

Journal of the  
International  
**FORESTRY  
STUDENTS'**  
ASSOCIATION



# NEWS

NUMBER 53 | 2011/2012



TEMPERATE RAINFOREST IN CHILE -  
A **THREATENED** ECOSYSTEM

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The International Forestry Students' Association (IFSA) was established in 1990 and is the global network for students in forest sciences. It unites approximately 3000 students in 80 member associations (called Local Committees) in 55 countries. IFSA is a non profit and non religious organisation entirely run by students for students. IFSA provides a platform to exchange knowledge and build understanding in order to create a sustainable future for all forests on the planet, and to provide a voice for youth in international forest policy processes.



# EDITORIAL

Dear readers,

IFSA News is very proud to be able to present to you this first issue of the IFSA year 2011/12. Thanks to your help it was possible to make it a reality.

2011 was a year filled with many natural disasters like huge floods in Australia, Brazil, China, Pakistan and Thailand. Earthquakes in New Zealand, Nepal, Turkey and Japan took place causing incredible environmental damages such as the devastating meltdown of the nuclear power plant Fukushima in Japan. Volcanoes erupted in Iceland, Indonesia and Chile. Heat waves hit the USA and Canada. Heavy storms like hurricane Irene in the USA and the destructive typhoon in the Philippines caused severe damages.

Most of these disasters have not only taken many peoples lives around the globe but have also left environmental damages which need to be cleaned up (not only by us and our children but also by many future generations to come).

We foresters, by some people kindly referred to as 'life givers', are faced with challenges that have not been experienced in history before.

Not only must we satisfy the economy's high demand for timber and non timber forest products but we must more than ever protect our ecosystems in every corner of this planet.

There are still too many people living on

Earth not realizing that life cannot exist without trees. People that are suppressing the fact that none of us will be able to breathe once our forests are all cut down.

Reading the articles you have sent to IFSA NEWS for publication have once again reminded me of how much challenges we face after graduation.

No matter on which continent we will work later, there is one thing all of us must do at all times and that is educating our families, friends and all people we come across (about the importance of intact forests on the planet).

Just the other day I read on the FAO homepage that Nigeria's forestland has now reduced to 10%. Whereas it was around 12% only a few years ago. And Nigeria is only one example of many countries facing the same rapid decrease of forestland.

So who is to blame? Is it really all the policy makers' fault? Should we exclusively blame our leaders for the wrong behavior in our society? What about us? Are our leaders not just a reflection of ourselves?

And how much longer can we afford to be bad followers?

Many of us are flying from one continent to the other visiting conferences where people talk about saving our environment not even wasting one thought on the carbon footprint left by all these thousands of miles travelled by

thousands of people several times per year.

If we who actually have the knowledge about the impacts of our actions on the environment are not making sustainable decisions then how can we expect others to believe us or even follow us?

It is our duty as foresters, natural resource managers, biologists, ecologists and all other people who are very much aware about the planet Earth condition to be a positive role model for sustainable behavior.

With all this said I hope I can inspire you to tap your inner energy and start spreading your love for nature to others (which is basically love for life).

And now please enjoy our new issue of IFSA NEWS!

With lots of Love,

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# P R E S I D E N T ' S C O R N E R

Dear readers,

Let me start by wishing you a belated Happy New Year!

No matter where you are from and when New Year is celebrated in your culture, allow me to take this opportunity to send my best wishes for health, happiness and self-fulfillment around the world.

In particular, I would like to send wishes full of creativity, motivation and solidarity to all of our IFSA Local Committees. It is thanks to the energy and will you all put into spreading the word about IFSA and forestry education that it is more and more recognized as essential to involve students in decision making processes related to forestry and natural resources.

Let me now bring you back to several weeks ago.

As the end of the year 2011 was approaching, a big milestone for IFSA was set: the signature of the Memorandum of Understanding with the FAO. It was a great honor for me to finalize the work of two generations of presidents and Liaison Officer FAO, and to finally sign this document making the partnership and mutual support between IFSA and FAO official.

I truly believe this is the start of a new kind of collaboration; more active and more concrete for both organizations.

Moreover, I would like to take this opportunity to thank all the Local Committees for the activities you have and will set up. Talking here and there, I have noticed that a lot of you have become incredibly active and it is always so satisfying to see new projects getting students involved. Congratulations! Remember to share your successes and challenges with your LC partner, it is often very inspiring for both. Also, a very warm welcome to the new Local Committees in Iran and in the Philippines! It is a great pleasure to have you in the IFSA Family!

Finally, I would also like to thank the whole team of officials and particularly the board for their hard work since IFSS. As we are all full-time students volunteering, it is always surprising to see what can be accomplished by a team of motivated people!

Starting the year 2012 thinking about IFSA, you might wonder: "What is ahead of us in this association?" It can be said in 3 words: IFSA under construction.

No, don't worry it's not the secretariat in Freiburg being rebuilt, nor the name is being changed.

This is only the leitmotiv IFSA 7 has chosen to guide its work until IFSS.

After learning for several months about what our positions were really about, we wanted to truly contribute to IFSA by trying to solve some issues which have been mining IFSA for some time.

The lack of visibility of our members' needs is one of them. Knowing what Local Committees would need from the umbrella organization, IFSA World, and what IFSA needs to provide the Local Committees with, is the core of the knowledge needed to be able to take decisions concerning the future of IFSA. This is why, with the great help of the officials attending Interim in Denmark, we started putting together a questionnaire which will be addressed to you through your Regional Representative. This will be your chance to get your wishes for IFSA heard, so take it!

Other than these internal perspectives, some great international events are ahead of us.

Interested in contributing to the voice of youth in the climate change debate at the Rio+20 UNFCCC Conference in Rio de Janeiro, Brazil, from the 20th to the 22nd of June 2012?! You could contact the International Processes commission and join those yearning to bring IFSA students to attend this event. Several thousands of kilometers from there, we will be waiting for students from Nigeria, South Africa, Cameroon, Swaziland, Kenya and many other countries to attend the IUFRO FORNESSA conference in Nairobi, Kenya. Happening from the 25th to the 30th of June it will be an excellent opportunity to gather a delegation from African countries in order to mobilize more students and to strengthen our membership in both Northern and Southern Africa.

But of course, the core of the life of IFSA for these upcoming months will lie once again in the amount and in the diversity of activities organized in your different



Picture: Juliette Mouche, IFSA President 2011/12

Local Committees. So once this IFSA News is read, get back to your local meetings and be creative!

I hope you will savor the first edition of the year and that it will enable you to feel and appreciate this special connection IFSA creates between its members, as well as to learn more about what forestry means throughout the world.

Keep spreading the IFSA spirit,

Your dedicated president,

**Juliette Mouche**  
**IFSA President 2011/12**  
**France**  
[president@ifsa.net](mailto:president@ifsa.net)

# SO HOW BIG IS YOUR CARBON FOOTPRINT?

Last December I flew out to New Zealand to deliver the final keynote at ASCILITE 2009. Though entirely possible to have delivered the keynote remotely, part of the reason for going was to attend the conference itself. I wanted to see and hear what was happening in that part of the world in the area of e-learning. I did consider the environmental impact of my journey as I am sure anyone who flies long haul for these kinds of events.

Any conference is going to have an impact on the environment. With hundreds of people travelling hundreds (if not thousands) of miles this will contribute to the carbon footprint of the event. Likewise once at the event there are all the “extra” bits of paper, bags and paraphernalia that you receive at a conference. Paper from the organisers, exhibitors and session presenters. Don't get me wrong, some of this will be really useful, but a fair amount will end up (hopefully) in the recycling bin and some in landfill.

Yes I know I can hear you saying but I like reading from paper. That's true, but it doesn't have to be a one or the other scenario. You can print some of the papers, but not all of them. You can print the stuff you want to read “on paper” and leave the other stuff on the screen. Print what you need, rather than let others print everything! At this point I should say that many physical conferences are moving over to electronic materials, though there is still a fair bit of paraphernalia about at the conference I recently attended.

Now it has to be said that an online conference can help reduce the environmental impact of an event. If you are like me you probably have a laptop with you at a conference, so if you are staying at home or in the office and using the laptop at the online conference this will have a negligible impact on the carbon footprint as you would be using the laptop at both kinds of events.

We should though consider the impact of staying at home and attending the conference, you will be using lighting, heating (it will be November) and making coffee. If you are at a physical conference this energy wouldn't be used. You might want to consider going into the office to access the conference (travel impact again, cycle to work perhaps) to lessen your personal contribution to the carbon footprint. If like me though there are already people at home, attending from home may be a better option. Also it



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has the advantage that you are less likely to be disturbed.

An online conference is not going to have a zero carbon footprint, but I would argue that the footprint will be a lot smaller than a traditional physical conference.

Now it's not to say every conference should be online, there is something about the social and networking aspects of a physical event, but attending an online conference can not only be a stimulating and interesting experience, it can also have less impact on the environment. You will still be able to network and the social side of the online conference though not the same as a physical conference, it is there and is just different. It is still possible to make new contacts at an online conference, I know, because I have.

See the savings both in cost and in carbon footprint by having an online conference rather than a physical conference in this report by the Centre for Distance Education, Athabasca University: Online professional development conferences: An effective, economical and eco-friendly option: <http://www.cjlt.ca/index.php/cjlt/article/view/521/254>

The article was first published at : <http://www.jisc.ac.uk/whatwedo/programmes/elearningpedagogy/elconference10/environment.aspx#.TsExHb-Zc84.email>

Written by

**James Clay**

**ALT Learning Technologist of the Year 2009**

This article called the editor's attention after researching on carbon footprint. Since IFSA organises quite many international events every year and IFSA members also attend many conferences, IFSA News felt the need to share the impressions of James Clay with our readers.

Especially forest science, forestry and natural resource management students are looked up on as people who care for nature more and treat our resources sustainably.

IFSA News is therefore calling on all Local Committees to take a close look at their carbon footprint and possibly work out a sustainable plan on how to lower the negative impact on the environment through travelling without having to neglect the IFSA SPIRIT!

