

## **Participatory Governance in Forest Landscape Planning: an Application in Southern Italy**

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**Abstract.** Participatory governance in the decision-making process is basic to sustainable and successful management of natural resources. Stakeholders and local communities participation is a key element in forest landscape planning. In this field the Forest Landscape Management Plan (FLMP) is a tool of local governance which provides forest management guidelines on a landscape scale, which is the proper one to take into account the objectives and targets expressed by local actors and institutions.

The paper presents the results of the process of stakeholders' consultation in a FLMP in a mountain district in Basilicata region, Southern Italy. After a preliminary stakeholders' analysis, the 115 actors identified were consulted face-to-face through a structured questionnaire.

The gathering and the organization of the preferences expressed by the stakeholders are a key step in the decision-making process. To take into consideration this information in the following phase of identification and exploration of planning alternatives is an effective way to include stakeholders' input in the decision-making process.

**Key words:** Local governance; public participation; forest functions; Forest Landscape Management Plan (FLMP); Alto Agri district (Italy)

### **Governança Participativa no Planeamento da Paisagem Florestal: uma Aplicação à Itália do Sul**

**Sumário:** A governação participativa no processo de tomada de decisão é fundamental para uma gestão sustentável e eficaz dos recursos naturais. A participação dos intervenientes e comunidades locais é um elemento chave no planeamento da paisagem florestal. Neste domínio, o Forest Landscape Management Plan (FLMP) é um instrumento de governação local, que oferece orientações de gestão florestal numa escala de paisagem, que é o correto tendo em conta os objetivos e metas expressos pelos atores e instituições locais.

O artigo apresenta os resultados do processo de consulta dos intervenientes de um FLMP numa região montanhosa na região de Basilicata, sul da Itália. Após uma análise preliminar dos intervenientes, os 115 atores identificados foram consultados cara a cara seguindo um questionário estruturado.

A recolha e a organização das preferências expressas pelos intervenientes constituem um passo fundamental no processo de tomada de decisão. Levar em consideração estas informações na fase seguinte da identificação e exploração de alternativas de planeamento é uma forma eficaz de incluir os intervenientes no processo decisório.

**Palavras-chave:** Administração local; participação pública; funções da floresta; plano de gestão da floresta ao nível da paisagem; distrito de Alto Agri (Itália)

**Participation Publique dans la Planification des Forêts au Niveau du Paysage: son Utilisation en Italie du Sud**

**Résumé:** La participation publique dans le processus décisionnel est à la base de la gestion soutenable des ressources naturelles. La participation des intervenants et des communautés locales est un élément clé dans la planification et la gestion des forêts au niveau du paysage. Dans ce domaine le *Forest Landscape Management Plan* (FLMP) est un outil du gouvernement local qui fournit des directives de gestion forestière au niveau du paysage, en considérant les objectifs exprimés par les acteurs et les institutions locaux. L'article présente les résultats du processus de consultation des intervenants dans un FLMP réalisé dans une zone de montagne de l'Italie méridionale (région Basilicata). Après une analyse préliminaire des intervenants, les 115 acteurs identifiés ont été interviewés à partir d'un questionnaire structuré. Le rassemblement et l'organisation des préférences exprimées par les intervenants est une étape fondamentale dans le processus décisionnel. Considérer ces informations dans la phase suivante d'identification des solutions de planification sera une façon efficace d'inclure les demandes des intervenants dans le processus décisionnel.

**Mots clés:** Gouvernement local; participation publique; fonctions de la forêt; planification forestière au niveau du paysage; zone de l'Alto Agri (Italie)

## Introduction

Governance refers to new ways of achieving social objectives, in which states participate but do not necessarily play a leading role (PAAVOLA *et al.*, 2009).

In this definition, if states are key-players in governance, then usually a number of different participants are also involved. Moreover, states are not homogenous entities, but a network of different units and players operating at different levels (FUKUYAMA, 1995). As a consequence, governance can be considered as a multi-participant and multi-level process (CUGUSI and STOCCHIERO, 2010).

Different definitions can be found in the literature to analyze the type of governance. The first distinction that can be made is between the top-down and

bottom-up approaches (SABATIER, 1986), whereas another distinction takes into account the centers of the power (polycentric and centralized governance). Polycentric governance describes the co-existence of many centers of decision making that are formally independent of each other (OSTROM *et al.*, 1961). This approach emphasizes that the systems of governance which distribute capacities and duties across many levels, may achieve better outcomes than centralized systems. In contrast, in centralized or monocentric governance, a single public organization is mandated to make decisions regarding a specific topic (i.e. forest management or nature conservation). A further distinction that can be made regards multilevel and network governance, respectively. Network governance is a horizontal articulation of interdependent, but

