVD	S. Kay and F. Herzog made presentation on “Agroforestry in Europe and standard cherry fruit trees in Schwarzbubenland”	30 Jan 2017	Büsserach, Switzerland	I	20	Switzerland
500	Field visit	INRA-Ferlus	Visit to the agroforestry plots of the president and chief executive of INRA and supporting staff	14 Feb 2017	Lusignan, France	SC	5	France
501	Training workshop	ORC	Presentation by J Smith at ‘Agroforestry Around the World’ at Soil Association staff training workshop, Swindon, UK	22 Feb 2017	Swindon, UK	I	12	UK
502	Field visit	EVD	M. Jäger made field visit and Foundation of the “Groupe d’Interêt agroforesterie Suisse romande”	7 Mar 2017	Rusy, Switzerland	I, Ed, SC	25	Switzerland
503	Stakeholder meeting	LBI	Meeting with chairman of organic poultry chain working group focused on Challenges and corresponding demand for research related to organic poultry production	7 Mar 2017	Ede, Netherlands	I	2	Netherlands
504	Workshop	UEX	Grazing and fire prevention workshop	10 Mar 2017	Hernán Pérez, Spain	CivS, Pol	50	Spain
505	Field visit	INRA-Ferlus	Field visit by the Heads of four scientific INRA divisions	14 Mar 2017	Lusignan, France	SC	10	France
506	Stakeholder meeting	APCA	Grazed orchards stakeholder meeting at Saint Quentin des Prés	17 Mar 2017	Oise, France	I	40	France
507	Workshop and field visit	VEN	G.Mezzalira, C. Dalla Valle and V. Bondesan supported EIP_Agri Agroforestry focus group	21 Mar 2017	Vallevecchia, Caorle-	SC, CivS, Pol, M	40	Europe

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			participants, field visit to Vallevecchia pilot farm on a reclaimed area of land		Venice, Italy			
508	Stakeholder meeting	VEN	Solutions for agroforestry outdoor organic pig production at Sasse-Rami Pilot Farm	11 Apr 2017	Ceregano, Rovigo, Italy	I	7	Italy
509	Workshop to launch new association	UEX	Launching of the Association for Chesnut forests of Hoyos	12 April 2017	Hoyos. Spain	CivS	35	Spain
510	Workshop	EVD	M. Jäger led field visits and workshops during 2-day course for Swiss Interest Group on agroforestry on refining and high value Timber Fruit Tree agroforestry systems. Presentation on the cultural history of fruit trees and improvement of apple / pear trees for agroforestry systems	1–2 May 2017	Frauenfeld, Switzerland	I, Ed, SC	20	Switzerland
511	Field visits	CNR	Delegation of researchers from Spain (Bosques Naturales) and Italy (CREA Forestry Research Institute) visited the CNR IBAF experimental plots of walnut under agroforestry managements	3 May 2017	Pornano and Orvieto, Italy	SC; I	10	International
512	Field visit	INRA-Ferlus	Visit to agroforestry plots by the Head and researchers of an agriculture high school in Bordeaux	4 May 2017	Lusignan, France	SC, Ed	10	France
513	Workshop	ORC	Woodland Trust/ Accor Hotels /Pur workshop on agroforestry and farm walk at Elm Farm	8 May 2017	Newbury, UK	I	8	UK
514	Field visit	INRA-SYSTEM	Two day field visit of agroforestry plots with farmers, researchers and extensionists from Czech Republic	9–10 May 2017	Montpellier, Maraussan, Molandier, France	I, SC	15	Czech Republic
515	Field visit	CNR	Visit of the Monte Pisanu AGFORWARD site as post tour for the European Grassland Federation 2017 Meeting	10 May 2017	Bono, Sardinia, Spain	Sc, Pol	50	International
516	Stakeholder workshop	ORC	Tree Fodder: Food for Thought workshop at Elm Farm	11 May 2017	Newbury, UK	I, Pol, SC	25	UK
517	Stakeholder meeting	LBI	Meeting with organic poultry farmers and water board focused on challenges and corresponding demand for research related to water pollution by	29 May 2017	Driebergen, Netherlands	I	10	Netherlands

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			poultry manure in free-range areas.					
518	Field visit	INRA-Ferlus	Visit to agroforestry plots by the participants of a seminar on system experiment organized by INRA in Poitiers	30 May 2017	Lusignan, France	SC	45	France
519	Stakeholder meeting	SoE KKK	SoE KKK with MTA ÖK: Event: Herder meeting at Olaszfalu	3 Jun 2017	Olaszfalu, Hungary	I, CivS, PM, M, SC	250	Hungary
520	Field visit	USC	Field visit to Bosques Naturales plot by international students and teachers of an agroforestry course held in Bragança, Portugal: Agroforestry Systems: an inheritance with future	2–3 Jun 2017	Galicia, Spain	SC, Ed	30	International
521	Field visit	INRA-Ferlus	Visit to agroforestry plots by the Iranian vice-minister of agriculture, the president of the Iranian seed-bearer association and two representatives of a French seed company	6 Jun 2017	Lusignan, France	Pol, I, CivS	4	France
522	Stakeholder visit	LBI	Visit to organic poultry farms with Finnish journalist Laura Yöntilä: Agroforestry for poultry farmers in NL	8 Jun 2017	Netherlands	I	2	Netherlands, Finland
523	Field visit	UEX	Field trip through the 30 ha farm of Carlos Donoso, a farmer with a 30 year experience on organic fruit production during an intensive course on Small-scale agroforestry.	16 Jun 2017	Acebo, Extremadura, Spain	CivS, Ed	25	Spain
524	Field visit	UEX	Visit to the farm of the Fertiprado company to discuss about the sown of legume-rich pastures	22 Jun 2017	Vaiamonte, Portugal	I	12	Spain
525	Field visit	CRAN	Field visit to the apple-cereal silvoarable system at Whitehall Farm as part of the Farm Woodland Forum meeting	23 Jun 2017	Peterborough, UK	SC, I, Ed, Pol	40	UK, Ireland
526	Stakeholder meeting	Ven	Stakeholder workshop on free range fattening pigs marginal/bush areas at Mountain pilot farm of Villiago	27 Jun 2017	Villiago, Sedico, Belluno, Italy	I	4	Italy
527	Open Day	ORC	Open Day at Allerton Estate, UK. General presentation on agroforestry as part of farm tour.	28 Jun 2017	Leicestershire, UK	I, Pol	250	UK
528	Open Day	ORC	National Organic Combinable Crops event, Andover, UK. General presentation of value of	6 Jul 2017	Andover, UK	I	200	UK

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			hedges and agroforestry as part of farm tour.					
529	Field visit	INRA DiaScope	The focus of the visit organised by INRA was "Which crops in Agroforestry systems?"	12 Jul 2017	Mauguio, France	I	30	France
530	Stakeholder workshop	ORC	Wakelyns Agroforestry Open Day, Suffolk UK	12 Jul 2017	Metfield, UK	I, SC	35	UK
531	Stakeholder meeting	USC	Presentation of the results of the AGFORWARD project to farmers, advisors and technicians	19 Jul 2017	Lugo, Spain	I	30	Spain
532	Stakeholder meeting	VEN	Workshop on solution for agroforestry outdoor organic pig production at Sasse-Rami Pilot Farm.	24 Jul 2017	Ceregano, Rovigo, Italy	I	10	Italy
533	Workshop to launch new association	UEX	Launching of the Association of Forest of Descargamaría (northern Extremadura)	12 Aug 2017	Descargamaría, Spain	CivS	60	Spain
534	Field visit	UBB	T. Hartel led a field visit at the invitation of the Sona Noastra Association on the importance of cultural landscapes	23 to 24 Aug 2017	Romania	I	30	Romania
535	Workshop	UEX	Debate co-organized with Bosques Naturales S.A. company about the silvopastoral and silvoarable management of timber plantation, attended by company and local farmers and extension workers	1 Sep 2017	Carpio de Tajo, Toledo, Spain	CivS	12	Spain
536	Field visit	INRA-SYSTEM	Field day associated with day 5 of the EcoSummit international conference	2 Sep 2016	Montpellier, France	SC, I	30	International
537	Field visit	UEX	Visit to the farm "Atoquedo" owned by Enrique Rodríguez-Arias to discuss about the sowing of legume-rich pastures, triticale as fodder crop and the efficiency of thorny protector to regenerate trees in grazed wood pastures.	7 Sep 2017	Torrejón el Rubio	I	10	Spain
538	Stakeholder workshop	ORC	Trees and Livestock Workshop	15 Sep 2017	Pitlochry, UK	I, Pol	20	UK
539	Stakeholder workshop	ORC	Agroforestry for Growers Workshop, Tolhurst Organics, Pangbourne UK	19 Sep 2017	Pangbourne, UK	I	25	UK
540	Workshop	BTU	Introduction to agroforestry and its benefits to soil, water and biodiversity	21 Sep 2017	Peickwitz, Germany	Ed	50	Germany
541	Field visit	LBI	Discussing opportunities for new business model in which companies compensate their carbon	26 Sep 2017	Overberg, Netherlands	I	5	Netherlands

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			footprint by paying for planting trees in organic poultry free range areas					
542	Workshop	UEX	Workshop to select some ne experimental agroforestry farms	29 Sep 2017	Hernán Pérez, Spain	CivS	40	Spain
543	Stakeholder workshop	VEN	Workshop on solutions for agroforestry outdoor organic pig production at the Corte Pajusco-Bressanvido, local agriculture exhibition	30 Sep 2017	Bressanvido, Vicenza, Italy	I	7	Italy
544	Workshop	UBB	T. Hartel met with the local community of Saschiz to share knowledge and to identify further needs of interventions for the sustainability of wood-pastures	2 Oct 2017	Saschiz, Romania	Pol	10	Romania
545	Stakeholder workshop	TEI	A Papadopoulos and A Pantera presented ”Agroforestry in Greece: the case of the Xeromero forest (in Greek)” and K Mantzanas presented ”Opportunities of the new CAP: cases for the AGFORWARD project” at a meeting co-organised with the AGROFMM Eramus+ project http://www.velanidodasos.gr/articles/one/201	3 Oct 2017	Skourtou-Aetoloakarnani, Greece	I	25	Greece
546	Stakeholder workshop	INRA-Ferlus	Presentation to the French stakeholder group on agroforestry for ruminants of the results on the diversification of tree uses, their spatial organization and tree protection from cattle, and on the nutritive value of potential fodder trees and on the effects of trees on grassland production and quality.	11 Oct 2017	Lusignan, France	I, SC, CivS, Ed	42	France
547	Stakeholder meeting	CREA	Adolfo Rosati led a meeting focussed on chickens and asparagus in the olive orchard, geese and soil tillage with horses in the vineyard (Polli e Asparagi nell'Oliveto, Oche nella Vigna, Lavorazioni con Cavalli)	16 Oct 2017	Spoleto, Cannara, near Perugia, Italy	I	33	Italy
548	Field visit	AGROOF	Field visit to Restinclières of politicians and decision-makers from Cuba	19 Oct2017	Restinclières, France	Pol	15	Cuba
549	Field visit	LBI	New initiative of small scale egg production in forest areas. www.groenewoudei.nl	20 Oct 2017	Oirschot, Netherlands	I	5	Netherlands

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
550	Stakeholder meeting	VEN	Workshop on free range fattening pigs marginal/bush areas at the Mountain pilot farm, Villiago	24 Oct 2017	Villiago, Sedico, Belluno, Italy	i	5	Italy
551	Field visit	INRA-SYSTEM	Field visit by of heads of experimental farms of agricultural schools: Agroforestry in Restinclières	24 Oct 2017	Montpellier, France	SC, Ed	15	France
552	Workshop	UEX	Participation in the debate of the workshop "The dehesa: environment, conservation and heritage"	26 Oct 2017	Almodovar del Campo, Spain	CivS	50	Spain
553	Stakeholder meeting	TEI	A Papadopoulos led a stakeholder meeting on Silvopastoral systems in Greece at Kato Meria	29 Oct 2017	Kea island, Cyclades-Aegean, Greece	I, SC	50	Greece – Netherlands, USA, Germany
554	Workshop	UBB	Workshop on cultural ecosystem services of agrarian landscapes, at the Green Club Association	30-31 Oct 2017	Sfîntu Gheorghe, Romania	CivS	25	Romania
555	Field visit	UEX	Visit to the farm "Castro Enríquez" owned by the government of the Salamanca province to discuss about the innovations of the dehesa management	9 Nov 2017	Cabeza de Diego Gómez	SC, I	10	Spain
556	Stakeholder meeting	VEN	Workshop on solution for agroforestry outdoor organic pig production at Sasse Rami Pilot Farm	13 Nov 2017	Ceregano, Rovigo, Italy	I	3	Italy
557	Workshop	ORC	Jo Smith made a presentation on "Agroforestry at the Organic Research Centre" to a IFOAM European farmer group	15 Nov 2017	Lambourne, UK	I	40	Europe
558	Field visit	ISA	Visit to farm in Grândola county managed by ANSUB and affected by a large fire in August 2017.	13 and 23 Nov 2017	Grândola	I, CivS	15	Portugal
559	Stakeholder meeting	INRA UMR BAGAP	Final workshop to present AGFORWARD results with the Terres & Bocage Association.	15 Nov 2017	Plouguenast, Bretagne, France	I	24	France
560	Workshop	LBI	Study day organised by the stakeholder group "Dunefarmers" which covered new method in studying browsing behaviour of dairy cows (wild cameras), the self-medication by dairy cows by eating willows, and the nutritional value of fodder	22 Nov 2017	Oosteind, Netherlands	I	25	Netherlands

