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Sustainable Development of Forests

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ABSTRACT: Forests are nature's most bountiful and versatile renewable resource, providing simultaneously a wide range of economic, social, environmental and cultural benefits and services. The worldwide demand for their numerous functions and outputs is increasing with the expanding population, while the global forest resource is shrinking either as a result of overharvesting, deforestation and permanent conversion to other forms of land use in many tropical regions, or as a consequence of forest decline associated with airborne pollutants in temperate regions.

Forests represent a unique situation in terms of global environmental issues. Physically, they are located within the territories of sovereign states, yet their environmental role extends beyond their borders at both transboundary and regional as well as global levels. For example, the management, or mismanagement, of watershed forests of international rivers has transboundary implications in terms of soil and water conservation in neighbouring countries. Similarly, airborne pollutants generated in one country may be transported across the boundary and cause forest decline in others. The role of forests in global ecological cycles highlights the environmental significance of forests beyond the boundaries of the nations where they are located. In this context, they are being viewed as global commons similar to the atmosphere and oceans.

KEYWORDS: forests, sustainable, development, pollutants, environment, management

I. INTRODUCTION

Conservation and sustainable development of all types of forests worldwide have now emerged as priority items on the international policy agenda, particularly in the context of the United Nations Conference on Environment and Development (UNCED), to be held in Brazil in June 1992. The role of forests is receiving particular attention in the biodiversity and climate change conventions currently under negotiation. While special interest groups are only focusing on a specific role or function of forests (e.g. as a reservoir of biodiversity, for carbon sequestration, economic development, subsistence, fuel, etc.), national and international policy-makers face the challenge of reconciling the role of forests in meeting national socioeconomic and environmental objectives as well as the global environmental and socio-economic interests of the community of nations. Ecological considerations are now being viewed not as subordinate but as an integral part of economic policy and planning (Ullsten, 1991).[1,2,3]

Sustainable forest development is also emerging as a consideration in the international trade of forest products. Many consumers, individually and collectively, are preferring to buy products obtained from sustainably managed forests and manufactured by environmentally acceptable processes. There have been consumer threats to boycott wood products that are not "green" both in terms of raw materials and manufacturing processes.

In contrast, most members of the forestry community have usually dealt with local issues and with "delivering wood to the mill gate". The national and international forestry community is relatively inexperienced, both technically and politically, in dealing with the globalization of forest-related issues. Consequently, their participation in these deliberations and their influence in shaping the international forestry agenda to date have been marginal. Forestry, involving long-term commitments, usually receives limited political attention in comparison with most other, often shorter-term, socio-economic policies. The current attention being paid to forest related issues by international political communities should be viewed as a rare window of opportunity to advance the interests for forestry of political support and sustainable forest development, and to promote the multiple benefits provided by forests. These benefits range from meeting the socio-economic needs of forest dwellers, forest-based communities and forest industry to conserving environmental values.

It is important to understand the evolution of the structure and content of international deliberations on forests, the shifts in our values and the consequent impact on forestry practices. The forestry and scientific communities are faced with the challenge of defining sustainable forest development, formulating a conceptual framework and establishing

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internationally accepted criteria and approaches for the practice of sustainable forest development to meet multiple human needs.

Sustainable forest development
What does it mean?
The term "environmentally sustainable economic development", more commonly known as "sustainable development", has been popularized globally by the report of the World Commission on Environment and Development (WCED), Our common future. In this report, sustainable development is defined as "economic development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). The term sustainable development has captured the imagination both of the public and politicians at local, national, regional and international levels, and has instigated much discussion. However, there have been limited attempts to put the concept into practice.

The forestry sector, perhaps more than any other, is well positioned to provide worldwide leadership in the practice of sustainable development. The forestry community is accustomed to a long-term perspective; it is reasonably knowledgeable about the response of forest ecosystems to natural and human disturbances; it is comfortable with the sustained yield principle; and, in a few instances, it has attempted to practice a multiple and integrated use of forests. As compared to many other industrial sectors, it is relatively easier for the forest community to expand its scope from sustained yield to sustainable development, which requires a shift from forest management to forest ecosystem management.[4,5,6]

