Devising A Methodology for the Economic Value Assessment of Forests in Albania

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Abstract

Albeit being a small country, Albania is very rich with forests and pastures. The forests cover about 1 041, 000 ha or 33% of the national territory, and the pastures cover about 400 000 ha, or 15%. But, whilst we have statistical data for their surface, an assessment of their economic value is still lacking. There are only some partial studies, mostly with regard to the financial loss as a result of forests lost to fires, but none so far that integrates the claims arising in ecology, flora and fauna, the pollution of the waters, soil erosion and other environmental consequences. Previous studies carried by the Faculty of Forest Engineering show that the economic damage is averaging 200 million ALL for a forest. These studies include two factors in their calculations: the financial damage and the time for the forest to regenerate after burning.

Clearly there are several other factors to be included such as: watershed services (water quantity and quality); soil, stabilization and erosion control; air quality; climate regulation and carbon sequestration; biodiversity; recreation and tourism; non- timber products and cultural values.

Being fully aware of the limitations, mostly inherent to the very concept of economic value which is far more elusive than the financial, and also due to the very large and extensive amount of data required to successfully apply a broader valuation method, this paper's ambitious objective is to devise a more holistic and comprehensive methodology to assess the economic value for forests in Albania.
KEYWORDS: economic value of forests, valuation methodology, Albania

Introduction

Albania changed its regime from a socialist country into a democtratic system and the market economy in the early 90's. The transition was companioned by very rapid and drastic political and socio economic changes that impacted all sectors. The forests made no exception and over the years they were subject to an ever-increasing demand from the market for wood. Unfortunately the adaptation of the legal framework was not as quick as the changes in the market, therefore only in 2005 (after 14 years of the regime change) a Law on Forests and Forest Services was developed (Law. No 9385, 2005). In the same year the then General Directorate of Forests of Pastures also developed a Forest Development Strategy 2005 – 2030.

Albeit both documents aim the forest protection, the sustainability of forests and pastures as well as the protection of biodiversity, the facts and figures in the following years show a different reality. As often the case in the Albanian context, the law reinforcement has been very weak and the authorities often failed to contain and control the actions of the

population. The latter has been faced with difficult economic conditions, unclear jurisdiction, ownership and property rights over pastures and forests as well as a low reinforcing capacity of the law by the central and local authorities.

So dar the responsibility for the forest management has changed from body to body, creating unclarity, non-continuity of the initiated actions and leaving space for the population to act as if it was nobody's property.

The authority passed from a central general directorate, to a directory within the former Ministry of Environment, Forests and Water Administration and later as part of the local governance.

All these factors created difficult conditions for the forests in Albania, the main problem being the loss of forests through degradation, burning and illegal cuttings in order to obtain immediate benefits. Consequently, the resource base has been declining significantly not only in quantitative terms, but also in terms of an increasing and widespread forest degradation. The tree cover loss from 2001-2014 is 32 760 Ha (retrieved from http://www.globalforestwatch.org).

It is understandable therefore, that the few studies conducted thus far with regard to an assessment of the economic value of forests in Albania has been limited only to the aforementioned aspects: burning and illegal cuttings of forestry.

What we are trying to do in this paper is to devise a more holistic and comprehensive methodology to assess the economic value for forests in Albania.

Forests, forestry and economic contribution of forestry sector in economic development of the country have been the most discussed issues among specialists, policy makers and environmentalists, but nonetheless there no domestic studies and evaluations of the forests and pastures in Albania and their contribution in the country's economy.
In Albania there are no reliable statistical data with this regard, due to the high informality and the mismatch of the data in maps and cartography and the real situation in the country, as well as due to fragmented studies that fail to depict the big picture.

The only source we can quote for the forestry sector contribution is the one retrivied from http://www.globalforestwatch.org,which estimates it as USD 82.9 million in 2011, as in appoximately 0.7% of the GDP.

The discrepancy among the surface that the forests and pastures cover, and their contribution in the GDP is reveiling. It at least shows that the forests and pastures in Albania have been under-exploited or mis-exploited by being used only as wooden forest products, failing to understand their value for alternative uses (i.e. recreational and tourism, carbon sequestration), etc.

