KEY ISSUES

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Issues in measuring outcomes

Part V contains two excellent papers that evaluate agri-environmental regulatory policies. The papers take mainly a technical standpoint, focusing on the measurement of the principal environmental issue that was the objective of policy makers, *i.e.* soil erosion in the US and nitrogen loss in Denmark. Both papers show some attention to the dynamics of policy impact, particularly the Danish paper that discusses the trend in nitrogen reduction. The two papers emphasise the good results of the policies under evaluation, even with delays and the presence of climate effects that somehow disturb the clear interpretation of the environmental changes detected. They also emphasise the importance of simple indicators, regularly used over time, with possibilities for benchmarking and comparisons (such as nitrogen balances) and the use of a mix of information sources (primary ambient data, input statistics, etc.). The papers focus on one or a few indicators very much confined to the main target of the policy. This is in fact a very pragmatic approach. However, in order to give these studies a full "evaluation content" it would be necessary to ask at least:

- Are there relevant environmental/economic effects other than the main policy objectives?
- What if we compare effectiveness with costs?
- If we can get information about cost-effectiveness, how would the result compare with other policy instruments (taxes, payments, etc.)?

These issues may be treated through either cost-benefit or multi-criteria analysis. In the context of agri-environmental policies, and taking into account the (partial) pieces of information available at the moment in many countries, multi-criteria analysis may provide the basis for at least some deeper understanding of the trade-offs and a rough analysis of effectiveness, taking into account possibly multiple objectives of the decision makers. It also seems to fit well the framework designed, for example, by the EU for the evaluation of rural development programmes based on a set of common questions and indicators.[2] In any case, different impacts should be to some extent considered in order to avoid misrepresentations of the evaluation framework and incorrect evaluation of policy successfulness.

How to get back to causes

Getting back to causes of environmental change is always difficult and is something common to all evaluation work. The issue of additionality was often discussed at the Workshop. The US paper provides a relatively easy and elegant way of eliciting the effects exclusively due to the policy under evaluation. It is estimated that only 25% of total erosion reduction is due to the regulatory measure

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2. These considerations are drawn from intermediate results obtained within the EU project SSPE-CT-2003-502070 on Integrated Tools to design and implement Agro Environmental Schemes (ITAES), in which the author is presently involved. They do not necessarily reflect the view of the European Union and in no way anticipate the Commission's future policy in this area. Bartolini, F., V. Gallerani, A. Samoggia and D. Viaggi (2005), *Methodology for Multi-criteria Analysis of Agri-Environmental Schemes*, ITAES Project, deliverable D11, forthcoming.

examined, after accounting for: farms not involved; independent land use change; non excessive pressure areas; and farms not receiving payments.

However, some issues are touched only in a qualitative way and could further affect the result in different directions. Some of these issues include the:

- positive or negative indirect impacts on farmers not directly affected by the policy;
- induced changes in farming culture and farmers' attitudes; and
- effect of general trends of technology change.

Additionally, in order to understand policy effectiveness, it would be often relevant to elicit the role of different measures acting within the same policy framework. Apparently this is not a problem in Denmark. However, even some pieces of information internal to the paper (*e.g.* the delay in seeing changes to nitrogen leaching with respect to the policy coming into force) might be used as an argument to support the view that closer attention to the problem of additionality and counterfactual analysis could be necessary.

Lessons for policy design and incentives

The main policy lesson learned from the US experience, and to a lesser extent from the Danish case, is that regulatory requirements are still a matter of incentives, as policy regulation acts in a context of strongly asymmetric information. Farmers are not simply left with the option but to comply. They may give up payments, if the policy is based on cross-compliance as in the case of US, or accept the risk of sanctions associated with non-compliance. In other words, the regulatory policies illustrated are still affected by relevant adverse selection and moral hazard problems. This issue is now widely treated in the literature about agri-environmental schemes, mostly in an *ex ante* perspective.[3] As a consequence, in order to make a policy effective and efficient, a right combination is required of regulation requirements, compliance incentives and enforcement.

This optimal mix has been considered in the US by restricting the regulatory action to sensitive areas and allowing for a high level of flexibility with respect to the individual farm's compliance conditions (such as tailoring regulations to reasonable compliance expectations). This could provide some major insights to the issue of introducing cross-compliance in the EU as part of the 2003 CAP reform.

Both papers highlight the importance of enforcement and the costs associated with it. This brings in the issue of transaction costs and their relevance in determining policy costs, which leads back to the issue of cost effectiveness mentioned above. Regulatory policies may be described as the most cost effective when a reasonable knowledge of individual compliance costs is available and when enforcement is relatively cheap. Otherwise, the balance of costs and benefits compared to other policies becomes rather complex.

Finally, another major issue that many need to be addressed is the interplay with other policies, for example the Conservation Reserve Program in the US. The US paper shows how important such interplay is in providing incentives and in checking the consistency of policy outcomes with respect to the cost effectiveness relationship. In the long run, policy connection needs to go beyond a simple incentive mechanism and explore the consistency and co-ordination with other policies so that farmers receive more consistent signals (see for example the CAP reform and the implementation of the Water Framework Directive in Europe).

3. For a recent review see Latacz-Lohmann, U. (2004), *Dealing with limited information in design and evaluating agri-environmental policy*, 90th EAAE Seminar, Rennes, http://merlin.lusignan.inra.fr:8080/eaae/website/pdf/121_Latacz.

TABLE OF CONTENTS

Page

Part VI
EVALUATION OF ADVISORY AND INSTITUTIONAL MEASURES

Part VII
EVALUATION OF POLICY MIXES