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RILSIM (Reduced Impact Logging SIMulator) – 3 years later

Dennis Dykstra

By now it should be clear that convincing loggers in tropical countries to adopt reduced impact logging (RIL) technologies is not easy—if it were, everyone would be using RIL.

This is not to say that there hasn't been progress over the past few years. Recent news releases featured several large tropical timber concessions that were certified as sustainably managed, in part because they had adopted RIL on all of their operations. FAO publications on exemplary forest management in the Asia-Pacific Region and in Central Africa, as well as several recent publications in the FAO Forest Harvesting Case Study series show clearly that RIL can provide significant financial benefits to operators in addition to leaving behind a forest after harvesting that will continue to provide timber and other benefits on a sustainable basis over the long term.

Still, not all loggers are convinced that RIL offers a clear financial advantage. For one thing, it requires good planning, followed by careful implementation of those plans. This can be easier to say than to do, especially in areas where professional foresters are rare, a situation common in developing countries. In addition, logging costs and revenues tend to be site-specific and can vary considerably over the course of a year due to weather and other conditions (Pokorny and Steinbrenner 2005).

Furthermore, loggers are often more focused on the operations themselves than they are on keeping thorough accounting records so that they can analyze their costs and revenues to understand where financial advantages lie.

This is where RILSIM comes in. The Reduced Impact Logging SIMulator, a software package for computers running Microsoft® Windows® operating systems, was first released in mid-2003 and was announced in the *FAO Forest Harvesting Bulletin* published in May of that year. Designed by a team representing the USDA Forest Service, CIFOR, FAO, the University of Florida, the Tropical Forest Foundation, and Blue Ox Forestry, the purpose of the software was to organize and simplify the estimation of costs and revenues associated with reduced-impact logging. The idea was to enable loggers and forest managers to rapidly compare the cost of RIL against the cost of conventional logging under identical local site conditions.

Users enter data through a series of "data forms" (Figure 1) to describe payroll costs, personnel assignments, equipment costs, logging activities, expected production rates, and other factors relevant to the analysis. Running the simulator then provides a detailed report of costs and revenues, as well as an estimated timeline for the operation being evaluated. In addition to the simulation report, charts showing estimated operating times and costs for individual logging activities can also be displayed and printed. The initial version of RILSIM was released in a production run of 500 packets that included a CD-ROM and printed User's Guide. Due to financial support from USAID and the USDA Forest Service, the packets were provided for free to



anyone who requested them. These were all distributed within a few months, and a website was created <http://www.blueoxforestry.com/RILSIM> from which other users could download the software, also for free. Over time, 661 copies of the RILSIM 1.0 software were downloaded.

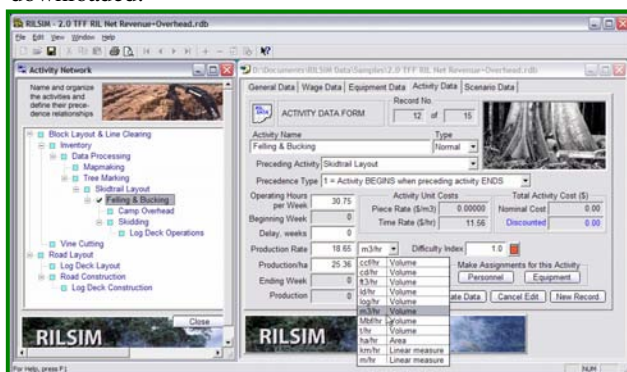


Figure 1. One of the RILSIM data forms at right, with the corresponding "activity diagram" at left.

In late 2003, a series of five promotion and training seminars was organized through the Asia-Pacific Forestry Commission to introduce the software to the private sector, universities, and government agencies in Malaysia. Participants in these workshops identified several minor flaws and provided suggestions on how to modify the data forms and printed reports to make them easier for users to interpret. Some also indicated that they would like to be able to calculate additional indicators or enter data using a wider array of measurement units. As a result of these suggestions a second version of the software was released in October 2004.

