

DEFORESTATION: RISK FOR THE CLIMATE – CHANCE FOR KOSOVA?

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Abstract

Climate Change is a risk for the global economy. Within its contributing factors, deforestation seems to be one of the major causes for the elevation of earth's temperature. By reverse logic, reforestation or at least keeping forests intact could help mitigating climate change. In order for this reverse logic to work, there has to be certain incentives for countries to maintain their forests intact. This paper analyses a specific framework of incentives, REDD+, and its possible implementation in Kosova.

Reducing Emissions from Deforestation and Forest Degradation (REDD) is an effort to create a financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. "REDD+" goes beyond deforestation and forest degradation, and includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks.

It is predicted that financial flows for greenhouse gas emission reductions from REDD+ could reach up to US\$30 billion a year. This significant North-South flow of funds could reward a meaningful reduction of carbon emissions and could also support new, pro-poor development, help conserve biodiversity and secure vital ecosystem services.

In South-eastern Europe at-large and in Kosova specifically, there are still forest reserves that can be used as object of REDD+ projects. This paper explores to which extent this is possible and goes into the procedural and institutional pre-conditions.

By helping mitigation/adaptation of climate-change and its attributed risks, Kosova could profit financially and in terms of its own image vis-à-vis the international community building up, thus, financial and political capital.

Key words Climate Change, Mitigation, SME REDD+, Adaptation

1. Introduction

Climate Change is a risk for the global economy. Within its contributing factors, deforestation seems to be one of the major causes for the elevation of earth's temperature. By reverse logic, reforestation or at least keeping forests intact could help mitigating climate change. In order for this reverse logic to work, there has to be certain incentives for countries to maintain their forests intact. This paper analyses a specific framework of incentives, REDD+, and its possible implementation in Kosova.

Reducing Emissions from Deforestation and Forest Degradation (REDD) is an effort to create a financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. "REDD+" goes beyond deforestation and forest degradation, and includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks. *In very simple words, under REDD+, countries pay other countries to reduce their CO2 emissions through maintaining forests.*

It is predicted (AUSAID 2012) that financial flows for greenhouse gas emission reductions from REDD+ could reach up to US\$30 billion a year. This significant flow of funds could reward a meaningful reduction of carbon emissions and could also support new, pro-sustainable development, help conserve biodiversity and secure vital ecosystem services.

In South-eastern Europe at-large and in Kosova specifically, there are still forest reserves that can be used as object of REDD+ projects. By helping mitigation/adaptation of climate-change and its attributed risks, Kosova could profit financially and in terms of its own image vis-à-vis the international community building up, thus, financial and political capital.

This paper explores to which extent this is possible and goes into the procedural and institutional pre-conditions. This is a non-empirical exploratory review of the REDD+ mechanism, actual forest-reserves in Kosova as well as

the Kosovar regulatory environment. After this introduction, the paper explains briefly REDD+ programs, then assesses the Kosovar forestry-situation in order to finish with very specific policy suggestion on how to implement such programs in Kosova.

It has to be stated, however, that there are two main obstacles to implementing REDD+ programs in Kosova. On the one hand, Kosovar legislation is yet not fully developed, therefore reference has to be made to UNMIK regulations or even back into Yugoslav law. On the other hand, cadasters of forest and land are not yet up-to-date making the statistical part of the paper difficult to access.

In forestry, the most urgent environmental problems are deforestation and degradation of forest land caused by uncontrolled gravel extraction, illegal logging, pests and diseases, and forest fires. Although Kosova's share of forest area is one of the highest in Europe, only about one-third of this area is considered ecologically healthy and economically productive. Most of the remaining forests consist of immature trees and bushy low forests that are cut periodically for firewood. After the conflict ending 1999, reforestation efforts began, yet Kosova still relies on imports for over half of its fuel-wood and most of its construction timber. Mature oak forests are now highly threatened, and several plant species are on the verge of extinction or already locally extinct, largely due to human actions. Illegal logging and the lack of a forest renovation strategy exacerbates soil erosion. The excessive use of fuel-wood not only puts forest resources at risk of depletion but also has significant environmental impact, in particular on air quality.

Factors that put environmental pressure on forests (Kosova Ministry of Environmental and Spatial Planning 2006) include: (1) illegal wood cutting, (2) diseases and pests (which also affect Sharr and Sara National Park), (3) poor quality forest structure, (4) insufficient use of forest land capacity, (5) insufficient implementation of silvicultural measures, and (6) forest land degradation due to stone and gravel extraction. Forest fires affect about

4,000 ha per year; they are caused by human activities and farming practices that include burning stubble on arable land before sowing, which increases the threat to nearby forests. REDD+ could also provide a means of stopping this type of behavior.

2. The REDD+ program

REDD is primarily about emissions reductions. The Bali Action Plan decided at the Conference of the Parties (COP) at its thirteenth session states that a comprehensive approach to mitigate climate change should include:

“Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries.”

