



EUROPEAN AGROFORESTRY FEDERATION

EURAF, 14, Rue Pagès, 34070 Montpellier, FRANCE

www.agroforestry.eu

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1 EURAF ACTIVITIES

1.1 EURAF AND POLICY

EURAF's work in the [Civil Dialogue Groups](#) (CDG) was very successful last month. The participation of EURAF's Executive Committee and staff in the CDG November meetings placed Agroforestry on the Strategic agenda for the following CDG's: Arable Crops, Direct Payments & Greening, and Environment & Climate Change. EURAF also participated in the Rural Development Network and European Structural and Investment Fund meetings. EURAF highlighted, among other issues, the role of Agroforestry for the Air and Water Directives. Moreover, EURAF was pleased to discover that good examples of Agroforestry Systems were highlighted by the European Commission in the Rural Development CDG, such as the Grazed Fuelbreak Network in Andalusia ([RAPCA](#), Red de Áreas Pasto-Cortafuegos de Andalucía) in Spain. It is worth mentioning that EURAF's Policy Officer, Jabier Ruiz, completed his PhD on this programme under the supervision of our colleagues Dr. Ana Belén Robles and Dr. José Luis González Rebollar. Besides, EURAF supported the nomination of RAPCA for the Spanish National Wildfire Awards (Batefuegos de Oro), which they obtained in 2012 in the category "Best Wildfire Protection". With this agroforestry innovation, livestock farmers contributed to diminishing fire hazard in forests efficiently: their costs are lower than using machinery for the same purpose, and greenhouse gas emissions are reduced.

EURAF also highlighted the inadequate definition of "grazable trees", used by the European Commission and sent a letter indicating that trees providing fruits and fodder for animals should be considered eligible for direct payments. Moreover, the EURAF pressed for agroforestry to be specifically addressed within the new fund for "[minor uses in the field of plant protection products](#)".

Source: [Rosa Mosquera](#), [Gerry Lawson](#), [Joana Amaral Paulo](#), [Jabier Ruiz](#), December 2014.

2 REGIONAL AGROFORESTRY NEWS

2.1 AGROFORESTRY IN POLAND

Many regions in Poland are rich in biodiversity and farmland is often surrounded by riparian buffers along watercourses and lakes. Shelterbelts and scattered trees on farmlands and even small woodlots are common to find in many areas. The fragmented structure of farms and a diverse topography favour the presence of small tree groups on agricultural land, especially in the southern and eastern parts of Poland.



Fig. 1: Trees in agricultural landscape of Poland
View from the Cisowa Góra hill (Suwalski Landscape Park – NE Poland). Photo: Noka, www.foto.suwalki.pl

Shelterbelts and alley trees were actively introduced to Polish agriculture by public authorities. Silvopastoral agroforestry systems are nowadays still common in many river valleys. These semi-natural ecosystems are usually grazed or mown. Pastures with pollarded willows have been widespread in the past, since a few decades the area has constantly decreased, due to the labour-intensive pollarding and declining numbers of cattle. The willows provide shade and fodder for animals; at the same time they offer

habitat to a great variety of insects and birds, e.g. for hermit beetle, bumble bee, little owls and hoopoes. Pastoral use of forest areas is not permitted in Poland. However, under the supervision of the State Forests Inspectorate in Strzałowo in Poland's North-East, trials are performed with Polish horses from the Biłgoraj region. The horses graze in a thermophilous oak forest in order to restore the ecosystem's biodiversity.

During many centuries more than thousand varieties of apple and other fruit trees were grown in Poland on grasslands. Unfortunately many orchards disappeared throughout the last century, others were abandoned. With the beginning of the 20th century a number of tree nurseries has been established, reflecting the growing interest to save and protect traditional orchard varieties. Several Polish research units are engaged in establishing collections of local varieties, as well in gene bank initiatives in order to preserve the local biodiversity.



Fig. 2: Pastures with pollarded willows
Surroundings of Radzymin (ca. 20 km NE from Warsaw)
Photo: Yarnangu

The replanting of old varieties is also supported by a variety of Polish NGO's and landscape parks. The ESTO project, involves several Polish partners and has the goal to ensure the survival of traditional orchards, e.g. by new ways of teaching and learning about them.

Poland's 1st Agroforestry Conference was held from November 25 to 26, 2014 in Pulawy, Poland. The meeting brought together experts from different fields, presenting and discussing opportunities for Agroforestry in Poland. On the 2nd day of the conference the Polish Agroforestry Associations was founded. Please follow the [link](#) to learn further details about the conference and about agroforestry in Poland.