Sustained yield is a deeply embedded principle in the forest community. Is sustained yield the same as sustainable development? Yes, but only partially. While sustained yield in forestry is mainly concerned with a perpetual and even annual flow of timber for human use, sustainable development of forests is much broader and is concerned with integrated forest management, maintaining the ecological integrity of the forest environment and keeping future options open. This does not imply that all forests everywhere should be managed for all benefits simultaneously. In practice, forests in specific areas are likely to be dedicated to primary uses or benefits (e.g. to the production of industrial wood or fuelwood, the protection of watersheds, or for use as ecological reserves, wildlife habitats and reservoirs of biodiversity, etc.), while other secondary values are also respected. This approach, would allow periodic and selective harvesting of watershed forests, provided it is not detrimental to the primary objectives of soil and water conservation.
As a part of the demands on forestry to meet present needs and our ethical responsibility toward future generations, the following definition of sustainable forest development is proposed (Main), 1989a):

Sustainable development of forest land and its multiple economic and environmental values involves maintaining indefinitely, without unacceptable impairment, the productive and renewal capacities as well as the species and ecological diversity of forest ecosystems.

The acceptable threshold of "impairment" is determined by the choices and decisions made by individuals, institutions and nations as well as by the international community. It is based on our understanding of both ecological principles and socio-economic imperatives. What is acceptable under a specific socio-economic and ecological condition may be totally rejected under another set of conditions. Consequently, choices and trade-offs are made in terms of risk management and the cost of inaction.

The formulation of approaches to sustainable forest development requires the harmonization of human activities with the biological and physical aspects of forest ecosystems. Human activities and forest ecosystems as well as the interactions between the two are dynamic and change over time and space. Consequently, monitoring the two systems and their interaction is crucial when practicing sustainable forest development, and it involves a number of ecological, socioeconomic, technological and political considerations.

From an ecological perspective, all forests are composed of an assemblage of diverse species and a life-support system that has the capability to renew itself. As long-lived and rather resilient ecosystems, most forests are not ecologically fragile. To a considerable degree they are able to withstand a wide range of natural disturbances such as weather extremes (wet and dry periods), storms, fires, insects and diseases. These disturbances are an integral part of the dynamic nature of forest ecosystems and play a critical role in their health, species diversity, renewal and rejuvenation, as well as in their gradual evolution over time. The mosaic structure of natural forests in tropical (Lamb, 1990) and temperate (Suffling, Lihou and Morand, 1988) regions is often a reflection of past disturbances attributed to natural causes.[7,8,9]

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Of course, primarily, our concern with the potential for sustainable forest development lies not with the natural changes that occur over time in undisturbed forests, but rather with the impact of human activity on the forest resource. While in the remote past forest dwellers across the globe utilized forest resources for subsistence with limited permanent impact on the resource, the expansion of the agricultural frontier has led to the significant and increasingly rapid permanent conversion of forest land to other uses. Permanent conversion of forest land to agricultural use, currently concentrated in the developing regions of the world, is similar to that experienced in the now industrialized temperate regions over the past several centuries. To meet the demands of growing populations, most of the developing countries will need to continue converting some of their forest area to other uses, including agricultural production, shelter and infrastructure. The key is that this conversion should be well-planned and implemented only on lands with the potential for sustainable, non-forestry use. This article, however, concentrates on principles for the sustainable development of land designated permanently for forestry.

Practising sustainable forest development

While forests are resilient ecosystems, there are limits to their ability to withstand environmental change, and they degrade when these limits are exceeded. Understanding these limits also allows us to enhance various forest outputs through silviculture. There are many examples of thinning, selective harvesting and manipulation of watershed forests to increase the yield of wood, water and wildlife without any apparent negative ecological impact. On the other hand, some industrial forestry activities have been associated with a number of environmental stresses on forest ecosystems. These activities include harvesting; road construction; manipulation of cover types and species through silviculture and reforestation and through the use of mechanical, biological and chemical technologies for protection against fire, insects, diseases and competing vegetation.

Forests are also exposed to environmental stresses associated with other human activities such as industrial manufacturing and the use of fossil fuels. The impacts of some of these stresses are restricted and local, others are global. For example, while forest decline in certain parts of Europe is attributed to airborne pollutants, all types of the world's forests would be exposed to the anticipated global warming associated with an increase in the concentration of greenhouse gases in the atmosphere (Main), 1989b). A managed natural forest, a forest plantation or an ecological reserve to study natural processes would be of limited value, if any, in the vicinity of a manufacturing facility emitting stressful pollutants.