Reducing Emissions from Deforestation (RED) concept first mooted in COP 11 in Montreal. The following naming convention is to be observed (UNFCCC/COP16 68ff.):

- RED means reducing emissions from (gross) deforestation: only changes from “forest” to “non-forest” land cover types are included, and details very much depend on the operational definition of “forest”;
- REDD means the same as above, plus (forest) degradation, or the shifts to lower carbon-stock densities within the forest; details very much depend on the operational definition of “forest”;
- REDD+ means the same as above, whereby “plus” includes afforestation, poverty alleviation, biodiversity conservation and improved forest governance, this means restocking within and towards “forest”; in some versions REDD+ will also include peat-lands, regardless of their forest status; details still depend on the operational definition of “forest”; and
- REDD++ includes emissions from other land conversion (e.g. agriculture), meaning the same as above plus all transitions in land cover that affect carbon storage, whether peat-land or mineral soil, trees-outside forest, agro forest, plantations or natural forest. It does not depend on the operational definition of “forest.”¹

More recently, the “+” in REDD+ has drawn increasing attention towards the activities after the semicolon (in above-quoted COP13’s definition), related to the conservation and enhancement of carbon stocks. A future REDD mechanism has the potential to deliver much more. REDD could simultaneously address climate change and rural poverty, while conserving biodiversity and sustaining vital ecosystem services.

¹ What is a forest? Host country must define a forest within the following guidelines:
 Minimum tree crown cover between 10 and 30%
 Minimum tree height between 2 and 5 m
 Minimum land area between 0.05 and 1.0 hectare. (Meridian Institute 2009: Reducing Emissions from Deforestation and Forest Degradation (REDD): An Options Assessment Report)

Although these benefits are real and important considerations, the crucial question is to what extent the inclusion of development and conservation objectives will either promote the overall success of a future REDD framework or complicate and therefore possibly hamper the ongoing process of REDD negotiations.

The diagram below presents a new framework for understanding REDD proposals. The framework comprises four basic building blocks as follows (Parker, C., Mitchell, A., Trivedi, M., Mardas, N., Sosis, K. The Little REDD+ Book (2009)):

- Scope: What is being delivered?
- Reference Level: How is it being measured?
- Financing: Where does the money come from?
- Distribution: Where does the money go to?



(REDD Book, p.19)

2.1 Scope

The first step in understanding REDD proposals is to quantify what is included. The scope refers to the activities, that are considered eligible for generating emissions reductions under REDD. This includes activities aiming towards reducing emissions from deforestation (RED), Reducing emissions from deforestation and degradation (REDD) or Reducing emissions from deforestation and degradation and enhancement of carbon stocks (REDD+).

The choice of scope will have an impact on the scale, relative cost and mitigation potential of a REDD mechanism. It will also play an important role in the political feasibility of an agreement and the ability of developing countries to measure, report and verify the options considered within scope in a proposal. In addition the countries that might benefit under REDD is also influenced by the agreed scope.

Scope, as it is defined here, relates to emissions reductions. The activities outlined above refer to flows of carbon between the land and the atmosphere: Reducing emissions from deforestation and degradation (REDD) are both activities that decrease additions of carbon into the atmosphere; enhancement of carbon stocks (the “+” in

REDD+) refers to carbon sequestration or removals of carbon from the atmosphere. The scope of REDD+ in its broadest sense, however, also includes the conservation of carbon. Stocks are distinct from emissions in that they do not imply a change in the concentration of greenhouse gases in the atmosphere and are therefore not recognized as a climate change mitigation activity. For the purpose of this framework carbon stocks are captured separately in the distribution module.

Finally, REDD is not always constrained to emissions occurring from increases and decreases of carbon stocks in rainforests. Some proposals indicate that REDD should be incorporated in a broader AFOLU approach that includes other land use.

2.2 Measurement / reference period

A REDD mechanism must specify how emissions reductions (ERs) are being measured. Reference levels define a benchmark scenario against which future emissions reductions can be measured and potentially rewarded. They are used to determine the additionally of a given activity, or in other words, how many emissions reductions have occurred because of the implementation of a REDD mechanism over and above what would have otherwise happened. There are two fundamental types of reference levels - either historical or projected.

Historical reference levels use past rates of deforestation as a proxy for future behavior. As an example, if a country deforested 1 million ha of forest containing 1GtCO₂ every year between 1990 and 2005 then its historical baseline would be 1GtCO₂/yr. Under this rationale, any reduction in deforestation amounting to less than 1GtCO₂/yr would be counted as additional and would be eligible for some form of incentive payment. Some limitations of the historical approach are that it requires a minimum quality and availability of data to be implemented; therefore ruling out certain countries who do not have these data, and it does not recognize potential changes in country circumstances, including changing rates of deforestation, over time.

