

Initial Stakeholder Meeting Report Agroforestry for Arable Farmers in Western France

Work-package group 4: Agroforestry for arable farmers
Specific group: Agroforestry for arable farmers in Western France
Date of meeting: 3 October 2013 to 26 September 2014
Date of report: 14 November 2014
Location of meeting: Poitou Charentes region, France
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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 are purely those of the writers and may not in any circumstances be regarded as stating an official position of the European Commission.

1. Context

The AGFORWARD research project (January 2014-December 2017), funded by the European Commission, is promoting agroforestry practices in Europe that will advance sustainable rural development. The project has four objectives:

- 1. to understand the context and extent of agroforestry in Europe,
- 2. to identify, develop and field-test innovations (through participatory research) to improve the benefits and viability of agroforestry systems in Europe,
- 3. to evaluate innovative agroforestry designs and practices at a field-, farm- and landscape scale, and
- 4. to promote the wider adoption of appropriate agroforestry systems in Europe through policy development and dissemination.

This report describes one of about 40 initial stakeholder workshops to address objective 2. Further details of the project can be found on the AGFORWARD website: <u>www.agforward.eu</u>

2. Description of system

The Poitou-Charentes Regional Council and the Chamber of Agriculture of Poitou-Charentes is committed to the development of agroforestry (Figure 1). For example in 1996, they created a network of agroforestry farms with CRPF (the regional centre of forest owners).



Figure 1. Aumagne, in Charente-Maritime, is a subdivision of the Poitou Charentes region

The Chamber of Agriculture of Poitou-Charentes also participated in the SAFE (Silvoarable Agroforestry for Europe) FP5 research program from 2001 to 2005. From 2006 to 2008, there was also a national project called "From Research to the Field: How to organize the Development of Agroforestry?" There was also a national project (2009-2011) led by the Chamber of Agriculture called "Improving the Effectiveness of Arable Crops in Agroforestry Systems". There was also inputs to the RMT agroforestry project (2014-2016) led by Chamber of Agriculture for the Centre region of France.

Some experimental plots were established in 2008, and since then the Chamber of Agriculture in the region (in partnership with the Regional Council) have supported regional agroforestry development as part of the "Regional Agenda for Greening the Economy and Green Growth".

Since 2011, the agroforestry development programme has been implemented under measure 222 (CAP/EAFRD). In total from 2008 to 2013, 42 agroforestry establishment projects have been completed in the region covering an area of 355 ha. Of these, 20 projects at different stages of maturity are being studied; these cover an area of about 175 ha.

The projects in Poitou-Charentes have mainly focused on arable farms that are managed organically (with and without ploughing). The systems typically comprise three to five tree species (*Juglans nigra* x *regia*, *Juglans regia*, *Sorbus domesticus*, *Sorbus torminalis*, *Prunus avium*, *Fraxinus excelsior*, *Acer pseudoplatanus*, and *Quercus* species). The density of trees ranges from 30 to 50 trees per hectare, typically with 27 m between rows which allows a 24 m cultivated area.



Figure 2. Images from the various meetings of the Poitou Charentes Agroforestry Group

Since 2009, there have been regional agroforestry meetings in the Poitou Charentes region. In 2009, the meeting took place in Rouillac. The meeting in 2010 was at Dompierre-sur-Mer, and the meeting in 2011 was at Saint Maxire. The group met at Béthines in 2012 and at Thou in 2013. On 3 October 2013, the group met at Aumagne in Charente-Maritime at a meeting entitled "Results and Prospects for Agroforestry in Poitou-Charentes". This was a good opportunity to launch the first debates on the challenges and issues of current systems and expectations of stakeholders in the development of agroforestry (Figure 2).

Since then there have been a series of meetings regarding agroforestry in the region (Table 1). The professions attending each meeting are shown in Table 2. At the meetings on 3 October 2013, 11 June 2014, and 26 September 2013, the participants were asked to think about the current challenges and issues concerning agroforestry practice. Across the various dates, the AGFORWARD questionnaire was filled by 14 participants.

Table 1. Recent meetings of the Poitou Charentes network

	-
3 October 2013*	Regional Agroforestry Day at the farm of Mont d'Or (Thou)
9 December 2013	Meeting of Agroforestry Group 17 at Berthegille (Sablonceaux)
8 & 22 April 2014	Training Agroforestry - Tour of Eduts meadow orchard Keys périgny
11 June 2014*	Discover Agroforestry in Pays de Loire Day, at Farm Eduts
30 June 2014	Meeting of Agroforestry Group 17 at Calumet Farm (Aumagne) and size
	training Préguillac
4 September 2014	Meeting regarding agroforestry crops (Saintes)
26 September 2014*	Regional Biodiversity and Agroforestry Day (Aumagne)

*Dates on which the challenges to agroforestry were discussed.