operationally autonomous players, who interact through a negotiation process (BASSOLI, 2010). By comparison, decision making in multilevel governance is characterized, at all levels of the territory, by the increased participation of non-state and non-institutional players. The complexity of participants actors and their respective networks makes the identification of the territorial levels more difficult, and as a consequence the role of the state is transformed from regulator to coordinator of power and authority (KLUVÁNKOVÁ-ORAVSKÁ *et al.*, 2009). Thus, multilevel governance is characterized by an openness to civil society and the possibility is extended to all players, in the local governance arena, to be involved in representative and participatory practices. Inter alia, the level of public participation in local governance issues are often used as indicators of a healthy civic culture. Besides these features, a possible differentiation between types of local governance involves the way in which players are involved in decision-making. This categorization refers to the distinctions implied by the concept of participation in public decision making. These distinctions may range from a minimum level of participation (passive participation) to a maximum level (self-mobilization) (RAMIREZ, 1998) and include all the different gradations (PRETTY *et al.*, 1995; GERMAIN *et al.*, 2001) which may involve: participation in giving information, participation in consultation, participation for material incentives, functional participation and interactive participation.

Multifunctional landscape forest planning represents an important tool of local governance. The Forest Landscape Management Plan (FLMP) can be

considered as an applicative tool of multifunctional landscape planning (AGNOLONI *et al.*, 2009; CANTIANI *et al.*, 2010; SECCO *et al.*, 2006). This plan has, among its primary objectives, the integration of non-productive aspects of forests, such as socio-cultural and environmental issues (KANGAS and STORE, 2002). The key concepts of this type of planning are: i) the awareness that forests are able to perform a multiplicity of functions and, consequently, to provide various useful goods and services (FÜHRER, 2000), ii) the necessity to manage the forest resources in a sustainable manner (HOSSAIN and ROBAK, 2010), according to the principles outlined by the Conference on Environment and Development held in Rio de Janeiro (1992) and iii) the effort to involve the stakeholders in the decision making process by following the principles of public participation (TINDALL, 2003).

Regarding the level of application, the FLMP can be considered as a multilevel tool with an intermediate role between forest management plans at national or regional (i.e. administrative) level and at forest management unit level (BASKENT and KELES 2005). FLMP should address long-term forest management issues, with special attention to land and environmental aspects (such as watersheds, biodiversity, etc.) that cannot be properly considered by referring to a single forest management unit (i.e. single forest ownership).

This paper shows a case study involving the governance of forest resources based on the principles of FLMP. In particular, it focuses on the consultation of stakeholders with the objective of highlighting the usefulness of consultation in the development of a

FLMP. The research was conducted in the framework of an ongoing FLMP in the Comunità Montana<sup>1</sup> Alto Agri, located in the Province of Potenza.

### Materials and methods

The Comunità Montana Alto Agri, located in the Basilicata region, southern Italy (40°20'25"N; 15°53'52"E), was chosen as the study area for the implementation of the FLMP. The territory of the Comunità Montana, with a population of 33,739 people, occupies about 72,550 hectares, and is divided into twelve municipalities. The actual population density, 46.5 people/ km<sup>2</sup>, against the national value of 200.1 people/ km<sup>2</sup>, is the result of a slow depopulation, which started in the 50s and has continued down to this day. The forest areas cover 42,367 hectares, comprising 58.4% of the Comunità Montana territory. Privately-owned land amounts to 72.8%, whereas the remaining 27.2% belongs to public administrations, which include mostly various municipalities but also the Basilicata Region. The forest categories, in order of prevalence, include: Downy oak forests (28.4%), followed by Turkey oak forests (17.8%), shrub lands such as broom thicket, mixed thorny thicket and thermophile thicket with *Phillyrea* sp. and *Pistacia lentiscus*, (12.7%) and Beech forests (9.6%).

In order to achieve the Alto Agri FLMP, a data collection phase, involving two main fields of investigation, was implemented: the first aspect focussed on the qualitative and quantitative features, typical of forest inventories and the second aspect focussed on the stakeholders consultation, which aimed to highlight preferences and perceptions.

The forest attributes were described by 577 sampling points, randomly distributed over the entire Comunità Montana territory, and provided a detailed picture of the resource to be managed. The available information was specified for each forest category: dendrometric parameters, type of silvicultural system, canopy cover, renovation, shrub cover, dead wood, phytosanitary conditions, etc.

Taking into consideration various factors including timing, resources and the economic and social-cultural characteristics of the territory, the consultation approach was chosen as the most suitable method of participation, applicable in the research context.

Consultation is a method in which the public is informed, and in which the voice of the public is heard regarding various issues. These issues include expectations and knowledge and the provision of a feedback on how public input influenced the decision making process (IAP2, 2007). The opinions of the people are requested during the consultative process, and what is expressed by the people may or may not influence decision making process (BUCHY and HOVERMAN, 2000).