There have been attemps by international bodies (i.e World Bank, GIZ, etc), via a number of projects, to sensibilize and raise awareness on the non-direct use of forests as opposed

to the direct one, but as previously mentioned an holistic and integrated mthodology for the assesssment of the economic value of forests in Albania is still missing.

Approaches to valuation

It is well known that forests provide a range of goods and services, some of which have significant economic value. Wooden forest products (WFP) (e.g. timber and firewood) are often the first to come to mind. Nonetheless, they provide also plenty of other benefits to humans.
In line with our idea to use an integrated evaluation method, a integrated conceot is the Total Economic Value (TEV) concept, which is used to identify and to a certain extent, quantify, the full value of the different components on natural resources, such as forests. Traditional use and exchange values (Smith 1776), have been complemented by other value types, including option values (Arrow and Fisher, 1974), and vicarious, existence and bequest values (Krutilla, 1967)

This follows a typology introduced by Pearce et al. (1989), which recognizes three types of environmental value: direct use value, e.g. the benefit of using forest resources as input to production or as a consumption good; · indirect use value, comprising the indirect support and protection provided to economic activity and property by natural forest functions, or forest "environmental" services; and · non-use value, including all other benefits which cannot be characterized in terms of a current or future physical interaction between the forest and consumers.

Direct uses of forests include both commercial and non-commercial activities. Commercial uses such as timber production may be significant in both domestic and international markets. Non-commercial direct uses, on the other hand, are often mainly local but can be very important for the subsistence needs of rural populations and poorer groups, e.g. fuel wood, game, edible and medicinal plants (FAO 1990). Direct uses also include important services such as forest recreation, education and research, which are often conducted on a non-commercial basis.

Indirect use values comprise the many ecological functions of forests. Their value derives from supporting or protecting economic activities that have directly measurable market benefits. For example, some forest may have indirect use value through controlling sedimentation and flood damage that affects downstream agriculture, fishing, water supplies and other economic activities (Aylward et al. 1999). Likewise the micro-climatic function of certain forests may have indirect use value by maintaining or enhancing the productivity of crop cultivation in neighbouring areas (Lopez 1997). Another important indirect use value associated with forests is the storage or "sequestration" of carbon in trees, offsetting the atmospheric accumulation of so-called "greenhouse" gases that are implicated in global warming.

Some authors distinguish a further sub-category of option value, referring to potential direct and indirect use values which might be realised in the future. According to this view, there may be a premium on preserving forest ecosystems for future uses, particularly if people are uncertain about potential future values but believe they may be high, or if the effects of exploitation or conversion are considered irreversible. For

example, forest resources may be under-utilised today but may have high future value in terms of scientific, educational, commercial and other economic uses. Similarly, the environmental regulatory functions of a forest ecosystem may become more important over time as economic activities develop and spread in neighbouring areas. Finally, there are non-use values. These refer to the intangible benefits derived from the mere existence of forests, above and beyond any direct or indirect use value that people may enjoy. Non-use values include both existence value and bequest value. An example of the former is the value which people attach to the continued existence of certain species of wildlife found in particular forest areas (e.g. bears or tigers). Such values may be most apparent among those who do not live near or use the products of forests directly themselves, and perhaps benefit only very slightly from indirect uses, but who nevertheless wish to see such forests preserved in their own right. Bequest values arise when people place a value on the conservation of particular resources for posterity (future generations). Bequest values may be high among local populations using or inhabiting a forest area, to the extent that they wish to see a way of life and culture that has "co-evolved" with the forest passed on to their heirs. By the same token, those who live far from forests may wish to ensure that their descendants have an opportunity to visit and enjoy them

Table 1. Types of Forest Value

Use values			Non use values
1 Direct use	2. Indirect use	3. Option	4. Existence
Wood products (timber, fuel) Non-wood products (medicine) Educational, recreational and cultural uses Human habitat Amenities (landscape)	Watershed protection Nutrient cycling Air pollution reduction Micro-climatic regulation Carbon storage	Future direct and indirect uses	Biodiversity (wildlife) Culture, heritage Intrinsic worth Bequest value

Source: Bishop (1999)

Methods for valuation

It is important to understand that the fundamental aim of valuation is not to put a ''price tag'' on a certain forestecosystem, or its components, but rather to express the importance people put on changes in ecosystem goods andservices provision, in comparison to other goods or services (Randall, 2002; Hanley and Shogren, 2002 in Turner,2003). Accordingly, the assignation of a monetary value corresponds more to a need of

establishing indicators, whichcan be used for the decision-making process, rather than of establishing a hierarchy of these goods and services.