For more information on green travel see

<http://gogreentravelgreen.com/>

<http://green.travel/>



# TEMPERATE RAINFOREST IN CHILE – A THREATENED ECOSYSTEM

*Chile is a land of extreme diversity spanning nearly 40 degrees of latitude (Wilcox 1996). Its geographic isolation by the Pacific Ocean and the Andes Mountains, enhanced the presence of endemic species, the conservation of relict taxa and the development of unique ecosystems. These include stands of *Araucaria araucana* and forests of giant Patagonian Cypress (*Fitzroya cupressoides*) in the South, groves of Chilean palms (*Jubaea chilensis*) in Central Chile, and the Valdivian forest subtype, a unique ecosystem which has been classified among the 200 biologically most valuable and critically endangered ecoregions of the world (Olson and Dinerstein 1998).*

## Ecology and importance of old-growth forest systems

In the temperate climate zone only a few areas in the world still maintain old-growth forest systems. In South America significant areas of temperate old-growth rainforest can be found in south-central Chile (Smith-Ramirez 2004). Characteristic for these forests is a large

volume of snags and logs with slow decomposition rates which is several times greater than that of second growth forests (Carmona et al. 2002). In addition to woody detritus, long tree life spans and slow growth rates also play an important role for carbon storage capacity (Harmon et al. 1996). Recent studies have shown that old logs on the forest floor function as safe spots for the regeneration of native tree

species (Christie and Armesto 2003). Old-growth temperate rainforests in southern Chile have global importance since they are unique in their unpolluted biogeochemical cycle (Hedin et al. 1995) and display the highest floristic richness among evergreen temperate rainforests worldwide (Arroyo et al. 1996). Despite its high conservational value, attempts to

preserve and manage this unique ecoregion in a sustainable way are still insufficient.

## Threats to the ecosystem

For the past 200 years human land use has led to significant decrease and fragmentation of old-growth forest in Chile (Willson and Armesto 1996). Presently, most existing native forests, especially in

the lowlands and foothills of the Andean and Coastal ranges of south-central Chile, are secondary forests. These forests are the result of human disturbance, especially of abandonment, agriculture and fires (Armesto et al. 2010, Echeverria et al 2007).

Nowadays, southern temperate forests are severely threatened by deforestation and the implementation of

exotic tree plantations of *Pinus radiata* and *Eucalyptus* species. In Chile approximately 15.6-million ha (21%) is forested today (Alvarez 2006), a decrease of almost 50% from an estimate of 30-million ha prior to Spanish colonization (Wilcox 1996). In order to fight erosion, caused mainly by land conversion to pastures, the Chilean

government began subsidizing afforestation with exotic tree species (Lara and Veblen 1993). Plantation timber has satisfied the domestic demands for construction, furniture, and wood pulp and is exported worldwide, yet has not reduced the cutting pressure on native forests. In the 1990s, the demand for hardwood chips by Japan led to increases in the exploitation of native forests. It has been estimated that 55% of native forests have been replaced by exotic plantations (Clapp 2001). Further threats to temperate forest ecosystems in Chile are the impacts of urbanization, fragmentation, and deforestation for agricultural purposes (FAO 2009, Echeverria et al 2007, Armesto et al 2010). A new threat to native forest ecosystems in the Chilean South is the construction of massive hydroelectric dams by international companies, which would drown large swaths of wild land and require the clear-cutting of native forest to accommodate 1,500 miles of transmission lines.

## Native temperate forests of south-central Chile and global change

The Fourth Assessment Report of the Intergovernmental Panel on Climate Change (2007) predicts that changing .....continue on page 7

**“...For the past 200 years human land use has led to significant decrease and fragmentation of old-growth forest in Chile ...”**

**Table 1 – Area of land cover types in 1975, 1990, and 2000 in Rio Maule-Cobquecura**

Cover type	1975		1990		2000	
	(ha)	(%)	(ha)	(%)	(ha)	(%)
Agricultural and pasture lands	105,701	18	78,482	14	124,819	22
Shrubland	193,532	34	260,607	45	104,151	18
Arboreus shrubland	112,818	19	79,643	14	93,261	16
Native forest	119,994	21	56,133	10	39,002	7
Exotic-species plantation	29,579	5	96,777	16	211,686	36
Other land covers	16,541	3	6522	1	4800	1
Total	578,164	100.0	578,164	100.0	578,164	100.0

Table 1: Change in land use from 1975 to 2000 in an area with temperate rainforest, showing the increase in exotic-species plantations over time (from Echeverria et al 2006)

climatic conditions are expected to have large impacts on forest ecosystems in Latin America in a near future.

For Chile, climate change models (CONAMA 2006) predict a terrestrial temperature increase of 2 to 4°C on average by the year 2040. These models also expect a precipitation decline of up to 40 % from the present precipitation mean in the summer time for south-central Chile (CONAMA 2006). Since temperature increase and precipitation decline have major effects on the

physiology of forest ecosystems (Neilson and Drapek 1998), climate change is most likely going to affect the future development of temperate forests in south-central Chile and adaptive measures should be considered in forest management strategies.

#### Effects on biodiversity

Forest degradation may have negative impacts on native biodiversity. Diaz et al. (2005) found that a variety of bird species in Chilean temperate forest depend on old-growth forest. Similarly,

Amico et al. (2010) have shown the dependence of the arboreal marsupial *Dromiciops gliroides* on old-growth forest attributes for nest building and shelter. In southern temperate rainforests where the majority of plants require interaction with animal pollinators and/or vertebrate dispersal agents for natural recruitment (Armesto et al. 2010, Wilson 1991) the disruption of these mutualism by forest degradation could be disastrous for the survival of the ecosystem.

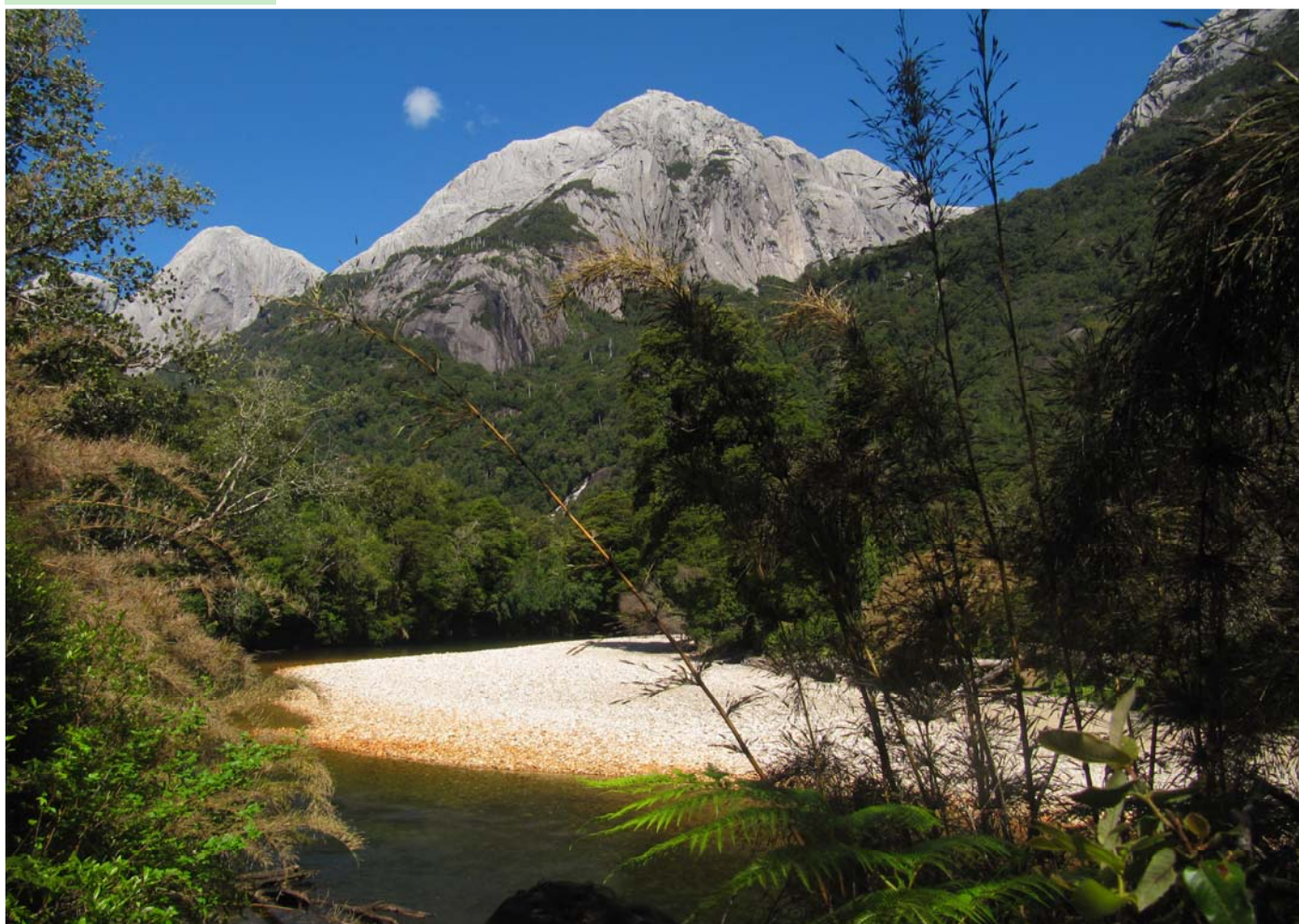
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Picture 1: The endangered Patagonian Cypress is one of most long-lived trees on Earth (Source: Author)





Picture 2: Chilean Rainforest (Source: Author)

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# THE MASTER OF SUSTAINABLE FOREST MANAGEMENT A NEW PROFESSIONAL DEGREE OF THE UNIVERSITY OF BRITISH COLUMBIA

*Sustainable forest management maintains and enhances the long-term health of forest ecosystems for the benefit of all living things while providing environmental, economic, social, and cultural opportunities for present and future generations (Canadian Council of Forest Ministers). Contemporary forest land management encompasses ecosystem restoration, conservation, carbon management, community forestry, and the assessment of cumulative impacts and integration of land-based activities such as timber harvesting, mining, grazing, recreation and electricity generation and transmission.*



Traditionally, most professional foresters completed undergraduate degrees in forestry. With the broadening of undergraduate programs in environmental sciences, graduates with allied sciences degrees are finding employment in forest land management but without a solid foundation in the ecology, growth, conservation, economics and management of forested lands.