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			trees brought together in the table					
561	Workshop	ISA	Centro de Estudos Florestais (CEF) workshop on the role of agroforest management practices in the prevention and recovery after fire in montado. Organization: CEF and ANSUB. https://www.isa.ulisboa.pt/en/cef/highlights/meetings/cork-oak-woodlands-agroforest-management-practices	23 Nov 2017	Grândola	I, CivS, M	50	Portugal
562	Stakeholder workshop	ORC	Jo Smith contributed to a "Trees on Farms" event organised by Farmers Weekly and Woodland Trust, at the Allerton Estate, UK	23 Nov 2017	Leicestershire, UK	I	40	UK
562	Stakeholder meeting	BTU	Michael Kanzler presented AGFORWARD – background and results to the stakeholder meeting	25 Nov 2017	Witzenhausen, Germany	SC	60	Germany
563	Field visit	INRA-SYSTEM	Farmers and researchers involved in the LIFE project Montado-Adapt visited the agroforestry plots at Restinclières	30 Nov 2017	Montpellier, France	I, SC	15	Spain and Portugal
564	Stakeholders meeting	TEI	A Papadopoulos presented the results of the AGFORWARD project to a stakeholder meeting in Western Greece	7-8 Dec 2017	Agrino & Messologi, W. Greece	I, Pol	5	Greece
565	Field visit	UEX	Visit by UEX staff to the farm "La Parra" owned by Alfonso Covaleda to discuss about the efficiency of thorny protector to regenerate trees in grazed wood pastures	8 Dec 2017	La Moheda de Gata-Santibañez el Alto, Spain	I	8	Spain
566	Field visit	INRA-Ferlus	Visit by technicians from the INRA "Res0pest" network	12 Dec 2017	Lusignan, France	SC	15	France
567	Stakeholder meeting	TEI	TEI staff presented the results of the AGFORWARD project in the Macedonia region of Greece	14 Dec 2017	Sissani, Kozani, Macedonia, Greece	I	10	Greece
568	Stakeholder meeting	TEI	TEI staff presented the results of the AGFORWARD project near Chalkidiki in Greece	15 Dec 2017	Fokaia, Chalkidiki, Greece	I	10	Greece
569	Workshop	UEX	UEX staff supported a workshop on Non-timber	19 Dec 2017	Cadalso	CivS, Ed	15	Spain

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			forest products in rural areas					
570	Stakeholder meeting	CNR	CNR staff presented AGFORWARD results at a workshop at the farm "Elighes Uttiosos"	20 Dec 2017	Santulussurgiu, Oristano, Sardinia, Italy	Sc, I, CivS, Pol	25	Italy
571	Stakeholder meeting	TEI	A Papadopoulos presented the results of the AGFORWARD research to a stakeholder group at Skourtou	27 Dec 2017	Skourtou, W. Greece	I	4	Greece
572	Stakeholder meeting	LBI	Meeting with organic poultry stakeholders focused on challenges and corresponding research questions related to organic egg production	9 Jan 2018	Ede, Netherlands	I	10	Netherlands
573	Workshop	CNR and CRAN	Piero Paris and Paul Burgess presented results at a final stakeholders workshop in Italy. Piero presented "I risultati del Progetto AGFORWARD in Italia" [The results of the AGFORWARD project in Italy]. The name of the workshop was "The Return of Agroforestry Systems" and it took place at FieraAgricola at Verona.	2 Feb 2018	Verona, Italy.	SC; CivS; Ed; P	70	Italy
Policy development								
574	Policy development	VEN	Agroforestry measures in RDP	2 Mar 2017	Mestre, Venice	Pol	3	Italy
575	Policy development	VEN	V. Bondesan and F. Correale attended meeting with Veneto Region Dep. of Agro- environment, officers on opportunities for RDP agroforestry and innovation measure calls in Veneto Region	17 Mar 2017	Venice, Italy	Pol.	4	Italy
576	Policy development	TEI	Anastasia Pantera participated in the EIP Focus Group "Forest Practices and Climate Change" where she participated in writing a paper on techniques and practices to manage fire risk including agroforestry	Oct 2017	Santiago de Compostella, Spain	SC, I, Ed	23	Europe
577	Policy development	CRAN	Paul Burgess met with the UK Minister of State for Agriculture to discuss agroforestry policy, at the UK Department for Environment, Food and Rural Affairs, London	1 Nov 2017	London, UK	Pol	5	UK

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
578	Policy development	USC	The team of the USC participated in some Civil Dialog Groups of the European Commission (Arable Crops, CAP, Direct Payments and Greening, Environment and Climate Change, Forestry and Cork, Organic Farming and Rural Development)	1 July 2016 to 31 Dec 2017	Belgium, Brussels	SC, I, CivS, Pol	50	Europe
579	Policy development	USC	The team of the USC participated in meetings of the EIP-AGRI	1 July 2016 to 31 Dec 2017	Belgium, Brussels	SC, I, CivS, Pol	50	Europe
580	Policy development	USC	Rosa Mosquera-Losada participated in different meetings of the Global Alliance for Climate-Smart Agriculture (GACSA) because she has been named as facilitator of the GACSA	1 July 2016 to 31 Dec 2017	Around Europe	SC, I, CivS, Pol, M, Ed	150	International
581	Policy development	USC	Rosa Mosquera-Losada participated in different meetings of the Global Research Alliance (GRA) because she is member of the Croplands Research Group https://globalresearchalliance.org/?s=MOSQUERA	1 July 2016 to 31 Dec 2017	Around Europe	SC, I, CivS, Pol, M, Ed	15	International
582	Policy development	USC	Rosa Mosquera-Losada participated in the meetings of the Spanish National Rural Network	1 July 2016 to 31 Dec 2017	Madrid, Spain	SC, I, CivS, Pol, M, Ed	40	Spain
583	Policy development	USC	Rosa Mosquera-Losada participated in two annual meetings of the European Structural and Investment funds (ESIF)	1 July 2016 to 31 Dec 2017	Brussels, Belgium	SC, I, CivS, Pol, M, Ed	100	Europe
Training, technology transfer and education								
584	Training course	UEX	Training for the Public Administration School: The nature of Mediterranean wood pastures and criteria for eligibility of permanent pastures for CAP payments teached by Gerardo Moreno	24-25 Oct 2016	Mérida	Pol, I	30	Spain
585	Training course	UEX	Training for the Public Administration School: The nature of Mediterranean wood pastures and criteria for eligibility of permanent pastures for CAP payments teached by Gerardo Moreno	23-24 Oct 2017	Mérida	Pol, I	30	Spain
586	Design of new agroforestry	UEX	UEX staff helped with the design of new agroforestry projects at a range of sites:	23 Nov 2017	Extremadura	I	8	Spain

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
	projects		1. Intercropping aromatic plants in almond groves: 0.3 ha at Acebo, Extremadura 2. Intercropping asparagus in olive groves: 0.5 ha at Acebo, Extremadura 3. Intercropping blueberries among chestnut trees for fruit production: 0.25 ha at Gata, Extremadura 4. Intercropping arbutus berries among chestnut trees for fruit production: 2 ha at Villanueva de la Sierra, Extremadura 5. Diversification of olive grove intermixing chestnut trees for nut production: 1 ha at Gata, Extremadura					
587	Design of new agroforestry projects	UEX	UEX staff helped with the design of two new agroforestry projects: intercropping peanut among fig trees. Site A at Valverde del Fresno (0.5 ha) and site B at Torre de don Miguel (1.3 ha) were visited	23 Nov 2017	Extremadura, Spain	I	5	Spain
588	Design of new agroforestry projects	UEX	UEX staff helped with the design of two new agroforestry projects: 1. Chestnut plantation managed with grazing with sheep for nut production: 1 ha at Villasvuenas de Gata, Extremadura 2. Improving pasture productivity and quality in olive groves to shift from intensive/chemical management to organic silvopastoral management with sheep grazing: 0.4 ha and 2 ha at Villasbuenas de Gata, Extremadura 3. Chestnut plantation managed with grazing with sheep for nut production: 1.5 ha at Villasbuenas de Gata, Extremadura 4. Improving pasture productivity and quality in olive groves to shift from intensive/chemical management to organic silvopastoral management with sheep grazing: at Perales del Puerto, Extremadura	24 Nov 2017	Extremadura, Spain	I	14	Spain

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
589	Design of new agroforestry project	UEX	UEX staff helped with the design and planting of woody fodder banks: *Morus alba* and Tagasaste for browsing with goats: 1.25 ha at Torre de Don Miguel,	24 Nov 2017	Extremadura, Spain	I	5	Spain
590	Design of new agroforestry project	UEX	UEX staff helped with the planting of woody fodder banks for browsing with goats: 1. 0.5 ha Morus alba at Acebo 2. 0.5 ha of Tagasaste at Hoyos	28 Nov 2017	Extremadura, Spain	I	7	Spain
591	Design of new agroforestry project	UEX	UEX staff helped with the design of three new agroforestry projects: Chestnut plantation managed with grazing with sheep for nut production (1 ha near Acebo) Improving pasture productivity and quality in olive groves to shift from intensive/chemical management to organic silvopastoral management with sheep grazing (6 ha at Valverde del Fresno and 6 ha at Cilleros)	28 Nov 2017	Acebo, Extremadura, Spain	I	8	Spain
592	Technology transfer	AFBI	Jim McAdam contributed to a workshop session with CAFRE on Agroforestry at Loughgall for participants who had taken up the Agroforestry policy option in DAERA's Environmental Farming Scheme.	5 Dec 2017	AFBI Loughgall, UK	I, Pol	22	Northern Ireland
593	Discussion about innovations	UEX	Visit to the "Protector Cactus World" company to discuss about the thorny protector to regenerate trees in grazed wood pastures	7 Dec 2017	Torre de Don Miguel Sesmero	I	4	Spain
Technical leaflets and flyers								
594	Technical leaflet on agroforestry	EVD AGRIDEA	EVD working with AGRIDEA produced a technical leaflet on Agroforestry in German and French https://agridea.abacuscity.ch/de/A~3048/0~0~Shop/Agroforstsysteme	15 Jan 2017	Lindau, Switzerland	SC, I, ED,	1000	Switzerland
595	46 Innovation leaflets	AGROOF, CRAN and others	46 Agroforestry Innovation leaflets covering the innovations investigated across the AGFORWARD stakeholder groups	27 Nov 2017	Anduze, France	SC, I, ED	800	Europe

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
596	10 Best Practice leaflets	ACTA, ICRAF	10 Agroforestry Best Practice leaflets	27 Nov 2017	Anduze, France	SC, I, ED	800	Europe
597	Folder for farmers and advisors	AFAF, AGROOF	Agroforestry folder for farmers and advisors	27 Nov 2017	Anduze, France	SC, I, ED	800	Europe
Training and education								
598	Training sessions	AGROOF	140 Training sessions in the last 2 years.	1 July 2016 to 31 Dec 2017	France	I, Ed	1000	France
599	Website, training toolkits	AGROOF	Provision of training toolkits on the AGFORWARD websitehttp://train.agforward.eu/language/en/agforall/	1 July 2016 to 31 Dec 2017	Worldwide web	I, CivS, Ed	1000	International
600	Training	EVD	S. Kay and F. Herzog supported exchange with regional experts and agricultural school: AGFORWARD in "Pâturage boisé" case study region – first results	26 Aug 2016	Delémont, Switzerland	SC, Pol	2	Switzerland
601	Training course for teachers	UEX	Gerardo Moreno presented "The Spanish dehesa: current threats and challenges to face the complexity" on the training course: "The Forest and the Dehesas" at an Agricultural Technical School	5 Sep 2016	Navalmoral de la Mata, Spain	Ed, I	30	Spain
602	Training course	INRA-SYSTEM	M. Gosme, D. Mézière D. and A. Metay led a practical course on soil profiles and root distribution in agroforestry	21 Sep 2016	Montpellier, France	Ed	12	France
603	Training course	UEX	Gerardo gave a presentation on "The nature of Mediterranean wood pastures and criteria for eligibility of permanent pastures for CAP payments" at a training event entitled "Cattle, Sheep, Grasslands and CAP"	24-25 Oct 2016	Mérida Spain	I, Pol,	30	Spain
604	Training course	INRA-SYSTEM	D. Mézière led a course on "Research and Development for Agroforestry"	15 Nov 2016	Florac, France	Ed	35	France
605	Training course	ISA	Joana A. Paulo led course entitled "Sistemas agroflorestais em Portugal: tradição e oportunidade de inovação" for the first national	20 Nov 2016	Instituto Superior de Agronomia.	SC, Ed	30	European