The TEV is an anthropocentric concept that stresses values that bring benefits to human beings whether directly or indirectly (Merlo and Croitoru, 2005).

The wide range of benefits that ecosystems provide requires a coherent analytical framework. The concept of TEV has been developed as a guarantee that the benefits are considered systematically and comprehensively, without any double counting. In recent years, the TEV has been widely used to quantify the full value of the different components of ecosystems, such as forests (Merlo and Croitoru, 2005).

The TEV is the sum of use values and non-use values. These two main TEV categories can be further broken down as follows: Use Values - Direct use value: includes interaction with the ecosystem through consumptive use such as the harvesting of timber, or may be non-consumptive such as recreational activities. Indirect use value: is derived from ecosystem services, such as cleaner water to downstream users, carbon sequestration, and flood control or erosion prevention. Option value: considers having the option of using the resource in the future, directly or indirectly. Non-Use Values - Altruistic value: is derived from the satisfaction of knowing that other people have access to benefits of the nature. Bequest value: arises from the interest in preserving a certain ecosystem or species for future generations. o Existence value: is derived from the knowledge of the existence of a particular ecosystem or species.

In developed countries nowadays there is an increasing social demand for non-use values (Kramer and al., 2004), however in Albania use values are stilldominant and their provision is the main objective of forest management. Due to many factors, and mostly because firewood in many areas of the country is used for warming and heating almost all year round

By the end of 2008, about 51 % of the country's population lived in rural areas (INSTAT, 2009). But there are disproportions among the distribution of rural population and the distribution of natural resources, which has great impacts over the latter. On the rural plain area hosting 60.7% of the rural population, only 40% of the forest area is there, as well as 39% of pastures and 73% of the agricultural land; while on the mountainous area inhabited with 39.3% of population, there are respectively 60% and 61% of the forest and pasture areas, and 27% of the agricultural land

All over Albania, especially in the mountainous zones, forest serves as a source of livelihood, goods and income. First, the firewood collected by villagers, without mentioning a good part of the population in urban areas which are supplied with firewood, is vital for warming and cooking almost year round. Firewood is an important commodity for Albania because it is used for heating by a majority of households, and in rural areas it is also used for cooking. It accounts today 36% of energy demands for heating and 12% of energy for cooking. This means that firewood is still a very important energy source and it will continue to be so for many years ahead.

What transpires from the energy strategy is that firewood consumption will remain on a high level. According to the so-called "passive scenario", firewood consumption is expected to increase nearly 70% from 1999 to 2015. In contrast, the "active scenario"

foresees a reductionof about 20% in the consumption during the same period. The key factor in the “activescenario” reducing the demand for firewood is a growth in solar energy. The projectedconsumption of firewood will thus remain clearly above the legal supply.

So, firewood, damages due to forest fires reduce not only direct use values (timber, fuelwood, honey medicinal plants, forest fruits etc) but above all: biodiversity conservation, watershed protection, carbon sequestration, landscape, recreation etc.

In other side the value of firewood used for heating in rural areas "without highlighting the estimated" about 1.9 million m3 / year x 2000 leke / m3 = 38 billion / year (equivalent to the market, while in the mountainous areas it consumes 10-12mst / year to provide about 15,000 KW / year. In developed countries, with other housing standards regarding energy efficiency, each household consumes an average of only 20,000 kWe heating / year or 8m3 / year (≈12mst) of dry wood biomass.