In the case of the Alto Agri FLMP, the consultation approach has been active since the start, and this choice has played a fundamental role in integrating the information of the participants in order to define management guidelines. Firstly, the participation started with an informative phase, since this step was considered a basic premise to launch the procedure and stimulate the involvement of the people. A flow of information was maintained even in the successive phases, so that the participants were able to express themselves on the basis of

solid opinions in order to recognize and discuss, in an effective way, the technical and scientific aspects of the Plan (SHANNON, 2003). Successively, a proper consultation with institutional actors and stakeholders was carried out. The first phase of the consultation was aimed at gathering opinions, expectations and needs of those participants who were in some ways and at different levels, interested in the general impacts of the ongoing Plan on the territory. The final goal, in this phase, was to highlight problems and opportunities for the area in which the Plan was being developed and to use the data collected, along with the information retrieved with the inventory in the forest formations, to elaborate the first draft of the plan. In this first attempt, an integration between field data and qualitative information, gathered from the perceptive investigation, was implemented, in order to formulate the management hypothesis able to fulfil the needs of local communities.

A *face-to-face* questionnaire was chosen as the tool for the consultation. A total of 115 stakeholders, identified through a preliminary *stakeholders analysis*, were chosen. A distinction, among the people interviewed, was made between institutional and non-institutional participants. Of the people interviewed, 30 belonged to the first category and 85 people to the second. In the latter category, a total of 27 people were from the non-profit world (volunteers and representative associations), while the remaining part were comprised of individual players such as forest entrepreneurs, breeders, timber processors and timber sellers, etc.

The questionnaire was divided into thematic sections. The sections focused

on the major issues concerning forest management: (i) forest functions perceptions, (ii) forestry and grazing practices, (iii) link between people and territory.

The subdivision of the questionnaire into thematic sections allowed for the separate analysis of each section, as well as a final elaboration which summed the results of the three sections.

This final elaboration represented a starting point for the implementation of the second consultative phase. Institutional players and a few stakeholders were gathered for round-table discussions, in order to analyze and discuss possible scenarios, and to formulate a number of shared and brief proposals to be integrated during the final redaction of the Plan. In the following chapters, the main questions utilised in the above mentioned sections are described and the purpose of their formulation and the modalities with which they have been structured are highlighted.

#### *Forest functions*

Forest multifunctionality, which represents one of the main objective for the implementation of FLMP's, was evaluated by the stakeholders through a specific question, aimed at highlighting the social preferences for any single function. The priority was to compare the present state of multifunctionality of the Alto Agri forests, retrieved by the elaboration of the field data in a multifunctionality matrix (CANTIANI *et al.*, 2010), with the social preferences. In order to achieve this goal, the interviewed were asked to assess the importance of any single forest function in a scale of four options: (4=high importance, 3=medium importance, 2=low

importance, 1=very low importance).

The forest functions were individuated by both local technicians and researchers, and were then presented to the stakeholders in a closed answer form, without the possibility of adding any additional functions. Before adopting the close answer approach, the authors did consider the benefits and drawbacks of the 3 available ways in which a list of functions may basically be presented. These 3 different approaches include the: (1) close answer form, (2) close answer form with the presence of "other" choice, and (3) completely open list to be compiled according to the functions indicated by the stakeholders. Each option has both advantages and disadvantages. The close answer form is the most rigid, since some relevant functions may be excluded, especially when the functions have not been carefully individuated. On the other hand, the functions can easily be compared. The completely open list is much more flexible and allows the possibility to highlight the totality of the functions which are relevant for the stakeholders, but does not permit the functions to be compared, since each stakeholder may indicate a different number of functions and exclude functions which have technical importance but low social relevance. The close answer form "with other" is a compromise between the two, but does not satisfactorily solve the problem of comparability. The functions in Table 1 were considered. Any additional functions suggested by the interviewees, that were not included in the list, could be added in the margin of the questionnaire.

The individual preferences attributed by the stakeholders to each forest

function were elaborated by sorting them according to a list of priorities. According to this list, and the gaps among the functions, it was possible to define preliminary management strategies. These would be then assessed successively on the basis of both the forest survey and the technical feasibility.

#### *Forestry and grazing practices*

The section regarding the forest and grazing practices of the Alto Agri territory provided the most heterogeneous part of the questionnaire. In this part, the different aspects investigated were connected to each other in a series. The aim of this section was to illustrate the existence of local habits still in use, as an expression of a historical heritage. The knowledge of local traditional uses in forest management represent a crucial aspect in the redaction of any planning tool. As a matter of fact, this knowledge allows to highlight critical issues/constraints, which are hardly manageable since are more linked to cultural than technical aspects (Table 2).