Sustainable forest development, therefore, means recognizing the limits of forests to withstand environmental change, individually and collectively, and in managing human activities to produce the maximum level of benefits obtainable within these limits. A number of parameters may be used to assess the status of forests with regard to individual species and ecosystems (Jordan, 1989; Rapport et al., 1985; Woodwell, 1970). The above definition of sustainable forest development recognizes three critical parameters: productive capacity, renewal capacity and species and ecological diversity.

Productive capacity. Site productivity is a function of the number of species and individual trees growing on a location, soil fertility and climate. In addition to soils, forest biomass constitutes an important reservoir of the total nutrients of a given forest land. Removal of forest biomass through harvesting may represent a net loss of nutrients from a site during the rotation period. At nutrient-poor sites, this could represent a significant reduction in biomass yield in the subsequent crop. However, only limited information on nutrient cycling is available for temperate (Kuusela, 1990) or tropical forests (Jordan, 1989; Lamb, 1990). There is therefore a need to improve our understanding of the impact of forest harvesting on the soil productivity and future yields.

Renewal capacity. Renewal of a forest ecosystem, following harvesting or other forms of disturbances, is dependent on the nature and intensity of disturbance and the mode of reproduction of species located on the site. Under many tropical conditions, forest revegetation by seed or vegetative means is rapid and is completed within a few months with high species diversity (Lamb, 1990). From an industrial point of view, the interest is in renewing forests quickly with economically valuable species, while natural revegetation processes usually result in a mixture of species, both economic and uneconomic. Depending on management objectives, it is important to maintain the process of forest renewal by appropriate natural and artificial regeneration.[10,11,12]

The sensitivity of forest ecosystems to stress is determined by the type of forest ecosystem, i.e. resilient or fragile, and by the form of stress, i.e. type, duration and intensity. A generalized response of forest ecosystems to stress is illustrated in the Fig. Forests subjected to stress beyond their tolerance limits may follow the trajectory of the F_1 to

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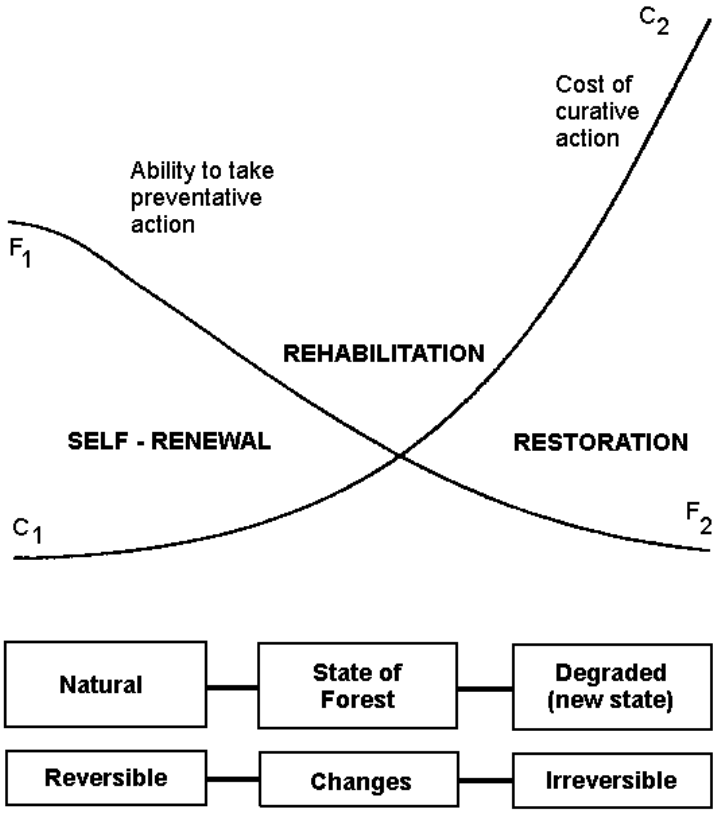
F_2 line. The recovery pattern of forest ecosystems subjected to perturbation and stress, the "forest degradation trajectory", may be divided into three levels:

· Self renewal. At a moderate level of degradation, following the withdrawal of the stress factor, forest ecosystems are able to renew themselves, returning relatively quickly without human intervention to more or less their original state.
· Rehabilitation. At an intermediate level of degradation, the forest ecosystem may require long periods to recover naturally, but this period often may be shortened through human intervention.