This time 1000 packets were produced, again including a CD-ROM and printed User's Guide. Again, financial support from USAID and the USDA Forest Service permitted the software to be provided to all interested users at no cost. Distribution of the packets was handled by the International Programs Office of the USDA Forest Service. The RILSIM website was updated to provide several download options and a support page was added to assist users who encounter problems installing or using the software. The download options vary between a limited, two-part download for users on dial-up telephone lines and a full download for those with broadband connections. Potential users can also download just the User's Guide if they want to evaluate the capabilities of the software before downloading it.

Interest in RILSIM has remained strong, even accelerating slightly over time. Figure 2 shows the cumulative number of downloads for version 2 of the software. The first download occurred on October 5, 2005 and the latest download shown in the graph occurred on July 19, 2006. As of that date 1,999 copies of the RILSIM 2.0 software had been downloaded. This means that on average, slightly more than 3 copies of the software have been downloaded every day since its release. The trend is nearly linear but shows a slight increase in the rate of downloads since November 2005. The inflection points on the graph generally correspond to the dates of training workshops

The FAO Forest Harvesting Bulletin

This bulletin is produced annually for distribution to about 5000 individuals, field projects, institutions and organizations interested in environmentally sound forest harvesting and transport, especially in developing countries and in countries undergoing the transition to market economies. The *Bulletin* forms part of the networking and technology transfer activities of the **Forest Products Service** of FAO, the Food and Agriculture Organization of the United Nations.

Correspondence and Submissions

Requests for information, to be added to the mailing list for the *Bulletin* and letters or short contributions in English, French, or Spanish to be considered for publication should be sent to Simone Rose:

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conducted by Gary Man of the USDA Forest Service and Thomas Enters of FAO. These workshops introduced RILSIM to users in Indonesia, Vietnam, Fiji, and Myanmar.

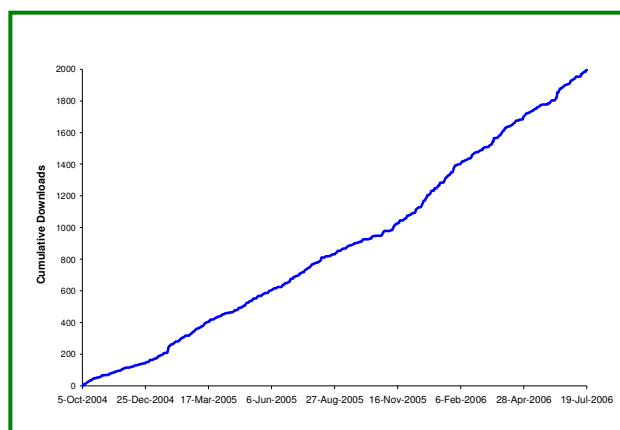


Figure 2. Cumulative downloads of RILSIM 2.0 since its initial release in October 2004. Note the slightly increasing trend over time.

FRENCH, PORTUGUESE, AND VIETNAMESE VERSIONS OF RILSIM

Over the past year, USAID and the USDA Forest Service have supported the translation of both the RILSIM software and the User's Guide into French for use in Africa, and into Portuguese for use in Brazil. These versions are essentially identical to the RILSIM 2.0 release. Both versions are currently being tested and are expected to be released in the near future. In Brazil, the Fundação Floresta Tropical (FFT) is testing the Portuguese version in a series of workshops and may make changes relevant to users in Brazil before releasing the software for general use. Another translation is being carried out independently by the Government of Vietnam, which is translating the User's Guide for use as a training tool but will continue to use the software in English.

WANT TO BE FAMOUS?

Given the apparent interest in RILSIM, it's reasonable to wonder who is using it. Unfortunately this question is difficult to answer. Because of security concerns, the USDA Forest Service has not maintained a list of people who requested the packets with CD-ROM and printed User's Guide. Similarly, to encourage the widest possible use of the software, users are not required to register or provide any contact information when they download the installation package from the Internet. For a variety of reasons it would be interesting to know who is using RILSIM, and what their experience has been. If you are interested in participating in a survey of RILSIM users, please contact Dennis Dykstra at the USDA Forest Service (email ddykstra@fs.fed.us), who will send you a survey form to complete. We'll eventually publish an article about people and organizations that are using RILSIM and we'll also use the results of the survey to help decide how to modify future versions of the software.

