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Agri-environmental measures for the conservation of semi-natural grasslands: a case study in Natura 2000 sites in Marche region (Italy)

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Abstract. Agri-environmental measures (AEM) are increasingly seen as essential tools for land conservation and management. Typically, Rural Development Programmes (RDP) are implemented on a farm level while most of the biophysical processes in agriculture occur on a larger scale. In 2011, Marche Region RDP 2007-2013 enabled Agri-Environmental Agreements (AEA) for biodiversity conservation. An AEA is defined as an agreement between public and private stakeholders (SHs) of a limited territory in order to improve its environmental conditions. We did a stakeholder analysis (SA) in a case study of AEA launched on a Natura 2000 site. We analysed the results in the light of a well-experienced conceptual diagnostic framework and its variables. The AEMs were first defined between regional services and some experts which also included a researcher who made experimentations with farmers in the area. After defining the AEMs, farmers were encouraged to get involved in meetings only to choose which of the proposed AEMs could be adopted in their AEA. SA results showed that the lack of involvement of the farmers after the defining of AEMs, limited the local knowledge inclusion which was only partially compensated by experts who participated. Moreover, involvement of other SHs also turned out to be indispensable since the first steps to take into account bureaucratic issues that could slow down the process of implementation. Based on AEA analysis, we propose guidelines for defining AEMs in order to guarantee a landscape approach to better address the conservation issues regarding semi-natural grasslands.

Keywords. Agri-Environmental Measures – Biodiversity – Participatory processes – Stakeholders.

Mesures agro-environnementales pour la conservation des prairies semi-naturelles : une étude de cas dans des sites Natura 2000 de la région des Marches (Italie)

***Résumé**. Les mesures agro-environnementales (MAE) des Programmes de Développement Rural (PDR) sont considérées de plus en plus comme des instruments essentiels pour la conservation et la gestion du territoire. Dans la plupart des cas les PDR sont mis en œuvre à l'échelle de la ferme alors que la plupart des phénomènes biophysiques qui interviennent dans l'agriculture le font à une échelle plus vaste. En 2011 le PDR 2000-2013 de l'Administration Régionale des Marches a mis en œuvre des Accords Agro-environnementaux (AAE) pour la conservation de la biodiversité. Un AAE est défini comme un accord entre « stakeholders » (SHs) publics et privés d'un territoire limité afin d'améliorer ses caractéristiques environnementales. Nous avons conduit une « Stakeholder Analysis » (SA) dans une zone Natura 200 où un AAE a été mis en œuvre. Nous avons analysé les résultats sur la base d'un cadre de diagnostic et de ses variables. Les mesures agro-environnementales ont d'abord été définies par les services régionaux et quelques experts parmi lesquels un chercheur qui avait fait des recherches dans la même zone. Après avoir défini les MAEs, les agriculteurs ont été invités à participer à des rencontres pour choisir les MAEs à adopter dans l'AAE. Les résultats de la SA ont montré que le manque d'intérêt de la part des agriculteurs dans les premières phases de définition des MAEs a limité l'inclusion des connaissances locales, ce qui a été en partie comblé par la participation des experts intéressés. En outre, l'implication d'autres SHs s'est très vite révélée indispensable pour les questions bureaucratiques qui pourraient ralentir le processus de mise en œuvre. Sur la base de l'analyse de l'AAE nous proposons des lignes directrices pour la définition des MAEs garantissant une approche territoriale pouvant traiter les questions liées à la conservation de prairies semi-naturelles.*

***Mots-clés.** Mesures agro-environnementales – Biodiversité – Approches participatives – Stakeholders.*

I – Introduction

Biodiversity conservation depends directly on traditional types of agricultural land use and farming systems. Agri-Environmental Measures (AEM) represent the most used tool for improving or maintaining biodiversity in agriculture even if their successful implementation varies across Europe (Henle *et al*., 2008). AEMs are voluntary agreements that give compensation payments to farmers for the adoption of management practices (e.g., landscape and habitat conservation).