The new Master of Sustainable Forest Management (MSFM) degree at the University of British Columbia (UBC) is a one-year course-based program that provides students with Bachelor's degrees in forest sciences, conservation, ecology, physical geography, environmental sciences or other allied disciplines, opportunities for advanced scholarship and professional growth in natural resource management principles and practice. It prepares students for careers as forestry professionals in temperate forests in North America and overseas, and sets the stage for life-long learning.

The major components of this program are:

- 1. Tree and stand dynamics**
- 2. Forest to landscape: structure and function**
- 3. Forest management**
- 4. Economics and administration of forestry**
- 5. Leadership skills: communication and critical reasoning**
- 6. Information acquisition and analysis**
- 7. Professionalism and ethics.**

As integrating capstone projects, students work in teams designing site and forest level plans. The latter by working with clients to develop management plans for woodlots, community forests, and conservation areas. The UBC campus in Vancouver, BC is a wonderful place to study, with nearby forests, beaches and downtown life. During our program we will visit the University Research Forests and Rural

Communities, giving students an opportunity to learn about old-growth and managed forest ecology, indigenous rights, and life in resource dependent communities.

For more information on this program please visit the program website at the following link

[www.forestry.ubc.ca/grad](http://www.forestry.ubc.ca/grad)

or contact [gradforapp@ubc.ca](mailto:gradforapp@ubc.ca)

*Stephen Mitchell, PhD, RPF*



# CLIMATE CHANGE AND ECONOMIC DEVELOPMENT: A CASE STUDY OF THE AFRICAN CONTINENT

*In the past decades, some of the global impacts of environmental degradation (such as desertification, ozone depletion, climate change etc.) had become very evident (Kjellen, 2008). In view of this, anthropogenic climate change has in recent times gained a lot of public attention due to its wide ranging future impacts on humans and other natural systems. One continent that usually comes first into mind in the climate change impact discourse is Africa.*

As asserted by GECHS (2008) Africa is the continent with the highest vulnerability to the negative impacts of climate variability and change due to its weak institutional, financial and technological capability. Whilst the exact nature of the impact of climate change on Africa is still being explored, past climate data indicates that, there has been an increase in annual temperature by about 0.5-0.70C in the twentieth century (GECHS, 2008, WWF, 2011). GECHS (2008) again asserts that, part of the continent (Sahel region) has also experienced a decline in rainfall pattern over the century whilst other areas (east, central Africa) have experienced large amounts of rainfall. These changes as a result of the climate variability also do have negative impacts on other natural systems and the African Society as a whole. It is against this background, that this study is being carried out to assess the impact of climate change on economic development in Africa.

The term economic development may have different meanings to different people depending on the context and also the person defining it. Deardorff (2011) defines economic development as a "sustained improvement in the well-being of a country's population". In this paper and for the sake of this study, the term economic development will imply a country and its citizen's ability to have adequate access to resources to meet their daily needs and survival. Based on this definition, this study will discuss the current and potential impact of climate variability and change on economic development by focusing on impact on agriculture (food security), water resources and

biodiversity.

The study was based solely on literature review. Literatures were reviewed in the area of climate variability and change, ecosystem resilience, the economics of climate change and others.

## THE IMPACT OF CLIMATE CHANGE ON FOOD SECURITY

WHO (2011) defines food security as "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life". It asserts further that the concept of food security is dependent on three pillars namely, food availability, food access and food use. Based on this, the discussion on the impact of climate change on food security will focus on this three domains or pillars.

### *Food availability*

The agricultural systems in most parts of Africa are rainfed. In view of this changes in climate as a result of changes in precipitation patterns and increased temperature will have a heavy toll on agricultural yield on the African continent. As asserted by IFPRI (2009) changes in rainfall pattern and increased temperature as a result of climate change would have a direct and indirect impact on crop yield. A study conducted by IFPRI (2009) to assess the impact of climate change on agriculture showed that Sub-Saharan Africa will have its production of maize, wheat and rice reduced by 10%, 34% and 15% respectively by the year 2050. This would occur because increase in temperatures has the potential to result in outbreak of certain crop pests; diseases and weeds (ibid) and this can have negative consequences on crop production.

The weed and crop pest proliferation becomes a serious threat to crop yield because most farmers in African countries lack the technical and financial capability to deal with such problem on a larger scale. Moreover, increased erratic precipitation patterns also have the potential to result in a lot of crop failure and hence production declines (ibid). According to Mason (2007) in 2006, Lesotho experienced its worst drought in 30yrs and this affected the crop yield and also the food availability to most households. Somalia has also experienced a decline in its seasonal rainfall pattern and this means food insecurity for many people (ibid). Lack of enough food will not only affect the livelihoods of most households in Africa but will also affect most African country's GDP and their ability to implement government's programs to improve the well being of its citizens. As indicated by WRI (1996) about 70 % of the population in Africa depends on farming for their survival whilst about 40 % of most African country's foreign exchange is dependent on agricultural exports.

### *Price (food access) and Consumption (food use)*

Due to low crop yield as a result of climate change, there is the likelihood that prices of food crops will increase as a result of increasing demand not compensated for by increasing supply. According to IFPRI (2009) climate change will result in additional price increases of cereals than the normal increase due to population, income growth and bio-fuel demand by the year 2050. IFPRI (2009) further asserts that, with increasing prices of food crops, animal feeds are also likely to

.....continue on page 11



increase and as such prices of meat is also likely to increase. It estimates an increase of beef prices by about 60 % in the year 2050 as a result of climate change (ibid). Increases in price of food crops means that most African citizen's access to quality food and their consumption would be severely affected. This is so because human consumption is dependent on the interaction between demand, supply and hence price with one's preference and income (ibid). As indicated by IFPRI

**"...climate change is likely to swamp most coastal areas of Africa leading to sea water intrusion into fresh water resources...This could have a damaging impact on fertile agricultural lands, fisheries and inland aquaculture....."**

(2009) climate change would result in a decline in meat and cereal consumption and this is likely to affect the per calorie availability and also result in malnutrition especially in children.

#### **IMPACT OF CLIMATE CHANGE ON BIODIVERSITY**

The Millennium Ecosystem Assessment Report (2005) indicates that climate change would be the single major contributor to terrestrial biodiversity loss in future as compared to loss from habitat fragmentation and loss, over-exploitation and colonization by invasive species. The African Wildlife Foundation (2009) also asserts that Africa is likely to have about 25-42% of its plant species losing all its habitats by the year 2085.

##### *Impact on plants*

Most African countries experience long periods of warm temperature throughout the year. In view of this, climate change resulting in further temperature increment means that most plants would experience heat stress which may affect its growth patterns (Espere, 2006). Moreover, changes in precipitation patterns and also low rainfall in some areas would also have a heavy toll on most plant species as a result of most plants experiencing water stress. As indicated by WWF (2011) the Cape Floral Kingdom (Fyndos) located at the southern tip of Africa and enriched with different plant species of which about 68% are native is likely to be threatened or affected by

changes in seasonal rainfall patterns. Also the Karoo Biome which is also home to about 2500 different native species of plants is also likely to be affected by changes in rainfall regimes as a result of climate change (WWF, 2011). These floral biodiversity hotspots in Africa would be affected because changes in the rainfall regime is likely to change the fire regimes of the area and that can affect the life cycle of these rich floral biodiversity (ibid). Furthermore, certain parts of Africa (Eastern

Africa) that are projected to experience high rainfalls in the midst of climate change also risk having most of its soils becoming waterlogged as a result of flooding. This would mean that plant roots would be deprived of oxygen as a result of air spaces in the soil being filled up with water and this has the potential to result in the wilting and eventual death of some excessive water intolerant plant species (Hawkins et al, 2008).

#### **IMPACT OF CLIMATE CHANGE ON WATER RESOURCES**

In most developing regions of which Africa is not an exception, water security is a problem even without additional stress being posed by climate change (WBGU, 1997). However, climate projections indicate that water resources are at risk and this would have a devastating impact on humanity and ecosystems (Bates et al, 2008). As indicated by WaterAid (2007) increasing temperature as a result of climate change would result in changes in the hydrological cycle as a result of melting of glaciers and this could increase the risk of flooding. Urama and Ozor (2010) also asserted that, the impact of climate change on water resources on the African continent would be in the form of flooding, changes in rainfall pattern, melting of glaciers, recession of water bodies, and sea water intrusion among others. These effects are already being observed in certain parts of Africa whilst other areas are projected to experience it in the future. In Northern

part of Africa, flooding is the most common disaster whilst some parts of South and Central Africa also experience flooding sometimes with its devastating consequences on human life, property and ecosystem (AWDR, 2006). In 2001, flooding in northern part of Algeria resulted in the death of about 800 people whilst at the same time the country incurred an economic loss of about 400 Million Dollars (Urama and Ozor, 2010). Also the year 2000 flooding in Mozambique led to an economic loss of about 6% per annum (ibid). Not withstanding these negative impacts flooding is having and would continue to have on the African society as a result of changes in climate, it has also been projected that changes in climate would exacerbate the risk of drought in most parts of the continent in the twenty first century (ibid). This is likely to lead to drying up of most water bodies especially in the arid regions (Sahel) of Africa. As indicated by WWF (2011) Mountain Kilimanjaro has lost about 82 % of its glaciers since it was first surveyed in 1912. These glaciers act as a water tower to most water bodies and loss of it means that the water bodies that are dependent on these glaciers risk becoming dried up in warmer seasons (ibid). Also past water availability data on River Niger, the Senegal basin and lake Chad over the last 100 years indicate a decline in the water quantity by about 40 to 50 % (African Commission, 2011). These would have a negative impact on the survival of the aquatic organisms present in those water bodies. Furthermore, rising sea level as a result of climate change is likely to swamp most coastal areas of Africa leading to sea water intrusion into fresh water resources (Africa Wildlife Foundation, 2010). This could have a damaging impact on fertile agricultural lands, fisheries and inland aquaculture (ibid). In Africa, salt water intrusion has already been observed in parts of Zambezi and the Gambia River during dry seasons (Africa Wildlife Foundation, 2010). Also Lagos, one of the largest cities in Nigeria is also affected by coastal erosion and salt water contamination of most of its freshwater resources as a

.....continue on page 12

result of increasing sea level rise (Urama and Ozor, 2010).

