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Parallel Session

Present and future role of forest resources in the socio-economic development of rural areas

Parallel Session 1

Forests, conservation of biodiversity, landscape protection and public services.

Monetary Valuations of Monumental Trees and Other Natural Resources between Demand for Conservation and Recent Requirements for Outdoor activities: Some Case Studies in the Madonie and Nebrodi Regional Parks of Sicily

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Objectives

The focus of the paper is on the valuation of the monetary benefits that local communities living in protected areas may perceive with regard to some specific natural resources, and in particular to Monumental Trees .

Three Sicilian case studies were investigated, two located in the Madonie Regional Natural Park area, and the third one referring to an area of the Nebrodi Regional Natural Park.

The monetary valuation of these environmental goods was carried out by using the Contingent Valuation Method (CVM).

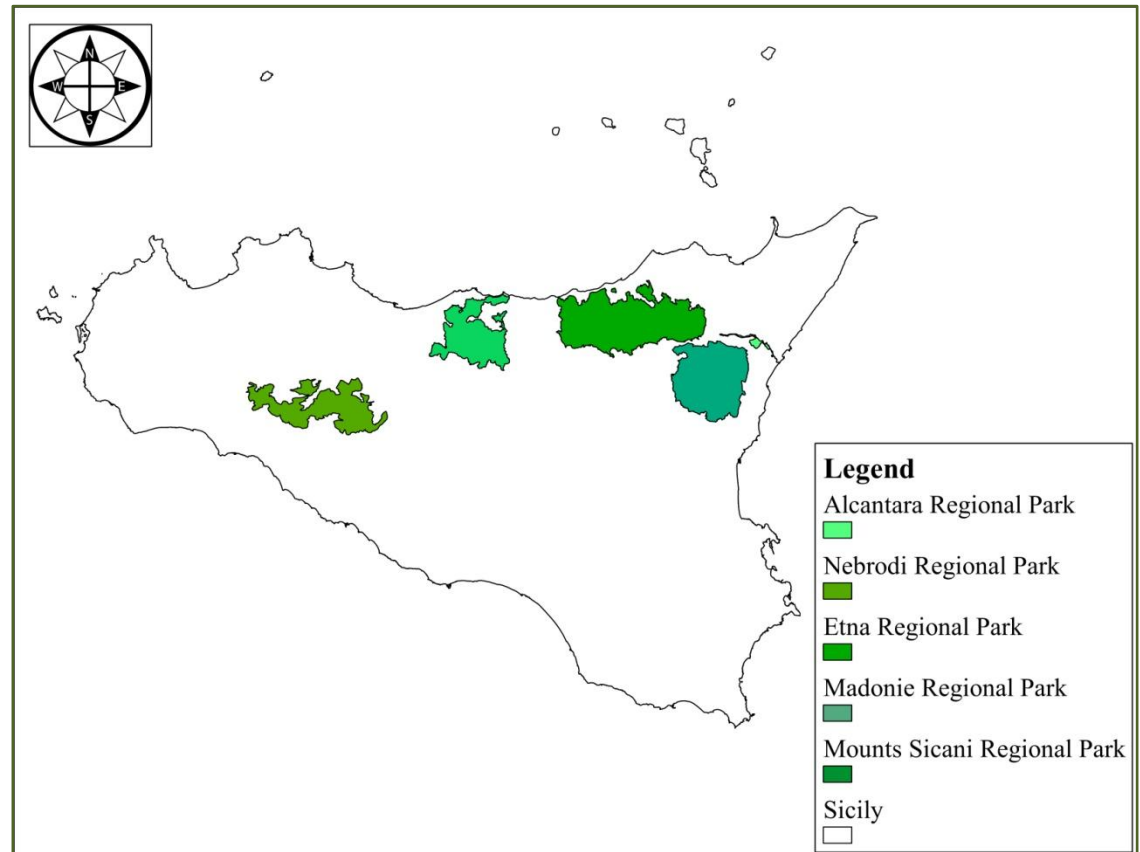
This work intends to evaluate the perception of the benefits deriving from these resources, both for people living in the territory and regular users.

The use and existence values may help public decision makers to estimate the investments to be destined to natural resources.

