



Initial Stakeholder Meeting Report Free-range Pigs with Energy Crops in Veneto, Italy

Work-package group 5: Agroforestry for livestock farmers

Specific group: Agroforestry with free-range pigs and energy crops in Veneto, Italy

Date of meeting: 30 September 2014

Date of report: 21 November 2014

Location: Veneto Agricoltura Experimental Farm, "Sasse-Rami" Ceregnano, Rovigo, Italy

Author of report: Valerio Bondesan

Contact: valerio.bondesan@venetoagricoltura.org



Contents

1. Context	2
2. The system.....	2
3. Description of participants and system visited	3
4. Ranking of positive aspects of agroforestry with free-range pigs.....	4
5. Ranking of negative aspects of agroforestry with free-range pigs	7
6. Main topics from discussion and possible research action.....	7
7. Reference	8
8. Acknowledgements	8



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: www.agforward.eu

2. The system

The workshop venue was at Sasse-Rami Experimental Farm in the southern part of the Veneto region in north east Italy. The 200 ha experimental farm include research and extension activities including agricultural and horticultural crops (such as maize, soybean, wheat, and apple-pear-peach orchards), wood biomass plantations, 20 hectares of an experimental organic area with free-range pigs (5 ha) and agroforestry crops (10 ha).

The free-range pig experimental unit at Sasse-Rami farm comprises a small herd (average 15 sows and 2 boars) of white pig hybrids from commercial companies. The production system follows organic specifications and the PDO standard (Protected Denomination of Origin) for fattening pigs to produce meat for traditional protected products such as cured ham and salami. The free-range areas are divided in fields of different size; four fields are used for mating-pregnancy, two fields for farrowing in a group (3-4 sows each), and eight fields for farrowing for individual sows, weaning piglets, and growing pigs. The sows and boars stay outdoor all year round; sometimes in heavy rain, frost and even snow. For welfare reasons, post-weaned piglets are housed in a pig barn and deep bedding straw is provided. The fields are bordered with electric fence and pigs are rotated: one year rest every two years. Winter cereals (mix barley and wheat) or spring crops (mix maize-sunflower and sorghum) are grown in the largest fields and grass is normally grown on the others. Most piglets (about 80%) are sold at 35-40 kg to organic farms for growing-fattening; the others are finished in the farm and slaughtered at age of 10-11 months (180-200 kg live weight).

An agroforestry system comprising poplar and willow bordering the fields of free-range pigs started in 2005 with the aim of improving animal welfare. It is well known that the very high temperature during summer months (32-35 °C in daylight), in the absence of shade, creates critical welfare conditions. Early abortion may increase in pregnant sows as well sunburn and a reduced number of piglets per litter. Fast growing trees, 300-450 plants per hectare can provide shade and a better environment for pigs. The first harvest of ten-year-old poplars in February 2014 provided a reasonably good quantity and quality of wood both for biomass and the production of pallets.



Figure 1. Pregnancy group of sows in a field with poplar rows (left) and lactating sow with piglets (right)



Figure 2. Harvesting ten years old poplar rows (left) and new high density plantation to be used for piglets in two years (right)

3. Description of participants and system visited

Potential stakeholders were identified using contacts lists for previous activities, organised by the Agricultural Research Division of Veneto Agricoltura, in areas including organic agriculture, pig production, farm tourism and forestry. In total, about 50 people were invited by mail at the beginning of September, and followed up by phone calls.

In total 22 people with different background and job activities, participated in the workshop on 30 September 2014. The programme of the workshop from 10.00 am to 2.00 pm included: a presentation of the AGFORWARD project (Giustino Mezzalira), a description of the free-range pigs unit and ongoing research (Valerio Bondesan), and a brief description of welfare and health aspects with free-range pigs (Marcello Volanti). Guidance was given to the completion of a questionnaire about positive and negative aspects of agroforestry system, followed by discussion and a field visit to the pig research area. On the way back to the farm facilities, the visit continued to agroforestry crops area (Cristina Dalla Valle) to see a two-year-old plantation comprising mixed trees species at different planting densities.