The second way to establish reference levels is to use a projected baseline. Projected baselines aim to predict how deforestation rates might change in the future and can use a variety of methods. Econometric models can be used that analyze the underlying socio-economic or structural forces driving deforestation. Drawbacks of this theoretical approach are that it would require adequate data on key variables to be accurate, and that, due to its complexity, it might be difficult to negotiate in a forum such as the UNFCCC17. It would, however, arguably be a more robust approach to establishing future deforestation rates as it incorporates a broader range of driving factors than just historical behavior. Another way to calculate projected baselines, as used by the Terrestrial Carbon Group, is to establish areas that would be biophysically and economically viable to deforest over a given time period and to classify all of that land as at risk.

Reference levels that use a projected baseline could create baselines that are either higher or lower than historical levels depending on the approach and

assumptions that are taken in the model. It is unlikely, however, that total emissions allowances under a projected model will equal current global emissions from deforestation (and degradation). There is a potential, therefore, under a market-based approach that projected baselines could generate “hot-air”. The level of conservativeness of the assumptions within the models will play a key factor in determining how many emissions reductions will be generated from projected and historical adjusted reference levels.

2.3 Distribution of financial incentives

The scope and reference level determine how many emissions reductions will be generated. Of equal importance is how benefits in the form of financial incentives might be distributed or allocated to countries with standing forests that might not directly benefit from an emissions-based approach to REDD. The majority of proposals advocate incentives or compensation directly in line with a Party's own actions. Other proposals suggest that benefits should flow to Parties other than those generating emissions reductions through a distribution mechanism.

The choice of how benefits are distributed has the potential to greatly influence the ability of countries to participate in a REDD mechanism. To address equity concerns arising from differing national circumstances (usually developmental), some proposals suggest that a distribution can be applied to historical baselines to allow historically low emitters who may deforest more in the future to benefit from REDD. This mechanism has been discussed in the reference level module.

The distribution module of the framework, discussed here, describes how different proposals seek to reward countries with high forest cover and low rates of deforestation (HFLD) for their standing forests or carbon stocks. Typically the objective of a distribution mechanism is to avoid international leakage or address equity concerns within REDD mechanisms that reward solely based on emissions reductions. The argument goes that if HFLD countries are not rewarded to protect their current stocks there will be a perverse incentive to chop down their forests for more profitable ventures.

The choice of methodology to compensate HFLD countries can be classified broadly into two groups; a redistribution of REDD revenues or additional sources of funding. Proposals that specify a redistribution mechanism can allocate revenues in a variety of ways. Initial proposals, including the “Combined Incentives” and “Incentive Accounting” approaches, use a global baseline against which a proportion of revenues are allocated. The rationale behind this approach is that awarding emissions reductions against a global baseline provides incentives for HFLD countries whose rates of deforestation are below this global average. To generate revenue for these payments, high deforesting countries would receive less under such an allocation mechanism, as part of their emissions will be accounted above the global baseline. A second way to redistribute revenues uses a withholding mechanism in the form of a levy or tax on emissions

reductions. Under these mechanisms a proportion of revenues is withheld in a fund and then paid out to REDD countries in the form of stock payments. The key to both of these approaches is that the revenue required to support HFLD countries is generated from the mechanism itself. Potential disadvantages of these approaches are the distorting effect that redistribution could have on incentives to reduce emissions in countries with high rates of deforestation.

The alternative to a redistribution mechanism is to use an additional financial mechanism. Many proposals suggest a "stabilization fund" that would use additional funding to address leakage and equity concerns in HFLD countries. The revenue for a stabilization fund could come through a variety of sources including voluntary funds or innovative finance mechanisms such as the auctioning of allowances or levies on shipping or aviation.

2.4 Financing

The sources of financing discussed in this module refer explicitly to revenue that would be used to incentivize emissions reductions under a REDD mechanism, as opposed to other funding that might be targeted at capacity building or conservation of carbon stocks (as discussed in the Distribution module).

Finance for REDD can be grouped into three main categories; direct-market, market-linked or voluntary funding mechanisms. In a carbon market based mechanism, REDD certified emissions reductions (CERs) could be used by companies and national governments to meet emission reduction targets in their national cap-and-trade systems. A variation of a market-based approach is the creation of a dual-market, in which REDD credits are linked to but are not fungible with existing CERs. In a dual-market approach it is discretionary whether ERs generated through REDD would be additional to or instead of existing Annex I commitments. In both cases, however, emissions reductions could be used to meet compliance targets.

A market-linked approach can generate finances through a variety of mechanisms. An auction process, such as Norway's proposal to auction Assigned Amount Units (AAUs) at the international level, or Germany's "International Climate Initiative" at the national level, would generate revenue through the auction of emissions allowances. At both national and international levels, the auctioning process could generate revenues at scale. Emissions reductions generated through auction revenues could also be used towards Annex I commitments although this would not be a requirement. A voluntary fund could operate at the national or international scale. Official Development Assistance

(ODA) such as Norway's \$2.6 billion commitment is an example of voluntary funding. In general non-Annex I Parties call for new and additional contributions from developed countries. A key feature of voluntary funds is that emissions reductions generated through a fund cannot be used for compliance targets.