· Restoration. At a certain level, forest degradation becomes virtually irreversible, at least within a human time frame, and is characterized by a combination of total or near total loss of forest cover (i.e. deforestation) and species diversity as well as soil degradation and a consequent reduction in the overall productive capacity of the site. In such an extreme situation, the recovery process may take centuries as a result of natural processes, or decades with human intervention. While it would be impossible to recreate the "original natural" state of the forest, it may be possible to create a forest of diverse species or forest plantations.

The relationship between the level of forest degradation, the magnitude of change, the recovery process and the cost of curative action



The conceptual framework illustrated in the Fig. also suggests a number of other conclusions:
· our ability to take preventive action at no or a low cost is confined to earlier stages of forest degradation;
· from an economic point of view, the cost of curative action increases with the level of forest degradation (trajectory C_1-C_2);
· it is important to enhance our ability to recognize early warning signals and to "anticipate and prevent" rather than "degrade and cure";
· our ability to practice sustainable forest development is related to our ability to predict the ecological impact of natural disturbances and human activities on forest ecosystems;
· learning from past experience through carefully designed, long-term studies for example, comparing poorly managed or disturbed forest land with well-managed and undisturbed forest land would enhance our predictive capabilities;
· setting aside ecological reserves of representative and unique forest types worldwide to serve as environmental baselines and biomonitoring sites is a crucial and integral part of sustainable forest development.[13,14,15]

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Species and ecological diversity. Forests are a rich repository of planet Earth's genetic heritage. Tropical forests contain more than 50 percent of all plant and animal species in about six percent of the world's surface area (Poore and Sayer, 1991). The species diversity apparently decreases toward the higher latitudes. As compared to the tropical forests, composed of hundreds of tree species, large tracts of forest land in the boreal regions may be dominated by a single species. Species diversity and ecological diversity are closely related and their preservation is an integral component of efforts to maintain future options.

The challenge ahead

The world community is now deeply concerned about the sustained use of natural resources and the quality of the environment for both present and future generations. There is an increasing move toward environmental ethics, including: use and not abuse; reduce environmental stress; recycle; and do more with less. Particularly in the industrialized countries, the general public is also very concerned about past and current forestry practices in many parts of the world, especially forest degradation and deforestation in the tropical regions, forest decline in industrialized countries and environmental degradation associated with the manufacturing of certain forest products. The challenge of practicing sustainable development as described above may be pursued through a number of specific actions, including research; legislation; forest and environmental policy; forestry practices and management; and international cooperation in developing criteria for sustainable forest development, the transfer of technology and financial assistance.

Practising sustainable forest development, through the management of forest ecosystems for their multiple benefits and values would be relatively more costly in the short term than the management of forests for wood production only. However, failure to practice environmentally sound forest management is likely to lead to prohibitive future costs. As it is in our collective economic and environmental interest to practice sustainable forest development at the national, regional and global levels, there is a need to develop an appropriate international policy and institutional framework to foster global technical and financial cooperation (Main), 1991a). A set of guiding principles for the conservation and sustainable development of global forests must also be formulated (Main), 1991b; UNCED, 1991) and international criteria for sustainable forest development agreed upon.

Actions toward sustainable forest development

• Make fuller use of existing knowledge to practice integrated forest ecosystem management and establish a national and international network of demonstration areas.
• Strengthen research to predict the response of forest ecosystems to disturbances associated with natural causes and with human activities; develop the capability to recognize early warning signals and Indicators of environmental stress and degradation in forest ecosystems.
• Accelerate the development of national and international monitoring systems to provide timely and reliable information on the state of national and global forests.
• Promote the establishment of, or further develop, national ecological reserves of representative and unique forest types to protect biodiversity and ecological diversity as well as to provide baselines against which the environmental consequences of human activities can be determined.
• Increase forest land productivity in selected areas through improved management of forests and forest plantations as well as reduce losses from fire, insects and diseases so that more forest land is available for other uses without a reduction in the overall timber flow.
• Reduce waste in forest harvesting operations and in product manufacturing; improve utilization of wood for a variety of end-products; encourage recycling where appropriate to reduce demand for raw materials and to "do more with less".
• Reduce effluents from forest product manufacturing processes to environmentally acceptable levels.
• Reduce pollutants from non-forest sector industrial and consumption activities that cause forest decline through reductions in productivity; renewability and species and ecological diversity.
• Dedicate more resources to systematic policy research to understand and influence decision-making processes in the forest sector and develop innovative approaches to harmonize different economic, environmental, policy and political time horizons.
• Continue-work to develop appropriate international policy and institutional frameworks to foster international cooperation in technology transfer and financial assistance in support of the conservation and sustainable development of forests.
• Formulate criteria for sustainable forest development to strengthen international trade In forest products derived from sustainably managed forests.
• Publicize more widely the commitment, policies and programmes undertaken by various stakeholders in the forest sector to achieve the objectives of sustainable development.