## CONCLUSION

Since majority of African country's economic growth is dependent on climate sensitive activities like agriculture, fisheries, forestry etc. coupled with weak institutional, technological and financial capability, it can be said that the

negative impact of climate change on the African Society would far outweigh its positives. As indicated by the African Commission (2011) very few areas in Africa would benefit from climate change. This means that on a whole, climate change would undermine economic growth and economic development of most African countries and its people. This would add to the continent's already existing problems like

extreme poverty, food security challenges, and diseases among others. This makes mitigation measures through substantial greenhouse gas reductions in the developed world and adaptation strategies by the affected groups not only important but also very crucial if the negative impact of climate change on the African society should be dealt with. In view of this, there is the need for the developed world which is believed to have contributed immensely to the problem of climate change to help African governments in climate adaptation measures through institutional strengthening, provision of financial support and technological transfer. Moreover, most African governments can also come up with good developmental policies and programs that can help ensure that less percentage of its population are engaged in climate sensitive activities like agriculture, fisheries, forestry etc. whilst the rest of the population also engages in other sectors of the economy. This should be done such that the few people engaged in the climate sensitive activities can support the rest of the population with its output and even make some available for exports. This would help

improve the livelihood and resource base of most families in Africa and thus help them adapt better to the negative impacts of climate change. Also local climate adaptation strategies should not be overlooked if the negative impact of climate change is to be improved on the African continent.

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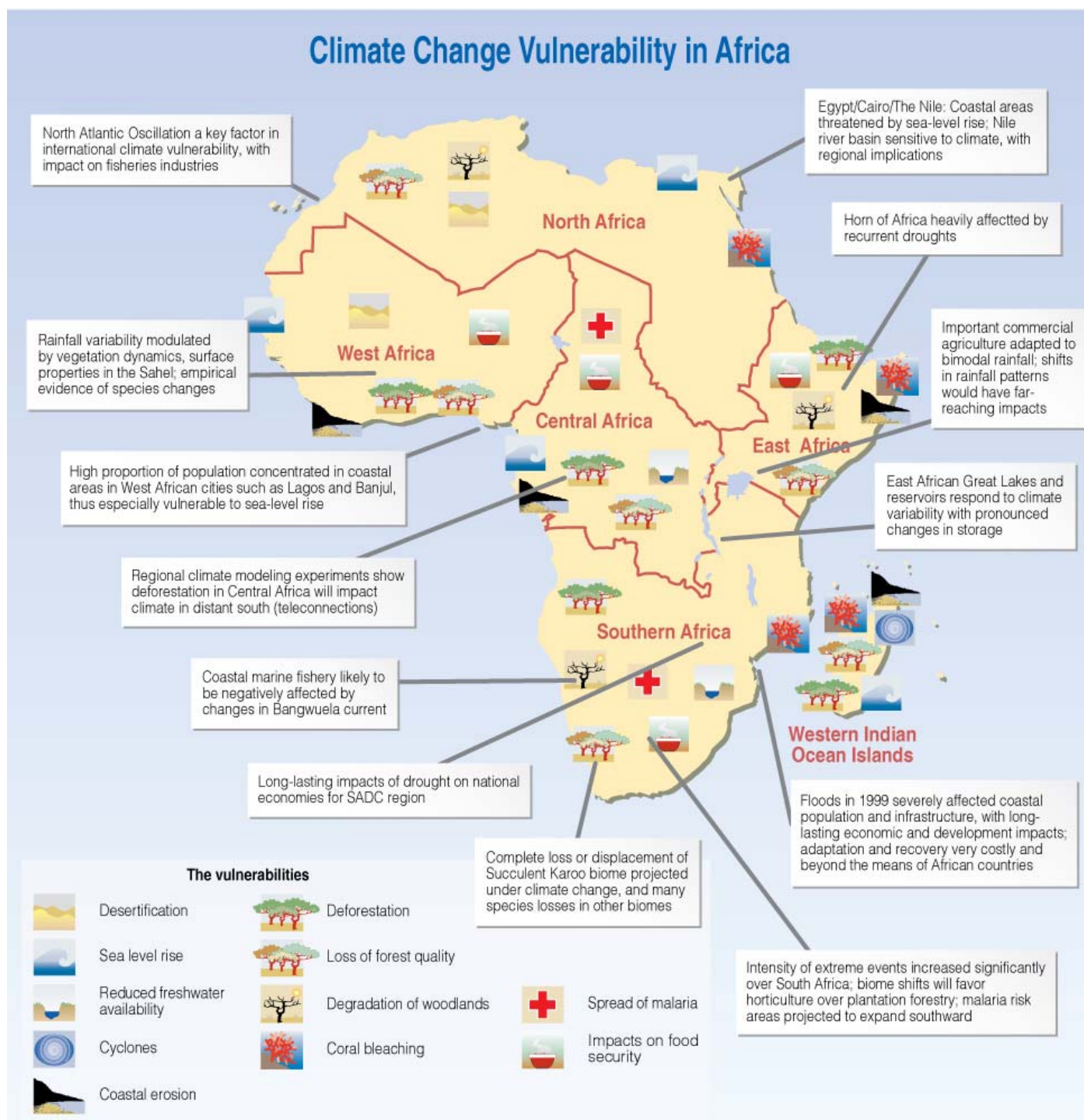
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## Climate change vulnerability in Africa

Multiple stresses make most of Africa highly vulnerable to environmental changes, and climate change is likely to increase this vulnerability. This graphic shows which of the regions of Africa (North Africa, West Africa, Central Africa, East Africa, Southern Africa and the Western Indian Ocean Islands) are most vulnerable to specific impacts of climate change. These impacts include desertification, sea level rise, reduced freshwater availability, cyclones, coastal erosion, deforestation, loss of forest quality, woodland degradation, coral bleaching, the spread of malaria and impacts on food security.



Picture: Climate change vulnerability in Africa

Sources: Anna Ballance, UNEP/GRID-Arendal, 2002. [http://maps.grida.no/go/graphic/climate\\_change\\_vulnerability\\_in\\_africa](http://maps.grida.no/go/graphic/climate_change_vulnerability_in_africa)

Cartographer/Designer: Delphine Digout, Revised by Hugo Ahlenius, UNEP/GRID-Arendal

Link to web-site: <http://www.grida.no/climate/vitalafrica/english/28.htm>

# ROLE OF INDIGENOUS KNOWLEDGE SYSTEMS IN CLIMATE CHANGE ADAPTATION AND MITIGATION IN CAMEROON

*Forests today represent an essential part in the worlds' initiative aiming to reduce climate change effects; they play a very important role in the regulation of the global climate. Forests provide various eco-systemic services to millions of people including wood energy (Locatelli, 2008). In Central Africa, it is estimated that around 100 million people depend on forest considering goods and services that it offers (COMIFAC, 2009), forests are the main and sometimes the only source of energy for these people. Wood energy is the main source of energy in developing countries (Schure et al.,2010).*

In Cameroon around 80% of the population, in rural and urban areas depend on fire wood for cooking (MINEE, 2008). The consumption of fire wood is estimated to be about 10 million cubic meters annually. This demand will probably increase as a result of demographic factors, lower incomes, and the increase in prices.

Wood energy is one of the four sectors identified during science-policy dialogues as sensitive to climate change and important for adaptation in Central Africa. Many people highly depend on it especially the indigenous people (Sonwa et al., 2008).

Today climate change effects are visible and the poorest indigenous people are most affected. But thanks to their knowledge, indigenous people have always accommodated themselves to the different modifications or disruptions of their local environment. The reality of climate change impacts is such that adaptation constitutes a priority at local level.

The question is firstly to know the vulnerability of the wood energy sector to climate change and secondly to know how the indigenous people that are stakeholders in the wood energy sector react to today's climate change?

The main objective of this study that we lead in a forest zone in Cameroon is to contribute to the identification of some knowledge and indigenous practices developed by the stakeholders of the wood energy sector to adapt to climate

change.

## Methodology

The study area that has 650 km<sup>2</sup> and a population around 62,808 inhabitants is a mosaic of different type of land use: mixture of natural and managed (degraded) vegetation. The exploratory investigations that we made in our study area permitted us to count, to categorize and to identify our actors; this is how we proceeded to uncertain, stratified and systematic sampling according to the categories of identified actors. The methodology used in this study is based on a meticulous bibliographic research and data collection.

Concerning the collection of the data, several methods have been used:

-Explorating investigations in our survey zone;

-Semi-structured interviews close to several resources person;

-Application of AMPR (Accelerated Method of Participative Research) "in french MARP" by conducting focus groups;

-Direct and indirect structured interviews with every category of actors, by the administration of a questionnaire;

-Participative Observation.

All the data collected was analyzed by using Excel and Spss software.

## Results and Discussion

### Wood energy sector description and climate change effects

Energy derived from wood in Cameroon refers essentially to charcoal and heating wood, the sector is still informal. However, the wood energy sector is structured in stakeholders, producers, carriers, sellers and consumers. The majority of the actors are young (60% of them are between 16-35 years old) (see figure 1).

