Farmers’ reasoning behind the uptake of agroforestry practices: evidence from multiple case-studies across Europe

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www.efi.int
AGFORWARD (AGroFORestry that Will Advance Rural Development)
EU FP7
2014-2017
2 international institutions
23 universities, research and farming organisations
http://agforward.eu
AGFORWARD Goals

• Promoting both existing and novel agroforestry systems in Europe
• Mapping and stratifying the different agroforestry systems in Europe
• Analysing the driving forces and perform an economic, social and environmental assessment for certain case studies
• Facilitating participative agroforestry research in partnership with farmers and land owners, extension staff and rural businesses
• Identifying areas where it would be most promising to promote agroforestry
• Offering policy recommendations
Analysis of environmental and socio-economic factors framing agroforestry development in Europe

- Grounded theory, ground data, social processes
  - Qualitative interviews to farmers (183) implementing and not implementing AF, grouped by different subsystems across Europe
Qualitative interviews to farmers across Europe

<table>
<thead>
<tr>
<th>Agroforestry system</th>
<th>Partner</th>
<th>Country</th>
<th>Number of AF interviews</th>
<th>Number of A interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>WP2 High Nature and Cultural Value</td>
<td>TEI</td>
<td>Greece</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>ISA</td>
<td>Portugal</td>
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<tr>
<td></td>
<td>UNEX</td>
<td>Spain</td>
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<tr>
<td></td>
<td>BTU</td>
<td>Germany</td>
<td>8</td>
<td>8</td>
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<tr>
<td>WP3 High value trees</td>
<td>CRAN</td>
<td>UK</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>AFBI</td>
<td>UK</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>USC</td>
<td>Spain</td>
<td>4</td>
<td>7</td>
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<tr>
<td>WP4 Silvoarable</td>
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<td>UK</td>
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<td></td>
<td>AFAF</td>
<td>France</td>
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<tr>
<td>WP5 Silvopasture</td>
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<td>Spain</td>
<td>9</td>
<td>7</td>
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<td></td>
<td>NYME</td>
<td>Hungary</td>
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<td></td>
<td>CNR</td>
<td>Italy</td>
<td>6</td>
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<tr>
<td></td>
<td>TOTAL (183)</td>
<td></td>
<td>98</td>
<td>85</td>
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</tbody>
</table>

- Random
- Theoretical saturation
- Face-to-face
- Closed and open questions
- MAXQDA software
Sampling socio-economic facts

**Gender**
- Male: 86%
- Female: 14%

**Occupation**
- Farm or farm manager: 62%
- Livestock breeder: 20%
- Farmer, other: 6%
- Fruit grower: 7%
- Other: 5%

**Education**
- University degree: 53%
- High school: 19%
- Elementary school: 17%
- Vocational school: 3%
- None: 3%
- n.a.: 5%
### Age

<table>
<thead>
<tr>
<th>MEAN</th>
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<th>MAX</th>
<th>STDEV</th>
<th>MODE</th>
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<tbody>
<tr>
<td>48</td>
<td>23</td>
<td>80</td>
<td>11.5</td>
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### Number of descendants

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## Sampling socio-economic facts

<table>
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<th>MIN</th>
<th>MAX</th>
<th>STDEV</th>
<th>MODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of the farm (ha)</td>
<td>363.10</td>
<td>0.1</td>
<td>11000</td>
<td>993.84</td>
<td>20</td>
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<tr>
<td>Size eligible CAP 2007-2013</td>
<td>242.24</td>
<td>0</td>
<td>6612</td>
<td>674.30</td>
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<tr>
<td>Size eligible CAP 2014-2020</td>
<td>263.34</td>
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<td>6612</td>
<td>697.14</td>
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<tr>
<td>Eligibility CAP 2007-2013</td>
<td>-128.34</td>
<td>-4388</td>
<td>0</td>
<td>448.26</td>
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<tr>
<td>Change to CAP 2014-2020</td>
<td>3.47</td>
<td>-70</td>
<td>320</td>
<td>33.39</td>
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Research questions

1. What are the main reasons for the farmers to practice agroforestry?
2. What do the farmers understand by agroforestry?
3. Have trees been removed from the farms and why?
4. What are the agroforestry practices implemented?
5. What are the main problems that the farmers face when implementing agroforestry?
RQ1a What are the main reasons for the farmers to practice agroforestry?

1. Tradition
2. Learning from others
3. Increasing diversification of products and their quality
4. Minimizing risks in production
5. Animal welfare
6. Aesthetics and cultural heritage
7. Primary vs second occupation
8. Research purposes
9. Environmental reasons
10. Improving quality of life
11. Marginal lands are not suitable for arable crops
12. Subsidies
13. Regulations
Tradition
- Tradition in the family or in the region
- Cultural reasons & benefit of the synergies
- Greece, Spain, Hungary, Italy, Germany and Portugal
- „Giving continuity to the farm as inherited. After the 2003 fire we became concerned about the economic viability of the farm that was mainly based on the forest, so in order to overcome this and to diminish the risk in the future, I am planning to increase the number of animals...“ (Portugal)

Learning from others
- Learning the benefits
- Meetings, work, colleagues, internet
- UK, Germany and Spain.