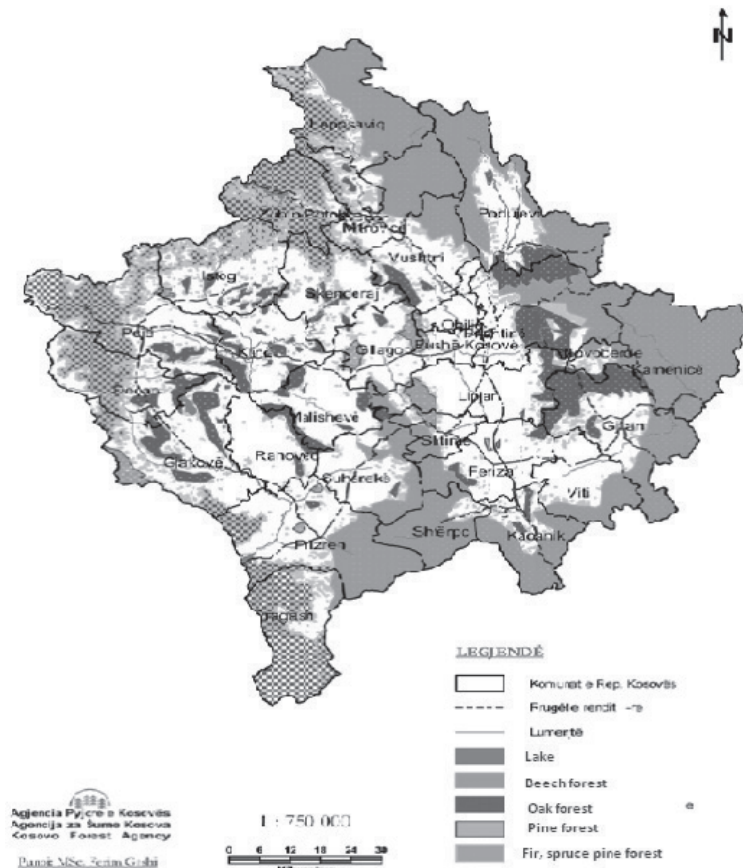
Each of these mechanisms has its strengths and weaknesses. A growing consensus is emerging, however, that a combination of these financial mechanisms will be needed to match the different stages of development and differing needs of tropical rainforest nations. This system is often referred to as the phased approach (see page 96 for more detail); where proposals have suggested such an approach this will be highlighted within the analysis.

3. Forest in Kosova

The national forest inventory, which was completed in 2003, estimated the total forest area to be 464800 ha, or 42% of the land area. Some 278880 ha are public forest lands and under the control of the Kosova Forest Agency (KFA), which is organized into six geographical regions. The KFA has a regulatory function in relation to the 185920 ha of private forest lands. Broadleaved forest, created through natural seeding, accounts for more than 90% of the forest area, with the main species being oak and beech. Coniferous forest, covering 7% of the total forest area, is dominated by *Abies alba*, *Picea abies* and *Pinus* spp.

The total standing volume on public forestlands was estimated at 33.5 million m³ and in private forests circa 19.5 million m³. The gross annual increment is approximately 1.3 million m³. The inventory estimated the annual allowable cut as being of the order of 900000 m³ gross, corresponding to 77% of the calculated increment on the areas surveyed. About 700000 m³ would be harvested in high forest and about 200000 m³ in low forest. The main harvesting operations in Kosova are cleaning and thinning. The road infrastructure is relatively poor. This has resulted in harvesting concentrating in areas with easy access and increasingly the allowable volume is located in remote areas where access is difficult. Official harvesting is currently some 200000 m³ per annum. Since the war, the majority of timber harvested is used for fuel-wood and this is the main source of heating, even in some urban areas. The demand for fuel-wood is currently great and some analysts estimate that the national requirement is close to 1 million m³ per annum (Task Force per Integrim Evropian 2011, Thematic Roundtable "Agriculture, Rural Development, Forestry, Fisheries and Food Safety "Discussion Material: Forestry).

FOREST COVER IN KOSOVO



(MAFRD- online)

The Ministry of Agriculture, Forestry and Rural Development (MAFRD) is the highest authority in charge of forestry (Ministria e Bujqësisë, Pylltarisë dhe Zhvillimit Rural 2009: Policy and Strategy Paper for Development of Forestry 2010 – 2020). At central level it has two main forestry branches – the Kosova Forest Agency (KFA) and the Department of Forestry (DOF). KFA has four central Directorates (Directorate for Forest Management, Directorate for Pasture Management, Wild Animals, Hunting and Ecotourism, Directorate for Silviculture, Research and Seedling production and Directorate for Administration). The municipalities have received forest management competences in 2010 within the decentralization process in Kosovo. The municipalities still lack sufficient capacities but increasingly are more involved in forest protection.