Regarding the forestry sector, the investigation focused on aspects including forest management and its objectives, the common land rights, and the time that non-residents spent in forest. The part related to the grazing activity was centred on assessing the spread of forest grazing and its modalities and characteristics. Particular focus was given to the practice of the "*transumanza*"<sup>2</sup>, an important tradition of the central-southern Apennines, which is progressively disappearing due to various economic and social reasons.

**Table 1** - Forest functions of Alto Agri forests

1. Firewood production	8. Sporting activities
2. Timber production	9. Didactic activities
3. Grazing	10. Tourist activities
4. Collection of mushrooms and truffles	11. Landscape contemplation
5. Collection of other forest non-wood products	12. Amelioration of air and water quality
6. Hydrogeologic protection	13. Wildlife and biodiversity conservation
7. Gaming	

**Table 2** - Questions in the "forestry and grazing practices" section

<b>Forestry</b>
1. How many public owners use the forest? For what purpose?
2. How many of the private owners use the forest? For what purpose?
3. Which common land rights are practised? Are the forest lots assigned? Is the lot assignment practice satisfactory?
4. How many and who are the non-residents who frequent the forest? Where do they come from and in which period?
<b>Grazing</b>
1. Is forest grazing practiced? What are the prevalent species and in which period of the year?
2. Is the "transumanza" practiced? What are the potential causes of its decline?

The analysis of the main descriptive statistics of the above mentioned questions provided an overall view on some management aspects of the Alto Agri forests and pasturelands. This information provided a useful support in establishing management scenarios and, particularly, in highlighting the potential hurdles of present management practices and the possible solutions.

#### *Link with the territory*

The link between the local population and the territory was evaluated through a set of questions which took into account both purely social aspects and more typically economic aspects but with

a social impact.

Regarding the social aspects, the key question was formulated in a way to allow the interviewees to express their bond with the territory in a four-options ranking scale (very strong, relatively strong, relatively weak, weak). In order to better assess this relationship, two supporting questions were also inserted. The first question inserted, was in regard to whether the interviewees ever felt the need to emigrate in the past. If the answer was affirmative, then a second question was asked in order to ascertain the motivational causes, as indicated (Table 3).

The same questions were given indifferently to each social actor, in order

to provide an overall view of the individual connection with the territory, as well as any external factors which may harm this link.

Three main causes were taken into consideration: lack of work, social malaise, and willingness to change. The interviewees were also given the opportunity to indicate any additional causes. The lack of work constitutes a material cause which drives people to abandon their birthplace, whereas social malaise presents a psychological connotation.

A change linked to the research of economic improvement leads people to leave their own birthplace to start business activities. The return of these individuals represents an important resource for the territory.

The economic aspects were investigated by quantifying the number of young people who resumed the family

business in the forestry and animal husbandry sector. Four classes, (many, some, few, none) were utilized to evaluate this aspect. In the case where the first two classes predominated, a link with the traditional activities of the family was hypothesized as still being present. In contrast, the prevalence of the last two classes would signify that the link is extremely weak or absent. These sets of questions provided a framework of the social, cultural and economic environment from which the future FLMP could be set. The aggregated analysis of the questions permitted the definition of a series of situations within a continuum varying from a positive (scenario 1) to a negative (scenario 2) extreme, as reported in Table 4. A series of case records may be found between these two extremes, which have to be assessed carefully before the redaction of the FLMP.

**Table 3** - Questions in the "link between people and territory" section

<b>Social aspects</b>	
1.	How strong is your bond with the territory?
2.	Have you felt the need to emigrate?
3.	Which are the main causes that may lead to emigration?
<b>Economic aspects</b>	
1.	How many young people have resumed forestry activities carried out by their parents?
2.	How many young people have resumed animal husbandry activities carried out by their parents?

**Table 4** - Extreme scenarios regarding the link with the territory

<b>Scenario 1</b>	The bond with the territory is strong The desire to emigrate is low and, if present, is mainly due to a desire for change The commitment of young people in the traditional family activities (animal husbandry and forestry) is high
<b>Scenario 2</b>	The bond with the territory is weak The desire to emigrate is high mainly because of social degradation The commitment of young people in traditional family activities (animal husbandry and forestry) is either low or absent



## Results

The information retrieved during the consultation process was reported as collected in the thematic sections of the questionnaire. An integrated analysis of the answers provided an overall view of the situation, which is useful for the redaction of the future governance guidelines in the FLMP.

