



*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

*No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.*

## RESEARCH IN ECONOMICS AND RURAL SOCIOLOGY

**CAP and the Environment: agriculture and public goods**

*Since the 90s, successive reforms of the CAP have progressively introduced environmental considerations into the policy's goals. However, the CAP remains a sectorial policy intended to modernise the tools of production and support farmers' income. The agri-environmental measures (AEM) represent the CAP's most focused environmental initiatives, but they are granted a relatively modest budget, are dependent on voluntary adoption (with a low rate of uptake) and their limited duration makes significant structural changes difficult. Making aid payments conditional and subject to the respect of sanitary and environmental regulations is not a very efficient system, because the payments are not proportional to the environmental services rendered. While the majority of farm income support is financed by the European budget, support for public goods comes from the Ministries of External Affairs, with funding from both the European budget and the regions, with a continuous rise of the European contribution. Now, the aid to the farm income ensuring a certain degree of social cohesion is much more a regional or national matter than a European one, while some public goods provided through agriculture benefit to all the European citizens. The provision of some of the public goods through agriculture is therefore an opportunity to re-found the CAP around purposes common to the Member States, and dedicating the agricultural public aid to the production of public goods becomes a central issue.*

**The notion of public goods in agriculture and its consequences for the public intervention**

Economic theory defines a public good as non-rivalrous and non-excludable. The use of this good by an agent does not damage its use by another agent and consumers cannot be prevented from accessing and enjoying this good. The main non-exchangeable productions in agriculture have the characteristics of public goods, which can be of an environmental nature (agricultural landscape and biodiversity, quality and availability of water resources, features of the soil, climate stability etc.) or not (social cohesion and rural vitality, food safety and animal well-being). The goods produced by agriculture show various degrees of non-excludability and non-rivalry, and can be classified according to these two criteria into private goods, goods pertaining to a "club", "impure" public goods or contributing to the production of "pure" public goods, (see table 1).

By their very nature, public goods are not provided through the market at an optimal level. Often they are not produced at a socially optimal level because of the associated moral risk (the "tragedy of the outbuildings"). The voluntary contributions to public goods, including through purchases of labelled products, do not a priori constitute a mechanism of optimal financing of the public goods because of the property of non-rivalry. A public intervention can therefore turn out to be necessary to mitigate this market failure.

As a rule, the optimal offer for a public good can be obtained by a subsidy, a tax or even a regulation. Public Economics provides lots of recommendations on the choice of the instruments according to the degree and type of uncertainties affecting their implementation.

**Table 1: Classification of the goods according to their degree of “publicness”**

Degree of “publicness”			
Weak	Medium		High
Private good	“Club” good	“Impure” public good	“Pure” public good
Rivalry	Non rivalry for a small group of users	Non-rivalry	Non-rivalry
Excludability	Excludability	Excludability but only with a high cost	Non-excludability
Excludability and rivalry	Excludability but prone to congestion if the number of users increase	Expensive excludability but technically possible (high risk of congestion)	Excludability technically impossible Very high level of rivalry and possibility of a certain level of congestion
Examples: Wheat Wood logs	Examples: private parks Golf course	Examples: Public access to farmlands Landscapes	Examples: Good quality of air Biodiversity

Source: Cooper et al. (2009)

The intervention of the public authorities can also consist in guaranteeing a system of standards and certification facilitating consumer information and its credibility to remunerate certain environmental services indirectly through the marketing of a joint production. Public intervention is only justifiable in situations where, in its absence, a public good would not be supplied at the level wished by the society or would be threatened with decline, or even with irreversible disappearance. First of all, a public intervention in favour of public goods requires the definition of certain goals concerning the production level to be reached, followed by action to encourage the potential suppliers of these goods to reach the goals set. This raises a certain number of issues, on the one hand concerning the evolution of agriculture and natural resources, and on the other hand concerning the preferences of consumers and citizens.

First of all, technological advances may increase pressures on the environment and often come with a concomitant increase in the opportunity costs of environmental actions (higher, a priori, in those agricultural areas with a higher potential). An aid to the agricultural systems which contributes to the environment in a positive way is therefore fundamental if the purpose is to correct the insufficient supply of public goods. The definition of adequate incentive policies poses several difficulties: identification of social preferences for the environmental goods and services, nature and level of instruments of environmental policy to be favoured, necessary harmonization with other public policies and identification of the possible pernicious effects, consequences of the environmental instruments of the CAP on the farmers’ strategies of production. Finally, there are questions regarding the financing of local

public goods (Water resources, attractiveness of rural landscapes) which should logically fall under the remit of local authorities while that of global public goods (stability of the climate, biodiversity) would seem to be a matter for the national government or for the European Union (EU).

### **Evaluating the measures of the second pillar of the CAP and their conditionality**

With an annual budget of around 53 billion euros, the CAP has the capacity to orientate the level of supply of the environmental services produced by agriculture, due to its influence on the management of farmlands. However, some rather negative analyses of the CAP’s environmental balance question the relevance of the policy’s environmental aspects. First of all, the CAP seems to have had only limited effects on the state of the environment, as far as the “bad” incentives to pollute could not really be prevented by decoupling and the conditionality of aid. For example, the reduction in pressures on the habitat could be seen as more due to a market effect than to the CAP measures, and moreover, the measures contained in the second pillar do not have a predominantly environmental vocation. Let us also mention the criticisms relating to the difficulties in ensuring effective control of respect for the AEM at a lower cost, since the AEM compensate for the additional cost of the implementation of new practices instead of paying for an environmental service, due to the complexity of the administrative procedures or to the problem of targeting sensitive areas. It is however well-known that because of the presence of thresholds, a minimum rate of adoption on a given region is an essential condition to the efficacy of the system for certain environmental goods and services (Dupraz *et al.*, 2009).