AEMs included in Rural Development Programme (RDP) are designed at farm level, although most of the agriculture biophysical and ecological processes, like soil erosion, biodiversity or nitrate leaching, occur at different scales (e.g., watershed or hillslope) (Prager *et al*., 2012). This can lead to a spatial scale mismatch between ecological processes and agricultural management (Armitage *et al*., 2008; Cumming *et al*., 2006; Pelosi *et al*., 2010). For this reason, a need has come up for stakeholder (SH) collaboration and coordinated actions at landscape scale to define AEMs (Prager *et al*., 2012). The EU encourages its Member States to design participatory AEMs involving SHs in a bottom-up process. Some authors have observed that different levels of power between SHs (Prager and Nagel, 2008) or lack of trust among them (Schneider *et al*., 2009) can constrain the participatory process.

In 2011, the authority responsible for RDP coordination of Marche region (central Italy) launched a set of AEMs at landscape scale for biodiversity conservation in Natura 2000 sites. From the analysis of the implementation process in 'Montagna di Torricchio' Nature Reserve, we discuss how a participatory approach can lead to shared and more accepted AEMs.

II – Materials and methods

In 2011, the Marche regional authority launched Agri-Environmental Agreement (AEA) for conserving biodiversity in Natura 2000 sites. An AEA is defined as an agreement between public and private SHs of a limited territory in order to improve its environmental conditions. An AEA is composed of AEMs already included in the RDP but allows SHs to propose changes to the original characteristics of AEMs through their participatory approach.

The managing authorities of Natura 2000 sites were identified as 'AEA potential lead partners' by Marche Region. The AEA implementation path was divided into two subsequent sessions of participatory meetings. The first one was between the regional authorities (Agriculture and Environment Services) and some external expertise advisors. In this phase, AEMs were defined. The second was between local SHs and the lead partners that discussed those AEMs to be adopted in their area. After approximately one year, 6 managing authorities launched an AEA in their areas mostly for the conservative management of Habitat 6210* – Semi-natural dry grasslands and scrubland *facies* on calcareous substrates (*Festuco-Brometalia*) (EU Habitat Directive 92/43/EEC). We analysed the AEA implementation path in the 'Montagna di Torricchio' (820-1575 m a.s.l.) located in the southern Marche region (lat 42.962868, long 13.018124) where pasturelands are often common lands under customary grazing rights.

We did a Stakeholder Analysis (SA) by carrying out semi-structured interviews in order to obtain the greatest flexibility in terms of discussion, and we arranged a list of 'subjects for discussion' for each class of SH (Reed *et al*., 2009). In particular, we investigated: (i) the origin of scientific knowledge, (ii) the SHs' involvement level and the facilitation process, and (iii) the procedure constrains in the changes in RDP. We recorded each interview by a voice recorder and transcribed the conversations on a spreadsheet. Then we compared each sentence within the SLIM Diagnostic Framework (DF) and its variables: (i) Stakeholder and Stakeholding (understood as the process in which SHs become aware of their role in the system); (ii) Policy and Institutions; (iii) Ecological Constraints and (iv) Facilitation. In social learning processes, the improvement in understanding an issue triggers a change in SHs' practices. SLIM DF is a dynamic model that evolves in the course of time to a further better situation through concerted actions (Steyaert and Jiggins, 2007).

III – Results and discussion

We interviewed 14 SHs and obtained 1196 sentences: 1033 were clustered according to the four DF variables and 163 were not allocated because they went off the subject. The results of the analysis of the variables are discussed below.

Stakeholder and Stakeholding: SA underlined the synergy between the two regional services due to the possibility of launching AEMs in Natura 2000 sites. One Marche Region officer stated that: *'...in the past there were some conflicts between us, but AEA is a good example of collaboration between regional services and a starting point for future collaborations...'*.