In other countries they are not sold firewood with mst. (Metro Stern) but with weight, because the consumer is interested in the energy produced by the spaces between the wood and not wood, ash, wood humidity, soot or smoke. At the same time an important factor that determines the amount of energy released is the type of wood, which means that 1m3 firewood species "strong" (oak) gained about 3,200 kWe, while for 1m3 types " soft "(poplar, beech, maple, etc.) acquired about 2,400 kWe. If firewood will be sold by weight (as in the whole world) of 1.9 MNL m3 of wood will deal x 0.6 x 0.8 x 4000 kWe / hour = 3.648 billion kWe (renewable energy) x 15 LEK / KW = 54.720 billion / year . This figure should be 40% higher if we consider that rural households use wood wet (cut within the year) and if we consider that the rate of use of wood is low (about 30% of the wood cut remains in forest), this figure would result in even higher (about 20%).

Nonetheless, as formerly stated, our objective is to device an assessment methodology not limited only to the direct use, but also taking into account the non-direct use of forests, more specifically its landscape and recreational benefits that are not determined by the value per se, rather as the willingness to pay for them.

Recent developments in Albania, such as the 10 year Forest moratorium, that lately entered into force on February 12, 2016; the increase of Protected Areas in Albania, approximately 10.5% of the forest fund (http://akzm.gov.al/) and a steady growth of the middle-class s (The 2016 National Human Development Report http://www.al.undp.org/)expected to bring an increased demand for domestic tourism, constitute a good rationale to start applying a new assessment methodology for the value of forests.

Domestic travel spending is expected to grow by 3.8% in 2015 to ALL32.7bn, and rise by 5.0% pa to ALL53.4bn in 2025 (http://www.wttc.org/), we consider that methodology to value recreational benefits of forest should be apply in Albania.

The literature review,among others Croitoru (2007), suggests Contingent Valuation Methodology (CVM) to be used to value recreational benefits of forests. Contingent valuation method - use consumer surveys to elicit hypothetical individual willingness-to-

pay (WTP) for a benefit, or willingness-to-accept (WTA) compensation for the loss of that benefit. Contingent ranking / focus groups - use participatory techniques in group setting to elicit preferences for non-market benefits, either in relative terms (ranking) or in monetary terms.

For example, people receive benefit from a beautiful view of the forest, but it would be tough to evaluate it using price-based models. Contingent valuation survey is a technique used to measure these aspects. The contingent valuation method involves directly asking people, in a survey, how much they would be willing to pay for specific environmental services. In some cases, people are asked for the amount of compensation they would be willing to accept to give up specific environmental services. It is called "contingent" valuation, because people are asked to state their willingness to pay, contingent on a specific hypothetical scenario and description of the environmental service

There are standard steps for application of CVM. The first step is to define valuation problem. This would include determining exactly what services are being valued, and who the relevant population is. In this case, the resource to be valued is a specific site and the services it provides – primarily tourism/ recreational. The second step is to make preliminary decisions about the survey itself, including whether it will be conducted by mail, phone or in person, how large the sample size will be, who will be surveyed, and other related questions. The answers will depend, among other things, on the importance of the valuation issue, the complexity of the question being asked, and the size of the budget. The next step is the actual survey design. This is the most important and difficult part of the process, and it is accomplished in several steps. The survey design process usually starts with initial interviews and/or focus groups with the types of people who will be receiving the final survey, in this case the general public. In the initial focus groups, the researchers would ask general questions, including questions about peoples' understanding of the issues related to the site, whether they are familiar with the site, whether and how they value this site and the habitat services it provides. In later focus groups, the questions would get more detailed and specific, to help develop specific questions for the survey, as well as decide what kind of background information is needed and how to present it. For example, people might need information on the location and characteristics of the site, the uniqueness of species that have important habitat there, and whether there are any substitute sites that provide similar habitat. After a number of focus groups have been conducted, and the researchers have reached a point where they have an idea of how to provide background information, describe the hypothetical scenario, and ask the valuation question, they will start pre-testing the survey. Because the survey will be conducted by mail, it should be pretested with as little interaction with the researchers as possible. People would be asked to assume that they've received the survey in the mail and to fill it out. Then the researchers would ask respondents about how they filled it out, and let them ask questions about anything they found confusing. Eventually, a mail pretest might be conducted. The researchers continue this process until they've developed a survey that people seem to understand and answer in a way that makes sense and reveals their values for the services of the site. The next step is the actual survey implementation. The first task is to select the survey sample. Ideally, the sample should be a randomly selected sample of the relevant population, using standard statistical sampling methods. The final step is to compile,