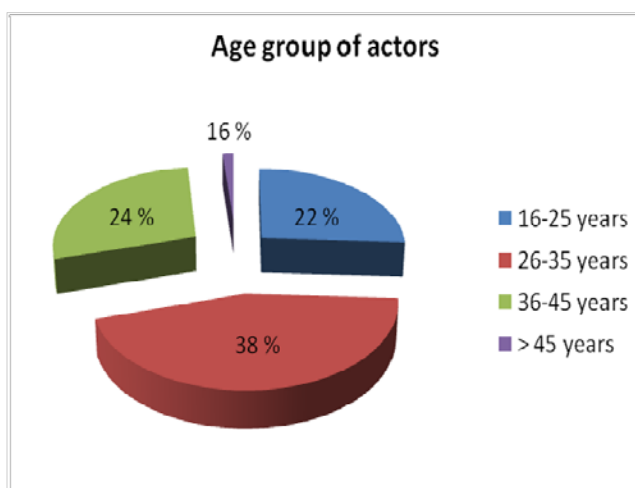


Figure 1: Age group of the actor

Based on the sources, fire wood and charcoals are both collected in forests and on fields. Charcoal mostly results from harvesting wood in the forests while fire wood is collected from the fields.

The majority of wood energy products is used for trade (58%) and for private consumption (39%) (see figure 2).

Several parameters influence the sector:  
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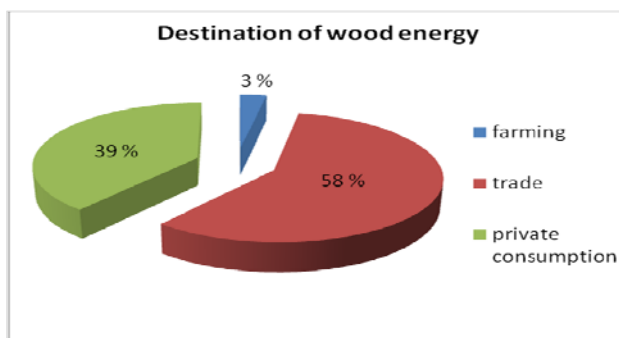


Figure 2: Use of wood energy

seasons assigned to local climate variabilities, type of timber gas, availability of manpower (see figure 3).

Vulnerability of the sector may also be affected by the combination of multiple non climatic factors (type of timber, availability of manpower, tools, etc.). Analysis shows that, the level of vulnerability to climate change is not the same among all the actors; consumers for example are more affected than sellers or producers who can adapt differently due to higher income.

Concerning climate change effects, what rural people observe are mainly:

- irregularity of season cycle
- rains in dry seasons
- drought in rainy seasons
- violent winds often.

These effects have several consequences on the sector such as difficulties of wood supply (road conditions etc.), decrease of production and increase in price, deterioration of wood quality (wood gets rotted, charcoal crumbles). Faced with these problems, different actors put in use their knowledge and practices to adapt themselves.

#### *Knowledge and practices developed by indigenous people in this sector*

This knowledge and practices were developed to conserve the good level of production and to overcome difficulties related to wood energy access.

The following strategies/mechanisms to conserve a good level of production and sale were developed:

- to implement the usage of carbonization ovens/ cut down heating wood and stock during favorable seasons;
- to produce wood energy by mixing high and low production gas;
- to use carbonization ovens near water sources;
- to recruit more manpower;

-to build tents with local materials or use tarpaulin for covering wood products for protection of rain;

-to optimize the wood energy production process.

In addition the following practices were developed:

-cut down a lot of trees in dry season (easy entry in forests)

-take advantage of creation of fields to harvest heating wood

-unsustainable cutting of all trees without concern

-plant economical valuable trees close to villages.

#### *Sustainability of the practices*

Of all the practices developed by the actors to adapt to climate change, some are not sustainable or not viable and can be considered as simple reactions to these changes. Very disturbing is for example the cutting down of wood by producers in favourable period, which is done without thinking of sustainability which leads to severe damage of the vegetation and to high risks of accidents.

Also several plants Figure 3: Influencing parameters

planted by rural people may not be suitable for the production of fire wood. Although there is a lack of adequate research results on the wood energy sector related to climate change in Cameroon, we can note that, the results of this study (characterization of the sector notably) is similar to the studies led by Demanou,1997, Sonfack, 2010 and Schure,2010.

#### **Conclusion and recommendations**

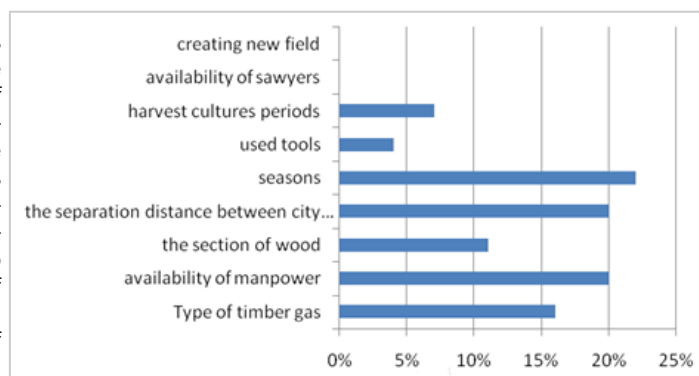
After analyzing the results of our study, we can conclude that people use more wood energy as a commercial activity than ever.

The fact that the majority of the actors are young, shows that the actions of durability integrating adaptation and mitigation measures to climate change can be undertaken.

The wood energy sector appears structured and its actors somewhat organized, the sector is under influence of several factors that can together lead to high vulnerability.

Several practices and knowledge are developed by indigenous wood energy stakeholders to overcome difficulties related to climate change. These practises can be considered as mitigation measures if they are implemented on a large scale, but the sustainability of these practices are questionable.

The wood energy sector provides opportunities to integrate climate change adaptation and mitigation; forest landscape and local indigenous knowledge/practices can be useful (synergy between mitigation and adaptation). However, the necessity to take in account the indigenous knowledge and practices is essential to improve or to complete indigenous peoples' efforts facing climate change challenges. It is also important to note that, incorporating indigenous knowledge systems in conception of adaptation and mitigation projects/policies to climate



change have the advantage of being easily applied by local people and can give them confidence of being taken into account for the achievement of their development.

This taken into account is supposed to bring these native populations to gradually drop some of their unsustainable practices and to capitalize those that are sustainable. In any case we must constantly have in mind that the best adaptation to climate change resides in the improvement of the standard of living for rural people. A good management in the wood energy sector in Cameroon may imply a combination of local indigenous knowledge with forest sustainable practices proposed by scientist.

We think that, some efforts must be made for a better understanding and inclusion of indigenous knowledge systems in adaptation and mitigation

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measures against climate change. This may be feasible by for example mobilizing the power of youth (young researchers) to lead pointed investigations and studies in domains that are considered priority and essential for indigenous people, and by stimulating the organization of these people in formal groups in order to conjugate their effort against climate change challenges.

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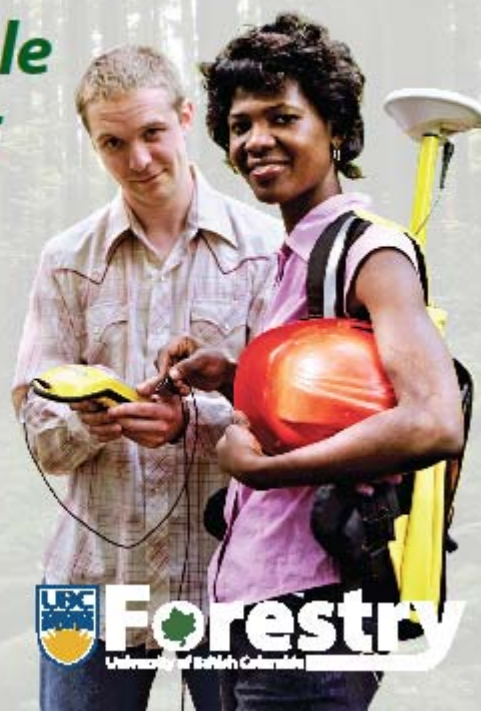
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# UNFCCC CLIMATE CHANGE CONFERENCE COP 17 - REDD+ OUTCOME

*The Durban summit, the longest UN climate meeting since 1995, put particular emphasis on the role of forests in combating climate change and securing livelihoods. A special focus was on challenges for REDD+ (Reduced Emissions from Deforestation and Forest Degradation) as land use and forest management have been recognized to hold huge climate change potential.*

The decisions made on REDD+ in Durban included progress on how to set reference emissions levels and progress on measuring, reporting, and verifying (MRV) emission reductions stemming from forestry. However, weak decisions were made on social and environmental safeguards, as well as on finding sources of long-term funding for REDD+.

For a better understanding, a quick introduction will clarify the concept of REDD+ and might help to seize what consequences the above stated decisions bring with them.

Since COP16 in Cancun last year, preserving forests and preventing forest degradation play an increasingly significant role in combating climate

change. The challenges faced now are to find ways to make forest conservation economically attractive both to the local people and on the national level.

Therefore, the idea of REDD+ came into being. The principle is that certain areas covered in forests are excluded from exploitation, or that new forests are planted on previously unforested land. In many cases, neither logging is allowed in these areas nor are the local people permitted to extract fire wood from the forests included in REDD+ projects. The goal is to build up the highest possible carbon stock. The project areas undergo a carbon inventory, where certifiers measure the amount of carbon that is stored in the forests.

According to the results the land owners

get a certain amount of carbon credits. One carbon credit accounts for one ton of CO<sub>2</sub> that was taken out of the atmosphere to be stored in the wood. The more carbon has been sequestered since the last inventory, the more money the land owners get as reimbursement for having taken their forests out of use, or for not using the respective area for other purposes, as cropland for instance.

