Farmers as “custodians of the territory”: the case of Media Valle del Serchio in Tuscany

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Introduction

In Italy the hydro-geological management of the territory is currently recognised as a national priority and the local and national institutions are putting an increasing emphasis on the need of improving the environmental stewardship of the territory and of adopting new flooding prevention strategies. With regard to the magnitude of the hydro-geological risks, a study released by the National Council of Geologists (CNG 2010) highlights that in Italy 6 million of inhabitants (about 10 per cent of the national population) live in the 29,500 kilometres squares that are considered at ‘high risk’, where 1.2 million of building are considered at ‘high risk’ of landslides and flooding.

The attention to this subject is mainly due to the increasing frequency of flood events in several Italian regions, and there is an increasing acknowledgment that, together with the climate change, the main reasons of these risks are related to the lack of hydro-geological management of the territory. The flooding events in the plains are usually determined by a lack of landscape and hydro-geological management in the mountains, which is mainly due to the combined effect of the abandonment of farming activities in the most remote and marginal areas and of a lack of maintenance of hydraulic structures by the public institutions.

Tuscany is one of the Italian regions that during the last decade have been increasingly subjected to extreme weather events and flooding. According to the data released by Legambiente in 2011, the 98% of Tuscan municipalities are interested by phenomena of hydro-geological risks, which comprise the 90% of the regional houses and infrastructures. The region is also characterised by an increasing abandonment of farming activities in the most remote and marginal areas. From this perspective, it is evident that in order to increase farmers’ environmental stewardship in such areas, it would be necessary to further valorise the economic and environmental roles of agriculture.

At this regard, this article describes the project “Custody of the Territory”, an initiative promoted by a territorial authority (Unione dei Comuni “Media Valle del Serchio”) aimed at increasing the role of environmental stewardship of local farmers but also at providing additional revenues to the most marginal and isolated farmers of the district.

The analysis of this case study, based on the semi-structured interviews with key stakeholders (farmers, representative of farmers’ organisations, representative and technicians of local institutions, professionals) explores how the relations between farming activities and environmental services are addressed at territorial level, what
resources are mobilised during the process, what type of information is exchanged and what outcomes are reached.

The article shows that a direct involvement of local farmers in territorial projects aimed at ensuring the correct hydro-geological management of the territory has the potential of enhancing the multifunctional capacities of agriculture and, more importantly, of delivering hydro-geological management of the territory and prevention to flooding in a very efficient way.

1. The project “Custody of the Territory”

The project “Custody of the Territory” was developed in the Land Reclamation District No. 4 “Serchio Valley”, a mountain area of Lucca and Pistoia provinces, in the Tuscany region. In this district, the main land reclamation activities are managed by a local authority, the Unione dei Comuni Media Valle del Serchio, which is in charge of ensuring the hydraulic and hydro-geological management of the territory (cleaning up and restoring the riverbeds, as well as the maintenance of the 2,500 hydraulic structures of the areas, mainly dikes).

This local government authority, due to difficulties in managing over 115,000 ha of mountain areas and about 1,500 km of streams and torrents, has decided to involve the local farmers in the delivery of the environmental services, in order to increase the resilience to flooding and to improve the landscape and hydro-geological management of the district (Rovai 2009).

The agreement with the local farmers settled by the local agency is articulated into two types of activities:

- monitoring activities: periodical on site controls of torrents and streams, with report and pictures;
- first maintenance interventions: execution of simple maintenance works such as removal of trees, woods and debris from riverbeds and dikes to avoid overflowing, together with the management of riparian vegetation.
The agreement includes a fixed payment (€ 6,000 per year) for the monitoring activities, and a variable payment for the first maintenance intervention, based on the extent of the work to be done.

The maintenance activities, according to the Italian law on multifunctional agriculture and diversification activities, cannot exceed € 50,000 per year for professional farmers and € 300,000 for specialized cooperatives.

The broad objectives of the project may be summarized as follow: improving the environmental management of the areas through the involvement and empowerment of local communities; favouring a pro-active role of farmers in managing the territory in order to maximize their role in delivering the environmental services; increasing the resilience to flooding by favouring the involvement of farmers in prevention activities (monitoring, surveillance, early intervention works).

2. Farmers’ motivations and attitudes: building a new identity of ‘custodians’

The data collected in the field have allowed exploring how the farmers perceive the environmental services they provide, to what extent the environmental services fit in their farming strategies, and which are the main motivations of farmers to adhere to the project.