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			encounter of Portuguese forestry students DOI: 10.13140/RG.2.2.30419.78888		Lisboa, Portugal			
606	Training course	INRA-Ferlus	Staff at INRA led a two day course on "Innovating in cattle production"	5-6 Dec 2016	Lusignan, Paris	Ed	72	France
607	Primary schools	SoE KKK	SoE KKK with HAS–IEBT: Anna Varga supported an Agroforestry Education programme: "Ancient trees and wood pastures are wandering to the schools…"	1 Jan to 31 Dec 2017	Bogyiszló, Hungary	Ed	>150	Hungary
608	Training course	INRA-Ferlus	Staff at INRA led a one day course on "Innovating in cattle production"	10 Jan 2017	Lusignan, Paris	Ed	72	France
609	Training course	INRA-SYSTEM	D. Mézière led a course on "Temperate agroforestry: what for and which valorization?"	8 Feb 2017	Montpellier, France	Ed	25	France
610	Agroforestry module	EVD	EVD with AGRIDEA: module on Agroforestry at the Agricultural School in Marcelin	15 Feb 2017	Marcelin, Switzerland	Ed	20	Switzerland
611	Training workshop	VEN	C. Dalla Valle provided workshop to university students on hedges and agroforestry systems in Veneto rural areas	31 Mar 2017	Montecchio P., Vicenza, Italy	Ed.	10	Italian
612	Field training	UBB	Tibi Hartel with a group of students from Sapientia University engaged in tree-related management activities in the wood-pasture of HRH Prince of Wales, which included: pruning, haloing, coppicing and fencing. The event was assisted partly by the journal Sinteza, who reported it here: http://revistasinteza.ro/remarcabilii/	23-24 Apr 2017	Transylvania, Romania	Ed	25	Romania
613	Training seminar	EFI	"Farmers' perception on the agroforestry systems in Europe" in Seminar Sistemas agroflorestais: uma Herança com future. for students of the Escola Superior Agrária de Bragança	2-3 Jun 2017	Braganca, Portugal	Ed	60	Portugal
614	Training Course	UEX	UEX staff led a one course on "Small-scale agroforestry"	16 Jun 2017	Acebo, Spain	CivS, Ed	25	Spain
615	Training course	CNR	Piero Paris led a session called "Introducing Agroforestry" for high school students from the municipalities of Aiken (South Carolina-USA) and Orvieto (Italy)	22 Jun 2017	Orvieto, Italy	CivS; Ed	30	USA, Italy
616	Training	USC	Staff at USC led a two day course called "Nuevas	13-14 Jul	Vitoria,	Ed	50	Spain

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
	course		tendencias en restauración de suelos degradados: cultivos energéticos y fitogestión en un modelo de Economía Circular"	2017	Spain			
617	Training course	UEX	Gerardo Moreno led a session for chefs on "Ecological bases of dehesa functioning and production of high quality foods" in the course "The dehesa for the production of high quality foods"	15 Sep 2017	Mérida, Spain	I	25	Spain
618	Training course	BTU	P Tsonkova and C Böhm gave presentations on "Introduction to agroforestry and its benefits to soil, water and biodiversity" for students from schools in southern Brandenburg	21 Sep 2017	Peickwitz, Germany	Ed	50	Germany
619	Training course	INRA-Ferlus	Staff at INRA gave a course on "Innovating on cattle production"	26 Sep 2017	Lusignan, Paris	Ed	72	France
620	Exhibition and art competition	SoE-KKK	Staff from SoE-KKK supported Bogyiszloi Vandorlo Fak (Migratory trees in the wood pasture at Bogyiszló) http://www.ddnp.hu/index.php?pg=news_111_2630	29 Sep 2017	Szaporca, Hungary	Ed	1000	Hungary
621	Training course	INRA DiaScope	Staff from INRA led a short course for researchers on Participatory Research	9-13 Oct 2017	Pont-à-Mousson, France	SC	20	France
622	Training course	INRA-SYSTEM	D. Mézière and M. Gosme led a course on temperate agroforestry covering what for and how to develop, and multispecies systems, which included a field visit to the silvoarable systems in Restinclières	17-18 Oct 2017	Montpellier, France	Ed	20	France
623	Training workshop	VEN	C. Dalla Valle provided workshop to university students on hedges and agroforestry systems in Veneto rural areas	20 Oct 2017	Montecchio P., Vicenza, Italy	Ed.	70	Italian
624	Training course	UEX	Gerardo Moreno led a session on "The nature of Mediterranean wood pastures and criteria for eligibility of permanent pastures for CAP payments" at the "Cattle, Sheep, Grasslands and	23-24 Oct 2017	Mérida Spain	I, Pol,	30	Region of Extremadura, Spain

	Type of activity	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
			CAP" training course					
Presence at trade show								
625	Trade show	AGROOF	Presence at Innovagri	6-8 Set 2017	Outarville, France	I, Ed, Pol	30000	France

9.4 Regular communication

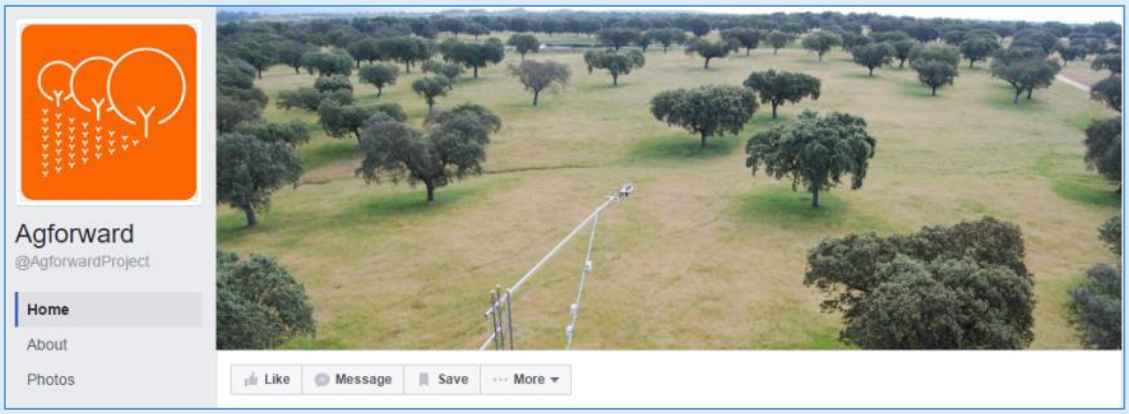
The next activity (Task 9.4) was to provide regular communication to key stakeholders through the use of electronic newsletter and social media. During the past 18 months, five electronic newsletters (Table 9.10) have been sent to 574 people across Europe with an interest in agroforestry. The newsletters have been issued through the secure UK-based Jiscmail system. The European Agroforestry Federation has also produced its own regular quarterly newsletter which often covers details from the AGFORWARD project. Both newsletters have active links which direct readers to the content of the AGFORWARD website. The creation and dissemination of the newsletters has been led by CRAN working with EURAF and AGROOF. The project also has an active Facebook page (Box 9.1).

Table 9.10. Newsletters produced during the project and some key news items

November 2017	Countdown to Agroforestry Meeting in the European Parliament Newsletter 13
July 2017	Agroforestry 2017 Conference Newsletter 12
March 2017	World Agroforestry Congress coming to Europe Newsletter 11
December 2016	European policy and agroforestry Newsletter 10
September 2016	Third European Agroforestry Conference abstracts and presentations Newsletter 9

Box 9.1. AGFORWARD has a Facebook page with 1089 followers

A useful activity and output of the AGFORWARD project, which was not specifically mentioned in the original description of work, was the establishment and maintenance of the AGFORWARD Facebook page: https://www.facebook.com/AgforwardProject. On 21 February 2018, the project had 1089 followers. Whereas the newsletter is released quarterly, items of news can be posted to the AGFORWARD Facebook pages as it happens, and material that is of interest can be shared. Between July 2016 and December 2017 there were 71 new items posted on the Facebook page. The site has also highlighted the 20 videos from partners of the project interviewed during the European Agroforestry Conference in May 2016.



9.5 Education tools

The fifth task of the dissemination work-package (Task 9.5) was to assess the specific needs for education tools and to produce appropriate material. AGROOF has been working with a group of students and four teachers at the Ecole des Mines d'Alès / Celsa Paris Sorbonne. A first proposal for the toolkit was produced and a prototype was discussed with partners in Chania in June 2015. A first draft of the webpage has been achieved in April 2016 and discussed with the partner during the Montpellier workshop in May 2016. In June 2016, a training tool-kit (Deliverable 9.29) on a new web-page domain was created (http://train.agforward.eu/language/en/agforall/) (Figure 9.10). A short report (Table 9.11) has been uploaded to the EC research portal. The training toolkit comprises 121 documents includes videos, pdf and slideshows.

Table 9.11. Reference for a report submitted to the EC portal describing Deliverable 9.29.

Liagre F, Le Gallic H, Pantera A, Smith J, Mirck J, Moreno G, Palma J, Vityi A, Rosati A, Ori D, Watté J, Burgess PJ (2016). Training toolkit for farmers, technicians and students. Deliverable 9.29. 30 June 2016. 5 pp.

Figure 9.10. Training outputs have been added to a specific section of the website http://train.agforward.eu/language/en/agforall/

9.6 Regional conferences and workshops

The sixth activity (Task 9.6) was to co-ordinate regional conferences and workshops. As reported in the Second Periodic Report the Third European Agroforestry Conference took place in Montpellier from 23 to 25 May 2016. The main conferences and workshops attended by AGFORWARD staff between July 2016 and December 2017 are described in Table 9.12.

Table 9.12. Selected key conferences and workshops attended by AGFORWARD staff between July 2016 and December 2017

Date	Description
13-14 July 2016	Agroforestry session and field visit at International Farming Systems Association Conference, Harper Adams University, UK http://www.agforward.eu/index.php/en/news-reader/id-13-14-july-2016.html
27-30 Sept 2016	World Congress Silvo-Pastoral Systems, Evora, Portugal.
30 Nov – 1 Dec 2016	5. Forum Agroforstsysteme, Germany
30 Nov – 1 Dec 2016	First Meeting of the EIP European Focus Group on Agroforestry, Melle, Western France http://www.agforward.eu/index.php/en/news-reader/id-30-november-1-december-2016.html
3-4 Jan 2017	Oxford Real Farming Conference, Oxford, UK
2 Feb 2017	Agroforestry sesión at 11th Organic Producers' Conference, Aston University, Birmingham, UK http://www.agforward.eu/index.php/en/news-reader/id-2-february-2017.html
22 Feb 2017	Soil Association staff training workshop on Agroforestry, Swindon, UK
21-22 Mar 2017	Second Meeting of the EIP European Focus Group on Agroforestry, Portogruaro, Veneto, Italy http://www.agforward.eu/index.php/en/news-reader/id-21-22-march-2017.html
7-10 May 2017	19th Symposium of the European Grassland Federation, Sassari, Italy
17-18 May 2017	AGFORWARD Fourth General Assembly, Herdade do Freixo do Meio near Montemor-o-Novo in Portugal http://www.agforward.eu/index.php/en/news-reader/id-17-18-may-2017.html
25-26 May 2017	International Congress on Cork Oak Trees and Woodlands and 3° National (Italian) Congress of Cork, Sassari, Italy
22 June 2017	UK Agroforestry 2017 Conference at Cranfield University, UK http://www.agforward.eu/index.php/en/news-reader/id-22-june-2017.html
23 June 2017	Practical Agroforestry in the UK and Ireland, Farm Woodland Forum Meeting, Cranfield University, UK http://www.agforward.eu/index.php/en/news-reader/id-23-june-2017.html
27–29 Jun 2017	AFTA Conference, Virginia, USA
28 Jun 2017	Open Day at Allerton Estate, UK
6 Jul 2017	II. Hungarian Agroforestry Forum, Hungary
12 Jul 2017	Wakelyns Agroforestry Open Day, Suffolk UK
19 Jul 2017	Final Stakeholder Meeting at the University of Santiago de Compostela, Spain
31 Aug – 2 Sept 2017	Agroforestry session at 15th International Conference of Environmental Science and Technology, Rhodes, Greece http://www.agforward.eu/index.php/en/news-reader/id-31-august-to-2-

	september-2017.html
18-22 Sept 2017	IUFRO-125th Anniversary Congress, Freiburg, Germany
19 Sep 2017	Agroforestry for Growers Workshop, Tolhurst Organics, Pangbourne UK
25–27 Oct 2017	First Agroecology Forum, Lyon, France
16-17 Nov 2017	2017 Agroforestry Conference, Swedish University of Agricultural Science, Alnarp, Sweden http://www.agforward.eu/index.php/en/news-reader/id-16-17-november-2017.html
23 Nov 2017	Trees on Farms event, Allerton Estate, UK
25 Nov 2017	Final Stakeholder Meeting in Witzenhausen, Germany
29 Nov 2017	Agroforestry at the European Parliament http://www.agforward.eu/index.php/en/news-reader/id-29-november-2017.html
14 Dec 2017	Final Stakeholder Meeting at Sisani, Voio, Greece

The final deliverable (in numerical terms) on the project was Deliverable 9.31 which was the final AGFORWARD conference (Figure 9.11). On 29 November 2017, over 80 people from across Europe met in the European Parliament to discuss how to mainstream agroforestry in practice and through policy initiatives. The meeting entitled "1 + 1 = 3" was hosted by Paul Brannen MEP and examined how agroforestry can boost the revenues and resilience of Europe's farmers.