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A Review of Forest Roads and National Park Roads in Turkey

Saban Cetiner

In many countries, the standards for planning, construction and maintenance of roads in forest areas, and especially in national parks are different from highways. This is because, forests, national parks and other protected/conservation areas are not only communities of plants, but also renewable, sustainable and wonderful ecosystems. When compared to highways, forest roads (and national park roads) have lower standards and costs but they are more aesthetically and environmentally friendly (Cetiner et al 2004; Cetiner 2003).

Turkey has 21.2 million ha of forest which covers 27.2% of the total land (Anon 2005a). Less than half of this forest area (9.6 million ha) are productive. The remaining forest contains protected areas, and afforestation zones (Anon 2001, Anon 2005a). Productive and conservation forests are under the responsibility of the General Directorate of Forestry (GDF) while the General Directorate of Nature Protection and National Parks (GNDP) is responsible for national and nature parks, nature protection areas, natural monuments, wildlife and game management areas.

The GDF and GNDP are under the Ministry of Environment and Forestry (MEF). Almost 12 million ha of Turkey's forest are in areas prone to fire (Anon 2005a) and thus the road network must be able to facilitate fire fighting (Cetiner 2003). In this article, criteria and standards for planning, constructing and the maintenance of forest and national park roads and national park roads, and the applications are briefly discussed.

FOREST ROADS

Road Density and Distance

GDF has its own standards for road density, distance, grade and width. For example, in planning, if total volume is 250 m³/ha or more, the density should be 20 m/ha and road distance 500m; and if the volume is less than 250 m³/ha or the forest is managed for conservation, the density should be 10 m/ha and the distance 1000m.

During 1964-71 the GDF planned 144 425 km forest roads for timber production and 201 810 km for other forest uses including potential plantation lands and protected/conservation areas (Erdas 1997, Anon 2001). Each Forest Enterprise has its *Forest Road Network Plan* for each planning unit. Construction priority is generally related to priority of the forest compartments to be harvested. By September 2005, the GDF had constructed directly or with the assistance of private companies 136 046 km of forest roads.

Standards and Superstructures

Many of the forest roads are B type secondary (3rd class) roads with 4 m platform width (excluding the 1m ditch); but 3 m in sensitive, rocky or very steep areas. The hydraulics and superstructures of many forest roads are insufficient and in the five-year National Development Plan (NDP) (2001-5), it was decided that the completion of the superstructures and hydraulics of existing roads would take priority over the construction of new roads. It was hoped that this would prevent degradation of the roads and allow for year round use.

Vision for the Future

For the 9th NDP period (2007-2013), using environmentally sound technologies in road construction and completing superstructures and hydraulic structures of forest roads are a priority. Additionally, legal and technical studies and applications for conformity to European Union standards and those of developed countries will be conducted (Anon 2005a). A study on “*environmentally sound blasting materials in forest road construction*” commenced in 2006. It is being undertaken by Karadeniz Technical University and supported by GDF.

NATIONAL PARK ROADS

The GNPD is responsible for 2 369 177 ha of forest. This comprises 36 national parks (808 172 ha), 34 nature protection areas (81 861 ha), 17 nature parks (69 505 ha), 102 natural monuments (5 285 ha). Additionally, there are also 12 Ramsar areas (200 000ha), 104 wildlife breeding and game management sites (1 204 354 ha).

Road Density and Distance

In national parks and other protected areas, roads, paths, cable railways and mono-rails are often used as transport routes. However roads can only be planned for areas open to vehicle access. The lengths of these roads must not exceed that which is required. Consequently, a standard of density and distance is not suitable for these areas, and the design of roads is based on the needs of each department in each national park.