Mainly conifers seedlings are produced and provide the planting material for the 300 to 500 ha that are afforested annually. DOF has the role of developing the policy and regulatory framework as well as controlling/inspecting forest operations leading to the enforcement of the law. DOF's inspectors are ultimately responsible for controlling the forest sector – the public as well as the private parts.

The structure and mandates of the Government branches was influenced by factors as the size of the forest sector, availability of competent human resources, ownership structure, needs for policy changes and needs for combating unlawful practices. The lack of communication

and overlapping of competencies with local government, contribute to the high level of illegal logging. Top down actual planning approach lack the participation of the local communities as part of legal compliance of the relationship with local communities. Considering the local people needs and the potential of forests in their territory (cadastral zones-villages) as a special layer in the management plan can contribute to increase access of local people on firewood. A social communication plan of the individual forest management units, that is properly implemented, could help minimize illegal activities. It is piloted in 2009-2012 by Sida -SNV project in 6 cadastral zones in Nova Brde, Istog and Suhareke municipalities.

Out of the total area of 464800 ha forest there are 185920 ha private forestlands. The private sector includes private persons owning forests (about 40% of total forestlands), companies and entrepreneurs involved in forest operations and/or small-scale wood processing. The average size of a forest estate is in the order of 1.5 ha, which area is in turn split on an average of 2.4 parcels.

The policy of the Government¹ is to (I) promote the establishment of associations representing the interest of various stakeholder groups, (II) create a favorable business climate, (III) open possibilities for the private sector to undertake management of public forestlands and (IV) initiate land consolidation processes.

Kosova's forest management suffers from weak forest management planning capacity and multiple use orientation. According to the last national inventory data (FAO-2003), around 40% of public forestlands and 29% of private forestlands have been subject to uncontrolled or illegal harvesting activities. The main reasons for forest resources depletion are as following:

- High demand for fire wood and construction wood fulfilled in illegal way;
- Mismanagement of coppice forest;
- Low enforcement of policy and strategy for sustainable forest management;
- Un-flexible administrative instruction allowing silvicultural treatment on coppice forests spatially;
- The most significant obstacles to a viable forest products sector in Kosova is inadequate forest planning and management, which undermines needed investment in conversion technology.

On public forestlands 81000 ha, or 40% of the area surveyed, has been subject to uncontrolled harvesting. On private forestlands the situation is slightly better (29%), but is far from satisfactory. If the situation is similar on areas not surveyed, a total area in the order of 170000 is subject to uncontrolled harvesting activities. By all standards these figures are very high. The situation is most critical in coniferous forest where the entire existence of large forest areas is put at risk if no strong and immediate actions are taken. The inventory results also confirm that coppice forest, especially on public forestlands, is exposed to heavy harvesting. The results also show that many young and middle-aged forests are in an urgent need of management interventions, ranging from cleaning/pre-commercial thinning to commercial thinning.

Because of comprehensive illegal logging and in many cases improper harvesting technology, large volumes of commercial wood is left on ground resulting not only in loss of fiber but also creating risks of damages from insect attacks and forest fires. The current situation is alarming, and confirms expert opinions that management and supervision of forestry in Kosova to a great extent out of control of the government authorities. If no strong and immediate actions are taken the survival of the entire forest resource base is put at risk.

Forest management practices

The lack of communication and overlapping of competencies with local government, contribute to the high level of illegal logging. Top down actual planning approach lack the participation of the local communities and does not take actual field level planning and objective setting into account. The local people needs and the potential of forest in their territory (cadastral zones-villages) is not considered as a layer and are not part of the management plan in the frame of forest management unit. Families without forest property have not legal access to maintain the forest in village territory and produce firewood. A social communication plan of the individual forest management units, that is properly implemented, could help minimize illegal activities. The participatory approach piloted in 2009-2012 by Sida -SNV project in 6 cadastral zones in Nova Brde, Istog and Suhareke municipalities provided the model

for multi-functional participatory planning. This is recommended but not yet formally included in forest management planning guidelines and proper records should show clearly the contacts with the local population representation, consultation and the issues addressed.

The mean annual increment on areas surveyed in the forest inventory is 3.0 m³ per ha per year. Considering the soil and climate conditions this is a low figure, and there are certainly great potentials for improvements through better management of existing forests. Actually most of the wood production is firewood. Legally production (Annual Allowable Cut) is less than 200,000 m³, is four times less the AAC. The forests in Kosova have a great development potential and the forestry sector can become an important contributor to the national economy, both in terms of income from the wood production and as a generator of employment opportunities. (Study and Analysis of Innovative Financing for Sustainable Forest Management in the Southwest Balkan Inception Phase Report Part III Kosova Wood Biomass Case Albania & Kosova (March, April 2012)).