Table 2. Professions of the stakeholders at each meeting

87 different people have contributed to the contents of this report

3 October 2013	5 Agroforestry farmers; 2 Farmers with a project of agroforestry
Regional Agroforestry	2 Elected officials; 2 Facilitators
Day ,	4 Ecology and Environment Technicians; 4 Researchers
,	2 Agricultural Administration Technicians; 3 Hunting Technicians
	1 Co-operative Technician; 2 Forestry Technicians
	5 Technicians from the Conseil Général and Région
	10 CA technicians (énergie, élevage, biodiversité, territoire)
	1 Technicien fondation LISEA
9 December 2013	1 Agroforestry farmer
Meeting of	1 Retired truffle farmer
Agroforestry Group	1 Arboriculturist
17	5 Farmers with an agroforestry project
	2 GAB and CA technicians
8 and 22 April 2014	1 Agroforestry farmer
Agroforestry Training	5 Farmers with agroforestry projects
	2 GAB and CA technicians
11 June 2014	3 Agroforestry farmers
Agroforestry	4 Farmers with agroforestry projects
Discovery Day Pays	2 CAUE 85 technicians
de Loire	10 Technicians from the Chamber of Agriculture (conseiller bio,
	conseiller production végétale,
	Conseiller bocage, conseiller environnement)
30 June 2014	8 Agroforestry farmers
Meeting of	5 Farmers with an agroforestry project
Agroforestry Group	4 Technicians (GAB, CA, CRPF, NE)
17	
4 September 2014	2 Agroforestry farmers
Agroforestry	2 Technicians (CA, NE)
Information Meeting:	
grandes cultures	
26 September 2014	6 Agroforestry farmers
Regional Agroforestry	2 Farmers with an agroforestry project
Day	2 Elected officials; 2 Facilitators
	2 Environment-Ecology technicians
	1 Administrator from an environment association
	1 Conseil Général technician
	2 GAB and CA technicians

3. Perceptions of agroforestry

To help interpret the data, an aggregate score for each aspect was determined using the scoring system described in Table 3 as used by Crous-Duran et al (2014). The aspects were considered under headings of production, management, environment, and socio-economic effects.

	01			-						
Rank	1	2	3	4	5	6	7	8	9	10
Points	25	18	15	12	10	8	6	4	2	1

Table 3. Scoring points for each the rank

Positive aspects

The respondents generally ranked that the most positive aspects of agroforestry with environmental and production aspects. The environment in general, biodiversity and habitats, and soil conservation were particularly highly rated (Table 4). The highest ranked production aspect was increased production of timber, wood, fruits and/or nuts. Farmer image also featured highly. Other highly ranked issues were water quality, income diversity, and an improved landscape. Two people ranked inheritance and tax issues as the second most important positive attribute.

Table 4. Positive aspects of agroforestry as ranked by 14 participants

Aspect					Rai	nking	; by 1	L4 pa	rticip	oants	;				Sum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
General environment	2	1			1	3	2	5	1	1	1	6	4	6	214
Biodiversity and wildlife habitat	1	5	1	1	7	7	1	3	3	8	5	3		5	191
Soil conservation	7	4		5	2		4	8	2	7		8	1	1	140
Timber/wood/fruit production	4		2			1		10	7	4	2	1		2	135
Farmer image		7	7	10	3	4	5			2	4	4	3	4	119
Water quality	6	3		4		10	3	9		6		7	5	3	92
Income diversity	9	6		9	10	6		1	10		3	2			80
Landscape aesthetics	3		6	8	9	9	8	4	4	9	8	5		8	79
Diversity of products			10	2	8	2			5						51
Climate moderation	10		5			8	6	7	9	10	7	10		7	45
Runoff and flood control	8	2		6			7								36
Inheritance and tax								2					2		36
Timber/wood/fruit/nut quality			3						6		6	9			33
Animal health and welfare				3	4										27
Crop or pasture production			4				9			5					24
Tourism					5	5									20
Farmer/hunter Relationship										3	10			10	17
Reduced groundwater recharge	5			7											16
Crop quality/food safety								6	8						12
Originality and interest			9		6										10
Tree regeneration/survival			8												4
Marketing premium											9				2
Opportunity for hunting														9	2
Local food supply							10								1

Hence overall, the responses showed a strong positive weighting for the effect of agroforestry on the environment, together with product and income diversification. From the discussions, it seemed that the key issues varied with profession, with farmers tending to rank product diversification high, whilst environmentalists tended to focus on biodiversity and landscape enhancement. Leaders from the local administration tended to give a high ranking to effect on water quality.

In the discussions, the respondents emphasised the wider products of the trees beyond timber, and many wanted to include valuation of products such as wood energy and fruits. The results also indicate that the stakeholders, who generally had a good understanding of agroforestry, saw agroforestry as a useful tool for agro-ecology.

Negative aspects

Regarding the negative aspects of agroforestry, or at least the obstacles to its development, the most highly ranked issue was the complexity of the work and the demands on labour (Table 5). The effect on cash flow, the administrative burden and the impact on mechanization were also highly ranked. There were also concerns about the effect on grant eligibility such as changes in the common agricultural policy and local plans. Two people ranked regulation and two people ranked crop production as key negative issues. Disease and weed control were also mentioned.

