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Note from the editor

Our apologies for the late newsletter for reverting to the old format, both due to a few technical difficulties. The next issue of the IFWG/ISTF newsletter will be in December.

- Blair Orr, IFWG Newsletter Editor
(bdorr@mtu.edu)

Contributed Articles

It Takes a Global Village to Plant and Manage a Trillion Trees

Key words: forest landscape restoration, Bonn Challenge, target seedling

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Tree planting to combat climate change is wildly popular. Several countries and many organizations talk about planting billions or trillions of seedlings. Contrary viewpoints have also hit the popular press and scientific journals, pointing out that the need to reduce GHG emissions still remains the greatest challenge. Overlooked in many of these high profile news items is the reality that tree planting is not a simple activity; to be successful, we must plant the right trees, in the right places, at the proper time for young seedlings to prosper, grow, and eventually provide multiple benefits including biodiversity. Because it takes several decades until restored forests reach desired carbon sequestration levels, long-term management of forests and trees is key. And establishing new forests is even more complicated; successful tree planting requires planting stock grown with specific traits to meet the challenges of particular sites and the restoration

objectives. Focusing only on planting ignores everything that is needed to get to the point of planting seedlings, including seed collection, processing, and nursery practices through to caring for seedlings after planting.

Aravalli 2010 and Aravalli 2018: Restoration of mined area and development of Aravalli Biodiversity Park in Gurugram, Haryana, India (Photo credit: Haryana Forest Development Corporation, Gurugram)

This is only one of the lessons learned by IUFRO scientists who looked at 17 projects in 9 countries (FOREST LANDSCAPE RESTORATION IMPLEMENTATION: Lessons learned from selected landscapes in Africa, Asia and Latin America). These projects followed the forest

landscape restoration (FLR) approach, a participatory process that aims to improve forested landscapes for people and for biodiversity. Different activities – agroforestry, tree planting, natural regeneration, removing exotics, fencing, etc. – were taken by organizations and communities to better provide ecosystem services, support biodiversity and withstand threats such as climate change.

Aligning and managing expectations in the design and implementation of an FLR project must balance competing interests and differing priorities for livelihoods versus biodiversity. At times, biodiversity benefits are possible by preferring native species. In the Aravalli Hills of India, for example, more than 150 native species were introduced, including some that are either very rare or almost locally extinct from the region. In Ghana, landless farmers partnered with researchers to restore degraded forest reserves using the modified taungya system. This allowed the farmers to grow edible crops between planted trees, thereby meeting their food needs for up to 5 years before the tree canopy closes and reduces light to the ground. The farmers selected the tree species to plant, choosing mostly native species that further biodiversity goals. These are just two examples of the lessons learned, pointing out ways to overcome the common problem that strong incentive systems need to be established, spanning over sufficient time horizons with clear benefits to local stakeholders.

Many other lessons are highlighted, including the need to involve local communities at the earliest stages of restoration planning and that restoration requires time for change to become obvious. Not all stakeholders, however, have the requisite technical knowledge or resources to fully participate and commit to long-term involvement. The need for trained FLR facilitators in agencies and NGOs was recommended, along with training and capacity development for local communities. Ten lessons learned are summarized, with implications for practice by decision-makers in the governance space, facilitators in the FLR facilitation space, and local stakeholders in the field implementation space. Take a look at the details of the FLR projects and the lessons drawn from this collective experience.

AGROFORESTRY: A VIABLE OPTION IN INDIA FOR SUSTAINING FARMERS AND WOOD BASED INDUSTRIES

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Introduction

Agroforestry (AF) is a land use management system which helps to conserve and protect natural resources and its benefits add up to substantial improvement of economic and resource sustainability of agriculture. Agroforestry, based on ecological principles, is of paramount importance in the areas where crop production is very insecure due to variable and harsh climatic conditions. Forestry with agriculture provides support to the farming

system by way of conferring stability and generating assured income. Agroforestry can mitigate the impact and consequences of these environmental limiting factors (Tewari and Singh, 2000).

The term Agroforestry was coined by J. Russel Smith in 1929 in his book "Tree crops: The permanent agriculture". AF is being practiced since time immemorial but concerted scientific work on AF started since last more than 40 years after establishment of World Agroforestry Centre (International Centre for Research in Agroforestry ICRAF) in 1978. In many countries of Europe like England, France and Germany, growing of fruit trees in arable lands or pasture lands had evolved over a period and used to be referred as pré-verger or Streuobst in its native country. Dehesa and Montado (4500 years old) system are found in Mediterranean zone of Spain and Portugal. Hauberg of the Siegerland is another specialized practice originated in north-western Germany. *Chania System of Greece* is also there (Dagar and Tewari, 2017).

In Southeast Asia, the *Hununoo* of the Philippines practiced a complex and somewhat sophisticated type of shifting cultivation. Pekarangan and Kebun-talun in Indonesia, Satoyama in Japan and KGF in Sri Lanka are also well known.

The Quezungal system in southern part of western Honduras, the Riberno system in Peruvian Amazon (forest clearing followed by homegardens with multiple species), silvopastoral systems in Brazil, and 'Swidden fallow agroforestry and Amazonian homegardens are traditional practices.

The parkland system of West African dryland involves multipurpose trees. *Kihamba and Ngitili Agroforestry System in Tanzania* is other important systems.