Source: [Robert Borek](#), EURAF National Delegate for Poland, December 2014.



2.2 CROPPING AMONG TREES TO COPE WITH CLIMATE CHANGE. INSIGHTS FROM CEREAL YIELD CULTIVATED IN WALNUT PLANTATIONS OF CENTRAL SPAIN.

Food production should at least double in this century to nourish the increasing human population. However, little increase in agricultural area is possible if we are to meet rival demands on the land for food and fuel production, whilst protecting the environment and reducing the emissions of greenhouse gases.

We need to design more productive and sustainable production systems. However, current farming practices are based on high management inputs (chemical and energy) and a short list of crop species and cultivars. Crop yield potential has stagnated and further increases of production per unit of land surface will be difficult in the near future (Brison et al. 2010; Ray et al. 2012).

Moreover, some reduction in the crop yields can be expected as consequence of the climate change. Brison et al. (2010) showed that although genetic improvements are still being made to crops, this is partly counteracted since the 1990 due to climate changes which are unfavorable to cereals in temperate climates due to heat-stress during the grain filling phase and drought during stem elongation. See for instance what happened in Central Spain this year, 2014, when the spring-rains were not so generous as usual (47.4 mm from March to June, compared to 216.6 mm for the same period in 2013, and to 143 mm as historic average - Figure 3). This produced a premature drying of cereal plants and grain filling was not completed.

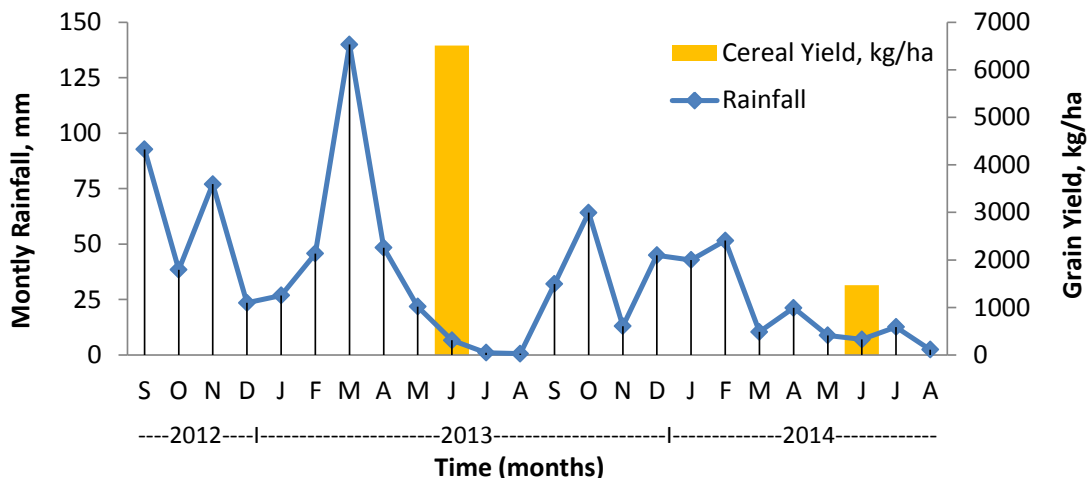


Fig. 3: Distribution of rainfalls in two consecutive hydrological years (from September 2012 to August 2014) in Central Spain (weather station in Puebla de Montalban; coordinates of the site are: 39° 49' 55" N – 4° 24' 14" W). Note that rainfalls in spring 2014 were very scarce compared to spring 2013 what affected the cereal yield in the area very negatively. Orange bars express the mean value of 64 cultivars of wheat and barley tested in the experimental station for the selection of cereal cultivars at Malpica de Tajo (coordinates of the site are: 39° 53' 16" N – 4° 32' 38" W).

Moreover, spaced trees help to regulate the climate beneath them: reducing extremes of temperature, sheltering against wind and reducing evaporative demand from the soil surface. In this way, silvo-agriculture can help mitigate the effects of climate change and the increased frequency of extreme weather events. Indeed, it's well documented that trees have a major role in Mediterranean wood-pastures in stabilizing grass production through the typically

variable seasonal rainfall (Gea et al. 2009; De Miguel et al. 2013). This 'rainfall buffering' seems also to be evident for food crops: as seen in Central Spain in 2014 (with a very dry spring) for cereals cultivated among walnuts (see Figure 4). Cereal plants did not dry so early beneath walnut canopy, and grain was formed. Grain production increased with silvoagriculture by 37 % compared to open fields (Figure 5). However, walnuts did not affect the different cereal species and cultivars similarly. While the two cultivars of barley tested (Doña Pepa and Azara) benefited very significantly of the presence of trees, only one of the cultivars of wheat (Bologna) improved slightly with the presence of trees, while the other wheat cultivar (Kilopondio) was not affected.