Sicily Regional Parks

Five regional parks have been founded in Sicily up to now: Alcantara, Etna, Madonie, Nebrodi and Sicani, taking an area of about 230.000 hectares, cover an area equal to the 9% of the regional territory.

In the last years their financial situation has become rather precarious both because of a drastic reduction of national and regional funds, which have made their ordinary management difficult, and of a lack of planning in terms of preservation, restoration and economic and touristic promotion of the territory.



Monumental Trees

an important resource of our forests

The monumental trees have exceptional morphological characteristics with respect to species, such as longevity, large size, posture and the distinctive shape, is also determined by the particular conditions of growth in nature, as well as the botanical rarity.



“Other factors, concur in the definition of monumentality, such as shape and growth habit of the tree, its relationships with art, literature, surrounding landscape, particular events of history, myths, legends and local traditions, besides the botanical rarity. This definition also takes into account the environmental context where the tree is localized and the architectural function a monumental tree can perform in relation to other elements such as buildings of historical importance”.

Schicchi and Raimondo (2007)

Survey Design

Step by step

- Identification of the resources evaluated.
- Choice of the valuation method.
- Study of the current scenario, through literature research and field surveys (GPS coordinates, photos).
- Identification of the target population from which to get the sample and method to interview.
- Formulation of a hypothetical future scenario to present to respondents.
- Choice of elicitation question format
- Design and drafting questionnaire
- Definition of the samples numerosness
- Occurs of questionnaires in the pre-test stage.
- Revision of pre-test questionnaire and drafting the final questionnaire.
- Distribution and collection of questionnaires.
- Statistical Analysis of the questionnaires.
- Data collection and processing.

Questionnaires and Samples

Questionnaires

The type of questionnaire chosen as setting is similar to the mail questionnaire but providing a higher rate of return and responses.

Questionnaires were delivered to all the primary, low secondary and high secondary schools of Madonie area for the Case studies no.1 and no.2.

Questionnaires were delivered to hiking associations of the Nebrodi for the Case study no.3.

Samples

The target population was different in the three surveys:

- resident households in the area of the Madonie Park (Case Studies no. 1 and 2)
- hikers and trekkers in the Nebrodi Park (Case Study no. 3)

The case studies

The three case studies and the aims of surveys

Case study no.1 : The study on the “Monumental trees of Isnello Forest” aims to assess both the existence value and the use value of these monumental trees, in relation to a new trail planned for their valorisation and fruition as an important eco-tourist resource.

Case study no. 2, “The monumental trees of Piano Sempria and Piano Pomo” aims to assess the existence value of the monumental trees present in a nature trail.

Case study no. 3 examined the diverse natural and cultural resources present along a stretch of the nature trail called “Dorsal of Nebrodi”, which represents one of the main routes of the Nebrodi Regional Park. The aim of the study is to estimate the existence and bequest value and, moreover, the use value of the above mentioned resources, since they are usable by excursionists due to the presence of a nature path.

Case study no.1

“The monumental trees of Isnello Forest”

The part of the questionnaire dealing with the monetary evaluation was set up into two different programs addressed to the interviewees:

- a program of “monumental trees conservation”,
- a program of “monumental trees fruition”

From the pre-testing we found out quite a strong disapproval concerning the administrators of the economic Funds destined to collect the bids for improving state of health and fruition conditions of Monumental Trees of Isnello Forest.

The questionnaires were organised into two groups named UWU and EAC, in order to check how the composition of the Boards included in the fund administration may affect the expressed WTP:

- the first group was organised as a technical-scientific Panel, constituted by researchers from University of Palermo and by delegates of UNESCO and WWF, international organisations working in the environmental field.
- The second group was made up of delegates of the Madonie Park Board, of Isnello Town Council and of the Regional Forest Farm.

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Case study no.1

“The monumental trees of Isnello Forest”

Out of 500 questionnaires that were delivered to the schools of the Madonie towns, 212 questionnaires returned, with a response rate equal to 42.4%, whereas EAC and UWU returned questionnaires were respectively 44.0% and 56.0% of total returned questionnaires. 19 questionnaires were identified as possible protest-zeros.