Increasing diversification of products and their quality
- Diversification of products (wood, fodder, meat, milk, crops), increase production and the profitability
- UK, Spain, Germany, Hungary and Portugal.
RQ1b What are the main reasons for the farmers to practice conventional farming?

1. Tradition
2. Lack of knowledge on AF
3. Easier management
4. Small land
5. Lack of time
6. Lack of subsidies for AF
7. High quality soil is a scarce resource to be maximized
8. Age
9. AF is not advantageous from an economic perspective, less productivity
10. Ownership of the land might be a limitation
11. Fine as they are
12. Might give AF a try
Tradition
• Tradition in the family or region
• France, Germany, Spain, UK.

Lack of knowledge on AF
• how to implement it, the technical design, and its economic viability
• Spain, UK, Greece, Portugal, Germany.

Easier management
• having to find feed for the animals during winter, trees complicate the mechanization, trees not compatible with grazing.
• Greece, France, Portugal, UK.
• „Mechanization was the main reason not to put trees“ (France)
RQ2 What do the farmers understand by agroforestry?

1. Combination of crops/animals with trees
2. Comprehensive understanding of the agroforestry practices by the farmers
3. Uncertainty on the term
4. Lack of awareness among practitioners
Combination of crops/animals with trees

- This is the most common definition by the farmers across Europe, for both agroforestry and non-agroforestry farmers (trees in the fields, crops and trees, forestry and agriculture, forests and livestock)
- UK (AF, A), Greece (AF, A), Germany (AF, A), Spain (AF, A), France (A), Hungary (AF)
- "Agroforestry is a system for growing trees in arable fields or the integration of trees with growing agricultural crops" (UK)

Comprehensive understanding of the agroforestry practices by the farmers

- Introducing woody vegetation as one of the component, obtaining revenues from different products
- Agroforestry farmers in Spain, France, Portugal and UK, but also among some conventional farmers in Portugal and Germany.
- "In society, agroforestry is a new word for something extremely old and large. For example hedgerows in this country, but there are systems even older than that. They have seen evidence of stone age hill systems in Devon, UK which resemble alley cropping - devon hedges 12m apart going up a hill side. People do not recognise the extent of agroforestry at the moment e.g. reindeer farming on 10's of million ha." (UK)
- "A woody component combined with more than one crop, coming at least one from the understory." (UK)
Uncertainty on the term

• Not clear for many farmers that do not practice AF, just guessing or referring only to particular practices that are familiar for them.
• UK, Spain or in Greece (A farmers), Hungary (AF)
• Never heard in many cases, especially by conventional farmers, e.g. in France, Spain, Greece.

Lack of awareness among practitioners

• Not aware of agroforestry, despite implementing the practice in their own farms.
• Spain, Italy, Greece, Hungary and Germany
RQ3 Have trees been removed from the farms and why?

- Removing trees in order to facilitate the management (diseases, birds, machinery, regeneration)
- It is not allowed to remove trees
- Remove trees to establish a new crop (olives)
- Removed trees for eligibility
- Removing trees for generations
- Not removed as all the eligible land are permanent crops
- Not removing trees voluntarily
RQ4 What are the agroforestry practices implemented?

- 1 High Nature and Cultural Value area
- 2 Hedgerows
- 3 Grassland with scattered trees
- 4 Montado “If we want to protect cork oak we must agree on the plantation of eucalyptus. Because it will give me money from areas were cork oak is naturally disappearing, and I will invest some of that money in my cork oak AF stands for my children
- 5 Dehesa
- 6 Orchards
- 7 Forest grazing
RQ5 What are the main problems that the farmers face when implementing agroforestry?

- Problems with farm management (difficulty, work, animal management cost, fencing, finding animals, regeneration)
- Wild fauna problems (killing, stress, quality, local institutions not acting)
- Regulation (law) problems (knicks, forest land, forest service)
- Property rights problems
- Lack of knowledge
- Bureaucracy problems
- Low profitability, expenses and product price fluctuations
- No problems
Conclusions

RQ1 What are the main reasons for the farmers to practice agroforestry?
   Tradition and knowledge

RQ2 What do the farmers understand by agroforestry?
   Lack of awareness by practitioners

RQ3 Have trees been removed from the farms and why?
   Removing trees to facilitate management and eligibility

RQ4 What are the agroforestry practices implemented?
   Wide range of practices

RQ5 What are the main problems that the farmers face when implementing agroforestry?
   Farm management, wild fauna and legislation
¡Obrigado!

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