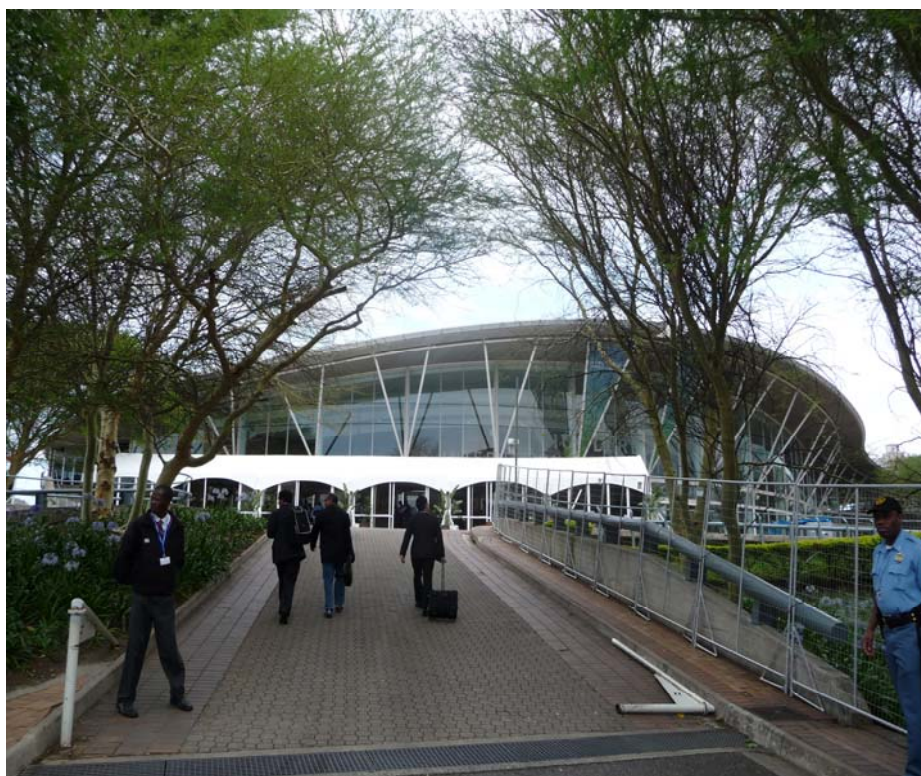
An important element of REDD+ projects is the so-called „additionality“. This means that only forests that would otherwise have been cut, or newly afforested areas that would have been used differently (say as cropland or pastures) without the financial recompensation, can be registered as REDD+ projects.

REDD+ is believed to increase in significance over the next years and to display a relatively inexpensive method of lowering the atmosphere's CO<sub>2</sub> concentrations.

Until now there are many difficulties that have to be overcome in the field of financing and social safeguards for the local communities that are directly affected by REDD+ projects. Another challenge is to ensure biodiversity and other ecosystem services. Clear legislation and strict jurisdiction is therefore essential for the success of the conception of REDD+.

The progress on MRV - measuring, reporting, verifying - systems that unequivocally allocate emission reductions to REDD+ projects mobilizes the private sector to increase their financial support for REDD+ and invest money. Durban served as a platform for

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Picture 1: Entrance of the International Convention Centre, Durban, South Africa



Picture 2: IFSA delegation at COP 17 in Durban, South Africa

international investors, organizations and businessmen alike - to discuss possible developments in this field.

Another incentive that the Durban talks provided are more elaborate and robust reference emissions levels that quantify the climate relevant additionality of REDD+ projects compared to a business-as-usual model. This may lead to including REDD+ into the CDM (Clean Development Mechanism), a scheme that awards emission reduction credits to projects in developing countries, which then help industrialized countries to meet their emissions reduction targets under the Kyoto Protocol.

Rather disappointing was the outcome on financing models.

In Durban there was no conclusion on how to best equip the Green Climate Fund, which is supposed to serve in financing climate change adaptation and climate relevant projects, with an equitable budget. Therefore setting guidelines that encourage the involvement of the private sector in financing REDD+ displays a relatively flexible means with a fast start option.

This, however, leads to another challenge that was discussed a lot in Durban but did not come to solid results:

Especially with the private sector involved it is crucial to have social safeguards that ensure benefit sharing among all affected parties and that guarantee that no group is left behind. The need to clarify land tenure in many developing countries was expressed unequivocally throughout the conference. If the local communities have confirmed property rights, they can manage their forests independently and are granted the revenue from the carbon sequestration in a REDD+ project. However, indigenous peoples often use the forest as a source of food and fuelwood without actually having an official document that guarantees them the forest as their property. Globally 75% of the forests are government owned. If a government decides to implement a REDD+ project, the local people lose their rights to use the forest for their daily livelihoods as the forest is to be left undisturbed. With the government being the official land owner all the revenue from the carbon sequestration in the project area flows to the government and not to the local people who actually are the ones compromised in their daily lives.

Besides the social benefit, also ecological advantages result from clear forest tenure. Forest inventories have shown that forests owned by indigenous

communities in Brazil and Ecuador have upheld their expansions over years through sustainable use while unclear tenure led to less responsible management as the communities did not consider the forests their own capital.

Furthermore, government owned forests are more likely to be sold as concessions for logging companies than privately owned forests because treaties for big areas have to be negotiated only with one partner - the government - and not with many communities where endless discussions often impede the companies' projects.

Essential groundwork for REDD+ to function on a large scale is to have a climate regime that comprises clear emission costs. This can only be installed through courageous international and national policy making and on-ground public support by the global civil society. Long-term emissions reduction requirements within a strong international framework that includes carbon offsets from forestry is a perspective that will attribute to the forests their deserved attention in the public awareness and in the political agenda.

Christiana Figueres, Executive Secretary of UNFCCC, symbolically pictured the significance of forests in today's climate talks by saying: „Those who didn't attend Forest Day 5 missed COP17.“

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## WHAT CAN BE LEARNT FROM KOREAN DEBATE ABOUT A 'GREEN NEW DEAL'?

Along with the ever increasing popularity of the idea of rising temperature due to greenhouse-gas (GHG) emission, the question that often emerges is that is it possible to make a drastic cuts in GHG emissions without destroying our economy? (Krugman, 2010). While answers to that question are yet to be found, our economy was confronted by another financial crises which experts considered as the worst since the great depression, with estimated rise of unemployed between 18 million and 51 million over 2007 levels (ILO, 2009).

To stimulate both economic recovery and environmental preservation the United Nations Environment Programme (UNEP) proposed the **Green New Deal** which echoes the New Deal program by US President Franklin D. Roosevelt back in the 30's. The objectives of the propo-

sal was to revive world economy through the creation of employment opportunities; reducing carbon dependency, ecosystem degradation and water scarcity; and put Millennium Development Goals of ending extreme poverty further (Barbier, 2009). Those were to be achieved through a call for countries to alloca-

te 1% of their gross domestic product on green initiatives.

While the world's initial responses to the plan were generally good, most nationals have missed this one time opportunity to harness the economy as shown in figure 1, leaving only China, Australia and South Korea on the list of those allocated more than 1% of their GDP.

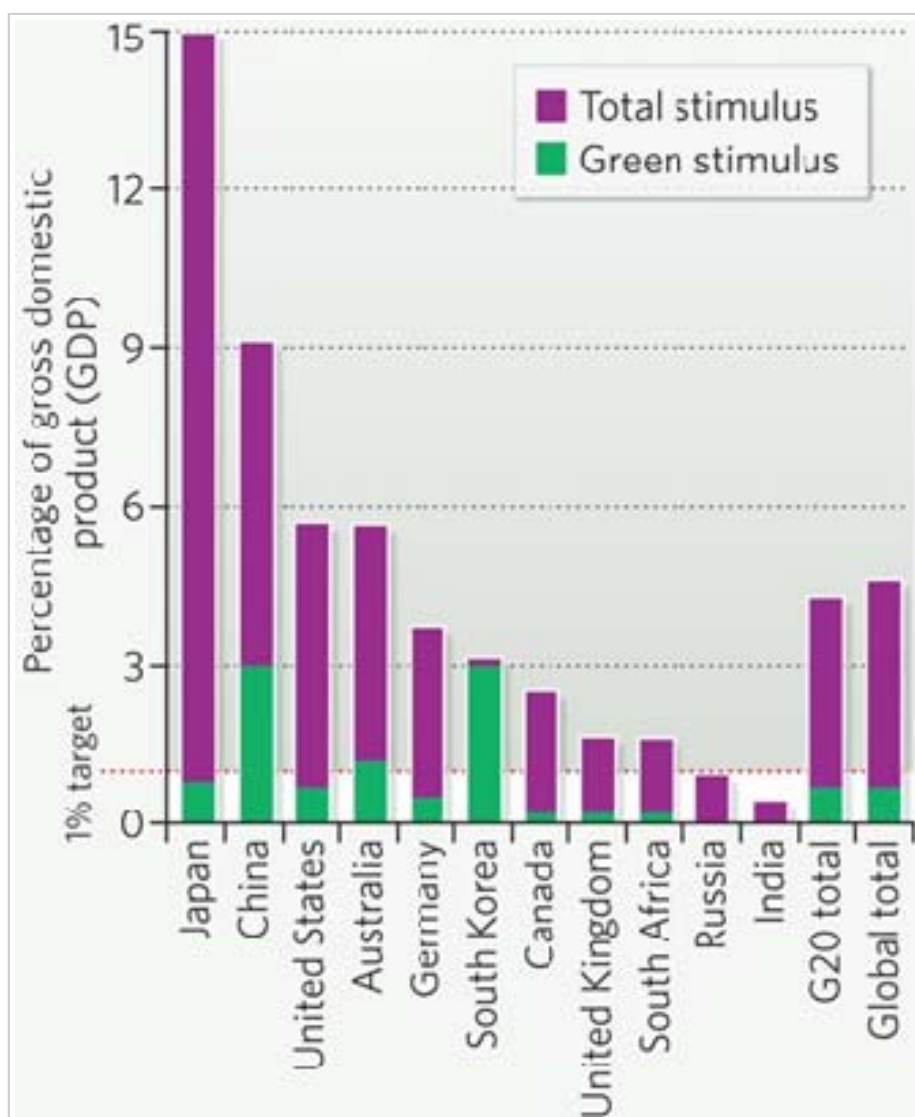


Figure 1: Government Stimulus (Barbier, 2010)

### South Korea's Response

*Immediate reaction from Lee's administration*

Korean Government under the Lee Myungbak administration responded to the call and launched Korean version of the so called Green New Deal which also declared as the policy vision of Korea. The 50 trillion won (around 36 million USD) stimulus package aimed to address two main issues: realization of low-carbon green growth and the creation of employment opportunities.

The Green within Green Growth symbolize the protection of environment, while Growth is associated with economic development, this which might seems as a directly opposed vision was declared as the policy vision of Korea that will unite policies from different spectrum (Lee et al., 2010).