### *Forest functions*

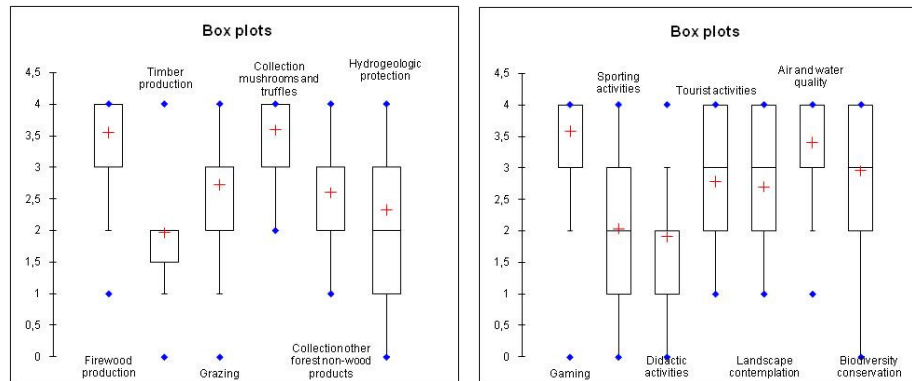
The answers regarding the evaluation of the forest functions fulfilled by the Alto Agri forests show a three block subdivision: those with an average value higher than 3.5, given to the functions evaluated as high importance, those with an average value between 3.0 and 3.5, with an intermediate importance, and those with an average value lower than 3.0, considered as not important.

The three most relevant functions which must be taken into account for a multifunctional forest management are: collection of mushrooms and truffles (3.59), gaming activities (3.58) and firewood production (3.55). Air and water quality conservation (3.40) had a mid-range score, whereas the remaining functions scored values below 3.0. The box plots, related to the main forest functions, are reported in Figure 1.

These results can be employed in various ways to support planning options and forest management. A possible application, which seemed to be adherent with the results obtained in the case study, is presented in this work. However, it is important to note that any management strategy has to be

developed by considering each time both the specific situation emerged from field data and the consultation with the stakeholders.

The social preferences expressed by the Alto Agri stakeholders, with their respective political and management implications, move towards a moderate multifunctionality. This can be achieved by readapting the Wake Theory or *Kielwassertheorie*. The original formulation of this theory postulates that the social forest effects result from a profit orientated forest management. In other words, the primary goal to be pursued is substantially firewood and timber production. The remaining forest functions then come in the wake of this main function, without any specific management interventions (GLÜCK, 1987). This theory was conceived in the middle of the 20<sup>th</sup> century in Germany and was valid in a specific social and cultural context. As a matter of fact, its application today requires some conceptual readjustments. A possible application may be the direct achievement of a moderate multifunctionality for two to three functions, and an indirect fulfilment of the remaining functions thanks to the wake effect. In practice, taking into account the preferences expressed by society, a forest management strategy that is focused on valorising mainly the functions which belong to the first block (values higher than 3.5) ought to be applied. The remaining functions, which fall in the other two blocks as a consequence, would be obtained thanks to the above mentioned wake effect.



**Figure 1** - Box plot forest functions and stakeholder's preferences

#### *Forestry and grazing practices*

Regarding the questions on the management in-use practices, the preference for an active management of the territory appears to be more diffuse among private owners with respect to public entities (Figure 2). In order to better comprehend the results related to this question, it is important to remember that the answer is linked to the perception that each single interviewee has of the situation instead of a real picture as reported in official statistics. However, according to 87.8% of the interviewees, almost all private owners use their forest properties, while the active management of forests done by public bodies is not very often perceived (48.7%). For both private and public owners, the primary management objective is firewood production (98.3%). Moreover, none of the interviewees mentioned, under the option "other", any non-economic functions such as biodiversity conservation, climate change mitigation, hydrogeologic protection, as well as the tourist-recreational function, which may

represent an important economic resource for the territory. The comparison of these results with the forest functions section shows that the management practice is perceived mainly as a function of firewood production, although non-economic forest functions obtained high scores. Considering that the protective function of forests, both hydrogeologic and environmental, is already guaranteed with normal silvicultural interventions, a detachment between the theoretical recommendations, which are oriented toward a multifunctional management, and the every-day practice, which tends to a productive monofunctionality, is highlighted.