Aspect	Ranking by 14 participants									Sum					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Complexity of work	10	1	1	8	6		2		6	2	1	8	3	8	155
Labour			6	7	10	1	3		3	7	2	4		2	124
Cash flow	4	2	2	6	8					5	3	5	5	5	115
Administrative burden	2			2	4		1			4		6		6	101
Mechanisation	7		5	9	5	8	4		1	3				3	99
Subsidy and grant eligibility	3			1					4	6			4	4	84
Project feasibility			3	3	2	10				8		1			78
Regulation			7	4	1			1							68
Disease and weed control	1		4			6						7		7	57
Crop or pasture production					7								1	1	56
Market risk						5				1			2		53
Opportunity for hunting						2	6		2						44
Farmer/owner relationship				5	3	3									40
Inheritance and tax					9				5	10		3		10	29
Losses by predation	6						5			9				9	22
Management costs	5					4									22
Water quality												2			18
Farmer/hunter relationship		3													15
Crop quality/food safety						7									6
Change in fire risk	8														4
Profit			8												4
Timber/wood/fruit/nut production						9									2
Originality and interest	9														2
Farmer image				10											1

Table 5. Negative aspects of agroforestry as ranked by 14 participants

Many of the perceived negative aspects of silvoarable agroforestry were related to the management of agroforestry plots and farms, followed by regulation, administrative and financial issues.

The complexity of agroforestry systems means that the practices are often innovative and experimental in nature. This leads to trial and mistakes. The discussions indicated that there was a strong need for reference material and technical advice. In Charente-Maritime discussion, where there were various organic farmers, agroforestry was associated with risk and an additional workload. There were also concerns about competition for light and water between the crops and trees particularly during the Eduts visit.

Those from Chambers of Agriculture had concerns about the need for support and efficient management in any pilot project. There were also concerns that the administrative and regulatory regimes change over a shorter cycle than the trees can grow. It was noted that farmers cannot follow policies that change every five years, and such constraints often dictate the direction of the project more than the farmer.

For some farmers wishing to undertake agroforestry, the attitudes of neighbouring farmers and the family (and sometimes the owner) were also a major obstacle.

During the visits to the agroforestry plots, two other points also emerged as possible constraints. The first was the management of wildlife such as deer, voles, and birds of prey, which could damage the trees. There was also interest in how best to manage the vegetation in the tree rows, including how to stop invasive species such as thistles.

4. Suggestions for innovation and future research

The key areas for suggested innovation could be divided into four themes:

a) Simplification of grants for the establishment of agroforestry systems

Grants for the establishment of agroforestry systems appeared to be essential for farmers to develop agroforestry. The participants highlighted the need for administrative simplification, especially on eligibility criteria. In particular it was felt that the limited choice of tree species, the priority development of timber, and the size of the eligible areas were all obstacles that should be removed.

b) Awareness

There was a need to communicate the benefits of agroforestry to farmers and local officials and administration. A question asked through the discussions was how to reach the majority of farmers who were remote from agroforestry. The AGFORWARD network could provide some support in this area. It was felt that communication should also be directed towards policy makers and local officials, particularly in peri-urban areas.

c) Establishment of a network of reference farms

All stakeholders agreed on the need to "see" agroforestry. Hence it was useful to maintain a number of farms as agroforestry showcases and to provide a means of monitoring and communication to different agricultural sectors. In addition, the farm Eduts, as a showcase of what can become an agroforestry plot at 40 years old, was a major subject of discussion in the groups.

d) Research and development of technical practices

Regarding participants' expectations on research and development, the consensus appeared to be the need for technical and economical references on agroforestry farms and research on the best technical practices to turn agroforestry into a safe investment.

Three specific points were also highlighted:

- Choice of varieties and crop rotations on agroforestry plots (competition for light, water)
- Management of grass strips
- Tree protection against wild animals such as deers, voles, and raptors

5. Opportunities in the AGFORWARD contract

The farmers within this existing agroforestry network were open to participate in technical trials within the AGFORWARD project subject to time and equipment constraints. Some farmers are already engaged in projects related to cereal varieties. They also noted the limited four year time period for the project as testing agroforestry "for real" can take 20 to 30 years.

Description of Eduts farm

Starting in 1967, Eduts farm expanded from 15 to 70 ha during the 1970s, reaching 180 ha in in 2013. In 1973, the manager, constrained by the services of the State, established an agroforestry system on 55 ha. This comprised 45 ha of Juglans nigra and 10 ha of Prunus avium. The inter-row spacing is 14 m with 7 m between trees. This experimental system has subsequently been used in different agroforestry development programmes.

The farmer at the Eduts site is now 73 years old and he has effectively retired. The recent low cereal yields meant that he did not plant a cereal crop in 2014, and the clover cover crop was unsuccessful. However, he remains open to enter into a process of experimentation subject to technical and financial support. However cutting the trees may not be possible because of the emotional attachment.

The authors note that it has not proved easy to reach or mobilise farmers in the production of this report. Existing work on many projects in part restrict the opportunities for exchange. It was also felt important to consider the long-term, future of any agroforestry planting, to reduce the uncertainty and cyclical nature of project-based interventions.

6. References

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7. Acknowledgements

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 views and opinions expressed in this report are purely those of the writers and may not in any circumstances be regarded as stating an official position of the European Commission. The report was edited by Paul Burgess.