Figure 9.11. A final meeting was held in the European Parliament on 27 November 2017 which included the launch of the folder of agroforestry innovation and best practice leaflets

Paul Burgess, Co-ordinator of the AGFORWARD project, explained that agroforestry is an important European land use equivalent to almost 9% of the agricultural area. Agroforestry is dominated by silvopastoral systems (combining trees and shrubs with livestock) such as the dehesa and montado and wood pastures, but there were also distinct benefits from using more trees on arable farms. Paul explained that field research and farmer perceptions demonstrated that integrating trees with farming provides synergistic benefits including increased land use efficiency and income

diversification, improved animal welfare, and increased biodiversity, soil conservation and carbon sequestration. He argued that these societal benefits warrant policies to encourage agroforestry, a reduction in the current administrative burdens, and there would be a net benefit if society compensated farmers for some of the additional on-farm labour and management costs.

Fabien Balaguer described how agroforestry was being implemented in practice across a range of farm types in Southern France, with a particular focus on improving water and carbon management at catchment and landscape scales.

Rosa Mosquera-Losada described how changes in policy within Europe could encourage the wider uptake of agroforestry. These include recognition of the wide range of agroforestry types (silvopastoral; silvoarable; hedgerow, windbreak and riparian buffer strips; forest farming and homegardens). She recommended that well-managed agroforestry on agricultural land should be fully eligible for Pillar I payments in the Common Agriculture Policy and that the wide and diverse range of agroforestry-related measures in Pillar II should be brought together.

After the presentations, an invited panel examined ways to mainstream agroforestry in Europe. The panel comprised Olivier De Schutter (Co-chair of the International Panel of Experts on Sustainable Food Systems), Valentin Opfermann (Policy Advisor on Agricultural and Environmental Research and Environmental Issues at COPA-COGECA), Patrick Worms (Senior Science Policy Adviser at the World Agroforestry Centre) and Frédéric Morand (Farmer and founder of Vert d'Iris International). There was a wide-ranging discussion and the responses to questions covered how current taxation systems (that often places high taxes on labour use) can penalise farm practices, such as agroforestry, where labour costs are often high. The panel also highlighted the very important role that agroforestry in Europe can and should play in terms of conserving soil and sequestering carbon. They recommended that agroforestry could and should play a role in enabling the Common Agricultural Policy meet its environmental and economic objectives.

9.7 Co-ordination

The last task (Task 9.7) was to co-ordinate and synthesise the work in work-package 9. This task was led by Fabien Liagre at AGROOF. Fabien actively participated in the monthly Executive Committee and in the Fourth General Assembly in Portugal.

9.8 Use of resources in work-package 9

At the end of December 2017, 109.50 person months had been allocated to work-package 9, equivalent to 138% of the original budget. In particular ORC, who organised a large number of work-shops, used a higher number of person-months in work-package 9 than originally planned.

Table 9.13. Person-month inputs to work-package 9 for each period

Organisation	First period (Jan-Dec 2014)	Second period (Jan 2015 to Jun 2016)	Third period (Jul 2016 to Dec 2017)	Total	Project budget
AGROOF	3.90	8.97	10.85	23.72	18.0
EURAF	5.30	2.60	8.80	16.71	12.0
ORC	0.26	0.56	15.26	16.08	5.0
ISA	1.80	3.95	5.46	11.21	8.0
CRAN	1.18	1.45	5.90	8.53	7.0
Wervel	0.26	0.88	3.80	4.95	4.0
ACTA (IDF)	0.00	0.18	4.26	4.44	3.5
UEX	0.40	0.60	2.50	3.50	2.5
AFAF	0.00	0.41	3.08	3.49	3.0
BTU	0.91	0.00	1.63	2.54	2.5
CREA	0.25	0.25	1.50	2.00	2.0
USC	0.20	1.40	0.40	2.00	2.0
CNR	0.13	0.19	1.67	1.99	0.5
INRA	0.27	1.13	0.00	1.40	1.0
AU	0.00	0.00	1.00	1.00	1.0
TEI	0.46	0.03	0.51	1.00	1.0
NYME	0.27	0.10	0.60	0.97	0.5
ICRAF	0.00	0.00	0.75	0.75	0.0
LBI	0.11	0.33	0.22	0.66	0.5
VEN	0.11	0.25	0.33	0.69	0.5
EFI	0.34	0.01	0.22	0.57	1.0
AFBI	0	0.48	0.06	0.54	0.5
UBB	0	0	0.50	0.50	0.5
APCA	0	0.12	0.15	0.27	1.0
UCPH	0	0	0	0	1.0
FDEA	0	0	0	0	0.5
Total	**16.15**	**24.36**	**69.45**	**109.50**	**79.0**

[a]: A correction from 1.35 to 0.88 made to the Wervel person month calculation for second reporting period

9.9 Issues and actions

The outputs of Work-package 9 have been successfully completed.

SECTION C: PROJECT MANAGEMENT DURING THE PERIOD

10 Work-package 10

This section summarises the management of consortium activities during the third reporting period. There have also been no major changes in the consortium although some partners have undergone name changes. The Executive Committee has met monthly using Skype and there was a successful fourth General Assembly. We believe that there were no significant deviations in the planned milestones and deliverables. The two deliverables (1.3 and 8.23), delayed in the second reporting period, were delivered in the third reporting period. The continued management of the project website has been described in Section 9.2, so it is not repeated here.

Work package number	**10**
Work package name	**Management**
Leader	Paul Burgess
Organisation	Cranfield University
Report period	1 July 2016 to 28 February 2018

Objectives and tasks within work package 10

Paul Burgess and Kenisha Garnett from Cranfield University are the Co-ordinator and the Project Administrator respectively. This section summarises the management of activities during the period 1 July 2017 to 28 February 2018 (Table 10.1), and highlights some of the key milestones (Table 10.2).

Table 10.1. Work-plan of activities, milestones (M), and deliverables (D) for work-package 10 from month 25 to 50 (indicated in orange)

Month	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
WP10 Project management																										
T10.1 Co-ordination																										
T10.2 Executive/General Assembly Meetings (MS41; MS42)						M						M						M						M		
T10.3 Progress reports and final reports							X																		X	
T10.4 Financial reports							X																		X	

Table 10.2. Summary of the status of milestones and deliverables in work-package 10 for the first, second and third reporting periods

Description	**Due date**	**Status**
First reporting period		
Progress report (month 13)	January 2015	Completed
Financial report (month 13)	January 2015	Completed
Second reporting period		
Progress report (Month 32)	August 2016	Completed
Financial report (Month 32)	August 2016	Completed
Third reporting period		
MS41 Internal interim reports	Six-monthly	Completed
MS42 Minutes of meetings	Monthly and yearly	Completed

10.1 Co-ordination of the project

The first management task (Task 10.1) was the maintenance of effective project management and co-ordination. This includes quality assurance and reviewing the timely execution of tasks. The management structure for the project is shown in Figure 10.1. The meetings of the Executive Committee, the General Assembly and the External Experts Advisory Board are described in Section 10.2.

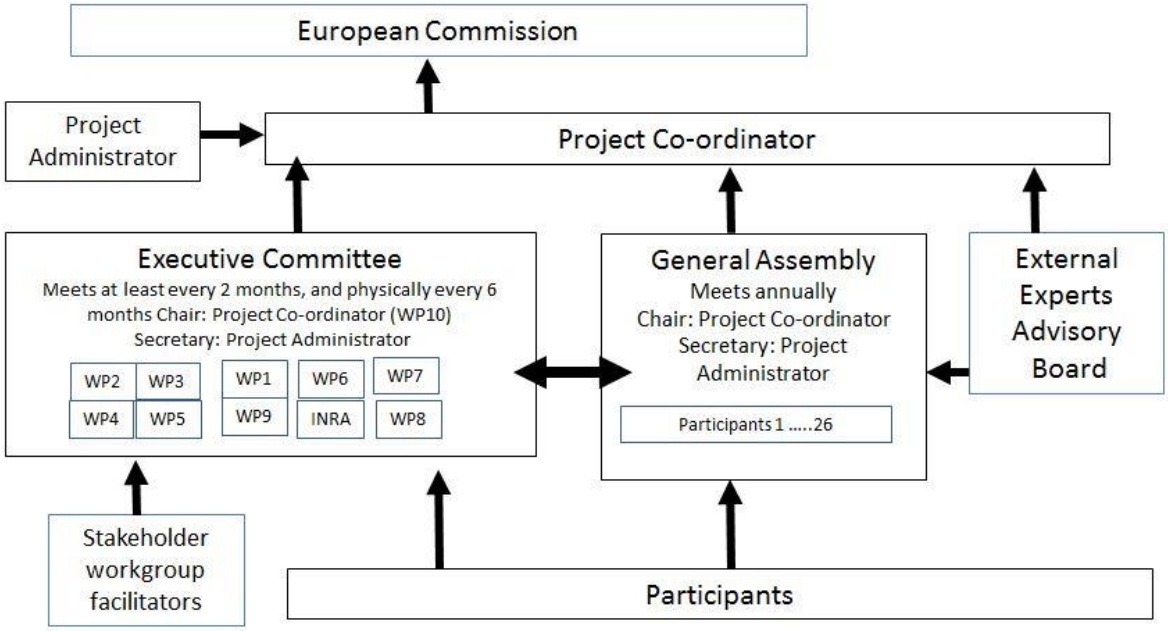


Figure 10.1. Management structure for the AGFORWARD project

A key role of the Co-ordinator has been to ensure effective communication within the project. In addition to the meetings described in the next section, communication within the project has continued to be achieved through e-mail communication, and through the use of an intranet "Sharepoint".

E-mail communication

The e-mail discussion list: AGFORWARD@jiscmail.ac.uk has been the principal means of communication within the AGFORWARD community. An e-mail to the above address, from any member, is automatically circulated to the whole consortium. Subscription to the list is managed by Cranfield University. As of 31 December 2017, there were 115 people registered on the list. The archive system provided by Jiscmail means that there is a store of all e-mails sent.

A separate e-mail discussion list: EXEC-AGFORWARD@jiscmail.ac.uk is the principal means of communication within the Executive Committee. This allows detailed and focused discussion of specific points that are not of wider interest. Again the archive system provided by Jiscmail means that there is a store of all e-mails sent.

In addition to the above, a separate mailing list has also been established for the newsletter. As of 31 December 2017, there were 574 contacts on the mailing list. Some work-package groups have also established their own e-mail discussion groups.

Sharepoint

In order to prepare and store reports, presentations and minutes, an intranet "Sharepoint" site was set up at Cranfield University in the UK, which can be accessed by the key participants on the projects (Figure 10.2). There is a link to the Sharepoint site from the AGFORWARD website. At the end of the project on 31 December 2017, 76 participants had access to the Sharepoint service which is protected by usernames and passwords.