Standards and Superstructures

To protect, sustain, develop, and use natural and cultural resources in a more effective manner, road characteristics (grade, width, etc) in national parks should be different from forest roads and highways. In Turkey, forest roads developed for timber extraction are environmentally sound. However these types of roads are not suitable for protected areas because usually they are a network connecting landings thus supporting the transport of timber from the forest. With protection as the main aim of national parks some roads are designed as main forest roads (*one way, two-lanes with 7.0m width*). Many of the secondary roads have been constructed as B type forest roads (*with 4.0 m width*) however the hydraulic structures and superstructures are poor.

Vision for the 9th National Development Plan (2007-2013)

The plan is to increase the protected forest areas and to prepare long term development plans for the current and newly declared protected areas. Physical superstructures, including roads, will be rehabilitated or constructed.

DISCUSSION

The GDF has its own road standards of density, distance, grade, superstructures, etc. Many of the roads in productive forests have been constructed according to the Forest Road Network Plans. The completion of superstructures and hydraulic structures of the roads have been given priority in the 9th NDP.

Environmentally friendly forest road planning and construction techniques have usually been applied by the GDF. However, there needs to be some rehabilitation of roads in conservation areas. The GNPD does not have its own road standards, however the main forest road standards have proved suitable for transport. Many secondary park roads have the B type forest road standards which are environmentally sound. However, new roads should have only a 3 m width. The hydraulic structures and superstructures of the park roads must be rehabilitated and where necessary constructed. Criteria and standards for park roads should be used in conservation forests, in productive forests where there are difficult conditions for production, in alpine areas that are to be conserved and in erosion control sites.

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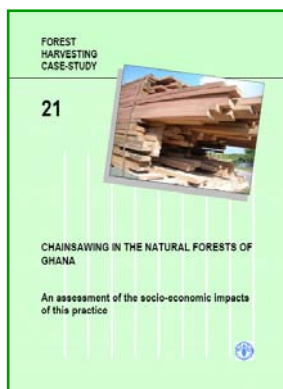
FAO guide to forest road engineering in mountainous terrain

The guide to forest road engineering is aimed at promoting the use of recommended practices in the planning, design, construction and maintenance of forest roads in mountainous terrain. The recommended practices are drawn from methods and activities that have proven effective in minimizing the adverse impacts of forest roads. They include reference, where appropriate, to case studies, describing forest operations on steep and potentially unstable ground that are used to illustrate key points. The publication is intended primarily for engineers, foresters, technicians, consultants and government regulators with experience of forest access planning. It contains guidance on both strategic and access planning, road drainage design, equipment selection, construction technique, protective works and maintenance.

In promoting the use of recommended practices, the main focus of the FAO guide to forest road engineering in mountainous terrain is to refine the practitioner's understanding of potentially adverse impacts and to use that enhanced knowledge in a broader consideration of the socio-economic factors influencing management of the forest resource.

Copies may be requested from Joachim.Lorbach@fao.org

FOREST HARVESTING CASE STUDY 21



The FAO review of chainsaw logging in Ghana sought to highlight positive and negative impacts of this practice and the approaches of policy makers to dealing with the issue. The report examines the past actions or inactions that have encouraged illegal timber harvesting activities as well as the capacity of the Forestry Commission (FC)

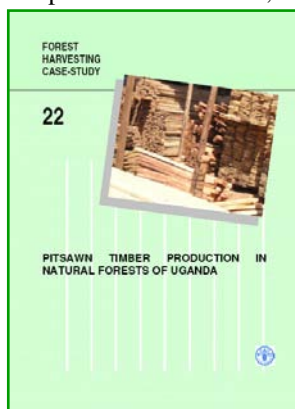
to deal with them. Law enforcement and governance play important roles in the control of illegal forest activities; hence, the various elements of governance in practice in Ghana have been reviewed in order to determine how chainsawing can be minimized and how transparency, accountability, civil society participation, law enforcement, and the tracking of chain sawn lumber improved.