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Epilogue

Global issues, such as economic inequity, population growth, hunger, illiteracy, inadequate shelter and environmental degradation, have led to concern for the future of this planet and its inhabitants. Environmentally sustainable economic development is seen as a societal value to ensure that, while attempting to satisfy current demand, we bequeath a healthy environment and adequate natural resources to meet the needs of future generations. Sustainable forest development is aimed to help address many of the above-mentioned global issues by providing food, fibre and wood as well as multiple environmental benefits.

Forest products are environmentally friendly, biodegradable and are obtained from a renewable resource base. The world forestry community now faces two major challenges: first, given the expanding world population and the anticipated increase in demand for wood and non-wood products, how to meet this future demand without degrading the forest resource base and forest environment; second, what technical, financial, institutional and political means to tap in order to promote sustainable development of all forest types worldwide. The international forestry community should be actively engaged in defining national and international forestry agenda.

The stewardship of the world's forests, both on a national and global scale, is a collective socio-economic and environmental responsibility. The forestry community, with its long-term perspective, technical capability and commitment to the sustained yield principle, is very well-positioned to provide national and international leadership in sustainable forest development. This practice will require collective international commitment and cooperation, an appropriate policy and institutional framework and a shift from forest management to forest ecosystem management.[14,15,16]

II. DISCUSSION

Sustainable Development Goal 15 aims to “protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss”. Forests have a significant role in reducing the risk of natural disasters, including floods, droughts, landslides and other extreme events. At global level, forests mitigate climate change through carbon sequestration, contribute to the balance of oxygen, carbon dioxide and humidity in the air and protect watersheds, which supply 75% of freshwater worldwide.

Investing in forests and forestry represent an investment in people and their livelihoods, especially the rural poor, youth and women. Around 1.6 billion people - including more than 2,000 indigenous cultures - depend on forests for their livelihood.

Forests are the most biologically-diverse ecosystems on land, home to more than 80% of the terrestrial species of animals, plants and insects. They also provide shelter, jobs and security for forest-dependent communities.

Therefore, the future of forests and forestry in sustainable development at all levels was at the core of the XIV World Forestry, hosted in Durban from 7 to 11 September 2015. The Durban Declaration called for new partnerships among forest, agriculture, finance, energy, water and other sectors, as well the engagement with indigenous people and local community.

The importance of investing in world’s forests and of taking “political commitment at the highest levels, smart policies, effective law enforcement, innovative partnerships and funding” was also recalled by the UN Secretary-General Mr Ban Ki-moon in his Message on the occasion of the 2015 International Day of Forests.

Both the International Day of Forests, launched in 2013 and the International Year of Forest proclaimed for 2011 aimed at raising awareness on the importance of all types of forests and of trees outside forests.

Prior to the 2030 Agenda for Sustainable Development, the outcome document of the Rio+20 Conference, the Future We Want, in its paragraphs 193- 196 stress the importance of improving the livelihoods of people and communities by creating the conditions required to sustainably manage forests. It also recognizes the role of the UN Forum on Forests in addressing forest-related issues in a holistic and integrated manner, and in promoting international policy coordination and cooperation in order to achieve forest management. Paragraph 196 calls for the mainstreaming of sustainable forest management and practises into economic policy and decision-making.

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Chapter 11 of Agenda 21 is entitled 'Combating Deforestation' and is devoted to sustain the multiple roles and functions of all types of forests, forest lands and woodlands.