The long term vision of Green Growth will be pursued through the adoption of a five year plan for green growth. The plan encompasses a number of projects that were previously announced as part of the Green New Deal and is an amalgam of several existing and newly designed projects on green growth articulated as

.....continue on page 20

Strategies	Policy directions
Measures for climate change and securing energy independence	Reduce carbon emissions
	Decrease energy dependence and enhance energy self-sufficiency
	Support adaptation to climate change impacts
Creation of new growth engines	Develop green technologies as future growth engines
	Greening of industry
	Develop cutting-edge industries
	Set up policy infrastructure for green growth
Improving quality of life and strengthening the status of the Country	Green city and green transport
	Green revolution in lifestyle
	Enhance global cooperation on green growth

Table 1: Strategies and Policy Directions of Green Growth Plan

part of a mid to long term strategy.

Within the plan there are three strategies and ten policy directions as shown in table 1. Legislators in Korea have been considering a “basic law for Green Growth” which will provide the legal basis for Korea’s Green Growth Strategy. The law or more accurately Framework Act on Low-carbon Green Growth, passed on 29 December 2009 and became the flagship of Korea’s Climate law.

#### *The Rise of Public Attentions toward Green Growth*

Based on a study by Lee et al. (2010) on how the issue of Green Growth appeared in the newspapers there were 414 articles published from the 1st quarter of 2005 to the 1st quarter of 2009 as shown in figure 2.

The content analysis above reflected public attention to the social issue), in this case the Green Growth Program (Stemler, 2001). Along the trend, there are several important events that can be referred to, the announcement of National Strategy For Green Growth in August 2008, Korea’s Green New Deal Stimulus Package in January 2009 and The Five Year Plan For Green Growth released in July 2009.

In general sharp increase happened in the same time when Lee Myungbak took office in the first quarter of 2008 and declared “Low Carbon and Green Growth” as a new growth engine and Korea’s vision of development for the next 60

years in his congratulatory address delivered during the 60th Anniversary of the Founding of the Republic of Korea on August 15, 2008.

President Lee has defined Green Growth as a new economic and social paradigm and will tackle energy and environmental issues, create job opportunities and growth engines, and encompass the facilitation of corporate competitiveness, and revolutionary changes in all aspects of people’s lives (Choi, 2011).

#### **Korea’s Legislative Process and the Development of Framework Act on Green Growth**

##### *Legislative Process*

The legal system of South Korea is a civil Law system that has its basis in the constitution of the Republic of Korea. The constitution charges the assembly with responsibility for making the nation’s laws, as well as approving the national budget, declaring war, and impeachment, among others. While the executive and other organs to enact subordinate statutes.

The unicameral National Assembly is the legislative body of the South Korean government. It has 299 members elected to four-year terms and meets in regular 100-day sessions from September to December every year. The president can request that the assembly meet in a special session of up to 30 days (Library of Congress). The power to enact acts belong exclusively to the national assembly and the lawmaking power held by the Executive, etc. for subordinate statutes is confined to matters delegated by Acts and other matters necessary to enforce Acts (Climate Change Legislation).

##### *Development of the Green Growth Act*

Parties inside and outside the legislative branch all have roles to play in placing items on the agenda as presented on a model proposed by Kingdon (1995) in (Page, 2008). In addition to that, changes of administration, a shift in the partisan or ideological distribution of seats in Congress, or a shift in national mood are also influential factors. Among others,

.....continue on page 21

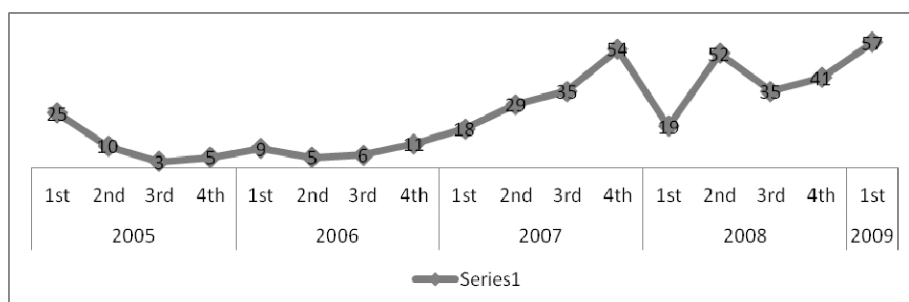


Figure 2: Appearance of Green Growth issue in Korean newspapers (Lee et al, 2010)



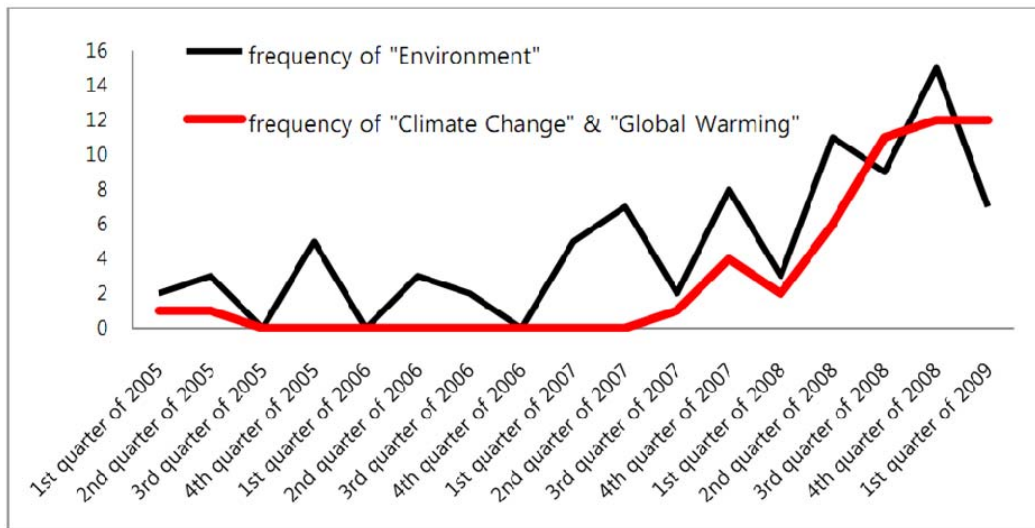


Figure 3: Frequency of Issues Within Presidential Speeches (Lee et al, 2010)

change of administration is the most important factor in the agenda-setting process (Kingdon, 2003).

The change of administration as the driver of emergence of particular political agenda can be captured from the analysis of 580 presidential speeches of the Roh and Lee administration which addressed Environment and Climate Change and Global Warming Issues as presented in figure 3.

It is observed on the figure that since the inauguration of Lee Myungbak, the frequency of both Environment and Climate Change and Global Warming issues being addressed in the presidential agendas has been steadily increased.

There is a cognitive map extracted from thirty texts of President Lee's speech developed by Lee et al. (2010). Through the analysis there were 25 variables with creating employment opportunities became the most important among

all. Those variables emerged from the President's Lee's interpretation of multi-dimensional crises that Korea is facing in climate change, resources shortage and global economic downturn. As a response to the crises the Lee administration then announced Green Growth as the policy vision which in turn initiated the creation of many significant policies in Korea.

#### Challenges and Critics of the Green Growth Policy of Korea

The enactment of Green Growth Policy is not without challenges. The amount of money required to finance the program is enormous and it is government responsibility to do so. Such excessive spending will lead to huge deficit, thus it is necessary that the program is not simply band together as a redundant project under a new name (Korea Times, 2009).

Creation of employment opportunities which are regarded as the most important outcome of the program received heavy criticism from the media as alleged to have manual jobs as big as 96% of the total jobs created. This however refuted by government that although the program does include big portion of construction works, 30% of the number would be filled by professionals, techni-

ans and office workers.

However, the heaviest criticism so far would be a claim that Green Growth policy is merely a green wash campaign of the South Korean Government. This due to several factors such as: low reduction of GHG reduction target; supply focused energy policy that accommodates 32% energy usage increase by 2030; the reliance upon nuclear energy to fuel

the growth through development of 12 new nuclear plants by 2022; and above all the construction based growth of the economy (Lee, 2010).

#### Lesson Learned

Despite all the criticism, Green Growth Program of Korea made the country became a world leader in green initiatives along with China in terms of money pledged for green initiatives. The actual money allocations of those stimuli are yet to be proven.

However in Korea, the initial stage of money allocation has been done in an efficient manner with 20% of fund disbursed at the end of the first half of 2009. It was another aspect that put South Korea ahead with only 3% compared to most countries (UNEP, 2009).

In contrast to the South Korean Government, the United States for example is somehow left behind Korea with its failure in meeting UNEP recommendation in GDP allocation for green initiatives and has its clean energy and security act lagged in the legislative line after facing fierce debate in the congress, competition from alternative bills and objection from the lobbyists.

At the time when east Asian economies faced the Asian financial crises of 1997, instead of subscribing to the demand of IMF to dismantle its market-intervening structure and liberalize the country's private sector, the Korean state took on a new role in the market by becoming the pluralist-supportive model which enabled the state to support the private sector qualitatively and quantitatively, without liberalizing it. Moreover, the state has kept most of its developmental structure. Consequently, in response to the crisis and the external pressure, the Korean state recomposed its role in the economic market in ways that aligned with the political and historical contingency (Kim, 2011).

In this sense it is the same reason why .....continue on page 22

the American public service sector is lagged behind South Korea. East Asia's economies advancement through the industrialization process has been accredited for the very developmental structure of the nations. Korea's success in particular has often been attributed to the developmental state that financially and logistically promoted the priority of industries through oligopolies of chaebols (Chang, 1993). While in the US and other western states, direct participation of the state in the economy is highly avoided.

The nature of how the shift towards green economy is more or less similar to investing in high speed train networks or other environmentally friendly transport networks, it requires lots of fund, it is risky and it is not attractive in shorter term. Thus it is very crucial that at the very initial state step the state is able to position itself in ways align with the long term national contingency, an advantage that is missing within the regulatory states system.

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## DID YOU KNOW . . . .