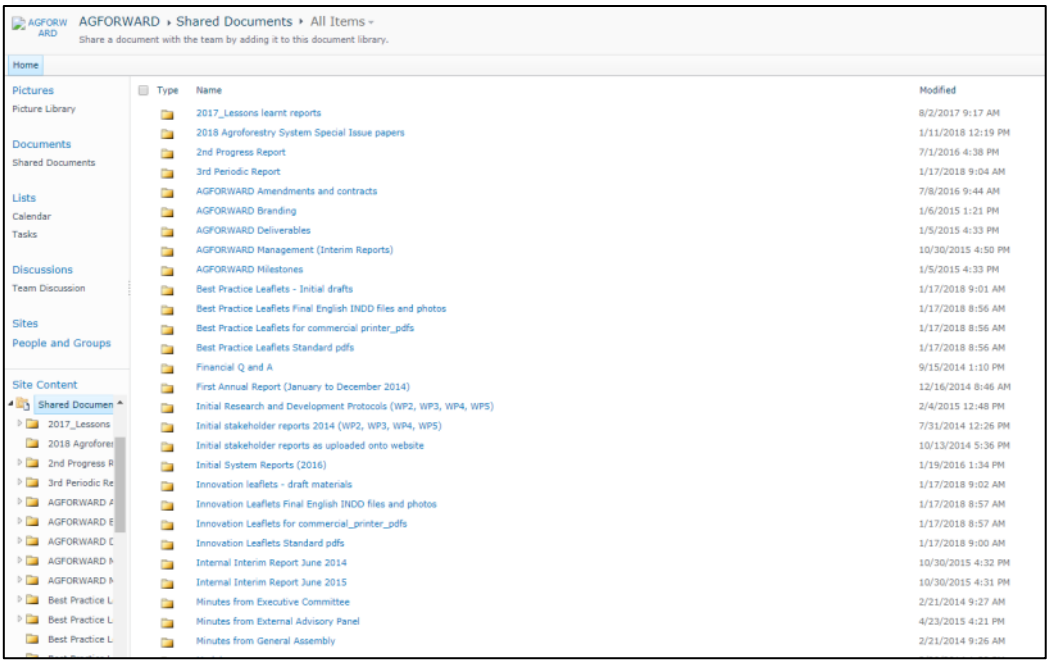


Figure 10.2. Screen shot of the AGFORWARD sharepoint or "intranet" site for file sharing and which is accessible to registered users from the AGFORWARD website

Links with other projects

AGFORWARD participants TEI and AFAF are participants in a new project called AGROF-MM (September 2015 to August 2018) which is focused on extending the work of AGROFE in the area of agroforestry education in the Mediterranean and mountain regions of Europe. There are opportunities to share the training tool made in AGFORWARD (D9.29) with the AGROF-MM projects.

Some AGFORWARD participants (ORC, USC, EFI, ISA, NYME, AFAF, EURAF, and CNR) are also partners in the AFINET project (January 2017 to December 2019; Project ID: 727872). The AFINET project seeks to create a EU reservoir of scientific and practical knowledge of agroforestry with an end-user-friendly access, and regional agroforestry innovation networks. With due acknowledgement, the material produced on the AGFORWARD project can help support the activities on the AFINET project.

10.2 Project meetings

The second management task (Task 10.2) was to prepare, chair and report on Executive Board and General Assembly meetings. The Launch Meeting and the First General Assembly were reported in the First Periodic Report. The Second and the Third General Assembly were reported in the Second Periodic Report

Fourth General Assembly

The Fourth General Assembly Meeting was held at Herdade do Freixo do Meio near Montemor-o-Novo in Portugal between 17 and 19 May 2017 (Figure 10.3). Herdade do Freixo do Meio is a 420 ha montado farm enterprise producing a range of crop, livestock and tree products, some of which are directly marketed in a farm shop in Lisbon. Our host was Alfredo Cunhal Sendim.

The logistics for the meeting was arranged by João Palma and colleagues from the Instituto Superior de Agronomia at the University of Lisbon. In total about 60 AGFORWARD researchers attended the three day meeting with workshops ranging from agroforestry innovations to agroforestry economic modelling and policy development. The assembly was a working meeting with the participants from 14 countries collaborating to progress various milestones and deliverables. The minutes of the General Assembly meeting were circulated to all participants and are available on the AGFORWARD intranet.

Figure 10.3. AGFORWARD participants at the Fourth General Assembly Meeting at Herdade do Freixo do Meio near Montemor-o-Novo in Portugal (17 to 19 May 2017)

There was also a General AGFORWARD workshop meeting in Brussels on 30 November 2017, after the European Parliament meeting, which was attended by numerous participants.

Executive Board

Between July 2016 and December 2017, there were 18 regular monthly Executive Board Meetings, and there have been two subsequent meetings in January and February 2018. These have all been by Skype and each meeting has been chaired by the Co-ordinator (Table 10.3). The minutes of each meeting have been circulated to the Executive Committee for approval, and once approved they have been circulated to the members of the General Assembly and the AGFORWARD mailing list for information. The minutes from the Fourth General Assembly comprise Milestone 42 and is available on the AGFORWARD sharepoint site.

Table 10.3. Number and dates of Executive Board Meetings completed by Skype. Minutes for each meeting are on the sharepoint site.

No	Date	No	Date
31	6 Jul 2016	41	10 May 2017
32	3 Aug 2016	42	7 Jun 2017
33	8 Sep 2016	43	5 Jul 2017
34	5 Oct 2016	44	3 Aug 2017
35	2 Nov 2016	45	13 Sep 2017
36	14 Dec 2016	46	4 Oct 2017
37	11 Jan 2017	47	11 Nov 2017
38	10 Feb 2017	48	7 Dec 2017
39	2 Mar 2017	49	10 Jan 2018
40	5 Apr 2017	50	7 Feb 2018

External Experts Advisory Board

Within its Description of Work, AGFORWARD indicate that it would create and implement an External Experts Advisory Panel, and that the members would participate in General Assembly meetings upon invitation. The role of the External Expert Advisory Board is provide critical and wise feedback on the project's operation and performance, and in critical cases to provide external quality control. The two members from outside of the EU were Professor Shibu Jose from the University of Missouri, and Professor PK Nair from the University of Florida and these both attended the Second and Third General Assembly Meeting. Dr Gerry Lawson joined the Advisory Board on 17 February 2016 and joined and gave feedback at the Fourth General Assembly Meeting at Montemor. Oana Neagu from Copa Cogeca was invited to each meeting, but was unable to attend (Table 10.4).

Table 10.4. Membership of the External Experts Advisory Panel

Name	Specialism
Prof Jose Shibu, University of Missouri, USA	Ecological research on agroforestry
Prof. PK. Nair, University of Florida, USA	Global agroforestry
Oana Neagu, Director at Copa Cogeca, Brussels	Rural development and forestry
Dr Gerry Lawson, CEH, Edinburgh, UK	European agroforestry policy

10.3 Progress and final reports

The third management task (Task 9.3) was to co-ordinate the preparation and delivery of progress reports and the final report to the European Commission. The First Progress Report was submitted on 27 February 2015 and was approved. The Second Progress Report was submitted on 31 August 2016 and was approved. The material for an internal interim report was collated in July 2017 (Milestone 41) and is available on the AGFORWARD intranet. This document comprises the report for the third reporting period.

10.4 Administration of financial matters

The fourth management task (Task 9.4) was to administer financial matters such as the proper distribution of monies to the partners, and the co-ordination and preparation of the financial reports. A summary of financial matters from the start of the project is provided below.

10.4.1 First periodic report and financial claim

In the First Periodic Report four participants were unable to initially submit their first year costs on 27 February 2015 because they had not registered their Legal Entity Appointed Representative. With the support of the European Commission, the last outstanding financial report was submitted on 7 May 2015. The European Commission agreed with the submitted claims for 1,281,782 Euros for the First Reporting Period, with the exception of 5,914 Euros claimed by AGROOF and 9,358 Euros claimed by EURAF. The eligible expenditure approved for each participant was distributed in a timely way to each participant.

10.4.2 First amendment to the General Agreement

Following the agreement of the Executive Board, on 4 November 2015 a first amendment to the General Amendment was proposed. This comprised the re-allocation of 27,900 Euros within the Louis Bolk Institute budget from personnel costs to the use of a contractor. Confirmation of the change by the European Commission was received by Cranfield University on 23 December 2015. Each member of the consortium indicated receipt of the change by 26 January 2016.

10.4.3 Second amendment to the General Agreement

Following the agreement of the Executive Board, on 3 May 2016, a second amendment was proposed to the General Agreement. The amendment comprised seven changes (Table 10.5). The European Commission agreed to the Second Amendment to the AGFORWARD Grant Agreement on 28 June 2016, which was received at Cranfield on 5 July. Each participant has indicated receipt of the change.

Table 10.5. Seven changes made in the second amendment of the General Agreement

Item	Change
1	SLU, which is a third party of the European Forest Institute requested an internal budget re-allocation between direct costs to personnel costs
2	ACTA requested a change in the wording of the use of funds for a sub-contract from "access and technical analysis of a pre-verger experimental plot" to "the evaluation of the total biomass production of pollarded trees compared to non-pollarded trees"
3	Within Workpackage 7, because of problems with identifying a site in France, 2.84 person months and 12.268 Euros were reallocated from ACTA to Cranfield (+8483 Euros and +1.42 person months) and TEI (+3785 Euros; +1.42 person months).
4	A change in the PIC number for the Brandenburg University of Technology in Germany (BTU Cottbus-Senftenberg).
5	An internal budget re-allocation for ISA from a sub-contract (15,000 Euros) to personnel
6	An internal budget re-allocation for AFAF from personnel to a sub-contract (12,100 Euros)
7	An internal re-allocation of the budget at AGROOF due to account for changes in the cost of setting up the internet portal for AGFORWARD, together with a modification in the wording of a sub-contract.

10.4.4 Second periodic report and financial claim

The Second Periodic Report and financial claim for the second reporting period was submitted on 31 August 2016. On 14 November 2016, the project received confirmation that the report has been approved. Only two relatively small items were not accepted as eligible expenses: 1544.73€ related to Cranfield and 314.14€ related to Agroof.

Following receipt of the second interim payment from the EC, Cranfield University made the second interim payments to each partner in the period 2-5 December 2016. The payments were made in line with a schedule circulated by Paul Burgess to the AGFORWARD jiscmail on 25 November 2016. Each partner received the amount that they had claimed up to 85% of their eligible expenditure.

10.4.5 Third period adjustments to financial claims for the first and second reporting periods

During the compilation of the financial reports for the third financial period, one organisation has made an adjustment to the first reporting period Table 10.6 and five organisations have made adjustments to the financial claims for the second reporting period. A brief explanation of the changes made is provided in Table 10.7.

Table 10.6. Explanations of adjustments made to the financial reports for the **first** reporting period at the end of the third reporting period.

Number and organisation	Work-package	Explanation and impact on direct costs
12 FDEA	3, 4, 7, 7	FDEA(EVD) includes adjustment of -€1145.36 following correction due to ne calculation of productive hours and incorrect allocations.
18 CNR	3,4	A payment made for co-ordination of workshops by Agridea is now judged not to be eligible of -€8318.03

Table 10.7. Explanations of adjustments made to the financial reports for the **second** reporting period at the end of the third reporting period.

Organisation	Work-package	Explanation and impact on direct costs
5 TEI	2, 3, 4, 6, 7	Inclusion of costs of €336.51 for consumables and travelling that were missing in the second report
10 ISA	6	ISA over-reported the 3rd European Agroforestry Conference fee by €100.
11 UCPH	7	University of Copenhagen underreported personnel cost of 1872.70€ in the second reporting period
12 FDEA	3, 4, 7	FDEA(EVD) includes an adjustment of +€9209.43 as some personnel costs were under-reported, over-reporting, corrections to the effectively cost based on productive hours
12 FDEA	7	FDEA(EVD) over-reported costs for the workshop in Rennes in January 2016 and the General Assembly in Montpellier in 2016 (-€448.61)
18 CNR	2, 4, 6, 8	CNR includes an adjustment of -€2030.96 following a correction to the effective hourly cost of personnel.
18 CNR	9	CNR includes an adjustment of -€50.17 following a correction to the effective hourly cost of personnel

Partner 18 CNR also included a change in the "indirect costs" of -10.506.34€ on its adjustment form. This resulted from a correction from central CNR Administration in the calculation of indirect costs on personnel costs.

10.4.6 Financial administration for the third reporting period

This section highlights significant financial administration issues for the third reporting period. A problem with Partner 25 (ICRAF) securing their financial signatory the project report was delayed from 28 February to 1 March 2018 with the permission of the Project Office. The important issues in the third reporting period are transfer of resources and responsibilities (between Partner 4 and 26, and 10 and 25), and updates on resource use (Partners 2, 15, 23, and 26).

Transfer of resources and responsibilities

Partner 4 and 26: With the agreement of the Executive Committee, and partners 26 (European Agroforestry Federation; EURAF) and 4 (University of Santiago de Compostela; USC), 17.05 person months of RTD activity and responsibility were transferred from EURAF to USC (Table 10.8).