On one side, the Agenda highlights the major weaknesses in the policies, methods and mechanisms adopted to support trees, forests and forest lands and the multiple ecological, economic, social and cultural roles.

Therefore, on the other side, it identifies, among its objectives, the strengthening of forest-related national institutions, the enhancement of the scope and effectiveness of activities related to the management, conservation and sustainable development of forests, and the sustainable utilization and production of forests' goods and services in both the developed and the developing countries.

The Agenda also mentions the importance to improve human, technical and professional skills, as well as expertise and capabilities to effectively formulate and implement policies, plans, programmes, research and projects on management, conservation and sustainable development of all types of forests and forest-based resources, and forest lands inclusive, as well as other areas from which forest benefits can be derived.[15,16]

III. RESULTS

"The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems."

As defined by Forest Europe and adopted by the UN Food and Agriculture Organization (FAO).

Given the importance of forests to the planet, sustainable management is essential to ensure society's demands don't compromise the resource. Sustainable forest management offers a holistic approach to ensure forest activities deliver social, environmental and economic benefits, balance competing needs and maintain and enhance forest functions now and in the future. Forest certification is the tool to demonstrate this and to connect the consumer with the sustainable origins of their products.

The three pillars of sustainability
Sustainable forest management creates outcomes that are socially just, ecologically sound and economically viable – the three pillars of sustainability.

We cannot separate, compartmentalize or address individually these pillars. If one pillar is missing, we cannot protect our forests, forest-dependent communities and rural economies cannot thrive, illegal logging will not be abated and development opportunities will not be captured.

What does this mean on the ground?
There is more than one way to manage a forest sustainably.
Forests are highly diverse, from evergreen eucalyptus forests in Tasmania to tropical rainforests in South America and the Congo Basin and boreal forests in Canada.

Similarly, their management differs greatly, along with local traditions, cultural and spiritual expectations, average property sizes and support structures such as forest owner associations.

At PEFC, we ensure that national sustainable forest management requirements are always tailored to the needs of the specific forest ecosystems, the legal and administrative framework, the socio-cultural context and other locally relevant factors.

However, all national sustainable forest management requirements must include the following:

- Maintenance, conservation and enhancement of ecosystem biodiversity
- Protection of ecologically important forest areas
- Prohibition of forest conversions
- Recognition of free, prior and informed consent of indigenous peoples
- Promotion of gender equality and commitment to equal treatment of workers

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- Promotion of the health and well-being of forest communities
- Respect for human rights in forest operations
- Respect for the multiple functions of forests to society
- Provisions for consultation with local people, communities and other stakeholders
- Respect for property and land tenure rights as well as customary and traditional rights
- Compliance with all fundamental ILO conventions for worker rights
- Working from minimum wage towards living wage levels
- Prohibition of genetically modified trees and most hazardous chemicals
- Exclusion of certification of plantations established by conversions, including conversions of ecologically important non-forest lands (e.g. peatlands)
- Climate positive practices such as reduction of GHG emissions in forest operations[16]

We are all aware of the critical roles that forests play in maintaining our climate, our freshwater systems and soils, and our biodiversity, all of which are critical for food security and other key aspects of human well-being. Forests are also critical for watersheds, carbon management and clean air, and the conservation of critical species and ecosystems.

What we have come to learn and appreciate is that forests and forest management are not just about timber. Forests play a critical role in sustainable development, from combating soil erosion in agricultural fields to mitigating the effects of climate change. We all know that the lack of clean water and clean air can result in adverse social and economic impacts on communities and economies. But the relationship is not just one-directional. Climate change and its associated stressors can also have devastating consequences on watershed health, directly affecting water supplies and other ecosystems services that we need from our forests.

Many of our forest areas are experiencing drought and major outbreaks of insects and diseases. Drought-stressed forests are especially vulnerable to wildfire as well as to outbreaks of insects and disease. And in the last 10 years, at least nine U.S. states have had record-breaking fires on a scale rarely seen in our history.

Green Economic Development

As we all acknowledge, forests and forest products are vital to the health of many APEC economies; that is certainly the case in the United States. The United States is the world's largest producer and consumer of wood. As is the case in many of your economies, the forest products industry is a significant source of jobs and revenues in many of our U.S. states. In California, for example, the forest products industry accounts for more than 68,000 jobs, and California's forest products are worth approximately $16.8 billion dollars annually.