Among its findings, the study highlights the fact that about 60 to 80 percent of the chainsaws used in chainsawing belong to lumber dealers located far from the source of the timber. Hence, focusing on the operators alone with regard to alternative livelihood schemes would not be effective as the dealers would find other means to reconnect the chain. The report suggests that measures to make the trade in chainsawn lumber less profitable, so affecting all categories of ownership, e.g. through the payment of the real prices for logs to the farmers and the payment of the appropriate forest fees, may be more effective.

FOREST HARVESTING CASE STUDY 22

The case study was conducted to highlight the impacts of pitsawing in Uganda and the approach of policy-makers to this industry. This report provides an assessment of current forest management practices, forest policies and laws with regard to pitsawing. The report also analyses the prevailing policies that have indirectly encouraged the emergence of the industry. The management policy has favoured the promotion of pitsawing in Natural Forest Reserves, with licences to operate up to four saws per sawyer under a strict zoning policy. There are many mobile sawmills, but all are licensed and working in the softwood plantations. However, there is a ban on the use of a chainsaw and any motorized tool in timber production in natural forests.

The report provides an analysis of the local and export timber markets. The supply of timber from natural forests is declining and forest continues to be lost at an alarming rate. Uganda's forests have a total economic value of about US\$1070 million. Of this, only



7 percent (US\$75 million) is derived from sawn timber with pitsawing providing about 90 percent of the sawn timber on the local market. The size of the local timber market is estimated at 240 000 m³ from current harvesting of roundwood, which is twice the sustainable annual allowable cut.

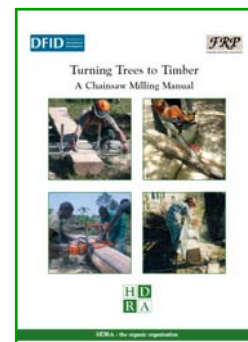
The report also evaluates the effect of pitsawing operations on the community adjacent to the Kalinzu Central Forest Reserve in western Uganda. It examines the livelihood systems of the pitsawyers and the target community, and also analyses changes, opportunities and constraints to livelihood systems if pitsawing activities were to be stopped. The report concludes with some recommendations aimed at identifying and developing alternative livelihood options to offset any short-term drop in income felt by poorer households with the cessation of pitsawing.

For copies of the case studies contact Simone Rose at Forest-Harvesting@fao.org.

TURNING TREES TO TIMBER: A CHAINSAW MILLING MANUAL

Pasiecznik NM, Brewer MCM, Fehr C, Samuel JH

Common opinions concerning the sawing of logs into boards with a chainsaw include: it is not possible, hardly anyone does it, it is very wasteful, it produces curved boards, and the finish is very rough. This manual will hopefully overturn these misconceptions, and allow the reader to see milling with chainsaws in a new light, as an increasingly common method of milling timber, being cheap and efficient, available to most people, producing quality timber, with appropriate technology already available and just waiting to be applied.



Most chainsaw milling today is 'freehand', without the use of any guides, frames or rails that would otherwise help sawyers produce even better quality boards with less chance of accidents. The few studies on chainsaw milling that do exist highlight the need for further training. However, supporting training materials are rarely available.

Many involved in timber production and processing may benefit from reading or using this manual. It was originally designed for use by trainers and extensionists in specific chainsaw milling training courses for farmers, tree owners and small processors. However, it became increasingly clear that the equipment was largely unknown, and even professionals in the field of timber processing seemed not to be aware of its current widespread use within tropical forests, or the potential it has outside of them. More text was added, turning a technical manual into a more comprehensive guide with practices and issues.

For more information contact Nick Pasiecznik, Agroforestry Enterprises, Villebeuf, 71550 Cussy-en-Morvan, France or email npasiecznik@wanadoo.fr

ERGOWOOD

The ErgoWood project (Ergo-efficient mechanised logging operations) was a three year project funded by the European Commission. Twelve different partners in six European countries (Norway, Sweden, France, Great Britain, Germany and Poland) participated in this project.