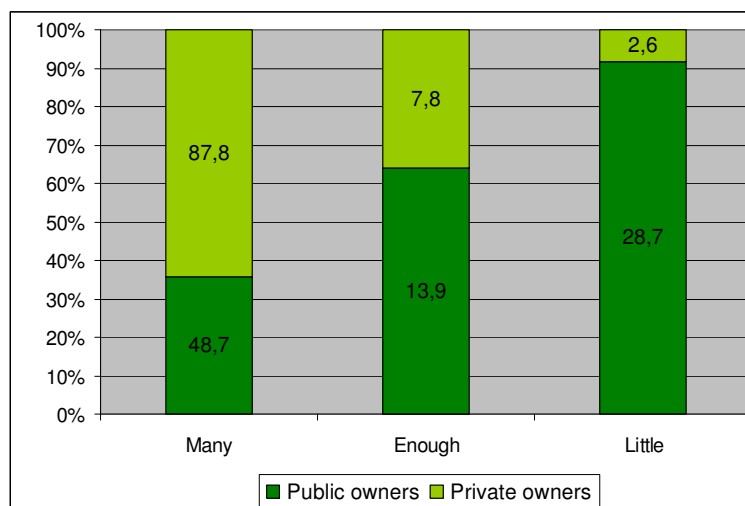
The common land rights represent an important social function provided by the forest and, at the same time, an irreplaceable link with a local tradition which has its historical roots dating back to the Middle Ages. The results of the investigation show that the right to gather firewood (regarding the assignment of firewood and, in specific cases, timber wood to the entitled families) is still active for 27.8% of the

interviewees, whilst for the remaining 72.2% such a right is not in use anymore. Concerning grazing, the situation is slightly different. Of the interviewees, 51.3% report the presence of this activity, whilst the remained report its absence. Those who mentioned the right to gather firewood, affirm that this right is accomplished by the competent public body in the 50% of cases through lots assigned to the entitled families. The last question investigated the ability of common land rights to satisfy the need of firewood and timber of those who own this right. The data show that the actual assignments do not satisfy the demand for more than the half of the respondents (56.3%). This unsatisfactory fulfilment makes the presumption that the firewood market may have commercial opportunities to compensate this demand.

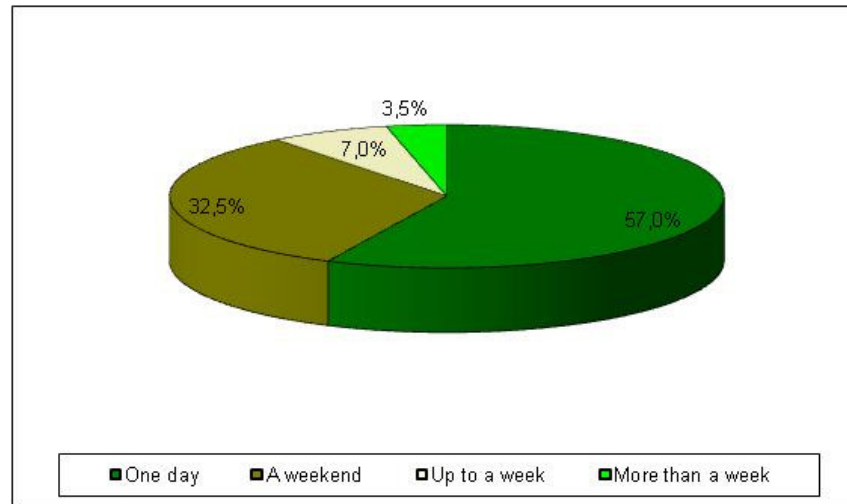
The potentiality of the tourist-recreational aspect can be partially retrieved by analysing the question on the time spent in the forest by non

residents. According to 49.6% and 38.3% of the interviewees, respectively, non-residents spent "enough" time and "a lot of time" in the Alto Agri forests. This data confirms a tourist potentiality, although, if we analyse the type of tourism, mushroom collectors and hunters were prevalent. However, a minor percentage of respondents indicated that the outsiders came solely for typical tourist activities such as walking, picnics, etc.

The type of person who spends time in the forest significantly influences the data of the successive two questions regarding the time of stay in the Alto Agri and their area of provenience. Regarding this last issue, almost all the interviewees indicate areas outside the Basilicata region (93.9%), in particular the neighbouring Puglia and Campania region. The time of stay is mainly one day (57%) for mushroom collectors and hunters. However, a certain number of tourists remain in the area for an entire weekend (32.5%) (Figure 3).