However, the economic downturn over the past several years has had a significant impact on the forest products sector. This economic environment presents challenges and opportunities and a chance to position the forestry sector as an engine of green growth. As ministers responsible for forestry in our respective economies, we should seek opportunities to encourage our national leaders to pursue strategies that capitalize on the critical role that forests can play in developing a green economy.

In the United States, we have come to understand the relationship among environmental protection, forest management, and economic growth. In February 2009, President Obama signed the American Recovery and Reinvestment Act, an economic stimulus measure with over $1 billion dollars for projects administered by the U.S. Forest Service, including efforts to clean up abandoned mining lands, restore forest trails, resurface roads, improve recreational facilities, and treat forests to promote forest health and reduce wildfire risk. This is a clear example of how investing in forests and their management not only stimulates the economy, but also enhances positive social and economic impacts in our local communities.

Ladies and gentlemen: Markets for forest products are changing. Consumers are increasingly demanding assurances that the forest products they buy have been legally harvested, and governments as well as private companies are responding to this change. In the United States, we amended the century-old Lacey Act in 2008 to make it illegal to import any plant or plant product taken in violation of foreign laws. As we heard from our Australian and Indonesian colleagues, this U.S. initiative is only one of a number of similar efforts to encourage "due diligence" concerning the legality of the trade in forest products. Many private companies, in the United States and around the world, are instituting their own policies and procedures to exclude illegal wood from their supply chains. This is important

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because effective action to combat illegal logging and associated trade requires support and commitment from all stakeholders, particularly in the private sector.

Forests Lead to Partnerships

In response to the forestry challenges we all face, my agency, the U.S. Forest Service, is focusing on forest ecosystem restoration at a watershed scale to enhance forest and watershed resiliency and biodiversity, prevent the loss of large carbon sinks, and maintain jobs. All of these efforts require us to work broadly across all lands, public and private, federal and state, and to coordinate planning and management with other land uses, such as agriculture and urban development. We value the role that community-based organizations as well as NGOs and local, state, and tribal partners are playing in these restoration efforts. We celebrate the global recognition of the importance of developing jobs; creating new markets related to water, carbon, and biodiversity; and adopting sound business models that promote investment in sustainable forest management to ensure that benefits flow to local communities.

The United States has just issued a new Report on Sustainable Forests. The report uses the Montreal Process criteria and indicators and fosters open and transparent reporting on current forest conditions and recent trends in the United States. We are excited about its publication.

Beyond what the United States is doing within our own borders, we have international partnerships in promoting sustainable forest management and biodiversity conservation. For example, we have worked with Australia on wildfire management; with China on invasive species and forest restoration; with Indonesia on conserving biodiversity, combating illegal logging, and addressing forest-related climate change; with Korea on forestry research; and with Peru on the revamping of forest laws and institutions.

Regionally, we have been a supporter of APEC taking a constructive role in promoting sustainable forest management, promoting trade in legally harvested forest products, and combating illegal logging and associated trade. We are pleased that APEC has decided to establish an experts group to enhance the efforts of member economies to take concrete steps to promote trade in legally harvested forest products and to combat illegal logging and associated trade. We also applaud the efforts taken by a number of producers, NGOs, and companies in the private sector to strengthen policy, management, and enforcement measures to combat illegal logging and associated trade. In particular, we note the substantial measures taken by Indonesia in developing and implementing its Timber Legality Assurance System, as described by our Indonesian colleague just yesterday; Peru's ambitious overhaul of its forestry and wildlife laws and institutions, just completed earlier this year; and the important efforts here in China to strengthen timber legality verification systems and capacities.[14,15]

IV. CONCLUSION

Multilaterally, the United States actively participates in a range of processes relevant to forests, including the Convention on International Trade in Endangered Species, REDD-plus discussions under the U.N. Framework Convention on Climate Change, the International Tropical Timber Organization, the U.N. Forum on Forests, and the U.N. Food and Agriculture Organization and its regional commissions. We also participate in regional networks such as the Asia Forest Partnership; and APFNet, one of the co-sponsors of this Ministerial. In this regard, we look forward to actively participating in Asia Pacific Forest Week here in Beijing in November, and we give our thanks in advance to both FAO and China for organizing this important event.[16]

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