The results of the research confirm what several economists have already demonstrated: in many cases the participation of farmers into collective action for public goods and services is strongly motivated by private benefits (Ayer 1997). Indeed, farmers adhered to the proposed scheme because they believed that they would gain from participation both directly, by having access to the specific funding for monitoring and for carrying out the first maintenance works and indirectly, by increasing the opportunities to collaborate also with other government agencies.
With regard to the economic and personal interests of participating into the project, farmers perceived this agreement with the local authority as an efficient way to optimize and rationalise farms activities (use of labour, machineries and spare time) but also to increased visibility in their areas.

Farmers highlighted that monitoring is an activity that they usually carry out mainly during the idle time, and it represents an interesting complement to the traditional agricultural activities. The monitoring also helps to engage employees at a time when there is a lack of work in the farms and in many cases this activity also fits well with the hobby activities of farmers such as hunting, fishing and mushroom picking. Similarly, the first intervention works were considered important income integration in periods of scarce activities in the farms (i.e. during the winter).

At the same time, the data collected allowed to identify all the farmers’ motivations and attitudes which go well beyond the private and economic interests, but which are more related to the personal sphere and to their identities. Indeed, as showed by Muradian et al. (2010), the economic incentives are just one of the main drivers that may influence farmers’ behaviour and willingness to adhere to the payments for environmental services.

For many farmers the reasons for joining the project are related to their personal passions, skills and ideas and, above all, because the project contributed to renovate their identity of farmers, which in many cases is closely linked to the social and institutional recognition of their role as ‘custodians’ of the territory. Indeed, as showed by Muradian et al. (2010), the economic incentives are just one of the main drivers that may influence farmers’ behaviour and willingness to adhere to the payments for environmental services.

Another interesting issue is the qualitative aspect of the activities that are ensured by the local farmers, compared to other local actors who potentially could be involved into the project. Indeed, the approach of farmers in delivering the environmental services was described by the representative of the Unione dei Comuni Media Valle del Serchio as ‘different in qualitative terms’ compared to the approach of the local authority workers or of the specialised cooperatives workers. The technicians working for the local authority have highlighted that in many cases, in delivering the environmental services, farmers put the same commitment and dedication of their farming activities.

According to the technicians working for the Unione dei Comuni Media Valle del Serchio, this different approach is due to the fact that the recognition of farmers as ‘custodians of the territory’ was interpreted by them such a sort of ‘right’ to make the monitoring and maintenance activities in their assigned area. This institutional recognition led the farmer to express the local needs in terms of hydro-geological instability and flood prevention activities and, more broadly, to be an example also for the other local land managers and land owners.
Finally, in many cases the most pro-active farmers increased their reputation and became a point of reference for local people and, above all, represented a reliable information and efficient early warning system for the public administrations in charge of preventing flooding, hydro-geological disasters and, more broadly, in the maintenance of the territory.

3. The role of the local knowledge and of joint learning

One of the most important innovations introduced by the project “Custody of the Territory” is related to the identification of farmers to be involved into the initiative, since they were selected not only on the basis of economic and technical parameters, but also on the basis of the location of their farms and on the basis of their knowledge of the territory. Indeed, according to respondents, the real added value of the environmental services which are provided by farmers is linked to their local knowledge in terms of places (location and conditions of canals, streams and hydraulic structures) but also in a more broadly knowledge of the territory in terms of local people, traditions and history.

The type of local knowledge, which played a crucial role for the success of the initiative, is related to the folk memory of farmers regarding the hydraulic and hydro-geological problems of their territory. This folk memory is usually passed down orally over the years and it involves, for example, the knowledge about the extraordinary meteorological events of the past, the seasonal (and annual) water level of rivers and streams, the diversion of water flows, the flow of water in times of flood, the access points to streams and rivers.

The local knowledge of farmers, related to the spatial and temporal dimensions of the hydraulic and hydro-geological priorities (i.e., the risk of flooding) was considered crucial to identify the main risks, as well as the timing and the location of the interventions.

As argued by the majority of local stakeholders interviewed, while in many cases professionals and government representatives fail to recognize the different contribution that local knowledge can make to problem solving, the Unione dei Comuni Media Valle del Serchio, through the project “Custody of the territory” has aimed at re-valuing and re-building different forms of knowledge that before were excluded from the main strategies regarding the management of the territory.