Table 10.8 Transfer of person-months from EURAF to USC in the third reporting period

Work-package	EURAF budget for person months	EURAF person months used at end of second reporting period	Remaining for EURAF after second reporting period	Transfer to USC (person-months)
1	3	0.65	2.35	2.35
2	2	0.30	1.70	1.70
3	2	0.50	1.50	1.50
4	2	0.50	1.50	1.50
5	2	0.50	1.50	1.50
8	12	3.50	8.50	8.50
Total				17.05

The September 2017 meeting of the AGFORWARD Executive committee supported the above proposal and the plan to transfer a budget of €23621.75 of personnel costs, €14000.00 of direct costs, and €7524.35 of indirect costs (related to RTD) from EURAF to USC. The result would be to decrease the budget for eligible expenditure by EURAF by €22572.45 (Table 10.9), who took over the associated obligations of EURAF. The budgeted requested expenditure from USC increased by €22572.45 (Table 10.10). Hence the net cost to the EC has remained the same.

Table 10.9. Original and updated budget for EURAF

Budget	Original budget			Updated budget		
	RTD (WP1-8)	Other (WP9)	Total	RTD (WP1-8)	Other (WP9)	Total
Personnel costs	59531.00	71877.00	131408.00	35909.25	71877.00	107786.25
Subcontracting	0.00	0.00	0.00	0.00	0.00	0.00
Other direct costs	14000.00	16761.00	30761.00	0.00	16761.00	16761.00
Indirect costs	14706.20	17727.60	32433.80	7181.85	17727.60	24909.45
Total	**88237.20**	**106365.60**	**194602.80**	**43091.10**	**106365.60**	**149456.70**
Requested	44118.00	106365.00	150483.00	21545.55	106365.00	127910.55

Table 10.10. Original and updated budget for USC

Budget	Original budget			Updated budget		
	RTD (WP1-8)	Other (WP9)	Total	RTD (WP1-8)	Other (WP9)	Total
Personnel costs	185500.00	7000.00	192500.00	204310.38	7000.00	211310.38
Subcontracting	0.00	0.00	0.00	0.00	0.00	0.00
Other direct costs	27740.00	1000.00	28740.00	27740.00	1000.00	28740.00
Indirect costs	127944.00	4800.00	132744.00	139280.60	4800.00	144030.23
Total	**341184.00**	**12800.00**	**353984.00**	**371280.60**	**12800.00**	**384080.60**
Requested	255888.00	12800.00	268688.00	278460.45	12800.00	291260.45

Partner 10 and Partner 22: The AGROOF sub-contracting budget includes "the provision of specialist technical support for the web-applications" (24,000 Euros) and "specialist support to manage the intranet" (3,490 Euros). At the Executive Committee in September 2017, we reviewed the most effective way of progressing specialist technical support, and the following changes were supported:

- The transfer €12,000 from the sub-contracting budget of AGROOF (Table 10.11) to ISA (Table 10.12).
- AGROOF would move €9500 from sub-contracting to other direct costs. This is to cover additional transport, printing and consumables. It would also move €1583 from personnel costs to indirect costs.
- ISA would reallocated the sub-contracting of €12,000 within its personnel costs, and to maintain the budget it has not altered its EU request.

Table 10.11. AGROOF budget before and after change agreed with Executive Committee

Cost category	"Other" budget after 2nd amendment	Change	"Other" budget after change
Personnel costs	86,025.00	-1,583.33	84,441.67
Sub-contracting	36,770.00	-12,000.00 -9,500.00	15,270.00
Other direct costs	15,000.00	+9,500.00	24,500.00
Indirect costs	20,205.00	+1,583.33	21,788.33
Total costs	158,000.00		146,000.00
Requested EU contribution	158,000.00		146,000.00

Table 10.12. ISA budget before and after change agreed with Executive Committee

Cost category	"Other" budget after 2nd amendment	Change	"Other" budget after change
Personnel costs	35,132.00	+12,000.00	47,132.00
Sub-contracting	0.00		0.00
Other direct costs	0.00		0.00
Indirect costs	21,079.20		21,079.20
Total costs	56,211.20		68,211.20
Requested EU contribution	55,764.00		67,764.00

Update on resource use

Partner 5: TEI noted that WP9 costs included cost of translating and producing printout copies of the agroforestry innovation and best practice leaflets in Greek.

Partner 15: AFBI allocated 0.24 person months to work-package 2. This was to support soil sampling for carbon sequestration measurements which are reported in the paper by Fornara et al. (2017).

Partner 23: We note that the financial claim from APCA includes an activity from the dissemination work-package 9 as an RTD cost rather than an "other" cost (€616 and €174). We note that the impact of this is a reduced claim for eligible expenditure.

Partner 25: We note that the financial claim from ICRAF includes an activity from the dissemination work-package 9 as an RTD cost rather than an "other" cost (€711). We note that the impact of this is a reduced claim for eligible expenditure.

10.5 Use of resources for management

At the end of the project, the total person input by CRAN into the management component of the project was 37.15 person months (Table 10.16). This was 120% of the original person month allocation; the additional person months were primarily associated with the production of the third periodic and final report and the preparation and uploading of material to the EC Portal and were necessary for successful project delivery. Some of the additional management inputs were possible by constraining sub-contracting and other direct costs.

Table 10.13. Person-month inputs to work-package 10

	First period (Jan-December 2014)	Second period (Jan-Jun 2015)	Third period (Jul 2016 to Dec 2017)	Sub-total	WP10 Project total
CRAN	4.07[a]	12.91	20.17	37.15	31.0

[a]: The Cranfield input for WP10 for the first period has been corrected to 4.07 from 3.78.

10.6 Summary of the use of person months across the project

The person months per work-package in period 1 and period 2 were provided in the previous reports. Table 10.14 presents the work-package person month inputs for the first two periods. Table 10.15 describes the person month inputs for the third period, and Table 10.16 provides the person month inputs across the whole project. The combined total at the end of the project was 1181 person months (i.e. about 100 person-years), which was 122% of the budgeted input. About 8% of the greater than budgeted input was due to the high inputs from INRA.

Table 10.14. Combined person-month inputs for each work-package and partner for the first two reporting periods (1 January 2014 to 30 June 2016)

Beneficiary	**Work-package number**										**Total**	**Full**
short-name	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**		**total**
CRAN	1.00	5.95	10.58	0.07		18.67	1.40		2.63	16.69	56.99	110
EFI	25.63	3.98				0.41	3.25	1.72	0.35		35.34	36
SLU		3.17									3.17	
ACTA			2.30	2.99	3.63		2.57		0.18		11.67	18.5
USC	3.50		11.50	8.90	6.90	2.00	2.44	13.00	1.60		49.84	55
TEI	0.77	3.45	10.85	4.61		1.09		1.01	0.49		22.27	46
INRA		11.44		50.56	11.44	16.16	14.62		1.40		105.62	103
ORC			1.34	13.38	11.60	1.01		0.91	0.82		29.06	46
BTU		7.17		20.05		2.28			0.91		30.41	50.5
UEX	3.00	30.10	7.15	7.05		1.40	11.10	0.70	1.00		61.50	67.5
ISA	1.00	7.05	1.94	1.86	1.32	34.95	3.50	1.05	5.75		58.42	89.5
UCPH							29.49				29.49	43
FDEA			0.32	0.81		0.04	22.38				23.55	40.5
Wervel								0.15	1.61		1.76	5
AU					5.14						5.14	22
AFBI			5.04		2.77	0.83		0.42	0.48		9.54	16.5
CREA	0.37		21.50			0.38		0.50	0.50		23.25	34
LBI					8.80	0.58		0.48	0.44		10.30	15.5
CNR		5.63		3.75		0.57		1.25	0.32		11.52	18.5
NYME	0.25	4.90		5.86				0.34	0.37		11.72	19.5
UBB		4.26					5.02				9.28	20.5
VEN				1.84	4.86				0.36		7.06	11.5
AGROOF						1.70			12.87		14.57	23
APCA			2.18	2.84					0.12		5.14	10
AFAF	0.95		1.89	2.28				0.91	0.41		6.44	17
ICRAF	6.00										6.00	10
EURAF	0.65	0.30	0.50	0.50	0.50			3.50	7.90		13.85	35
Total	**43.12**	**87.4**	**77.09**	**127.35**	**56.96**	**82.07**	**95.77**	**25.94**	**40.51**	**16.69**	**652.90**	**963.5**
Budget	42	109	113	130.5	92	183.5	124	59.5	79	31		

Table 10.15. Person-month inputs for each work-package and partner for the third reporting period (1 July 2016 to 31 December 2017)

	WP1	**WP2**	**WP3**	**WP4**	**WP5**	**WP6**	**WP7**	**WP8**	**WP9**	**WP10**		**Budget**
CRAN		0.50	0.54	0.18		29.68	3.10		5.90	20.17	60.07	110
EFI	8.24	0.44				0.01	3.15	2.28	0.22		14.34	36
SLU											0.00	
ACTA							0.54				0.54	2.16
IDF			0.20	0.23					4.26		4.69	5.5
IDELE					3.49						3.49	8
USC	2.85	1.70	2.00	1.60	1.60		0.56	11.02	0.40		21.73	55
TEI	0.98	5.56	12.15	1.39		1.57	1.42	0.99	0.51		24.57	46
INRA		5.47		35.40	14.50	18.58	1.68				75.63	103
ORC				8.09	8.45	1.21		2.20	15.26		35.21	46
BTU		1.02		13.49		3.91		2.00	1.63		22.05	50.5
UEX	0.20	12.00	2.50	5.00		3.00	6.50	0.30	2.50		32.00	67.5
ISA		2.36	0.64	0.72	1.09	27.32	1.73	0.56	5.46		39.88	89.5
UCPH			1.80				21.60				23.40	43
FDEA				0.41			35.67				36.08	40.5
Wervel								1.05	3.80		4.85	5
AU					14.12	4.00			1.00		19.12	22
AFBI		0.24	6.89		0.65	0.04		0.30	0.06		8.18	16.5
CREA	0.63		6.50			0.62		1.50	1.50		10.75	34
LBI					7.18	0.65		0.73	0.22		8.78	15.5
CNR		7.04		3.50		0.43		1.20	1.67		13.84	18.5
NYME	0.14	1.82		5.17					0.60		7.73	19.5
UBB		6.68					6.57	1.00	0.50		14.75	20.5
VEN				0.61	4.13				0.33		5.07	11.5
AGROOF						9.89			10.85		20.74	23
APCA			1.38	1.96					0.15		3.49	10
AFAF			1.19	0.95				0.79	3.08		6.01	17
ICRAF	1.25								0.75		2.00	10
EURAF								0.50	8.80		9.30	35
Total	14.29	44.83	35.79	78.70	55.21	100.91	82.52	26.42	69.45	20.17	528.29	**963.5**

Table 10.16. Combined person-month inputs for each work-package and partner for the complete project (1 January 2014 to 31 December 2017)

	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	WP10	Total	Bud-get
CRAN	1.00	6.45	11.12	0.25	0.00	48.35	4.50	0.00	8.53	37.15	117.35	110
EFI	33.87	4.42	0.00	0.00	0.00	0.42	6.40	4.00	0.57	0.00	49.68	36
SLU	0.00	3.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.17	
ACTA	0.00	0.00	0.00	0.00	0.00	0.00	3.11	0.00	0.00	0.00	3.11	2.16
IDF	0.00	0.00	2.50	3.22	0.00	0.00	0.00	0.00	4.44	0.00	10.16	5.5
IDELE	0.00	0.00	0.00	0.00	7.12	0.00	0.00	0.00	0.00	0.00	7.12	8
USC	6.35	1.70	13.50	10.50	8.50	2.00	3.00	24.02	2.00	0.00	71.57	55
TEI	1.75	9.01	23.00	6.00	0.00	2.66	1.42	2.00	1.00	0.00	46.84	46
INRA	0.00	16.91	0.00	85.96	25.94	34.74	16.30	0.00	1.40	0.00	181.25	103
ORC	0.00	0.00	1.34	21.47	20.05	2.22	0.00	3.11	16.08	0.00	64.27	46
BTU	0.00	8.19	0.00	33.54	0.00	6.19	0.00	2.00	2.54	0.00	52.46	50.5
UEX	3.20	42.10	9.65	12.05	0.00	4.40	17.60	1.00	3.50	0.00	93.50	67.5
ISA	1.00	9.41	2.58	2.58	2.41	62.27	5.23	1.61	11.21	0.00	98.30	89.5
UCPH	0.00	0.00	1.80	0.00	0.00	0.00	51.09	0.00	0.00	0.00	52.89	43
FDEA	0.00	0.00	0.32	1.22	0.00	0.04	58.05	0.00	0.00	0.00	59.63	40.5
Wervel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18	4.95	0.00	6.13	5
AU	0.00	0.00	0.00	0.00	19.26	4.00	0.00	0.00	1.00	0.00	24.26	22
AFBI	0.00	0.24	11.93	0.00	3.42	0.87	0.00	0.72	0.54	0.00	17.72	16.5
CREA	1.00	0.00	28.00	0.00	0.00	1.00	0.00	2.00	2.00	0.00	34.00	34
LBI	0.00	0.00	0.00	0.00	15.98	1.23	0.00	1.21	0.66	0.00	19.08	15.5
CNR	0.00	12.67	0.00	7.25	0.00	1.00	0.00	2.45	1.99	0.00	25.36	18.5
NYME	0.39	6.72	0.00	11.03	0.00	0.00	0.00	0.34	0.97	0.00	19.45	19.5
UBB	0.00	10.94	0.00	0.00	0.00	0.00	11.59	1.00	0.50	0.00	24.03	20.5
VEN	0.00	0.00	0.00	2.45	8.99	0.00	0.00	0.00	0.69	0.00	12.13	11.5
AGR'OF	0.00	0.00	0.00	0.00	0.00	11.59	0.00	0.00	23.72	0.00	35.31	23
APCA	0.00	0.00	3.56	4.80	0.00	0.00	0.00	0.00	0.27	0.00	8.63	10
AFAF	0.95	0.00	3.08	3.23	0.00	0.00	0.00	1.70	3.49	0.00	12.45	17
ICRAF	7.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	8.00	10
EURAF	0.65	0.30	0.50	0.50	0.50	0.00	0.00	4.00	16.70	0.00	23.15	35
Total	57.41	132.23	112.88	206.05	112.17	182.98	178.29	52.34	109.50	37.15	1181.00	963.5

10.7 Summary of issues and actions

This final section provides a summary of the key changes in the consortium, recommendations related to any problems, and an update on gender awareness.