Considering the importance of the budget allocated to the first pillar, the conditionality of the Community aids introduced in 2006 may be considered as an environmental policy of bigger scale than the AEM. However, the disconnection between the value of the payment and the service provided for the production of public goods, the low rates of inspection and the lack of application, the sub-definition of the goals and its repetition with certain compulsory legislations affect the capacity of this policy to act as a true incentive. It looks like the budget dedicated to conditionality would be more effectively used on specific action plans in favour of the environment.

A first observation is that payments for the production of public goods should take into account the social value of the environmental effects of agriculture instead of ensuring an income depending on the costs of changing practices. Even if progress has been made (Vermont and Of Cara, 2010), a better estimation of the local and global environmental profits is necessary on a scale compatible with the decisions of the public authorities. According to market conditions, a more effective system would involve forming contingent contracts at various states, but such a system would likely be associated with very high management costs and would be very opaque for the potential contracting parties.

A second observation concerns the difficulties deriving from the feasibility of the environmental policies contained within the framework of the current CAP with regards to local public goods, but also global public goods. The problems of management and incomplete information, in particular in the case of the AEM, require the mobilization, or in some cases the development, of a strong system of local expertise supported by the national and regional authorities.

At the moment, the CAP uses a certain number of economic instruments to promote and perpetuate the production of environmental public goods through agriculture. The weakness of the current programme comes both from its financing mode and its governance. A wide spectrum of environmental purposes are eligible for CAP aids. Consequently, i) the co-financing of the AEM, through the regions or national governments, encourages them to favour those local public goods which contribute to their economic development, ii) the AEM are largely defined in contradiction with the 'polluter pays' principle,

iii) for global public goods, the calculation of compensation based on local losses of earnings and the contributions to public goods thus obtained are certainly not cost efficient on the European scale. In view of the above assessment, a new type of contract between the EU and the Member States becomes necessary, so as to improve the environmental efficiency of the system. As regards the environment, one option would be to concentrate the European budget's efforts on global public goods, and nationalizing or regionalizing the funding of local public goods. More exactly, it could be primarily a matter of concentrating the "aids to the least-favoured areas" on the agricultural areas classified in Natura 2000, and the ecological network with an appropriate conditionality and some finance entirely supported by the EU. The system would then become a European system of payment for net carbon capture (with an increase in the organic matter of the soils). Finally, without any European co-financing or with a budget limited to some symbolic cases, the AEM and structural aids would be reserved for the adaptation of business-farms to the interests of local public goods and to the re-balancing of economic and environmental performances.

## **Conclusion**

Public intervention is only justified for public goods for which the demand is chronically lower than the supply, and/or for which production decreases in a worrying way. In circumstances of limited public budgets, the system chosen for arbitration between the various environmental goods must take into account not only the social value of the corresponding public goods, but also the opportunity costs for the producers, the implementation costs of the policies and the assessment of the rate of adoption in the case of contracts or other voluntary agreements. This is one of the EU's great challenges, particularly in the context of the re-examination of the budget and the CAP instruments in order to re-define the real purposes of the policy, and the necessary costs to reach these goals. By acting on the key players in the field of agricultural activity, the CAP has a major role to play in ensuring the provision of public goods. Some recent tendencies seem particularly significant in view of their repercussion on the provision of public goods: the increase in the size of business-farms and plots of land, conversion of meadows into arable farms, depletion of grazing areas, regionalization of productions and the effects of the recession on agriculture in under-privileged areas. If the CAP

makes public goods one of the key axes of its future policy, it will have to pay close attention to these trends, never losing touch with the founding objective of preserving the competitiveness of European agricultural production.

**Yann Desjeux**, INRA, UMR1302 SMART, F-35000 Rennes, [Yann.Desjeux@rennes.inra.fr](mailto:Yann.Desjeux@rennes.inra.fr)  
**Pierre Dupraz**, (auteur de correspondance) INRA, UMR1302SMART, F-35000 Rennes  
[Pierre.Dupraz@rennes.inra.fr](mailto:Pierre.Dupraz@rennes.inra.fr)  
**Alban Thomas**, INRA, UMR1081 LERNA, F-31000Toulouse, [Alban.Thomas@toulouse.inra.fr](mailto:Alban.Thomas@toulouse.inra.fr)

#### For further information

**Bonnieux F., Dupraz P. (2007).** La conditionnalité environnementale : une efficacité économique limitée par la diversité de l'agriculture, in I. Doussan et J. Dubois (Eds), *Conservation de la biodiversité et politique agricole commune de l'Union européenne. Des mesures agro-environnementales à la conditionnalité environnementale*. Paris (FRA), Documentation française.

**Cooper T., Hart K., Baldock D. (2009).** *The provision of public goods through agriculture in the European Union*. Rapport pour la DG Agriculture et Développement Rural de la Commission Européenne 396, Institute for European Environmental Policy, Londres.

**Dupraz P., Latouche K., Turpin N. (2009).** Threshold effect and co-ordination of agri-environmental efforts. *Journal of Environmental Planning and Management*, 52(5), 613-630.

**Dupraz P., Van den Brinck A., Latacz-Lohmann U. (2010).** Nature preservation and production, in A. Oskam, G. Meester et H. Silvis (Eds), *Eu Policy for Agriculture, Food and Rural Areas*. Wageningen (NLD), Wageningen Academic Publisher.

**Vermont B., De Cara S. (2010).** How costly is mitigation of non-CO2 greenhouse gas emissions from agriculture? A meta analysis. *Ecological Economics*, 69(7), 1373-1386.