

AGROFORESTRY AND GOOD GOVERNANCE: A COMPARISON OF THE AGROFORESTRY POLICY FRAMEWORKS IN THE EU AND THE USA

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Introduction

The principles of agricultural sustainability include (a) improved resource-use efficiency, (b) conservation, protection, and enhancement of natural resources, protection and improvement of rural livelihoods and social well-being, (d) enhancement of the resilience of people, commodities, and ecosystems, especially to climate change and market volatility, and (e) good governance of both natural and human systems (FAO 2015). It is widely perceived that agroforestry (AF) fulfills all these principles. In this context, this paper examines the extent of good governance supported by an enabling policy framework for AF adoption in the context of sustainability in the two major temperate regions: EU and the USA.

Agricultural sustainability must be seen a process that is able to adapt to increasing uncertainty requiring the development of not only technical capability, but also policy framework for good governance to help producers and managers to adopt agroforestry practices. Conceptually, governance is the process – by which authority is conferred on rulers, to enable them to make the rules, and to enforce those rules and modify them when needed. Thus, understanding governance requires an identification of both the rulers and the rules, as well as the various processes by which they are selected, defined, and linked together and with the society generally. Good governance is typically defined in terms of the *mechanisms* thought to be needed to promote it. For example, in various places, good governance has been associated with democracy and good civil rights, with transparency, with the rule of law, and with efficient public services (World Bank (www.worldbank.org)). Thus, good governance should be participatory, effective, efficient, accountable, inclusive and responsive, among other characteristics.

Given the appropriate cultural context and socioeconomic factors, accounting for all of these influences can begin to point to the likelihood of sustainable agriculture being instituted at the farm, or even community, level. And in this sense, adoption rates and the policies that affect them can be used as part of a means for measuring potential agricultural sustainability. The clearest starting point for effecting change in an institutional environment is through policy (Place et al. 2012). Policy measures include government programs instituted to support a particular technology (as this may contradict or complement agroforestry adoption), rules that govern markets for agroforestry products, extension programs, and land tenure. Policies can even affect culture, in that incentives for certain genders and age groups can outweigh cultural motivations and in time the results become solidified as norms (Stern 2000). Policies that reduce such risk and uncertainty, such as those that establish seed banks, nearby nurseries and/or training, extension, and agroforestry subsidies have positive effects on adoption (Pattanayak et al. 2002). Policies that raise awareness of benefits of these technologies are also likely to instill optimistic perceptions regarding adoption. Policy effects can also be extremely counterproductive to sustainable agriculture. The environmental impacts of poorly designed policy can be swift and long lasting. For example, subsidies for inorganic fertilizers, common in many countries, de-incentivize adoption of sustainable technologies and exasperate the aforementioned downward cycle of environmental abuse (Nair and Toth 2016).

It is appropriate in this context to compare the policy framework and governance related to agroforestry adoption in the EU and USA, the two major temperate agroforestry regions. Comparing the two regions, EU has a larger total area (ha) as well as percentage of pasture land and crop land area under silvopasture as well as potentially available for AF (sivoarable land). Although the methods used for estimating these data may not have the same in the two regions, it seems AF is more popular in EU than in the USA, but more importantly, there seems to be good potential for extending AF systems in both regions.

Table 1: Area currently under silvopasture and potentially available for agroforestry (silvorable) in the EU and the USA. Source: USA: USDA (2013); EU: Mosquera-Losada et al. (2016)

Land Use	AF Practice	USA		EU	
		Area (ha)	% of total	Area (ha)	% of total
Pasture land	Silvopasture	809	< 1%	18. 4 mill.	10%
Crop land	Silvorable	135,974	< 1%	784,250	< 1%

Agroforestry in EU Policy

The EU Common Agrarian Policy (CAP) is a rather complex policy instrument that depends on many decisions by Member States (MS) over the time that makes it difficult to evaluate it at EU level. Agroforestry is not adequately defined in the CAP, but it can be recognized in several parts of it. The definition of AF in the CAP only recognizes trees as the woody component of AF, but no other types of woody vegetation such as shrubs, in contrast to the concept and definition of agroforestry accepted worldwide (ICRAF: www.icraf.org).

The CAP is structured in two "Pillars." Pillar I, fully funded by the EU and initially dealing with productivity; and Pillar II, co-funded by MS and dealing with environment. Pillar I payment is based on the Basic Payment (BP) and the greening. To get paid the BP, it is necessary to have an entitlement and an associated piece of land that should be "eligible" and must fulfill the Statutory Mandatory Regulations (SMR) - dealing with water, birds and habitat protection and food and feed safety- and the Good Agricultural and Environmental Condition (GAEC) precepts -dealing with water, soil and carbon stock as well as with Landscape at minimum level of maintenance. Agroforestry can be used to fulfill all these requirements (SMR and GAEC) but to get Pillar I, the piece of land should be eligible, earning "eligibility" is a key concept within the EU CAP. In general, those arable lands with more than 100 trees per hectare have problems to be considered as eligible, but some woody components -like fruit trees and short rotation coppice with high tree density usually associated to produce biomass- are fully eligible as well as permanent grasslands with woody vegetation if the MS decides so. Agroforestry is also mentioned in the greening, but AF is not really promoted because only those lands established under Pillar II measures are eligible to be used as a greening measure (involving only around the 5% of the land) to get greening funds in Pillar I. The above-mentioned landscape features can be also considered for earning paid greening payments but CAP does not identify them as AF. On the contrary, Pillar II has a measure directly involved with AF, but mainly identified with silvoarable practices by the European Commission. Others like silvopasture are also funded if forests are prone to fire, but, not properly recognized as AF practice.