Changes in the consortium

The only change to the consortium since the Second Periodic Report and those indicated in Second Amendment to the General Agreement has been the change in the name and PIC number of Partner 21. On 12 December 2017, Veneto Agricultura (Partner 21) confirmed the Universal Transfer of Rights and Obligations to "Agenzia veneta Per L'Innovazione nel Settore Primario".

During the last 18 months of the project, Partner 18 had a name change from "Nyugat-Magyarorszagi Egyetem Kooperacios Kutatasi Kozpont NonProfit KFT" to "Soproni Egyetem Kooperacios Kutatasi Kozpont Nonprofit KFT". However for the purposes of this report, the acronym NYME is still used.

Problems and recommendations

The delays in Deliverable 1.3 and Deliverable 8.23, recognised in the Second Periodic Report, have been addressed in the third reporting period. Deliverable 1.3 was completed in October 2016 and an update to the report was made in April 2017. Deliverable 8.23 was completed and uploaded to the AGFORWARD website by 30 September 2016. Some small corrections were made in December 2016 so the current version on the AGFORWARD website is dated from 8 December 2016.

Gender awareness

Anastasia Pantera is our Gender Awareness Officer. At the application stage, there were 46 female participants (36%) and 81 male participants. We indicated that we would set a target rate of at least 37% of participants being female. At the General Assembly on 2 June 2014, the project involved 64 female participants (42%) and 86 male participants. By June 2015, there were 61 female participants (40%), and 93 male participants, so female participation remained above the target rate of 37%. By June 2016, this had changed to 72 female participants (48%) and 78 male participants.

At the conclusion of the project, a head count showed that over the four year project, there were 120 experienced researchers (with a PhD) involved on the project (48 female; 72 male), 18 PhD researchers (12 female; 6 male), and 94 other researchers (46 female; 48 male). Hence overall the project involved 232 researchers in some capacity of whom 106 were female (46%) and 126 were male (54%).

Ethical issues

The project involved questionnaire and survey research with attendees of the stakeholder groups (work-packages 1, 2, 3, 4, and 5) and with the respondents with public participation GIS (PPGIS) survey in work-package 7. The nature of the surveys were reviewed and approved by an ethics approval committee at Cranfield University, UK prior to use. The key elements of the approval process included assurances that the objectives of the research were transparent, that respondent responses were anonymous, and that respondents were able to withdraw from the survey at any point. For the PPGIS survey, all respondents were healthy adults who were able to give consent.

Research with animals

Some of the research work (e.g work-packages 2, 3 and 5) involved the standard management of farm animals e.g. poultry, cows, and sheep on farms or experimental field stations. The management of the poultry, cows and sheep followed best farming practice with due concern for animal welfare.

SECTION D Deliverables and milestones tables

This section summarises the completion and submission of the deliverables (Table C.1) and milestones (Table C.2) during the project.

Table C.1. Deliverables due in the project; those that have been completed are shaded.

Del no	Del. no.[1]	Deliverable name	Ver-sion	WP no.	Lead beneficiary	Nature	Delivery date in annex 1	Actual delivery	Dissemination level[2]	Submit-ted	Comments
D9.25	D9.1	EU agroforestry interactive platform highlighting project for end-users	1	9	22 (AGROOF)	O	June 14	Mar 14	PU	Feb 2015	On website
D1.1	D1.1	Technology transfer options from Mediterranean Partner countries to European countries	1	1	25 (ICRAF)	Report	Dec 14	Dec 14	PU	Dec 2014	On website
D9.26	D9.2	Experimental and demonstration plots map	1	9	22 (AGROOF)	Map	Dec 14	Feb 15	PU	Feb 2015	On website
D8.23	D8.1	Extent and success of current policy measures to promote agroforestry across Europe	1	8	4 (USC)	Report	Apr 2015; delayed to Nov 2015	Dec 2016	PU	Sep 2016	On website
D1.2	D1.2	Current extent and trends of EU agroforestry, including maps	1	1	2 (EFI)	Report	Jun 15	Dec 2015	PU	Aug 2016	On website
D9.27	D9.3	Web-application of the models of Yield-SAFE and Farm-SAFE	1	9	10 (ISA)	Other: model	Jun 15	July 2016	PU	Aug 2016	On website

1 In the original description of work, deliverables were numbered using the convention <WP number>.<number of deliverable within that WP>. For example, deliverable 4.2 would be the second deliverable from work package 4.

2 **PU** = Public; **PP** = Restricted to other programme participants (including the Commission Services); **RE** = Restricted to a group specified by the consortium (including the Commission Services); **CO** = Confidential, only for members of the consortium (including the Commission Services).

Del no	Del. no.	Deliverable name	Version	WP no.	Lead beneficiary	Nature	Delivery date from annex 1	Actual delivery	Dissemination level	Submitted	Comments
D2.4	D2.1	Agroforestry of high natural and cultural value: components, structure, ecosystem services and economic value of selected systems	1	2	9 (UEX)	Report	Dec 15	June 2016	PU	Aug 2016	On website
D3.7	D3.1	Agroforestry for high value trees: components, structure, ecosystem services and economic value	1	3	5 (TEI)	Report	Dec 15	June 2016	PU	Aug 2016	On website
D4.10	D4.1	Agroforestry for arable farmers: components, structure, ecosystem services and economic value	1	4	8 (BTU)	Report	Dec 15	June 2016	PU	Aug 2016	On website
D5.13	D5.1	Agroforestry for livestock farmers: components, structure, ecosystem services and economic value	1	5	14 (AU)	Report	Dec 15	June 2016	PU	Aug 2016	On website
D7.19	D7.1	Synthesis of existing European agroforestry performance in terms of biodiversity, ecosystem services, and profitability	1	7	11 (UCPH)	Report	Dec 15	Nov 2015	PU	Aug 2016	On website
D9.28	D9.4	12 National Agroforestry Associations across Europe	1	9	26 (EURAF)	Other	Dec 15	Dec 2015	PU	Aug 2016	On website
D6.16	D6.1	Initial modelled outputs at field- and farm-scale to support best management practices for resource efficiency of agroforestry systems	1	6	6 (INRA)	Report	Feb 16	Aug 2016	PU	Aug 2016	On intranet
D1.3	D1.3	Environmental and socio-economic framework conditions of agroforestry in different regions	1	1	2 (EFI)	Report	Mar 16	Apr 17	PU	Feb 2018	On website
D9.29	D9.5	Training tool-kit for farmers	1	9	22 (AGROOF)	Other: toolkit	Jun 16	Jun 2016	PU	Aug 2016	On website and submitted

Del no	Del. no.	Deliverable name	Version	WP no.	Lead beneficiary	Nature	Delivery date from annex 1	Actual delivery	Dissemination level	Submitted	Comments
D6.17	D6.2	Modelled outputs at field- and farm-scale	1	6	10 (ISA)	Report	Dec 16	Oct 17	PU	Feb 2018	On website
D2.5	D2.2	Agroforestry of high nature and cultural value: results of innovations	1	2	9 (UEX)	Report	Feb 17	Jan 18	PU	Feb 2018	On website
D3.8	D3.2	Agroforestry with high value trees: results of innovations	1	3	5 (TEI)	Report	Feb 17	Jan 18	PU	Feb 2018	On website
D4.11	D4.2	Agroforestry for arable farmers: results of innovations	1	4	8 (BTU)	Report	Feb 17	Jan 18	PU	Feb 2018	On website
D5.14	D5.2	Agroforestry for livestock farmers: results of innovations	1	5	14 (AU)	Report	Feb 17	Jan 18	PU	Feb 2018	On website
D7.20	D7.2	Assessment of the ecosystem services and profitability of four novel agroforestry practices in major European bio-geographic zones	2	7	12 (EVD)	Report	Feb 17	Jul 17	PU	Feb 2018	On website
D8.24	D8.2	Guidance on how policy can help appropriate development and uptake of agroforestry based on farmer requirements	2	8	4 (USC)	Report	Jun 17	Sept 17	PU	Feb 2018	On website
D2.6	D2.3	Agroforestry of high nature and cultural value: guidelines to farmers	1	2	9 (UEX)	Booklet	Aug 17	Jan 18	PU	Feb 2018	On website
D3.9	D3.3	Agroforestry for high value tree systems: guidelines to farmers	1	3	5 (TEI)	Booklet	Aug 17	Jan 18	PU	Feb 2018	On website
D4.12	D4.3	Agroforestry for arable farmers: guidelines	1	4	8 (BTU)	Booklet	Aug 17	Jan 18	PU	Feb 2018	On website
D5.16	D5.3	Agroforestry for livestock farmers: booklet of guidelines to farm businesses	1	5	14 (AU)	Booklet	Aug 17	Jan 18	PU	Feb 2018	On website

Del no	Del. no.	Deliverable name	Version	WP no.	Lead beneficiary	Nature	Delivery date from annex 1	Actual delivery	Dissemination level	Submitted	Comments
D6.18	D6.3	Modelled outputs at farm-scale (economic)	1	6	1 (CRAN)	Report	Aug 17	Oct 17	PU	Feb 2018	On website
D9.30	D9.6	Farmer applicable booklets focused on W2-WP5 and policy issues	1	9	3 (ACTA)	Other: booklets	Aug 17	Jan 18	PU	Feb 2018	On website
D7.21	D7.3	Profitability, biodiversity and ecosystem services of agroforestry at landscape scale	1	7	11 (UCPH)	Report	Dec 17	Jan 18	PU	Feb 2018	On website
D7.22	D7.4	European scenario maps / Predicting the impact of the widespread uptake of agroforestry on ecosystems and farm profitability	1	7	2 (EFI)	Other: maps	Dec 17	Feb 18	PU	Feb 18	On website
D9.31	D9.7	Final Project Conference	1	9	26 (EURAF)	Report	Dec 17	Dec 17	PU	Feb 2018	On website

Table C.2 Milestones as specified in Annex I to the Grant Agreement up to end of project. Milestones that have been completed are shaded

Mile stone No.	Milestone number	Milestone name	Means of verification	Work pack-age	Lead beneficiary	Delivery date from Annex 1	Achieved	Actual/ forecast achievem ent date	Comment
MS42	M10.2 (1)	Launch meeting minutes	Minutes	10	1 (CRAN)	Feb 14	Yes	Feb 14	On intranet
MS38	M9.1	Dissemination protocol	Report	9	22 (AGROOF)	Mar 14	Yes	Apr 14	On intranet
MS39	M9.2 (1)	Quarterly website update	Website	9	1 (CRAN)	Mar 14	Yes	Mar 14	On website
MS26	M6.1	Project database for pan-European simulated climate data	Database	6	10 (ISA)	Jun 14	Yes	Jun 14	On intranet
MS39	M9.2 (2)	Quarterly website update	Website	9	1 (CRAN)	Jun 14	Yes	Jun 14	On website
MS40	M9.3 (1)	Quarterly newsletter	Electronic	9	26 (EURAF)	Jun 14	Yes	Jul 14	On website
MS42	M10.2 (2)	Exec Committee and General Assembly minutes	Minutes	10	1 (CRAN)	Jul 14	Yes	Jul 14	On intranet
MS41	M10.1 (1)	Internal six-monthly report	Report	10	1 (CRAN)	July 14	Yes	Aug 14	On intranet
MS2	M2.1	Agroforestry of High Natural and Cultural Value Participative Network (WP2) established and first workshops undertaken	Reports of initial workshops on web	2	9 (UEX)	Aug 14	Yes	Aug-Dec 2014	On website
MS8	M3.1	Agroforestry for high value tree systems Participative Network (WP3) established and first workshops undertaken	Reports of initial workshops on web	3	5 (TEI)	Aug 14	Yes	Aug-Dec 2014	On website
MS14	M4.1	Agroforestry for arable systems Participative Network (WP4) established and first workshops undertaken	Reports of initial workshops on web	4	8 (BTU)	Aug 14	Yes	Aug-Dec 2014	On website

