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A property rights-based analysis of the illegal logging for fuelwood in Kosovo

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ABSTRACT

The increased demand for fuelwood may have the side-effect of unsustainable use of forest resource. The case of Kosovo fuelwood production is of a peculiar relevance to studying the drivers of the unsustainable patterns of forest biomass use in a post-war and poor economic context. The domestic market demand for fuelwood in Kosovo is estimated at more than 1.5 hm³, while the legal supply, including imports, is slightly higher than 0.3 hm³. Illegal logging for satisfying Kosovo population fuelwood needs is therefore widespread. The annual illegal fuelwood harvesting represents a market of up to 21.6 million euro and is done mostly by well organised groups of individuals, with market-oriented behaviour, acting rather in State than in private forests. After identifying the drivers of illegal logging for fuelwood, the paper provides an analysis of fuelwood extraction in relation with property rights distribution, structured along two lines: a) which was the evolution of the management and exclusion rights over the forest resource during the latest decades; b) which are the current enforcement mechanisms of the property rights and how are they performing. The paper describes a decades-long history of mismatching economic property rights arrangements. Thus, the dispute between the central agency and municipalities in performing exclusion rights on timber extraction definitely weakened the Kosovo system of law enforcement. Currently, the enforcement mechanism proved to be unhelpful in controlling illegal logging. As result, most of the Kosovo fuelwood production is based on an *de facto* open-access regime.

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1. Introduction

Forests in Kosovo cover 42% of the country and harbour the potential to supply biomass for energy purposes. The high density of the Kosovo population (175–220 inhabitants per

km²) and the large proportion of the population living in rural areas, e.g. 61% according to Population Census from 2011 [1] put a high pressure on forest resource. From this point of view, Kosovo needs to implement effective and coordinated forest management policies, and to promote a more efficient use of fuelwood [2]. The sustainable use of the forest resource

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faces important challenges in both State and private properties, reflected in the way the rules for forest management are implemented and enforced.

Fuelwood represents 20% of the total of Kosovo's energy consumption [2]. The residential sector is the main consumer of fuelwood (50%), followed by the service sector (25%), industry (15%) and agriculture (10%) [2]. Of the total Kosovo forest area that is 481,000 ha, public forestlands represent 62% with a standing volume of 33.5 hm³ versus 19.5 hm³ (million cubic metre) in private forests [3]. A number of 120,000 forest owners shares 180,800 ha, that is an average private ownership of 1.5 ha split in 2.4 parcels [3]. Coppice forest dominates the forest area with 84%. As a result of intensive cuttings, 58% of the public forest and 81% of the private forest are less than 60 years old [4]. The national forest inventory from 2002 estimated the annual allowable cut around 0.9 hm³ gross, of which 55% is fuelwood [5]. However, in the past decade, the annual allowable cut calculated and legally available for harvesting through the current system of forest management planning was under 0.2 hm³ [6].

The case of Kosovo fuelwood production is of a peculiar relevance to studying the drivers of the unsustainable patterns of forest biomass use in a post-war and poor economic context. A property-rights-based approach is used to complete and refine the standard explanation of illegal logging as policy failures in terms of law enforcement [7–9]. Although the issue of resource depletion and weak enforcement is quite well documented (see 152 cases in nine countries synthesized by Chhatre and Agrawal [9]), there are no studies addressing the fuelwood overharvesting and weak law enforcement in European institutional context. The drivers of illegal logging, important from the perspective of designing appropriate policies, are not well documented either [10], few studies have been made in post-socialist countries [11,12], however theft in general is well addressed by the literature on the criminal enforcement [13–16]. Following a comprehensive analysis of property rights regimes by Kissling-Näf and Bisang [17], the study was structured along two lines: a) the property rights over the forest resource and the possibility of exclusion from the consumption of fuelwood; b) the enforcement mechanisms of the property rights. The study aims to identify how the property rights on forestland and timber (stock and flow) were established, policed and enforced in the latest decades in Kosovo to assess the impact of the economic rights delineation on the legality of fuelwood production and trade.

2. The challenges of the fuelwood sustainable production

Sustainable fuelwood production challenges in Kosovo are: the changing institutional context, the degradation of the resource, the high amount of illegal logging and the extremely unbalanced ratio between the demand and supply.

In the last decade, Kosovo has attracted the attention of international donors supporting sustainable development of the forest sector. A forest strategy was adopted in 2009 and a new forest law is under debate (March, 2014). The Kosovo public authority for forests is the Ministry of Agriculture, Forestry and Rural Development. The management of public

forests and the law enforcement in private forests are performed jointly by a central agency with six regional offices and by the municipalities (in number of 30). Forest inspectors, untrusted with control of law implementation, are currently acting within the central agency. Though the changes in the institutional settings for the natural resources have happened everywhere in countries in transition, in Kosovo they occurred in the particular context of war (1999), of United Nations Interim Administration Mission in Kosovo (UNMIK) (after 1999) and new Kosovo State establishment (2008) with first democratic elections and therefore first sovereign government in late 2010.

The war and post-war disorders led to a large degradation of the forests by logging, fire and illegal hunting [18–20]. While the coniferous forests are put at risk due to fire, bark beetles, or a lack of the thinning operations, the coppice forests suffer from heavy harvesting in some locations and from a lack of management interventions in some other locations [3]. Only about one-third of the forest area is considered ecologically healthy and economically productive and most of the remaining forests consist of immature trees and bushy low forests that are cut periodically for fuelwood [21].

Illegal logging is connected with forestry activities such as wood harvesting, processing, transporting and trading in violation of the law [22]. Different estimations exist on the amount of the illegally cut fuelwood. The studies available [23,24,4–6] depict a situation unique in Europe. For example, the ratio between the legal and illegal logging is at least 1:1, but it might also be 1:5. The average annual value of the damages due to illegal activities was estimated at 1.5 million euro [24], while 40% of the public forests and 30% of the private forests are affected by illegal logging [6,3]. The latest national forestry inventory [25] assessed that over 90% of the annual fellings do not comply with the rules of law. Moreover, during the period 2002–2012 the annual harvesting has been 1.6 hm³ compared with 1.45 hm³ recommended as sustainable annual harvest [25] and compared with less than 0.2 hm³ officially approved as annual allowable cut. One may estimate therefore that annual illegal logging amounted to 1.25 hm³ during the period 2002–2012.

In the absence of more reliable data, and taking into account the share of fuelwood in the total primary wood production that is 55% [25], the demand for fuelwood is used as a proxy for illegal harvesting. Before the war, the population was supplied with additional fuelwood from imports, and alternative sources of energy (e.g. coal) were available. During the 1999 war and in the post-war period, the economic difficulties of households, the insufficient energy (oil, gasoline) supply and the shortage of many other materials pushed the population to turn to a more intensive use of the fuelwood for house heating and cooking.

For example, some 50% of the 168,000 Kosovo families need fuelwood regularly and their demand is estimated in one study at 0.8 hm³ [26] and at 1.5 hm³ in two other studies from 2011 to 2013 [27,28]. Fuelwood is used by 85% of urban households and by 100% of rural households, with an average consumption of 9.6 m³ per year [29]. Thus the annual domestic consumption of Kosovo households would range between 2.4 and 2.9 hm³ stacked wood [29] or 1.56 to 1.88 hm³ solid wood [30]. Therefore, if compared with the legal wood removal, the

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