Fig. 4: Silvoarable cultivation of cereal in the walnut plantation of Bosques Naturales S.A., in Central Spain (Coordinates: 39° 50' 52" N – 4° 28' 1" W.). Tree density is very high, 333 trees/ha, planted every 5 m within the line and every 6 m among lines. Alley crops were 4 m wide.

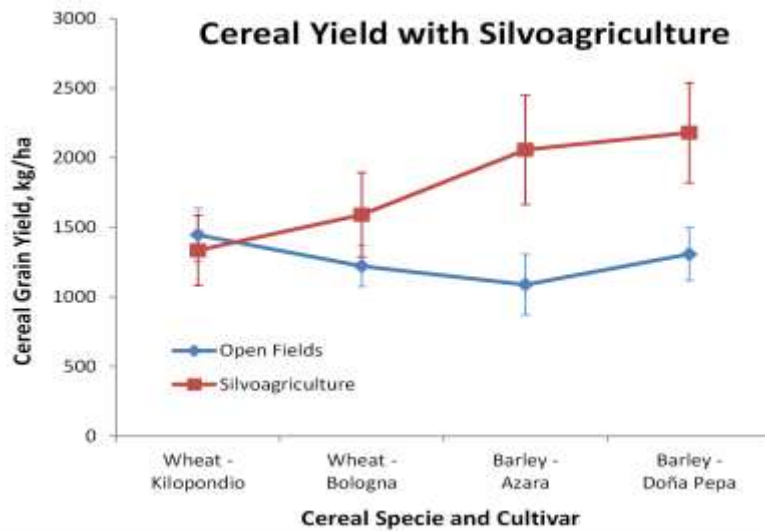


Fig. 5: Mean values of cereal yield produced among lines of walnuts compared to open fields in the year 2013 - 2014, with a very dry spring in Central Spain (see figure 1). Crops were only fertilized with 200 kg/ha of 5/15/15 NPK before the sowing. Vertical bars denote 0.95 confidence intervals.

The combination of lines of walnut trees with cereal crops is a very profitable farming system (Graves et al 2008). However, nowadays, any silvoarable combinations depend on cultivars that were selected for full-light conditions (see Fig. 6). Our results suggest that selection programmes for cereals adapted to partial shade will be a promising adaptation strategy in the face of climate change.

Fig. 6: Typical experimental field where commercial cultivars are selected under full-sun conditions (Picture from GENVCE; Spanish Group for the Evaluation of New Cultivars for Extensive Crops; <http://www.genvce.org>).



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Source: [Gerardo Moreno](#), EURAF National Delegate for Spain, November 2014.

3 FEATURED FARM: THE HAMADA ACORN INITIATIVE ON KEA ISLAND, GREECE. FARMING AND MARKETING ACTIVITIES.

The Hamada Acorn Initiative began as an effort to bring acorn awareness to the minds of local residents and people worldwide, through international crowd funding and a frequently updated [website](#). Creating sustainable opportunities for oak-based income for farmers on Kea Island in



Fig. 7: *Quercus ithaburensis*, Valonia oak, have enormous acorns weighing up to 40 g each. Photo: Marcie Mayer

Greece was the best and most immediate way to protect the trees, especially as the economic crisis hit and trees rapidly became used for firewood. As the project grew, and more farm families got involved, two separate entities evolved. The first, a non-profit organization “HAMADA ACORN INITIATIVE” to oversee the annual acorn cap exportation to Germany, India & Greece. The second, a private company, based at the Red Tractor Farm, for producing acorn flour, acorn cookies and other baked acorn goods. The [Red Tractor Farm](#) is an agrotourism project including professional food catering.

Fig. 8: Marcie Mayer and an Oak covered hill on Kea. Photo: Kostis Maroulis



In 2014, forty-two farming families collected thirty six tons of giant acorn caps from the Valonia oak stands on Kea for the third annual exportation. All of Kea's indigenous oak forest is privately owned and despite being a Natura 2000 site, entire trees have been removed rapidly without respect to proper forest regeneration since the mid-1960s when farmers were cut off from the centuries old tradition of exporting acorn caps to the leather tanning industry in Europe.¹ In recent years there has been a renewed interest in vegetable tanning methods of which oak is considered the very finest. Leather-related industries are the fifth largest industry sector globally.²

After only three years the Hamada Acorn Initiative has begun to take on a life of its own as local farmers take their own initiatives to introduce oak-friendly methods. Ten black acorn foraging pigs were acquired from central Greece and reintroduced by the Kea Farmer's Association in December 2013.