3.1 Regulatory framework

The Law on Nature Conservation (2006/22) is the principal legal instrument that governs nature conservation and biodiversity in Kosova. There are also other laws that regulate activities related to nature conservation and biodiversity. A list of relevant laws is given below:

- Law on Nature Conservation (2006/22)
- Law on Protection of Environment (2003/9)
- Law on Water (2004/41)
- Law on Spatial Planning (2003/30)
- Law on National Park Sharri Mountain (1986)
- Law on Forests (2003/6), (2004/40)
- Law on Hunting (2006/41)
- Law on Fishery and Aquaculture (2006/58)

In addition there are a number of administrative instructions on:

- Evaluation of Environment Impact (No.09/2004-MESP)
- Form and manner of maintaining a Central Register of nature conservation zones (No.04/2006- MESP, September 2006)
- Marking method of nature conservation zones (No.01/07-MESP, December 2006)
- Issuance of ecological permit (No.26/05-MESP, 07.11.2005)
- Licensing individuals and enterprises for drafting evaluation report on environment impacts (No.03/2004-MESP)
- Criteria for identification of water conservation areas and measures for conservation of drinking water resources (No.13/07-MESP)
- Implementation of Law on spatial planning on main elements of plan content for areas of special importance (No.2005/42-MESP, 04.03.2005)
- Decisions on conservation areas (a total of 75 habitats).

3.2 Afforestation

Afforestation in Kosovo has averaged around 240 ha per annum in recent years and is mainly of coniferous species. There is one forest nursery, in Peja, under the control of the Forest Research Institute, which produces circa 700000 seedlings annually. The main species are pines (*Pinus nigra* and *Pinus sylvestris*), spruce (*Picea abies*) and Douglas fir (*Pseudotsuga taxifolia*). Each year KFA allocate some 10% of seedling production to the private sector. Continued planting of coniferous species in future should be reconsidered with regard to stability if climate change affects ecosystems. To date the success of afforestation has at best been considered as mixed, whether undertaken by KFA or the private sector.

A 2001 Forest Sector Study concluded that the annual value of products and other benefits from forests and forest lands was in the range of € 50–75 million. The current contribution of the forestry sector to GDP is estimated at between 1.8% and 2.6%. The inventory estimated that some 40% of public forests and 29% of private forests have been subject to uncontrolled or illegal harvesting activities. The inventory results also confirm expert opinions that coppice forest, especially public owned, is exposed to heavy harvesting for fuel-wood. The results also show that many young and middle-aged forests are in urgent need of management interventions, ranging from cleaning and pre-commercial thinning to commercial thinning.

Forests are a key resource for the economic, social and environmental well-being of the people of Kosovo. A high proportion of Kosovo's biodiversity is forest based, and forest management will have a key future role in meeting Natura 2000 network requirements under the EU Birds and Habitats Directives. Forests are also diverse ecosystems. They provide a wide range of important habitats, give shelter, reduce the levels of CO₂ in the atmosphere, act as "green lungs" in urban areas, add to the diversity of the landscape and ultimately to the quality of life. Forests are also a source of non-wood products. These include wild fungi, berries, fruits, nuts and the products derived from them (jams, jelly, juices, etc.), honey, sand, gravel and stone/minerals. There are also possibilities to develop hunting and agro-cum-eco-tourism. The multiple benefits of forests can only be assured if they are managed wisely and in line with principles of sustainable forest management (SFM).

3.3 Management

The management plans in most public forest areas have expired and valid ones are outdated. The ministry every year produces new management plans (for approximately 8000 ha) through its own budget, but budget limitations prevent more expansive plans. In future years, as management plans are prepared for the publicly owned forest areas, it will be possible to use the data. However, in private forestry there is lack of best practices for forest management, even though some 40% of the total forest area in Kosovo is private property. Illegal activities in both public and private forests are a big challenge for the future of forestry. A national strategy is needed to stop illegal activities and to find the best solution. Most old forest has

been cut, where the average age of forest from the national forest inventory is between 40 and 50 years old. There is an urgent need for silviculture treatment to improve the quality of growing stock. Since the main biodiversity in Kosovo is in the forest, the exact location of biodiversity hotspots is unknown. Those areas should be mapped with coordinates, after inventorying them. This will help forest operator to pay special attention to those areas during harvesting and extraction of timber from forest areas.

Legislation and policies

The law that is in force and that directly affects the forest sector is Law No.2003/3, on Forests in Kosovo. So far the new law has been complemented by seven Administrative Directives, and a Wildlife Management Law. The new legislation defines the mandate, responsibilities and tasks of the different actors involved in forestry. The new law provides a basis for sustainable forest management and efficient forest land use. In general, the new law is built on principles of major global policies on sustainable forest management, such as: a precautionary approach, conservation of biological diversity, intergenerational equity and ecologically sustainable development, as set forth in Annex III to the Report of the United Nations Conference on Environment and Development (UNCED) (Rio de Janeiro, 3–14 June 1992). Based on such criteria, all international communities of democratic society with a free market economy system, including both developed and developing countries, should try to adjust their forest management systems. A similar effort is proceeding in Kosovo.