**Figure 2** – Percentage (%) of public and private owners who use their forests



**Figure 3** – Distribution of tourism (%) for the time of stay

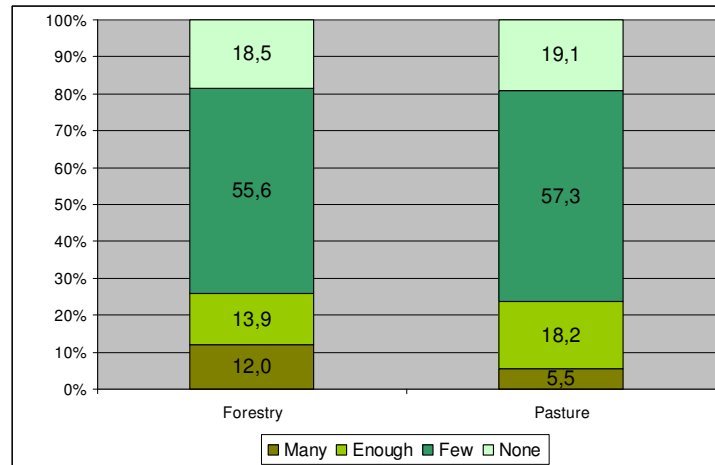
#### *The link with the territory*

The data related to the link with the territory show that the majority of the interviewees (81.7%) feel a strong bond with the territory. A good percentage affirmed a relatively strong bond (13.9%) and only 4.3% of the respondents expressed a weak bond with the territory. For this last group, the municipality of origin was considered, and all respondents, with the exception one, were born in the area. In order to better describe the results, a question on a past or present exigency of emigration was elaborated. In this case, the answers highlighted factors of uneasiness. As a matter of fact, 47.8% declared that they had taken into consideration the possibility to leave, while 52.2% has never considered this option. If we consider the main problems which have influenced the depopulation in the course of the years, the main reason seems to be the lack of work (83.5%). Social uneasiness (6.8%) and the desire

for change (3.9%) appear to be of little relevance.

The analysis of the economic aspects related to the link with the territory shows that a certain percentage (not marginal) of young people have undertaken an entrepreneurial activity in the animal husbandry sector (Figure 4). This trend testifies that to some extent, this activity is still assumed to have a relevant economic and social role in the Alto Agri territory, although less strong in comparison to the past.

In detail, the percentage of respondents who indicated as "many" the young people who have resumed their father's husbandry activity were 5.5%, while 18.2% selected the "enough" choice. As a consequence, a prevalence of the "few" and the "none" options was found. A similar comment can be made for the forestry sector, where about one fourth of the respondents (25.9%) selected either the "many" or the "enough" choice.



**Figure 4** - Percentage (%) of young people who have undertaken the father's activity (forestry and animal husbandry)

### Discussions and conclusions

The tool proposed in the present work, a participatory process based on consultation, was shown to be an effective support for governance within the framework of a FLMP. The consultation approach emphasized the real needs of people, as well as their expectations, towards the ongoing planning and stimulated an awareness of local communities about forest management. In particular, the submission of the questionnaire to the stakeholders represented a starting point for the elaboration of management scenarios which were successively discussed and modified by technicians together with the stakeholders themselves. The consultation during the start-up phase was a key element for the effective involvement of the stakeholders. In this way, their opinions were effectively taken into account to define the draft of the plan.

The territory of the Comunità Montana Alto Agri is currently managed, especially by private properties, in a mono-functional manner. If we consider the priority order expressed by the stakeholders about forest functions, a moderate request of multifunctionality - collection of mushrooms and truffles, gaming, firewood production and, secondarily, air and water quality - emerged.

In order to answer this demand, some of the principles of the wake theory, readjusted in a view of moderate multifunctionality, were applied. Possible scenarios were presented to the stakeholders in order to verify the correspondence with the preferences expressed during the first phase of consultation. The analysis on the link between population and territory showed that, despite a strong feeling of connection, external forces tend to harm this bond. The answers related to this subject seem to indicate that the

environment in which the future FLMP will take place presents some critical points. These crucial matters do not appear to be of social or cultural type while economic, and, therefore, of better dealing and solution. The tourist potentialities can be reported among the strong points of the territory, many of them linked to forest resources such as game and the presence of high quality non-wood products. Additionally, a strong link with the forest was observed. This link is highlighted by the presence of the land use rights which is not an obstacle to the local economic development, and also represents a link with tradition.

In the light of the results and the considerations that emerged, a series of interventions aimed to guarantee the fulfilment of forest multifunctionality are considered. These actions have to be reckoned in the definition of the FLMP management scenarios and, particularly, of the silvicultural guidelines which define the accurate management of forest resources. Firstly, the improvement of the forest road network may support the development of those functions reported as a priority by the participants, such as gaming and collection of secondary forest products. Secondly, tourism may be improved, thanks to the development of the infrastructure but also to silvicultural interventions such as limited clear cuttings, presence of clearances, etc., which are all aimed at valorising aspects relating to landscape and tourism.

To conclude, the application of a participatory territorial governance permitted the realization of a FLMP in which the plurality of functions (which is the primary objective of landscape planning), became a concrete element of

the plan. This achievement was possible thanks to the individuation of priority functions and related management guidelines through a shared process done by decision makers and local communities.