analyze and report the results. The data must be entered and analyzed using statistical techniques appropriate for the type of question. From the analysis, the researchers can estimate the average value for an individual or household in the sample, and extrapolate this to the relevant population in order to calculate the total benefits from the site.

Obviously the CVM is not an easy method to apply, as it is expensive and also assumes that the society is sensibilized and aware for the intangible benefits of forests. Therefore it is more suitable for the developed countries. Nonetheless, the population of just 3.2 million inhabitants, and its uneven distribution in the territory, with a high concentration in the Tirana-Durres region, can ease the application of this method.

Alternatively, another assessment method (also discussed by Croitoru, 2007) is the Travel Cost Method (TCM). TCM is based on the assumption that consumers value the experience of a particular forest site at no less than the cost of getting there, including all direct transport costs as well as the opportunity cost of time spent traveling to the site (i.e. foregone earnings). This survey-based method has been applied in several developing countries, particularly where higher incomes and rapidly developing markets have been associated with growing demand for amenities such as scenic views and recreational areas, and unfortunately Albania is not part of these countries, but taking into consideration prior arguments, (increase of the middle-class and domestic tourism), we retain this method as applicable andappropriate for the Albanain context. Three basic steps are involved in travel cost models. First, it is necessary to undertake a survey of a sample of individuals visiting the site to determine their costs incurred in visiting the site. These costs include travel time, any financial expenditure involved in getting to and from the site, along with entrance (or parking) fees. In addition, information on the place of origin for the journey, and basic socio-economic factors such as income and education of the individual is required. The resulting data is manipulated to derive a demand equation for the site. This relates the number of visits to the site to the costs per visit. The third step is to derive the value of a change in environmental conditions. For this, it is necessary to determine how willingness to pay for what the site has to offer alters with changes in the features of the site. By comparing the willingness to pay for sites with different facilities it is possible to determine how the total benefits derived from the site change as the facilities of the site change.

Conclusions / Recommendations

There are several methods, thoroughly described in literature, but also currently applied by many countries/ regions to assess the economic value of forests and pastures.
In Albania only fragmented and partial assessments have been conducted, mostly using the direct value method and focusing on forests as a source for wood products.
Recent developments (the forest moratorium, and the growing numbers of domestic tourism by an upcoming middle class) suggest that alternative uses of forests are to be considered and evaluated.
Methods such as TEV, CVM and TCM can all be applied to some extent to the Albanian context, but they also show some difficulties.
The TEV concept is the broader and the most complete out of the three, but the limited availability and reliability of data makes it difficult to apply in its all complexity in our

conditions. The CVM as formerly mentioned is more suited to developed countries and it's also quite expensive, nonetheless it can be considered as applicable to some extent.
What we suggest then, is the application of TCM method under the broader TEV framework.
Although the application of a fully integrated method might be a long term objective for out context, a preliminary suggestion for immediate use is to include in the assessment of forests cut for wooden products not only they direct use (as firewood mostly) but also its opportunity cost.

Therefore what the equation for the loss of forests to fires and cuttings should look like, is:
Damage assessment = Direct use of the forest (i.e. firewood) + Opportunity cost (i.e. Watershed protection)

Being fully aware of the limitations, mostly inherent to the very concept of economic value which is far more elusive than the financial, and also due to the very large and extensive amount of data required to successfully apply a broader valuation method, this paper's ambitious objective was to devise a more holistic and comprehensive methodology to assess the economic value for forests in Albania.

Obviously this is a small first step, to start an academic discourse and professional discussion about the issue, but if followed by a substantial amount of ulterior research it can provide a significant contribution to the way we treat and manage our resources.

A digitalized inventory and the use of specific programs and software can facilitate this process.

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