The building process of AEA not only enhanced collaborations between regional authorities but also favoured the inclusion of new SHs, such as unions, farmers, researchers and managing authorities of protected areas, which generally act disconnected or in conflict,.

The SA highlighted the crucial role played by the Torricchio manager who was also a university researcher. The interviews confirmed the close relationship between the researcher and the farmers due to *'…past and cooperative scientific activities…'*. Shared experimentations fostered trust among SHs and triggered the facilitation process through local knowledge inclusion. Most of the AEMs proposed to the farmers arose from a combination of trust and local knowledge.

To this day Torricchio AEA covers around 11,000 ha involving 40 farmers and has the biggest membership of farmers compared to the other 5 AEAs, where *'...farmers did not have any experience concerning the effects of the AEMs on the their activities...*' (Farmers Unions).

Ecological Constrains: No specific constrains emerged from the SA linked to the chosen AEMs. Other ecological constrains were not overcome due to the impossibility to change the AEMs proposed by Marche Region. In particular, some SHs stated that some different grazing options could have been identified taking into account the grazing behaviour of different animals *'…for example horses could graze the pasture at the end of the grazing period to preserve forage quality and the environment...'* (Farmer).

Policy and Institutions: The main reason behind AEA implementation was the conservation of pasturelands from invasive species (mainly *Juniperus communis* and *J. oxycedrus, Rosa canina, Brachypodium* sp.) threatening 6210 Habitat. Despite the high level of AEM acceptance, some constrains emerged from SA. Firstly, Marche region authority did not take into account that most of pasturelands of Torricchio' were common lands under customary grazing rights. This led to a 2-year delay of compensation payment as the farmers had to prove the exclusive use of the fields as required by EU. Secondly, the AEM implementation process was constrained by the choice of the regional managers to prevent farmers from changing the AEMs. This choice is a consequence of the long time required for defining AEA and negotiations with EU regarding changes in RDP. Regional officers could be discouraged to adopt a bottom-up and participatory process in the implementation of AEMs. For this reason, a simplification of bureaucratic procedures is required.

Facilitation: As can be observed from the previous analysis of variables, the facilitation and involvement of SHs are some of the main components in the AEM building process. The only involvement of a researcher in the definition of AEMs was not sufficient to include all the local knowledge even if he was very active in sharing research activities with farmers. The missing participation of the payment authority in defining AEMs generated bureaucratic issues and delay in payments which were solved only after long negotiations. In each step toward defining AEMs, all the SHs, including other institutions like payment authorities or EU, should be involved in integrating their knowledge in order to hasten the process.

IV – Conclusions

Existing incentive programmes such as EU agri-environmental schemes, usually neither require nor encourage large-scale coordination but favour a farm scale approach leading to individual and disconnected actions (Prager *et al*., 2012). Although RDPs are generally strict tools, Torricchio AEA showed that modifications are allowed by EU, and that the inclusion of local knowledge could lead to the implementation of landscape measures.

AEA analysis highlighted how facilitation and SHs involvement issues constrained the flow of local knowledge in the implementation process. Based on Torricchio AEA, an alternative approach to define AEM can be identified. The authorities responsible for coordinating the programme should (i) involve local SHs from the first discussion phase to ensure their empowerment (Reed, 2008), and (ii) act as a bridge between local SHs and EU. RDP could be seen as an 'empty box' which defines only strategic targets (e.g., grassland, biodiversity or landscape conservation) to be filled with bottom-up AEMs. In the 'empty box' model, the involvement of SHs could lead to new site specific AEMs not considered by Region authority on RDP but with a high level of acceptance by the farmers. EU should improve RDP procedure to reduce the negotiation time for AEMs, which actually emerged as one the main constrains for spending available funds on RDP.

These co-management measures would guarantee a landscape approach to better address the management of semi-natural grasslands and biodiversity issues for their conservation in Natura 2000 sites.

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