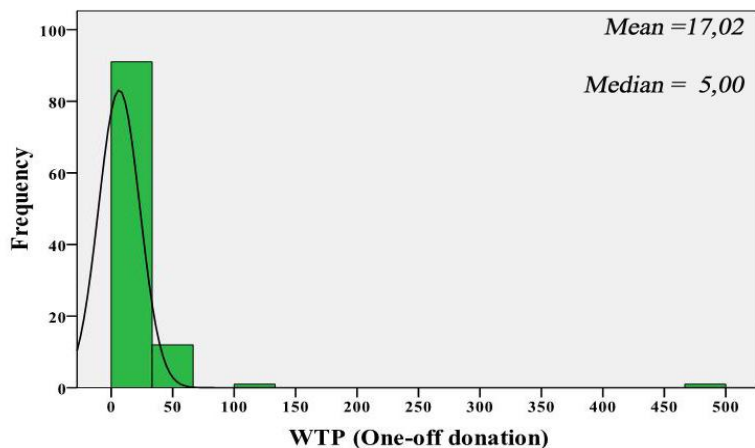
<u>WTP Statistics</u>		Protest Zeros included (No. 124)		Without Protest Zeros (No. 105)	
		WTP (One-off donation)	WTP (Annual donation for 10 years)	WTP (One-off donation)	WTP (Annual donation for 10 years)
No.	Valid	124	124	105	105
	Missing	0	0	19	19
Mean		14,41	10,94	17,02	12,92
Median		2,00	5,00	5,00	9,00

In the sample without the protest zeros (no. 105 observations), the average WTP rises to over 17 € and to nearly 13 € with regard respectively to “conservation” and “fruition” programs.

Case study no.1

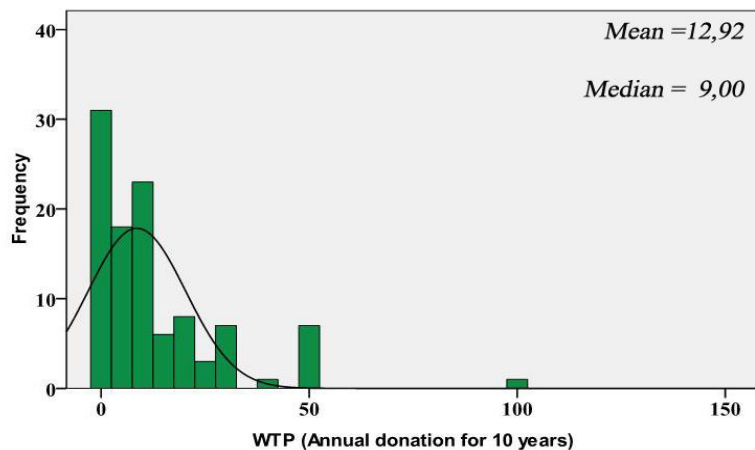
“The monumental trees of Isnello Forest”

WTP (One-off donation)



Valid questionnaires: n. 124. Bimodal frequency distribution. Fruition Program : Mode no. 1 WTP = 0 €; Mode no. 2 WTP = 10 € (Bid= 5 € has an absolute frequency very close to the first modal value, 10 €, 15 observations instead of 16).

WTP (Annual donation for 10 years)



Conservation Program: Bimodal frequency distribution: Mode n. 1 WTP = 0 €; Mode n. 2 WTP = 10 €.

Case study no.2

“The monumental trees of Piano Sempria and Piano Pomo”

In the questionnaire, respondents were presented a future negative scenario which would occur in the absence of silvicultural and protection techniques addressed to these monumental trees. The negative effects would consist in structural downfalls and in a rapid worsening of monumental trees health conditions, due to the combined action of fungi, insects, hemiparasites, wild pigs and non-controlled human activities.

Two programs were diversified in order to detect possible part-whole bias: the first one concerned just the protection of the hollies population (A), while the second program would allow the conservation of all the monumental trees present in the environs of the nature track (T).

Finally four groups of questionnaires were administered: two differed by the order of presentation of the programs in the questionnaire (A and T), two by the board composition of the association managing the monetary fund (E and W) as in the case study no. 1.