Mile stone No.	Milestone number	Milestone name	Means of verification	Work pack-age	Lead beneficiary	Delivery date from Annex 1	Achieved	Actual/ forecast achieveme nt date	Comment
MS20	M5.1	Agroforestry for livestock systems Participative Network (WP5) established and first workshops undertaken	Reports of initial workshops on web	5	14 (AU)	Aug 14	Yes	Aug-Dec 2014	On website
MS39	M9.2 (3)	Quarterly website update	Website	9	1 (CRAN)	Sept 14	Yes	Sept 2014	On website
MS40	M9.3 (2)	Quarterly newsletter	Electronic	9	26 (EURAF)	Sep 14	Yes	Sept 2014	On website
MS1	M1.1	Preliminary stratification and quantification of agroforestry according to WP2-WP5 systems	Internal report	1	2 (EFI)	Dec 14	Yes	Jan 2015	On website
MS3	M2.2	Innovations to be examined in WP2 are agreed	Report	2	9 (UEX)	Dec 14	Yes	Jan 2015	On website
MS9	M3.2	Innovations to be examined in WP3 are agreed	Report	3	5 (TEI)	Dec 14	Yes	Jan 2015	On website
MS15	M4.2	Innovations to be examined in WP4 are agreed	Report	4	8 (BTU)	Dec 14	Yes	Jan 2015	On website
MS21	M5.2	Innovations to be examined in WP5 are agreed	Report	5	14 (AU)	Dec 14	Yes	Jan 2015	On website
MS31	M7.1	Standardised protocol for biodiversity, ecosystem services and farm profitability	Protocol	7	11 (UCPH)	Dec 14	Yes	Dec 2014	On intranet
MS32	M7.2	Selection of key agroforestry systems and 12 sample landscapes for landscape evaluation	Report	7	9 (UEX)	Dec 14	Yes	Jan 2015	On intranet
MS39	M9.2 (4)	Quarterly website update	Website	9	1 (CRAN)	Dec 14	Yes	Dec 2014	On website
MS40	M9.3 (3)	Quarterly newsletter	Electronic	9	26 (EURAF)	Dec 14	Yes	Jan 2015	On website
		First Periodic Report					Yes	Feb 2015	On website

Mile stone No.	Milestone number	Milestone name	Means of verification	Work pack-age	Lead beneficiary	Delivery date from Annex 1	Achieved	Actual/ forecast date	Comment
MS4	M2.3	Experimental protocol for WP2 agreed	Protocol	2	9 (UEX)	Jan 15	Yes	Oct 2015	On website
MS10	M3.3	Experimental protocol for WP3 agreed	Protocol	3	5 (TEI)	Jan 15	Yes	Oct 2015	On website
MS16	M4.3	Experimental protocol for WP4 agreed	Protocol	4	4 (BTU)	Jan 15	Yes	Oct 2015	On website
MS22	M5.3	Experimental protocol for WP5 agreed	Protocol	5	14 (AU)	Jan 15	Yes	Oct 2015	On website
MS36	M8.1	Map and indicators of agroforestry policies across EU	Map	8	4 (USC)	Feb 15	Yes	Jan 2016	On website
MS27	M6.2	Identification of agroforestry systems and innovations to be modelled in project	Report	6	10 (ISA)	Feb 15	Yes	Sept 2015	On website
MS42	M10.2 (3)	Exec Committee minutes	Minutes	10	1 (CRAN)	Feb 15	Yes	Feb 2015	On intranet
MS39	M9.2 (5)	Quarterly website update	Website	9	1 (CRAN)	Mar 15	Yes	Mar 2015	On website
MS40	M9.3 (4)	Quarterly newsletter	Electronic	9	26 (EURAF)	Mar 15	Yes	May 2015	On website
MS28	M6.3	Database with description of key components to be modelled	Database	6	10 (ISA)	Jun 15	Yes	Jan 2016	On website
MS39	M9.2 (6)	Quarterly website update	Website	9	1 (CRAN)	Jun 15	Yes	Jun 2015	On website
MS40	M9.3 (5)	Quarterly newsletter	Electronic	9	26 (EURAF)	Jun 15	Yes	Aug 2015[3]	On website
MS41	M10.1 (2)	Internal six-monthly report	Report	10	1 (CRAN)	Jul 15	Yes	Oct 2015	On intranet
MS42	M10.2 (4)	Exec Com/General Assembly minutes	Minutes	10	1 (CRAN)	Jul 15	Yes	Sept 2015	On intranet
MS29	M6.4	Improvement of existing Yield-SAFE model for proposed innovations	Model	6	1 (CRAN)	Aug 15	Yes	April 2016 updated June 2016	On website
MS30	M6.5	Improvement of the Hi-sAFe model for proposed innovations	Model	6	6 (INRA)	Aug 15	Yes	Jul 2016	On website

[3] Combined with M9.3(6)

Mile stone No.	Milestone number	Milestone name	Means of verification	Work pack-age	Lead beneficiary	Delivery date from Annex 1	Achieved	Actual date	Comment
MS39	M9.2 (7)	Quarterly website update	Website	9	1 (CRAN)	Sep 15	Yes	Sep 2015	On internet
MS40	M9.3 (6)	Quarterly newsletter	Electronic	9	26 (EURAF)	Sep 15	Yes	Aug 2015[4]	On internet
MS37	M8.2	Report detailing the scenarios to be used for M7.4 in WP7	Report	8	4 (USC)	Oct 15	Yes	Jun 2016	On intranet
MS33	M7.3	Spatial characterisation of sample landscapes	Database	7	20 (UBB)	Dec 15	Yes	Jul 2016	On intranet
MS34	M7.4	Definition of scenario framework to be used in tasks to task 7.6	Report	7	12 (EVD)	Dec 15	Yes	Mar 2016	On intranet
MS39	M9.2 (8)	Quarterly website update	Website	9	1 (CRAN)	Dec 15	Yes	Dec 2015	On internet
MS40	M9.3 (7)	Quarterly newsletter	Electronic	9	26 (EURAF)	Dec 15	Yes	Nov 2015	On internet
MS41	M10.1 (3)	Internal six-monthly report	Report	10	1 (CRAN)	Dec 15	Yes	Jul 2016	On intranet
MS42	M10.2 (5)	Exec Committee minutes	Minutes	10	1 (CRAN)	Feb 16	Yes	Feb 2016	On intranet
MS39	M9.2 (9)	Quarterly website update	Website	9	1 (CRAN)	Mar 16	Yes	Mar 2016	On internet
MS40	M9.3 (8)	Quarterly newsletter	Electronic	9	26 (EURAF)	Mar 16	Yes	Feb 2015	On internet
MS35	M7.5	Cost-benefit analysis of selected AF systems at landscape scales	Database	7	1 (CRAN)	Jun 16	Yes	Jul 2016	On intranet
MS39	M9.2 (10)	Quarterly website update	Website	9	1 (CRAN)	Jun 16	Yes	Jun 2016	On website
MS40	M9.3 (9)	Quarterly newsletter	Electronic	9	26 (EURAF)	Jun 16	Yes	Jun 2016	On website
		Second Periodic Report					Yes		
MS42	M10.2 (6)	Exec Com and Gen. Ass. minutes	Minutes	10	1 (CRAN)	Jul 16	Yes	Jun 2016	On intranet

[4] Combined with M9.3(5)

Mile stone No.	Milestone number	Milestone name	Means of verification	Work pack-age	Lead beneficiary	Delivery date from Annex 1	Achieved	Actual date	Comment
MS5	M2.4	Initial report on innovations (WP2) including initial technical and socio-economic assessment	Internal report	2	9 (UEX)	Aug 16	Yes	Nov 2017	On website
MS11	M3.4	Agroforestry for high value tree systems: Initial report on innovations	Internal report	3	5 (TEI)	Aug 16	Yes	Aug 2017	On website
MS17	M4.4	Agroforestry for arable farmers: Initial report on innovations	Internal report	4	8 (BTU)	Aug 16	Yes	Mar 2017	On website
MS23	M5.4	Agroforestry for livestock farmers: initial results	Internal report	5	14 (AU)	Aug 16	Yes	Jan 2017	On website
MS39	M9.2 (11)	Quarterly website update	Website	9	1 (CRAN)	Sep 16	Yes	Sep 2016	On website
MS40	M9.3 (10)	Quarterly newsletter	Electronic	9	26 (EURAF)	Sep 16	Yes	Sep 2016	On website
MS39	M9.2 (12)	Quarterly website update	Website	9	1 (CRAN)	Dec 16	Yes	Dec 2016	On website
MS40	M9.3 (11)	Quarterly newsletter	Electronic	9	26 (EURAF)	Dec 16	Yes	Dec 2016	On website
MS41	M10.1 (4)	Internal six-monthly report	Report	10	1 (CRAN)	Dec 16	Yes	Feb 2017	Internal
MS42	M10.2 (7)	Exec Committee minutes	Minutes	10	1 (CRAN)	Feb 17	Yes	Feb 2017	On intranet
MS39	M9.2 (13)	Quarterly website update	Website	9	1 (CRAN)	Mar 17	Yes	Mar 2017	On website
MS40	M9.3 (12)	Quarterly newsletter	Electronic	9	26 (EURAF)	Mar 17	Yes	Mar 2017	On website
MS6	M2.5	Initial draft on guidelines for agroforestry of high natural and cultural value	Draft guidelines	2	9 (UEX)	Jun 17	Yes	Oct 2017	On intranet
MS12	M3.5	Initial draft on guidelines for agroforestry with high value trees	Draft guidelines	3	5 (TEI)	Jun 17	Yes	Sep 2017	On intranet
MS18	M4.5	Initial draft on guidelines for agroforestry for arable systems	Draft guidelines	4	8 (BTU)	Jun 17	Yes	Aug 2017	On intranet
MS24	M5.5	Initial draft on guidelines for agroforestry for livestock systems	Draft guidelines	5	14 (AU)	Jun 17	Yes	Sep 2017	On intranet

Mile stone No.	Milestone number	Milestone name	Means of verification	Work pack-age	Lead beneficiary	Delivery date from Annex 1	Achieved	Actual/ forecast date	Comment
MS39	M9.2 (14)	Quarterly website update	Website	9	1 (CRAN)	Jun 17	Yes	Jul 2017	On website
MS40	M9.3 (13)	Quarterly newsletter	Electronic	9	26 (EURAF)	Jun 17	Yes	Jul 2017	On website
MS41	M10.1 (5)	Internal six-monthly report	Report	10	1 (CRAN)	Jul 17	Yes	Sep 2017	Internal
MS42	M10.2 (8)	Exec Committee and General Assembly minutes	Minutes	10	1 (CRAN)	Jul 17	Yes	Jul 2017	Intranet
MS39	M9.2 (15)	Quarterly website update	Website	9	1 (CRAN)	Sep 17	Yes	Sep 2017	On website
MS40	M9.3 (14)	Quarterly newsletter	Electronic	9	26 (EURAF)	Sep 17	Yes	Nov 2017	On website
MS7	M2.6	Results from WP2 disseminated to stakeholder groups (with WP9)	Report	2	9 (UEX)	Dec 17	Yes	Feb 2018	On website
MS13	M3.6	Results from WP3 disseminated to stakeholder groups (with WP9)	Report	3	5 (TEI)	Dec 17	Yes	Feb 2018	On website
MS19	M4.6	Results from WP4 disseminated to stakeholder groups (with WP9)	Report	4	8 (BTU)	Dec 17	Yes	Feb 2018	On website
MS25	M5.6	Results from WP5 disseminated to stakeholder groups (with WP9)	Report	5	14 (AU)	Dec 17	Yes	Feb 2018	On website
MS39	M9.2 (16)	Quarterly website update	Website	9	1 (CRAN)	Dec 17	Yes	Dec 2017	On website
		Third Periodic Report					Yes		
		Final report					Yes		

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