According to the law in force: "the forests of Kosovo are a national resource. It shall be managed in such a way as to provide a valuable yield and at the same time preserve biodiversity. Forest management shall also take into account other public interests."

The new law on forestry is of great importance for the forest sector in Kosovo. The new law incorporates disclosure, transparency and sustainability in forest management, as well as new approaches, and a move toward free market-oriented economy in forestry. The main actors identified for the forestry sector in Kosovo are the Ministry of Agriculture Forestry and Rural Development (MAFRD) Forestry Department (FD) and the Kosovo Forest Agency (KFA), with its regional and municipal units. Other relevant stakeholders in the sector are various NGOs (Association of Wood Processors of Kosovo; Association of Private Forest Owners; Association of Forestry Engineers; Era-association; Ecological Association Prizren; Hunters' Association; etc.), Private Operative Contractors, Courts, Kosovo Police Service (KPS), non-wood product collectors and local communities. Stakeholders' activities have been minimal until now, despite their role and responsibilities to represent and address the interest of the members regarding sustainable forest management through coordination, advice and general support in the interests of the members at national level. They are at the initial stage of their growth. So, under the present circumstances, they do not represent a strong lobby that can influence the decision-making process. The situation must be changed rapidly in the near future.

If Kosova's forest resources are managed in a sustainable way, then it is possible to fulfill most of the needs of population for fuel-wood and possibly lumber as well (the needs of the population for lumber wood are not known due to the absence of any assessments). At the moment, domestic production capacities are not exploited as much as they should, due to the lack of management plans and lack of road infrastructure, as well as neglect through limited financial commitment to forest activities by the government. One of the most urgent needs for the forest sector in Kosova is to compose a "Strategy and Policy on Development for Forests". Due to the lack of any development strategy in the forest sector, many problems arise, especially for the department planning management, and problems due to the lack of a strategy have ramifications for the whole forest planning and exploitation process. The cost of drafting managing plans, plans for opening new roads, the inclusion of the needs and interests of the community, and that of the wood processing sector, all of these problems are closely linked to the development of the forest strategy. Thus, MAFRD and KFA need technical and financial assistance from investors in order to develop a comprehensive forest strategy.

3.4 Capacity and research institutions

Kosova governmental institutions do not have sufficient budget and capacity for monitoring forest resources in terms of impact of climate change. Before 1999 in Kosova, the main data collection for research purposes were done by forestry research institutes, including inventory, health monitoring and other research in forestry within the country. Most professionals engaged in the activities were from the Forestry Institute in Belgrade, which was the main body for data processing and data analysis. After 1999, there were few forestry experts in the country. Beside the lack of human resources, the Institute has very small budget, and the main activities have been seedling production. During reorganization of the Ministry of Agriculture Forestry and Rural Development (MAFRD), there have also been changes in forestry. Today the forestry institute no longer exists. Most professional activities such as forest inventory or forest management planning are done by private professional companies.

There is one professional private company currently licensed by MAFRD, which provides extension services for KFA. This company is specialized and well equipped with modern technology, such as GIS and remote sensing, with well trained staff for inventory, management planning and monitoring. Their activities depend on the budget available to government institutions, which sometime are very low. All management plans based on the procurement law in Kosova should be executed through tendering with private contractors, as well other measures like national forest inventory or harvesting operation.

- Forest management planning with GIS (2006–continuing)
- Sustainable forest management
- Forest certification (2008–continuing)
- Forest Industry Challenges of Development and Balanced Use

Since in Kosova most rural areas are using wood for heating during winter, there is pressure even in the national parks. Several meetings with relevant stakeholders and with institutions responsible for management of protected areas have shown the need to make available a supply of fuel-wood for communities living in national parks. The main activities will be within the sustainable use zone. Harvesting operations will be orientated to a mixed species, more natural approach, with selective silviculture treatment to make the forest less susceptible to the effects of wind, snow and pests and diseases, as well as enriching biodiversity in the forest. Through these activities there will be benefit for community through both job creation and fuel-wood supply. The sustainable management forest program identified a lack of the scientific data and expertise required to identify Natura 2000 sites. Based on existing data sets and research, the project has significantly increased awareness of Natura 2000 in the relevant institutions and with stakeholders. At the same time, a good start has been made with identification of hotspot sites. However, now the hotspot sites have been identified, there are a number of steps that need to be taken in terms of undertaking the necessary scientific surveys and establishing a nature protection system conforming to international conventions and agreements (e.g. UN Convention on Biological Diversity; the Berne Convention; the EU Birds and Habitat Directives). This will help forest managers to pay particular attention to the sites when they undertake forest operations. The Red List of species needing protection has been identified for Kosova.