Fagus sylvatica purpurea (Purple Beech) produces excellent wood for the manufacture of numerous objects and implements and is often used as ornamental tree in parks and large gardens.

But Purple Beech is also known for its usage as alternative medicine. It's contents Creosote (known for its anti-septic and preservative properties), different fats and proteins are useful for the treatment of several health problems.

The wood, tar, leaves, seeds and fruits are used for treatment. They have an

antibacterial, cough-relieving and mucus-dissolving effect. Fever, overacidification of the stomach, bowel complaint, skin diseases, psoriasis and even rheumatism is treated with Fagus sylvatica purpurea.

So next time you pass by one of these beautiful Purple Beech trees do not hesitate to pick a few leaves and chop them into your salad ;-)





# CRITERIA FOR SCIENTIFIC ARTICLES PUBLISHED IN IFSA NEWS

All IFSA students who want to write a scientific article should follow the listed criteria:

1. Articles must be related to forest science or natural resource management.
2. Scientific articles should have a minimum of 1000 words and should not exceed 2000 words.

3. A title of not more than fifteen words should be provided.

4. Articles must conform to the following generic format:

- Introduction
- Literature review
- Methodology
- Findings/discussion
- Conclusion/implications
- Reference

5. Articles are not allowed to be published elsewhere once published in IFSA NEWS.

The checklist provided below is to ensure that articles meet the requirements prior to submission:

Send your articles in WORD DOC format not PDF files

All text is using Arial 11 pt or New Times Roman 12 pt font

Author(s) affiliation, address and email is provided at the end of the article

Figures, tables and charts are included within the body (able to be copied out) of the paper with a brief description

All text is justified

All references are provided at the end in alphabetical order

IFSA NEWS can only consider your scientific article for publication if you

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# INTRODUCTION TO IFSA

## MEMBER: AUSF PADUA

*Hi everybody! It's my pleasure to present our LC: AUSF Padua! We are the University Forestry Students' Association, founded in 1996 in Padua, but we are located in the Faculty of Agriculture (for assemblies, courses and seminars) and spend most of the time in the beautiful Alps (for field trips and excursions).*



Our mission is to ensure that the university should not only be experienced as a place for passive teaching, but also a space and a time, in which students encounter and exchange their ideas and opinions. Everyone willing to interact with others is welcome! We offer students the opportunity to discuss their future and their possible professional careers.

*What else do we do?*

We have activities that we organize every year and others that we organize every 2-3 years or we organize events that take place just once. One of the “every year

activities” we make is for example the field trip for first year students where we present the course of Forest and Environmental Sciences: the new students are introduced by the old students to the studies they will have to face. During the field trip where the objective is not the technical acknowledgment but the raising



of interest and curiosity. According to the spirit of the association the excursion turns into an opportunity for aggregation and friendship for the participants.

Another field trip, organized only during wintertime, is to learn about characteristics and evolution of the snow cover, elements of silviculture for the protection of the territory, and how to rescue people attacked by avalanches.

We also participate in census of fauna species like deer, fallow deer, wild boar, roe deer.

Despite of these, the majority of our .....continue on page 25





activities are organized every 2-3 years or they take place just once.

The most famous one of these are our courses of chainsaw and tree-climbing in collaboration with the Forstlichen Ausbildungsstätte (Forestry Training Centre) in Ossiach (Austria).

We also have a bi-annual contest of nature photography where students can show off their talent to snap beautiful pictures with their camera. The theme of the contest changes every time, but it always focuses on nature and the relationship between nature and humans.

Almost every year, we have a 3 day



excursion abroad, for instance to countries like Switzerland, Slovenia, etc., to extend our forest and environmental knowledge outside of Italy.

Our LC organizes different courses like basic mycology, basic meteorological analysis, alpine fauna and several seminars on wildlife fauna, biomasses, climate change, uniqueness of the wood, and about international experiences of



students. We also participate in exchange programs with students from other AUSFs in Italy.

In addition to these field activities, we organize trips where the main goal is not learning but enjoying the nature together: snowshoeing hikes in wintertime and spring trips around the Alps and Euganei hills.



We are a big association (195 members in 2010-2011 academic year) and we organize many activities, but they are all in Italian language. However our new entry into the IFSA family has opened an international door for us, where we can share our experiences not just between us, but with different cultures and different environments around Europe and the world. According to this, we are preparing something interesting for IFSA members!

**Andrea Leoni & Giacomo Crucil**

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**Italy**

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## CALL FOR ARTICLES

IFSA NEWS is calling for articles to be published in our journal. Students around the world have the opportunity to write scientific articles, articles about their LCs activities or articles on IFSA events.

Let IFSA world know what your research is about or what your LC is up to!

All articles will be reviewed and corrected before publication. So do not be shy and start writing!

You can send your articles to

[ifsanews@ifsa.net](mailto:ifsanews@ifsa.net)

We are looking forward to your articles!!!!



# UNOFFICIAL OFFICIALS MEETING, BRNO, CZECH REPUBLIC 21ST - 23RD OCTOBER 2011

*A large number of Officials and IFSA members spent most of the weekend in the Students' Pub, thus having the opportunity to discuss all the ongoing developments in IFSA, to share their experiences and thoughts. The goal of an unofficial meeting is to meet in person, gain some motivation for IFSA work, have some IFSA discussions, get to know each other better, and also have some fun together. The participants all arrived on Friday evening, and all gathered in Green Pub, the Brno Forestry Students' bar IFSA had booked. On Saturday morning, we split in several groups and had workshops concerning the EU Grant, led by members of IFSA 7.*



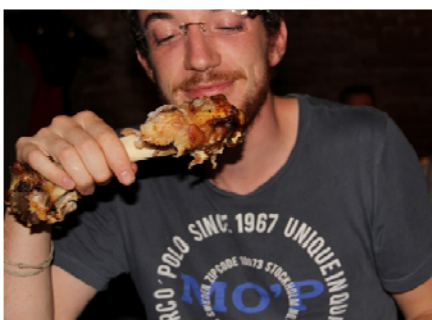
Picture 1: Officials during a workshop

After we shared our feedbacks, we had lunch : a typical Czech *Guláš* prepared by the Czech students. Then we got to the city center, where Pavlina, an IFSA Alumni currently working at Brno University, guided us to some nice sights.

Within in only three hours we visited the most important places of the town, such as *Petrov Cathedral* and the *Špilberk Castle*. Next stop was a brewery in the town, where the thirsty Officials experienced the tasty Czech beer while

having workshops, thus making up a new kind of workshop: the Czech Beer Workshop, which will certainly be regarded as a useful concept in the future of IFSA meetings just as the World Café!

Dinner was in a Medieval Pub, where our Officials were released of all the social constraints of our modern times, went wild and ate like uneducated peasants!



Picture 3: Official enjoying Czech food to the fullest



Picture 4: Group taking a trip to the forest

On Sunday morning, Pavlina, our Official Guide, took us to the University's forests for a peaceful walk and gave us an overview of Czech forestry.

Back at the University, a barbecue was waiting for us, prepared by our fellow Czech forestry students. We had a few more workshops and discussions, and the participants left during the afternoon.

The outcomes of this meeting were mostly about communication between Officials, how to prepare an IFSA delegation, and about the EU Grant. One can't measure it, but our motivation as Officials received a super kick-off too!

The great times we all had together are well appreciated and will surely be kept in mind! Thank you Brno!

**HugoPierre**

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Picture 2: Group picture of participants



## AUSTRIAN AUTUMN HIKING (OCTOBER 21 - 23 2011)

*The „Austrian Autumn Hiking Weekend“ was planned to be a hiking tour up to the peak at about 1800 meters. Unfortunately the weather foiled our plans. Thus we had to come up with new plans, and so we did.*

The „New Austrian Autumn Hiking Weekend“ started by having a traditional dinner at a wine-tavern in Vienna on Friday night. The participants had been from many countries such as Spain, France, Germany, Czech Republic and even Mexico.

Saturday started with an obligatory breakfast in a Viennese coffeehouse. Afterwards we met the late risers at the ethnic museum of Vienna. There we saw an exhibition about forest, people and history, which had been a contribution to the international year of forests. In the early afternoon on that sunny, but still a bit chilly day, we visited the convent of Heiligenkreuz, which is famous for their Gregorian chants. The convent owns a sawmill, real estates and a forestry, including about 5000 ha. After a guided tour through the convent by a monk and also forestry students we headed towards the sawmill, where we were also given a tour by an employee. Later we went to the forests to receive some information about the silviculture and hunting management. Then we headed out of the forest back into the city of Vienna.

Hiking was the major part of Sunday. The hike took us to the Wechsel region in the most eastern part of the Alps and in the south of Vienna. We reached our highest elevation at 1400 m above sea level after about two hours. Despite the fresh air the sun warmed us at the hut, where we stopped for a break. Finally hiking was followed by a ride on the local Alpine slide.

It was a very fascinating weekend, dominated by networking, enjoying nature, meeting friends and also getting to know new friends.

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Picture : Group picture of IFSA participants

## OFFICIAL IFSA PINS STILL AVAILABLE

Since April 2010 the new IFSA pins are available and can be purchased at regional meetings or ordered by mail. The pins are made out of recycled plastic and cost 4 Euros per pin. By purchasing the pins you do not only have a nice tool to represent IFSA at all times but you are also supporting the organization financially. IFSA is working really hard to

raise funding for our activities around the world! So we are calling up on all LCs to order/purchase these great looking IFSA pins and wear them with pride!

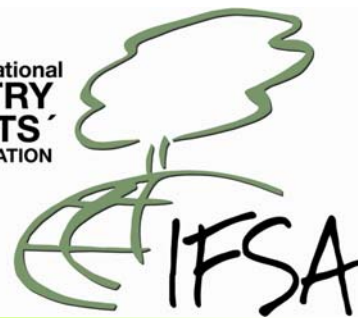
To purchase the pins please contact the IFSA executive secretary **Simone Herpich** at [secretariat@ifsa.net](mailto:secretariat@ifsa.net)







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Published by IFSA

Layout by Kris Chigbu

Editor: Kris Chigbu

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