The participants included nine farmers from different provinces of Veneto. Four kept organic free-range pigs, four had conventional pig systems and one was planning to start pig farming in the near

future. Of the nine, three managed closed production systems (from sows to fattened pig) whilst the others concentrated on the growing-fattening period only (from piglets to slaughtering). The main products produced included home-made processed fermented salami. Two of the farmers sell fresh pock directly to consumers alongside other organic products such as vegetables and cereals.

The other stakeholders included three public officers: two of Veneto Region (involved in organic production, agroforestry policy in the Rural Development Programme 2014-2020) and one within the agency for subsidies payment of CAP measures. There two experts from the regional-national association for organic agriculture (AIAB) and one expert from the environmental office of a local farmers association. There were also two agronomists and two vets, all with experience in free-range pigs. Lastly there were three representatives from AGFORWARD partner Veneto Agricoltura (Giustino Mezzalira, Cristina Dalla Valle and Valerio Bondesan).

After short presentations, the discussion between participants underlined different experiences of integrating free-range pigs and trees. Three farmers normally keep pigs in a poplar plantation (only fattening), two are using fields with different spontaneous trees and bushes (in a low mountain area); the others had thought to improve pigs welfare using trees, but some technical and legislation aspects (risk of losing a common agricultural policy (CAP) subsidy for the agroforestry area) dissuaded them.

4. Ranking of positive aspects of agroforestry with free-range pigs

After the discussion that followed the presentations, participants were asked to complete a questionnaire aimed at highlighting the key positive and negative aspects of agroforestry in free-range pig production (in organic or conventional system). To help rank the issues, we used the scoring system described by Crous-Duran et al (2014) (Table 1).

Table 1. Scores assigned to the ranking scale

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

The most positive aspects identified by the participants are indicated in Table 2. Not all of the participants decided to score the maximum number of ten aspects out of 45 aspects indicated in the questionnaire. The positive aspects receiving the highest weighted score were the diversity of products and product quality. These aspects may be linked with the farm activity of processing salami with large part of produced pork, and the good market opportunity generated with free-range system. Other highly ranked aspects were animal welfare, both timber and animal production, and originality and interest. Local food production was ranked first by three participants, and farmer image and income diversification were also ranked highest by two respondents.

Table 2. Positive aspects of agroforestry in free-range pig systems as ranked by 22 participants.

Aspect	Ranking by 22 participants																						Score
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
Diversity of products			1	4	3	1	2		6	5				3	5	1		1		7			194
Products quality	2	1	2	1			1	3	4			7		2		6		7			10	9	179
Animal health and welfare	5	5	4	8	6		8	6	3				6	1	2	2		3	7		7		167
Timber/fruit production	9					8	3				4	2	5		3				2	1	4	3	146
Originality and interest					1	5		2				4		7	7	3	6	5			1		135
Animal production	1			2		2	6	9		3			3				4		5		8		127
Biodiversity and wildlife habitat				9			7			6	3			4	1	7	8		8	2	3	6	123
Farmer image	7		5				4		1			9	2				1	2					116
Local food supply/production				5		3		1					1			9		6				1	110
Tourism	4								2		5	1				4					6	2	103
Income diversification	3			10		4				10	1	3					9		1			7	102
Disease and weed control		4			4			8	5	1		8	7	6			10			9		10	85
Business opportunities	6	2	3		2			5															69
General environment		9			8		9			8		10	4	9			7	4		3		8	64
Soil conservation/quality						7	5				10	6			8				3			2	62
Marketing premium		8						7						8			2		4	5	6		62
Carbon sequestration					10				8				9	5							5	4	39
Manure management		3			5				7							8		8					39
Landscape aesthetics								10	10	4	6				9			9	9	8			32
Protection of ground water	10		9			9				7	5		10										22
Mechanisation			10	7						7	8												17
(Global) climate moderation															6				10		9		11

Table 3. Negative aspects of agroforestry in free-range pig systems as assessed by 22 participants.