Almost 60% of the forest area in Kosova is coppice forest, as a result of coppice rotation for fuel-wood. The quality and production potential of those forest is not used. They are characterized by dense stands (>10 000 stems/ha). Increment is only 1.3 m³/ha, whereas the soil quality provides the potential for better increment and better quality production. Most activities in this type of forest are pre-commercial thinning, which needs investment. The activities were organized with the adjacent communities. As payment for thinning, the product extracted from the forest was given free to the people. This is a win-win situation: the forests benefit from the silvicultural treatment, and the people benefit from the fuel-wood (thereby reducing demand for illegally sourced supplies). More than 100 000 ha of forests needs such thinning activities. Taking into consideration the amount of illegal harvesting, the product extracted can be used to supply the community with fuel-wood or for biomass production. Implementation of thinning activities in the rest of the forest area requires both staff and financing.

Thinning of forests will increase tolerance to drought and resistance to wildfire or pests, contribute to in situ genetic conservation of species, assist migration of species to suitable habitat, provide wildlife corridors to facilitate animal migration, and contribute to improved hydrology. The potential of many National Forests to store additional carbon over the short and medium term is limited because many areas have too many small trees, making forests more susceptible to wildfire, pests and disease. Management activities can reduce the number of small trees, allowing the remaining trees to grow larger, improving

ecosystem health and reduce the risk of damaging wildfire. Several policies and strategies, such as the Restoration Policy Framework, provide guidelines for managers. However, the management practices designed to restore forests and grasslands and protect communities (through thinning, fuel-wood supply and controlled burning) are likely, at least in the short to medium term, to reduce total carbon stocks below current levels. However, not taking action to improve ecological health will probably result in substantially lower carbon stocks and substantially increased carbon emissions in the future as a result of severe wildfires and losses from pests and disease.

4. REDD+ Program for Kosova

As it has been stated, Kosova has the necessary mass for adhering to a REDD+ program under the UNFCCC. Two conditions are necessary, namely first sorting out which parts of the national forests are adequate for a REDD+ program and second specifying the type of forest, its density and its carbon storage capabilities. Once these items have been identified, Kosova can further work on the scope of its program. Ideally, the country would combine maintaining the forest status plus afforestation of degraded green-zones plus the management of actual logging projects.

This can be achieved by submitting the already designed national parks under the REDD+ rule and by coupling the management of forests, i.e. their economic use with afforestation duties. This could mean for example linking logging of a given zone to the afforestation of other, economically less usable areas like river-shores, green-zones in cities or municipality-towns.

The next step is to include local population, i.e. to specify how each local citizen can profit from the REDD+ program. Of course, it is almost impossible to generate gains on individual-level, however, if REDD+ revenues would be stipulated and realized on village-level (cadastral-zone) or at least municipality-level, more social control on enhancing REDD+ standards would emerge, since each disruption from the forestation baseline would impact negatively on the local or better sub-local¹ budget.

The baseline has already been mentioned: in the Kosovar situation, a future reference level is advantageous due to several factors. First, because of the high degree of uncoordinated use of forests today, achieving future discipline should be relatively simple. Each gain in discipline, as small as it may seem, contributes positively to Kosova's reference level. Second, reducing carbon impact in Kosovar economy is feasible beginning today towards a future goal. It is difficult to state a historical case, since historical measurements are seldom and possibly skewed against today's Kosova's society. Third, as a country with a new economic basis, Kosova profits more from setting future-oriented efficiency goals than tying its future development to historical accounts.

The most difficult question, of course, is financing. Here, a market-oriented mechanism fares best, especially due to Kosova's proximity to the EU. The European Union has

specific CO₂ emissions targets and the possibility of compensating some of its emissions with certificates in the sense of clean development mechanism (CDM). It is foreseeable that the EU will have to set a higher bid on CO₂ emissions in the next COPs in order to maintain its international position within the global climate governance. As it sets the targets higher, the Union will need more projects under the CDM that at the same time fulfill the EU's quality criteria. These projects are funded by EU countries or EU companies with the goal of producing CO₂-reduction certificates.

Hence, EU countries or companies would be willing to fund REDD+ programs in Kosova provided that Kosova shows improvement in maintaining and managing its forests, thus reducing CO₂ emissions. If these projects are carefully planned on local and sub-local level and the revenues from these projects are kept of that level, population itself should develop an interest in implementing the terms of the programs guaranteeing the success of REDD+ in Kosova.

As for the next immediate steps to be taken, a three-pronged approach might be successful. First, Kosova could provide an overview on its forests, its maintenance and afforestation plans as well as its potentials (including management). Second, but parallel to first, Kosova should actively inquire the interest of the EU in implementing or at least funding REDD+ programs in Isa Boletini's country. Third, and still parallel, Kosova should gain some visibility in the international climate talks (UNFCCC), perhaps in partnership with Albania, another country that could profit most from REDD+.

¹ The local level denotes the municipalities, the sub-local level denotes the villages or cadastral zones.