Evaluation of AF implementation it is a real difficult issue. The Commission has not published any documents on this, and it is quite difficult to gather the information due to the lack of recognition of all AF practices. An extra problem is the language of the reports, as they are not translated in all main EU languages, so this limits stakeholders to follow up the results of the CAP regarding AF. Besides that, some important AF components that can be defined within the Landscape features, meaning isolated trees, hedges, copses... in the arable lands can be protected by GAEC if the MS select this option, can be chosen by MS as greening if MS decides so and finally can be promoted within the Pillar II, usually associated with the agri-environment measures. But, the lack of data available regarding the consistent inventory across countries of AF practices, the selection of the countries and the real degree of implementation of the measure -as measures can be activated but not implemented- makes it difficult, firstly to describe a baseline of funded AF in Europe and secondly to evaluate the impact of the CAP on it. Only measure 222 of CAP 2007-2013, dealing with establishment of AF has been evaluated as budget allocated and budget spent, but the results cannot be really assessed due to the lack of further information. The EU is dealing with this aspect, and a Focus Group has been established to promote innovation on AF and Research Programs have included AF. The new era with the Operational Groups, aiming at working with farmers at farm level could also promote AF, as happened in Germany that establish projects dealing with trees outside the forest, even though not fully recognized as an AF practice.

USA Framework

Compared with the EU framework, the USA framework, which is based on a clearer strategy, is much simpler. The strategic framework has a clear definition of AF, which includes shrubs as a woody component, unlike in the EU definition, where only trees are included. Furthermore, the multitude of AF practices in the USA have been categorized into five practices and

recognized; these are: (a) field, farmstead and livestock windbreaks (b) riparian forest buffers along waterways (c) Silvopasture (d) alley cropping (integration high-value trees and shrubs), and (e) forest farming. In the EU, numerous AF practices other than silvopasture fall under “silvorable,” but some terms such as forest farming are not recognized. Both the U.S. Forest Service and the Natural Resources Conservation Service do include all USDA (US Department of Agriculture) Agencies related with Agriculture (Agricultural Research Service, National Institute of Food and Agriculture, and the Farm Service Agency) in their activities, thus facilitating the creation of an institutional mandate for foresters, agronomists, and environmentalists to jointly discuss the best ways to promote AF. Such an institutional mechanism for AF does not exist in the EU. The US - AF strategy is based on a clear document on which all main AF practices being able to be implemented by farmers in the USA are clearly established. Moreover, USDA provides the follow-up of the AF strategy framework every two years describing amount of money allocated, projects carried out, etc. This strategy pursues three goals: adoption, research, and integration, and these are extended to all lands with emphasis on conservation and economic development. The first goal, adoption, aims at creating a network with (a) end-users similar to that recently organized by EU countries within the EU Innovation Partnership strategy to promote learning, but also (b) educate professionals and (c) exchange with international institutions like World Agroforestry Centre. Meetings of European Commission are happening but not in an official way like in the USA. The second goal, advance in the understanding, deals with the identification of agroforestry needs and opportunities for investments and research as it is generally done in the EU in a global framework, conduct multidisciplinary research focused on environment protection, food safety, markets and marketing, landscape and bioenergy including technologies related with lifecycle analyses and finally move AF innovations in products and services facilitating exchange. The final goal, integration is carried out through the incorporation of the USDA policies, programs and activities, monitor the impact and application to promote awareness and appreciation of AF. Another important aspect of the USA strategy is that all objectives and sub-objectives will be evaluated through elaborate indicators. The budget allocated in 2011 and 2012 were 333 millions of dollars. Initial results of the first two years period reached the creation of 175,000 acres (~70,850 ha) of agroforestry practices, with most being riparian forest buffers (77 percent) and windbreaks (22 percent). They also funded 69 AF research projects dealing with Natural Resources, ecosystem services and environmental markets (22), agroforestry systems (31), climate change resiliency (2), Bioenergy (7) and economics and profitability (7). They also made many webinars and courses (USDA 2013).

Discussion and Conclusions

The above comparison shows that AF policy is relatively better organized in the USA than in the EU. This does not mean that the US policies are satisfactory. Indeed, both Europe and USA have long ways to go in the implementation of AF practices that can be used to promote sustainability in agriculture. But AF policy analysis in the EU, where even the various forms and types of AF practices have not been coherently and systematically identified and categorized. Moreover, politically, socio-culturally, and economically, the EU is a much more complex and diverse region than the USA, which makes it extremely difficult to design and implement uniform land management policies and governance structure, including those for AF, across the region. It also needs to be kept in mind that Policy effects can also be extremely counterproductive to sustainable agriculture. The environmental impacts of poorly designed policy can be swift and long lasting. For example, subsidies for inorganic fertilizers, common in many regions, de-incentivize adoption of sustainable technologies and exasperate the downward cycle of environmental abuse. While such policies benefit the politicians responsible for their popularization by temporarily increasing production in combination with policies that neglect infrastructure, they set the groundwork for perpetual food insecurity. This propensity stems from the fact that policy is often derived from economic concerns, making economic methodology determinative of environmental outcomes.

In conclusion, the establishment of an Agroforestry strategy for Europe should be a priority task for EU. In this respect EU is way behind the USA. Considering the many ecological, developmental, and political similarities and aspirations between the two regions, it is only logical that the EU take into account the experience and lessons learned in the USA while developing a comprehensive policy and governance structure for agroforestry development.

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