This approach, according to the local stakeholders interviewed, promotes the spread of best practices among farmers, recovering the daily actions of prevention and maintenance that in many cases had been lost. Interviewed highlighted that, since in the past the territory almost entirely occupied by farms, the correct hydro-geological management ensured an effective delivering of environmental services at landscape level. As pointed out by a member of a local municipality,

the abandonment of farming determined many environmental problems, especially in relation to the landscape maintenance works, which in the past were naturally carried out that all the farmers that were settled here, who by maintaining their land in good conditions also maintained the all territory. Nowadays the problem is different, the main challenge for local authorities is encouraging farmers to provide environmental services outside their farms and this also imply to act on motivation and attitudes of farmers, in
order to recover their knowledge and their competencies in providing environmental services which are not only functional to their business.

The project aimed at recovering this knowledge through the interactions and the exchanges between different actors (institutions, technicians and farmers), in order to increase the effectiveness of the services performed. Indeed, instead of implementing the traditional hierarchical approach of learning transmission (manager to technicians to workers), the involvement of farmers led to a constructive exchange and to a learning process that have involved representative of local institutions, technicians and local farmers.

More specifically, the interaction amongst farmers and the technicians working for the local agency resulted in a process of joint learning that represented an efficient early warning system for the risk of flooding and ensured the provision of environmental services at lower costs.

Furthermore, during the second phase of the project, the local authority decided to standardise the procedures for the monitoring activities (report and pictures provided by the farmers) with the main objective of collecting all this information in a single data-base. Thus, an information system based on Google Maps was created, named IDRAMAP. This is a web site where it is possible to access from the home page of the Unione dei Comuni Media Valle del Serchio and it was developed as an on-line information system with the objective of expanding the monitoring activities to the local inhabitants.

According to the responsible of the project, the role of this on-line information system is twofold. On the one hand, by extending the monitoring activities to the local population, it represents a very effective tool for communicating promptly the main hydraulic and hydro-geological problems of the district; on the other hand, IDRAMAP was developed to make public the activities carried out by the local authority, in order to increase the transparency of the use of revenues paid by the citizens with the local reclamation tax.

Web tools as IDRAMAP, by spreading awareness among the local actors on the role that farmers play in delivering public goods and services, have the potential of improving the interactive capacities of local stakeholders and, indirectly, of increasing the hydraulic and hydro-geological management of the territory.
Concluding remarks

Traditional payments for environmental services are settled on a simple mechanism, based on a voluntary participation of farmers, where the payments are bound to the environmental services effectively provided: farmers provide environmental services and get paid for doing so (‘provider gets’), while those who benefit from environmental services pay for their provision (‘user pays’) (Engel, Palmer 2008).

The mechanisms observed in the case of “Custody of the Territory”, based on the building of a new identity for farmers and on joint learning, involves a more complex relationship between ‘provider gets’ and ‘user pays’, since it requires a more integrated strategy based on the development of a local network of farmers, citizens, advisory system and local institutions.

The case study shows that the Unione dei Comuni Media Valle del Serchio has aimed at creating not only an instrumental relationship based on compensation, but a more complex system of incentives, rules and knowledge, which is based on reciprocal relationships, trust and engagement. More in details, the agreement described here is not only based on economic compensation for farmers for delivering specific services, but as a set of incentives to push farmers to actively participate in the environmental management of the territory, by increasing the relations and interdependences amongst farmers, local institutions, advisory system and local communities.

To conclude, it can be argued that this initiative shows the potential for developing a new management model of delivering environmental services in rural areas, based on the integration of policy tools based not only on compensation but also on incentives focused on information, communication, skills and learning opportunities. This approach allowed farmers to play a proactive role in providing environmental services, but also ensured a stronger integration amongst the environmental goals and the social and economic interests of the area concerned.

References


CNG - Consiglio nazionale dei geologi (2010), Rapporto sullo stato del territorio italiano, Centro studi del Consiglio nazionale dei Geologi (CNG) and CRESME, Roma.


**Abstract**

The article focuses on the project “Custody of the Territory”, an initiative promoted by a territorial authority of a mountainous area of the Tuscany region (*Unione dei Comuni Media Valle del Serchio*) which set an agreement with local farmers to improve the hydro-geological management of the district. This innovative flooding prevention strategy, based on farmers’ knowledge and capabilities, shows that an effective hydro-geological management of the territory in mountainous areas should involve not only changes in farmers’ practices, but also a more structural shift regarding their identity, motivations and attitudes. The article highlights the need of implementing integrated policy tools based not only on compensation but also on incentives, communication and learning opportunities, since farmers’ knowledge and joint learning (amongst farmers, institutions, technicians, academics) are very important issues for an effective provision of environmental services through agriculture.

**Keywords**

Hydro-geological management, mountainous area, farmers’ stewardship, knowledge and joint learning.

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