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### References

- AGNOLONI, S., BIANCHI, M., BIANCHETTO, E., CANTIANI, P., DE MEO, I., DIBARI, C., FERRETTI, F., 2009. I piani forestali territoriali di indirizzo: una proposta metodologica. *Forest@* **1**: 140-147.
- BASKENT, E.Z., KELES, S., 2005. Spatial forest planning: a review. *Ecological Modelling* **188**: 145-173.
- BASSOLI, M., 2010. Local Governance Arrangements and Democratic Outcomes (with Some Evidence from the Italian Case. *Governance* **23**(3): 485-508.
- BUCHY, M., HOVERMAN, S., 2000. Understanding public participation in forest planning: a review. *Forest Policy and Economics* **1**: 15-25.
- CANTIANI P., DE MEO, I., FERRETTI, F., PALETTO, A., 2010. Forest functions evaluation to support forest landscape management planning. *Forestry Ideas* vol. 16 (39)**1**: 44-51.
- CUGUSI, B., STOCCHIERO, A., 2010. *Multilevel governance dynamics in the Western Mediterranean: Lessons learnt from the Medgovernance project*. Working Papers Med Governance 73, 16 pp.
- FUKUYAMA, F. eds. 1995. *Trust: The Social Virtues and the Creation of Prosperity*. New York: The Free Press.
- FÜHRER, E., 2000. Forest functions, ecosystem stability and management. *Forest Ecology and Management* **132**(1): 29-38.

- GERMAIN, R.H., FLOYD, D.W., STEHMAN, S.V., 2001. Public perceptions of the USDA Forest Service public participation process. *Forest Policy and Economics* **3**: 113-124.
- GLÜCK, P., 1987. Social values in forestry. *Ambio* **16**: 158-160.
- HOSSAIN, S.Y., ROBAK, E.W., 2010. A Forest Management Process to Incorporate Multiple Objectives: a Framework for Systematic Public Input. *Forests* **1**: 99-113.
- KANGAS, J., STORE, R., 2002. Socioecological Landscape Planning: An Approach to Multi-Functional Forest Management. *Silva Fennica* **36**(4): 867-871.
- IAP2, 2007. IAP2 Spectrum of Public Participation. <http://www.iap2.org/associations/4748/files/spectrum.pdf>
- KLUVÁNKOVÁ-ORAVSKÁ, T., CHOBOTOVÁ, V., BANASZAK, I., SLAVIKOVA, L., TRIFUNOVOVA, S., 2009. From Government to Governance for Biodiversity: The Perspective of Central and Eastern European Transition Countries. *Environmental Policy and Governance* **19**: 186-196.
- OSTROM, V., TIEBOUT, C., WARREN, R., 1961. The organization of government in metropolitan areas. *American Political Science Review* **55**: 831-842.
- PAAVOLA, J., GOULDSON, A., KLUVÁNKOVÁ-ORAVSKÁ, T., 2009. Interplay of Actors, Scales, Frameworks and Regimes in the Governance of Biodiversity. *Environmental Policy and Governance* **19**: 148-158.
- PRETTY, J.N., GUIJT, I., THOMPSON, J., SCOONES, I., 1995 *Participatory Learning and Action: A Trainer's Guide*. IIED.
- RAMIREZ, R., 1998. Participatory Learning and Communication Approaches for Managing Pluralism. *Unasylva* **194**(49): 26-34.
- SABATIER, P.A., 1986. Top-Down and Bottom-Up Approaches to Implementation Research: a Critical Analysis and Suggested Synthesis. *Journal of Public Policy* **6**: 21-48.
- SECCO, L., AGNOLONI, S., CANTIANI, P., DE MEO, I., FERRETTI, F., PETTENELLA, D., 2006. A methodology to integrate SFM standards on forest cultural heritage into meso-scale forest planning: preliminary results of the Ri. Selv. Italia 4.2 research project. In: Parrotta, J., Agnoletti, M. and Johann, E. (Editors). 2006. "Cultural Heritage and Sustainable Forest Management: The role of traditional Knowledge". Proceedings of the IUFRO conference held in Florence, Italy, 8-11 June 2006. Warsaw: MCPFE Liaison Unit-Warsaw, Volume 2: 443-450.
- SHANNON, MA., 2003. The use of participatory approaches, methods and techniques in the elaboration of integrated management plans. In: *The formulation of integrated management plans (IMPs) for mountains forests*. Brun F. e Buttoud G. (eds.), Quaderni del Dipartimento di Economia e Ingegneria Agraria, Forestale e Ambientale dell'Università di Torino, pp. 119-134.
- TINDALL, D.B., 2003. Social values and the contingent nature of public opinion and attitudes about forests. *Forestry Chronicle* **79**: 692-705.

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<sup>1</sup> The Comunità Montana is the Italian administrative body that coordinates the municipalities located in the mountainous areas, and is responsible for administration and economic development.

<sup>2</sup> The transumanza is the seasonal migration of flocks and herds from hilly and mountainous regions toward coastal areas during the winter, with the reverse migration occurring during the summer.