The objective of the ERGOWOOD project was to enhance the competitiveness of the European logging industry by improving the organization of logging operations and machinery. The project also aimed at developing guidelines on ergonomic matters for users, buyers and manufacturers of forest machines. It was hoped that this would encourage the development of safe and efficient forest machines, which are easy to use. The project was also involved in promoting good examples of work-crew building, work-shift scheduling, job rotation and work enrichment in logging operations in order to improve the sustainability of human resources.

The project held its final workshop in Gross-Umstadt, Germany from 7 – 8 November 2005. At this workshop, the participants and contractors of the different work packages (WP) reported on the final project outputs.

Four different work packages were presented:

- WP1 Forest machine operators social, safety, and health situation (Skogforsk, Norway)
- WP2 Benchmarking of work organization in logging operations (Swedish University of Agricultural Sciences (SLU), Sweden)
- WP3 Technical ergonomic guidelines for forest machines (Kuratorium für Waldarbeit und Forsttechnik (KWF), Germany)
- WP4 European recommendations for ergo-efficient mechanised logging operations (SLU, Sweden)

The main achievements of the project are:

- Recommendations and experiences of different work organizations throughout the EU logging sector, emphasising the progress in achieving job rotation, work enlargement and participation
- Technical ergonomic guidelines for forest machines. These were developed through structured and detailed discussions with all stakeholders concerned in the participating regions and include ergonomic requirements for forest machine design, selection, operation and maintenance
- Measuring methods for the ergonomic guidelines for forest machines
- Standardized methods for the determination of machine operators' safety, health and social status as well as for assessing work organization
- Work environment monitoring systems with cost/benefit analysis methods.

Two main publications are available in English with planned translations into French, German, Polish, Swedish and Norwegian:

- *European Ergonomic and Safety Guidelines for Forest Machines*
- *Health and Performance in Mechanised Forest Operations*

European Ergonomic and Safety Guidelines for Forest Machines



The guidelines cover all cab-equipped off-road machines that are used in forestry, including excavators and farm tractors are also included. The guidelines specify functional criteria to be met by the design of the operator's work station, the control and operation of the machine and its equipment as well as maintenance procedures.

A machine manufacturer can use the guidelines to find out what criteria a forest machine must meet, whereas buyers and users can check if a machine can be efficiently operated without causing health problems. The guidelines can be used for determining a machine's ergonomic profile, preferably done by an independent testing firm. There have been different ergonomic guidelines in many European countries consequently following a need for that due to the rapid mechanisation of forest operations starting in the Nordic countries in the 1960's.

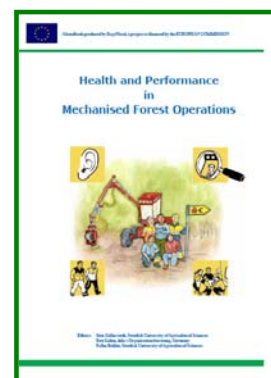
The 2006 version is based on Gellerstedt et al., 1998, Löfroth et al. 2003 and KWF, 2003. A short *Ergonomic Checklist for Forest Machines* (24 pp.) is attached to be used by machine owners and operators for inspection and decision making when buying a new machine.

Health and Performance in Mechanised Forest Operations

The handbook provides guidance on how to manage and improve operators' health, safety and performance. It is aimed at work teams, contractors and 1st line managers in mechanised forest operations. The first part of the handbook describes five steps for improvement to be taken by the employer and the team. Each step is supported by ideas, examples and questions. The second part presents nine tools for finding solutions.

Over 350 machine operators in the six participating countries have provided the foundation for the research in the development of the publication by responding to questionnaires and interviews on their social, safety and health situations. This handbook is also partly in conformity with the EC Directive 89/391/EEC: Introduction of measures to encourage improvements in the safety and health of workers at work. The procedures recommended in the handbook will contribute in fulfilling the social element in a forest certification system.