Aspect	Ranking by 22 participants																						Score
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
Tree regeneration/survival	4	4			1		1	1	3	2	7	6	5	2	9	6	6	3	3	3	2	1	280
Inspection of animals			1				5	2	1	4		9	9	4	6	1	2	8	7	4	3	4	206
Complexity of work	1	8	2	1	3	9	2	4		5	10	10			4		3	5	6	8	5		190
Animal health and welfare	6	2	5	3		5	6	3	7		8			8		2		4	9	6	6	7	152
Disease and weed control		1	6	2	6	2		7	4						3	5		7				6	134
Management costs						7					9	7	1	1	2	9			8		1		113
Protection of ground water	9				10					3	1	2		6			4		2		4		111
Administrative burden	8	9	3	4	4		8		6	9			2	3	5						7		108
Losses by predation	2	3	4		2		3	6	5						8		8			9			106
Regulation			9	7					9	10		1			1	10	5	2					90
Mechanisation	10	6		5	7	3		10	2	7			4						5				87
Subsidy and grant eligibility		5				1		8		6			3		10	7						2	87
Marketing risk		7		6		4		5				8	6	5			7	9	10	7	8	10	78
Relation farmer/hunters						6						3					9	1				3	65
Control of manure/odour		10			8		4	9		1	5	5											64
Other: interaction with wild boar	3																1			5			50

5. Ranking of negative aspects of agroforestry with free-range pigs

The most negative aspects ranked top by four and three participants were respectively 'tree regeneration or survival' and 'inspection of animals' (Table 3). Other issues that were highly ranked because of their negative effects were 'complexity of work' and 'management cost' which could be associated with the previous two. This may indicate, as pointed out during the discussion, that there is a need to improve system management. Other negative effects cited first or second rank were 'animal health and welfare', 'disease and weed control', 'protection of ground water', 'regulation' and 'subsidy eligibility', 'losses by predation' as well as 'relationships between farmers and hunters' are also concern of farmers working in a low mountain area. For that area, the possible interaction between pigs and wild boar (largely increased and extended population in the last ten years) negatively affected local regulation of free-range systems and required higher prevention costs such as electric fences and field inspection.

6. Main topics from discussion and possible research action

During the discussion as well in the questionnaire participants mentioned several aspects that may represent some constraints or challenges for agroforestry system in free-range pigs. Possible research activities discussed are indicated *in italics*. The farmers and the technicians participated to the workshop, indicated that they would be interested in supporting research related to the project AGFORWARD and interested in being part of a network regarding agroforestry in pigs.

Management of agroforestry systems

- There is a lack of information and experience on tree varieties, tree spacing and distribution.
- Protection tools for young trees are needed to prevent damage from pigs rooting, scratching and bark biting.
- Labor intensive system - specific experience required in handling heavy pigs.
- Very few available technologies on the market for feeding, catching-handling piglets, and provide water a right temperature during winter.

Research may concentrate on fast growing tree species for plain areas (such as poplar, willow and black locust) with appropriate protection shelter (that is for example resistant, easy to use, and not expensive) to prevent damage from pigs.

Legislation and subsidies

- In the agroforestry system the stocking rate (the number of free-range pigs per hectare) should be examined for both organic and conventional systems.
- Official veterinary control officials (local authority) lack knowledge about free-range pigs, for example the real health risks of diseases (due to the interaction with wild animals) and food safety may not correctly evaluated.
- Agroforestry for livestock production (pigs) need to be considered in Rural Development Programme at regional level (as well national) and subsidies should consider the general beneficial effects of the system such as on the environment.

Investigation is needed to understand if presence (increase) of different birds and wild animals in agroforestry free-range fields represent a health or safety risk for pigs and meat products.

Marketing and product quality

- Premium price for products (fresh pork and salami) are currently more linked to free-range system (organic or conventional) rather than agroforestry benefits and positive aspects.
- There is a need for more information on the quality of products from agroforestry systems, which can be used to further enhance quality, support marketing, and provide more information for consumers.

Research on consumers' perceptions of the benefits of agroforestry may be useful for farmers to promote the system and improve product quality. This is particularly a challenge for farmers who sell directly to consumers such as through farm tourism and farm shops.

7. Reference

Crous-Duran, J., Amaral Paulo, J., Palma, J. (2014). Initial Stakeholder Meeting Report Montado in Portugal. Instituto Superior de Agronomia (ISA), Universidade de Lisboa, Portugal.

8. 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 has been edited by Paul Burgess.