Case study no.2

“The monumental trees of Piano Sempria and Piano Pomo”

WTP Statistics	Sub-sample A		Sub-sample B	
	WTP for Holly Protection (€)	WTP for protection of all monumental tree (€)	WTP for Holly Protection (€)	WTP for protection of all monumental tree (€)
Mean	20.50	21.56	24.12	25.36
Median	2.50	5.00	5.00	9

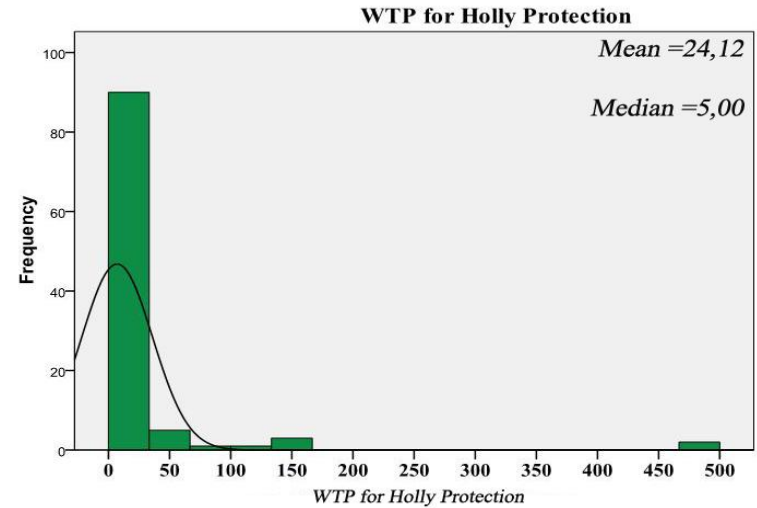
The sub-sample A (120 people), after the removal of the 18 protest zeros, decreases to 102 people and will be subsequently named sub-sample B

As in the case study no. 1, average values of WTP are far higher than median values, highlighting an asymmetric frequency distribution curve (positively skewed, with values which are more concentrated in the lower end of the scale).

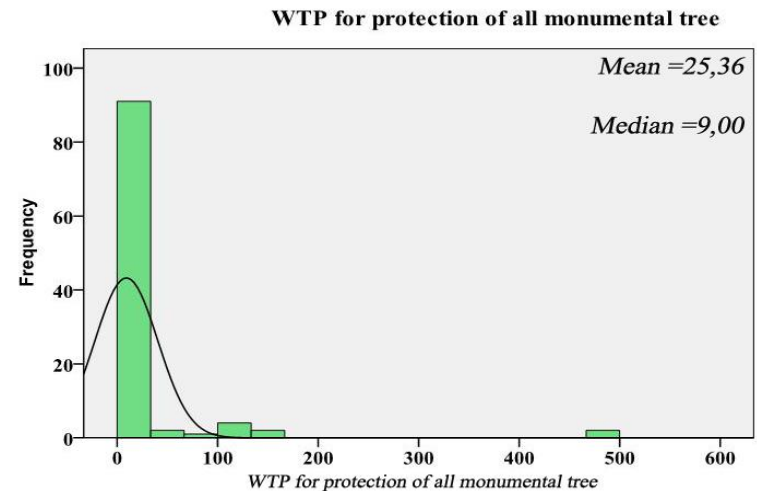
Case study no.2

The monumental trees of Piano Sempria and Piano Pomo

Mode 0 €: absolute frequency, 28 obs.
Mode 10 €: absolute frequency, 20 obs.



Mode 0 € : absolute frequency, 23 obs.
Mode 10 €: absolute frequency 19 obs.



Case study no.3

The stretch of the nature trail called “Dorsal of Nebrodi”

In the questionnaire the proposed scenario concerns improvements in the levels of the resources and of the relative paths that could be carried out to ensure an increased conservation of the resources and the possibility of fruition for day-trippers and excursionists.

In the questionnaire section concerning the monetary valuation, respondents are informed about recent regional provisions that impose the payment of an entry ticket for the fruition of services in the Parks. Soon after they are asked to express their WTP in the shape of an additional amount on the contribution to be paid for each excursion.