¹ Most tanneries rapidly switched to chemical alternatives in 1965

² Top brands of luxury leather goods are asking these questions in today's greener economy:

- where and by whom has the product been manufactured?
- from which raw materials (what type of leather) has the product been manufactured?
- are these materials friendly to the environment and suitable to be recycled?



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A brief outline of the Hamada Acorn Initiative's activities:

Oak Conservation:

- Education & Awareness: Community Meetings, Seminars
- Sustainable Opportunities for Oak based Income: acorn caps & acorns

Acorn Research & Development:

- Nutritional Documentation
- Optimum Processing Procedures
- Product Development
- Practical Support (mentoring worldwide) & Networking

Community Outreach:

- Annual Acorn Festival
- Free hulling service to local residents for animal feed
- Acorn Center & Acorn Bakery & Craft Center
- School visits
- International Intern Program for acorn gathering & processing
- [Fundraising](#)



Fig. 9: Current crowdfunding campaign to establish a permanent home for the Acorn Center on Kea at the port of Korissia. The [campaign](#) ends on 30 December 2014.

I've spent over a decade gathering and experimenting with acorn processing methods, testing and finally developing a 6 day method for producing 400 kilos of gluten free acorn flour from stored acorns. From Native American and Korean recipes I first explored possibilities with aromatic acorn flour and recently launched my first product, Acorn Cookies. I maintain a comprehensive [website](#) concerning acorns through which I've made many connections all around the world and I am now consulting several Native American Tribes about promoting their acorn products.



Fig. 10: Golden acorns – sliced & leached in fresh water to remove the bitter tannings. Photo: Marcie Mayer.



Fig. 11: Freshly backed acorn cookies. Photo: Marcie Mayer.

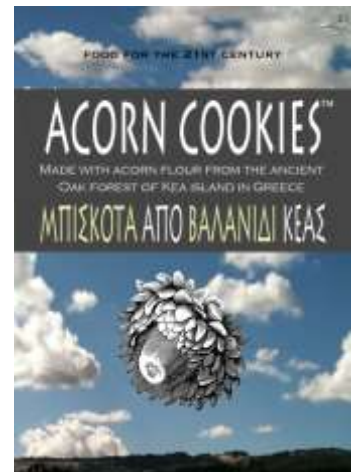


Fig. 12: Acorn Cookies produced on Kea. Package design and graphics. By Marcie Mayer.

The key to creating long-term sustainable prosperity for rural areas in Greece needs to be based on the unique strength and diversity of local communities and built on solidarity, not competition. In the 21st Century rural areas face the multiple challenges of producing food, restoring and protecting the ecosystem and producing energy as oil reserves dwindle. Truly resilient systems must be based on strong social cohesion at the local level. The structural framework for the Hamada Acorn Initiative can be seen in the graph below:



Fig. 13: Diagram of current Acorn Activities (non-profit and for profit) on Kea Island.

Island people take as a gift the new outside interest in sustainable systems built on social currency. Every farmer knows that diversity is the key to resilience in an agriculturally-based economy. The Farmer's Association on Kea was quick to respond and support my efforts when first alerted to the possibility of reigniting the annual acorn cap exportation. The oldest generation on Kea was particularly supportive and shared their knowledge of harvesting and storage techniques.

The Hamada Acorn Initiative was created to spread the word that the ancient oak forest on Kea is unique, worth protecting and can easily become a sustainable source of income for local farmers. The project began as a simple appeal and awareness campaign to stop indiscriminate felling of indigenous oaks. The campaign was first launched in May 2011 and in just a few years many objectives have been met and surpassed. The giant acorns and acorn caps of Kea have created new sustainable income for the island's farmers and a greater awareness of new possibilities for the silvopastoral forest we live near as a unique and benevolent ecosystem.

Farmers recently met with Dr. Pantera to discuss opportunities for responsible management of the forested areas. Dr Pantera's report on the Acorn Festival can be found [here](#).