All project documents are available online <http://www2.spm.slu.se/ergowood/dloadseng.htm>



TIME FOR ACTION

Changing the gender situation in forestry



The UNECE/FAO Team of Specialists on Gender and Forestry completed their mandate in June 2006 with the launching of their final report - "Time for Action - Changing the Gender Situation in Forestry". This publication was launched at the recently concluded Gender and Forestry International Seminar held from June 18 – 20 in Umeå, Sweden

and provides an overview of the gender structures throughout the forestry sector in Europe and North America. The report reviews gender structures in forestry organizations, gender structures in forest ownership and gender and the perceptions of forests and forestry. It also explores probable means and actions for improving gender balance in the forestry sector and advances the argument for criteria and indicators to be developed to measure and monitor changes in gender structures in the forestry sector. The data is presented in a case study format.

This overview of gender and forest management and organization has shown that although women are significant users of forest products, they rarely have input into forestry decision-making. Even though some countries have introduced policy to improve the representation of women in the forestry sector, little has been done to encourage or follow up on this and thus the situation in most cases remains as it was before the legislation was passed. This is emphasized in the available statistics on the forestry sector labour force. Men dominate the forestry sector workforce in most countries and usually earn more than their equally qualified female counterparts. Even when women hold the majority ownership of private forests, they are still marginalized in the decision-making process. One important lesson that may be learned from the case studies presented here is that there is no quick fix for increasing gender representation within the forestry sector. As this overview indicates, there are a myriad of issues that have to be first dealt with, which indirectly or directly influence the gender balance in the forestry sector.

The report indicates that for there to be any improvements in the current gender imbalance in the forestry sector in Europe and North America, these issues must be put on the agenda at all levels of discussion - the international community, government, private sector and public sector. In September 1995 at the United Nations Fourth World Conference on Women, "Governments expressed their commitment to creating a new development paradigm that integrates environmental sustainability with gender equality and

justice within and between generations as contained in chapter 24 of Agenda 21."

However, since then, very little has been done to meet this commitment. In fact, and sadly so, many of the conclusions and recommendations from the 1995 United Nations conference in Beijing and those from the April 2001 Seminar on Women in Forestry still hold true today. Hopefully, this report will not only raise awareness of the current status of gender structures within the forestry sector, but also lead to a better gender balance in the forestry sector.

For more information or copies of the publication, contact Simmone Rose at Forest-Harvesting@fao.org

OTHER FORESTRY NEWS

The Forestry Department of the Food and Agriculture Organization of the United Nations (FAO) is launching a photo contest to recognize the beauty of forests and the people who use them. A panel of foresters and photographers will select the best 20 photos for display at an international conference on forests, the 18th session of the FAO Committee on Forestry, in March 2007. One of the photographers among the top 20 winners will be invited to attend. Selected photos will be published on the FAO Forestry Web site and in *Unasylva*, FAO's international journal of forestry.

Entrants should submit their photos by **31 October 2006**. Entrants must own full copyright to pictures submitted, which they must be able to certify, if requested. Winners will be informed and announced on the FAO Forestry Web site in December 2006. The competition is not open to FAO staff or family members.

For more information check the FAO Forestry Department's Website <http://www.fao.org/forestry/index.jsp>

XIII World Forestry Congress Buenos Aires, Argentina, 2009

FAO is inviting submissions for a theme for the next World Forestry Congress to be held in Buenos Aires, Argentina in 2009. The final selection of a theme will be made by the Government of Argentina and FAO.

The theme for the World Forestry Congress should:

- address a timely issue of interest around the world
- be attractive to a wide range of interests, while not being too vague
- encompass a range of technical and policy-related topics

Themes for the past 5 World Forestry Congresses

XII 2003 (Canada) Forests, source of life

XI 1997 (Turkey) Forestry for sustainable development: towards the 21st century

X 1991 (France) Forests, a heritage for the future

IX 1985 (Mexico) Forest resources in the integral development of society

VIII 1978 (Indonesia) Forests for people

Please send your ideas for a theme to:

FO-WFC-2009@fao.org

FOCUS ON CENTRAL AFRICAN FORESTS

Initiatives to promote Sustainable Forest Management

Central African forests represent the second largest tropical forest area in the world. These forests cover an estimated 223 million hectares or about 45% of the total land area of the six countries (Cameroon, the Congo, the Democratic Republic of the Congo, Equatorial Guinea, Gabon and the Central African Republic) (FAO 2005). Forest concessions cover almost 55 million hectares or 42 percent of the total tropical moist forest area of the sub-region, of which 17 million hectares are being developed. Protected areas span across about 16 million hectares or some 12 percent of total tropical moist forest area. Over the past few decades, the forests in all Congo Basin countries have been significantly reduced as a result of land use changes to non-forestry purposes. Moreover, the structure, composition, density, species diversity and vitality of the forests have declined following intensive and selective logging. If the current trends continue, it is feared that the forests of the Congo Basin will meet the same fate as those of West Africa or of Southeast Asia.

This situation is of great concern to governments, donor agencies and scientists. In the long run, it is likely to increase the poverty situation of the many people who still depend heavily on the resources that these forests offer. Many initiatives were thus undertaken in countries of the region, to protect biodiversity and to sustainably manage the resources. Laws have been enacted and protected areas established, but the results have not always been up to expectations or to the level of investments made.

The recent history of the sub-region is partly responsible for this lack of results, but the complexity of the tropical forest ecosystems also constitute a serious challenge. The sustainable management of large forest areas requires the development of appropriate approaches, taking into account both the biological reality as well local human needs and activities. The successful management of these forests therefore requires a regional vision and a combination of efforts.

Central African states recognized the need for a common vision, and stepped up their efforts of regional coordination in the area of biodiversity conservation and the sustainable management of forests throughout the Congo Basin. Heads of State of seven countries of the sub-region signed the Yaoundé Declaration in March 1999 in Cameroon. This gave birth to the Conference of Ministers in Charge of Forests of Central Africa (COMIFAC) and the Convergence Plan. The plan defines the framework for the development of common objectives in the conservation of forests and leads to the development of new regional and trans-boundary conservation efforts.

At the same time, in an effort to rationalize and optimize investments, the Congo Basin Forests Partnership (CBFP) was launched on September 4, 2002, during the Earth Summit in Johannesburg, South Africa. CBFP brings together public, international community and private sector partners with the aim of offering

international support to the attainment of the Yaoundé Declaration objectives. Its working procedures were defined in January 2004 during a meeting in Paris.

FAO has also recognized the importance of working with partners in the region to promote conservation efforts while, at the same time, maximizing the contributions of forests to livelihoods, food security and poverty alleviation. Consequently in 2004, FAO, along with partners in the region, developed an action strategy for the Congo Basin forests.

Three priorities have been identified in this strategy:

- improving the socio-economic conditions of the poorest people, enhancing food security and reducing poverty;
- reinforcing sub-regional cooperation;
- strengthening data collection and management.

To respond to these priorities, FAO has proposed four orientations for its work with countries, consistent with its technical capacities and mandate. These are:

- building and strengthening capacity for sustainable management, development and use of forest resources in the Congo Basin;
- strengthening institutional, political and legal frameworks to better manage the resource and distribute income more equitably;
- supporting the establishment and maintenance of a sub-regional forest information system that will contain data collected by each country;
- encouraging the formulation, development and implementation of forest management, harvesting techniques and wood processing within the context of sustainable development.

The action strategy therefore aims to facilitate collaboration with development partners who are working or intend to work in the Congo Basin and to improve synergies with other efforts related to forest development such COMIFAC.

These are just a few of the initiatives that have evolved in the region. However it is quite obvious that more still needs to be done. The impact of the current initiatives needs to be assessed to determine their effectiveness and to identify gaps in the existing approaches. Continuing global demand for the timber resources of the sub-region's forests, coupled with local population growth and increased dependence on the forests resources will make forest management efforts even more challenging. These efforts will only be successful if there is strong political will, supported by adequate funding.

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Additional information on COMIFAC and CBFT may be found on their websites: <http://www.comifac.org> and <http://www.cbfp.org>