Respondents are also asked if this overcharge can be destined to the program of interventions regarding the natural and cultural resources, to the program for paths improvement or to both programs (in the latter option respondents are asked to distribute the total WTP expressed between the two programs).

Case study no.3

A stretch of the nature trail called “Dorsale dei Nebrodi”

It is not still possible to report on the results of final CVM survey, as data collection is in progress. The delay in the development of the survey in comparison with the other two case studies was mostly due to a different way to carry out the questionnaire administration, based on direct interviews to day-trippers and excursionists who participated to excursions arranged by local hiking associations. Some results of the pre-test, where 30 respondents were interviewed, are illustrated in the table below.

WTP pre-testing results per proposed program







	<u>Case study no. 3:</u> <u>The nature trail "Dorsale dei Nebrodi"</u>		
	<u>Natural Resources Improvement Program</u>	<u>Trail Improvement Program</u>	<u>Natural Resources and Trail Improvement Programs</u>
<u>Average WTP (Euro)</u>	<u>6.41</u>	<u>5.72</u>	<u>12.13</u>
<u>Protest Zeros (%)</u>	<u>3.20</u>	<u>3.20</u>	<u>3.20</u>

Monumental Trees Forum

The strict budget constraints have actually prevented to post explanatory pictures in the questionnaire, therefore an open forum was set up on Internet - whose website was provided in the questionnaire (<http://alberi.monumentali.forumfree.it/>) - where respondents could find the pictures of the monumental trees relative to case studies no.1 and 2.

Alberi Monumentali

Bentornato, la tua ultima visita risale al 22/6/2011, 21:52 Discussioni attive · Top Members

Alberi Monumentali			
Forum	Discussioni	Risposte	Ultimo Messaggio
 <u>Gli Alberi Monumentali</u> Qui potrete trovare alcune risposte alle domande più frequenti sia sulla tematica che sull'oggetto di studio. Moderato da: Mariam80	7	0	23/5/2011, 13:45 in: IMPORTANTE: non è una richiesta di sovvenzione! di: Ricercante
 <u>Links a ricerche e notizie su tematiche simili</u> qui potrete trovare riferimenti sul web a tematiche simili, approfondimenti e links utili.	7	0	3/5/2011, 00:14 in: Gli alberi monumentali e la provincia di Roma di: Ricercante
 <u>Alberi Monumentali del Bosco di Isnello</u> foto e descrizione	2	3	26/3/2011, 10:17 in: Foto di alcuni Alberi Monumentali, o di loro particolari di: Ricercante
 <u>Alberi Monumentali di Piano Sempria/Piano Pomo</u> foto e descrizione	2	1	9/4/2011, 12:26 in: Foto di alcuni Alberi Monumentali di Piano Sempria e Piano Pomo di: Mariam80
 <u>Vostre considerazioni personali</u>	1	0	19/3/2011, 19:30 in: le vostre considerazioni personali di: Ricercante
 <u>Ringraziamenti</u>	1	1	3/6/2011, 11:16 in: Ringraziamenti per l'adesione alla ricerca di: Ricercante

This forum has been viewed 180 times since the beginning of the surveys.

Final considerations

- Response rates higher in the questionnaires where the Foundation was supposed to be made up of international environmental organizations (WWF, UNESCO) and University of Palermo, rather than local Authorities, such as the Park Board or other local Boards.
- Park residents distrust these local Boards, often seen as bad fund administrators.
- Always more than 40% of respondents stated that in their opinions funds assigned to protect environmental goods would be sufficient to the requirements, but are badly administered by local and regional Boards.
- Between case studies 1 and 2, sensible WTP differences in favour of the last one might be ascribable to a deeper knowledge of the Monumental Hollies and all the Monumental Trees which are along a more beaten trail.
- Administration of the surveys 1 and 2 through the schools of the Madonie Park area, similar to a mail survey, allowed to achieve a questionnaires return % far higher than a standard mail survey in our region.
- Case Study no.3, where data collection is being carried out through direct interviews to excursionists visiting the Nebrodi area, suffered a heavy delay due both to unstable weather conditions which made several excursions cancelled, and to a low propension of excursionists to collaborate.

THANK YOU FOR YOUR KIND ATTENTION....