Fig. 14: Farmers' Meeting with Dr. Pantera to discuss sustainable forest opportunities (10/2014). Photo: Dr. Pantera



Fig. 15: Children playing with and sorting acorns at the 3rd Annual Acorn Festival. Photo: Dr. Pantera

Source: Marcie Mayer, Environmental Activist, Founder of the Hamada Acorn Initiative, Dec.'14.



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4. MISCELLANEOUS

Fundraising expertise wanted

Do you have any fundraising skills or expertise, or perhaps just an interest in contributing to EURAF's fundraising efforts? If fundraising interests you in any way and you would like to help with fundraising itself, or wish to contribute some strategic thinking into how this can be set up and managed over the long term, then please contact euraf@agroforestry.eu. All contributions appreciated.

Source: Anja Chalmin, EURAF staff, Dec. 2014.

14th North American Agroforestry Conference

The Association for Temperate Agroforestry ([AFTA](#)) invites interested persons to submit abstracts for the 14th North American Agroforestry Conference via [email](#).

[Online conference registration](#) will be opened on December 1st 2014 with early bird registration ending on March 15th 2015. Late registration will end on May 15th 2015.

The conference will be held May 31-June 3, 2015, at the Holiday Inn Ames Conference Center at ISU, Ames, Iowa, United States.

Source: Diomy Zamora, president of AFTA, Dec. 2014.

EURAF's [online agenda](#) with agroforestry events

Please support EURAF building an online agenda with agroforestry events, e.g. conferences, demonstration events, or field visits. Are you aware of any activities? Please forward information to [EURAF](#).

Source: Anja Chalmin, EURAF staff, Dec. 2014.



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Contact us:

EURAF's Executive Committee ([euraf at agroforestry.eu](mailto:euraf@agroforestry.eu))

President:	María Rosa Mosquera Losada, Spain	mrosa.mosquera.losada at usc.es
Deputy-President:	Gerry Lawson, UK	gerrylawson at ntlworld.com
Secretary:	Jeroen Watté, Belgium	jeroen at wervel.be
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Deputy Treasurer:	Joana Amaral Paulo, Portugal	joanaap at sa.ulisboa.pt

EURAF's National Delegates and Sub-Delegates

Belgium	Bert Reubens	bert.reubens at ilvo.vlaanderen.be
Czech Republic	Bohdan Lojka	lojka at ftz.czu.cz
France	Alain Canet	a.canet at arbre-et-paysage32.com
	Xavier Devaux	xdevaux at cg23.fr
Germany	Norbert Lamersdorf	nlamers at gwdg.de
	Heinrich Spiecker	instww at uni-freiburg.de
Greece	Konstantinos Mantzanas	konman at for.auth.gr
	Anastasia Pantera	panteranatasia at gmail.com
Hungary	Andrea Vityi	vityi.andrea at gmail.com
Italy	Andrea Pisanelli	andrea.pisanelli at ibaf.cnr.it
Kosovo	Sami Kryeziu	sami.kryeziu at agrovvet-ks.com
Poland	Robert Borek	rborek at iung.pulawy.pl
Portugal	João HN Palma	joaopalma at isa.ulisboa.pt
Spain	Gerardo Moreno	gmoreno at unex.es
Sweden	Johanna Björklund	johanna.bjorklund at oru.se
Switzerland	Felix Herzog	felix.herzog at art.admin.ch
	Mareike Jäger	Mareike.Jaeger at agridea.ch
The Netherlands	Mark Vonk	mark at duinboeren.nl
	Emiel Anssems	emiel at duinboeren.nl
UK	Jo Smith	jo.s at organicresearchcentre.com
	Mike Strachan	mike.strachan at forestry.gsi.gov.uk

EURAF Staff

Policy Officer	Jabier Ruiz Mirazo	jruizmirazo at gmail.com
Project Manager	Anja Chalmin	euraf at agroforestry.eu

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Editorial Committee: Rosa Mosquera Losada, Gerry Lawson, Jeroen Watté, Adolfo Rosati, Sylvène Laborie-Roussel, Joana Amaral Paulo, Bert Reubens, Bohdan Lojka, Alain Canet, Xavier Devaux, Norbert Lamersdorf, Heinrich Spiecker, Konstantinos Mantzanas, Anastasia Pantera, Andrea Vityi, Andrea Pisanelli, Sami Kryeziu, Robert Borek, João Palma, Gerardo Moreno, Johanna Björklund, Felix Herzog, Mareike Jäger, Mark Vonk, Emiel Anssems, Jo Smith, Mike Strachan, Jabier Ruiz.

Person in charge of the newsletter: Anja Chalmin