More than 40% of world's agriculture lands have at least 10% tree cover. In terms of potential, currently area under agroforestry worldwide is 1023 million ha. It is estimated that 823 million ha area globally is under agroforestry and silvopastoral systems (Kumar *et al*., 2014). In India, area under agroforestry is estimated to be 25.31 million ha or 8.2% of the total reporting geographical area of the country which can further be increased up to a considerable level (Dhyani *et al*., 2009). AF in India is practiced in 13.5 million ha which is a means to reduce rural unemployment, with timber production on farms generating 450 employment days per ha per year (http://worldagroforestry.org/news/india-leads-way-agroforestry-policy). India was the first country to promulgate the National Agroforestry Policy in 2014. National sub-mission on Agroforestry is also working under Ministry of Agriculture, Govt. of India.

Preferable agroforestry Tree species

A model tree for agroforestry purposes should be characterized by a fast vertical growth, a small crown, and few branches with a narrower angle, a loose canopy and a self-pruning habit, straight and clean bole with an aggressive apical dominance. Such trees require little horizontal space hence offer a larger density. Consequently, returns per unit area are higher.

The root system in agroforestry trees must be deep (Bangarwa, 1998). This is all the more important as the area considered is dryer, and crop moisture stress common.
The prominent high yielding fast growing species like poplar, eucalyptus, Salix, *Melia dubia, M. composita, M. azedarach, Acacia nilotica, Ailanthus excelsa, Gmelina arborea, Grevillia robusta, Swietenia macrophylla, Khaya senegalensis, K. anthotheca, Cedrala tuna, Anthocephalus cadamba, Duabanga grandiflora, Prosopis cineraria, Dalbergia sissoo, Casuarina equestifolia* need to be promoted under agroforestry as per their suitability in difference agroclimatic zones across the country.

Agroforestry: Potentials and limitations

Agroforestry imparts ameliorating and mitigating effects of harsh and erratic climatic conditions and poor soils, raising soil fertility build-up and enhance symbiotic activities that help crop growth, sustainable production of food and feed, fuel, timber, fibre, tools, draught power, medicines, and several other products of day-today utilization on farms. In addition, it permits higher security and sustainability during droughts and famines that are not infrequent in dry regions.

Despite the many promises and benefits that agroforestry holds under appropriate conditions, there are also limitations arising from biophysical, socio-economic and socio-political conditions such as land ownership and control, usage rights and the like. One limitation comes from the time lag until the full benefits of agroforestry practice become apparent. Soil conservation benefits and cash from tree harvesting may only become apparent several years after the establishment of the system (Tewari and Dagar, 2017). They may be overcome by careful planning and appropriate combination of crops and animals with trees, both in space and time.

Wood Demand of the Industries

In India, natural forest contributes just 6.4% of timber demand (3.17 million m^3) and about 44.34 million m^3 is harvested from Trees outside Forests (TOF). Growing stock of trees under AF is 70% of total TOF (FSI, 2011). Forest Development Corporations produce less than 5% of total timber production in India.

Demand for furniture has been raising 12 to 15% annually. Similarly, demand of paper has been raising 8% annually. Annual demand of wood-based panel products is 8 million cum against production of 3.4 million m^3. It is a bit difficult to calculate consumption figure within Indian wood-based products industry as market is unorganised and unregulated (Srivastava, 2017).

South Carolina Forestry Commission has estimated consumption of 50.1 million m^3 of industrial round wood, 23.2 million tonnes of paper, paperboard and other fibres and 11.16 million m^3 of sawn wood and panel wood. Country is meeting demand through import of timber and allied products which is roughly 18.01 million m^3. Thus, there is significant gap between demand and supply of wood in India and import is bound to increase in coming years if concrete action is not taken to address the issue.

Out of total wood produced in India, 3% is used for pulp and paper, 7% for plywood and sawn wood and the remaining 90% as fuelwood (CSE, 2016). The demand for Round Wood Equivalent is expected to increase to 153 million m^3 in 200 which was only 58 m m3 in 2000 (NCCF, 2017).

As per ICAR-CAFRI report, 50% of timber demand, 65% fuelwood demand, 70-80% demand for plywood, 60% of raw material for paper pulp and 9-11% of fodder demand is met from AF (Srivastava, 2017). AF practices have demonstrated that production could be safely enhanced to more than 30 m^3/ha/year by selecting suitable tree-crop combination. Thus, agroforestry is a viable option for meeting the raw material demand of wood based industries and to sustain them in long run.

Contract forming in agroforestry

Contract farming is being implemented since more than three decades in the country and is still being evolved in its own way. WIMCO-NABARD and ITC-NABARD contract farming with bi- and tripartite agreements met the objectives of creating awareness about poplar and eucalyptus cultivation in the country (Dhiman, 2013)

Contract farming reduces risks of production, price and marketing costs, open up new markets, ensures higher production, financial support and technical guidance to farmers but also have some issues like it may exploit the poor bargaining power of small farmers, delayed payments, low price etc. even written contract often do not provide the legal protection in our country. Lack of enforceability of contractual provisions can result in breach of contracts. There may be issue of single buyer and multiple sellers. However, these can be taken care by putting proper safeguard in place.

New Farmers agreement on Price Assurance and Farm Service Ordinance 2020 has been issued. This ordinance also emphasize on contract farming which has now been legalised. Most of the above concerns have been taken care of in the new ordinance.

Way forward

AF needs to be given boost. More markets need to be established in close proximity of AF regions. Forestry policies need to be farmer friendly to enable them to produce hassle free wood by doing away with archaic taxation systems and wood transit rules as well as introducing an effective MSP regime. Though people may differ on the issue of MSP but it needs careful thinking.

India is having 12.6 mha of cultivable wasteland and 24.58 mha of fallow land and these can be utilised to enhance productivity in AF sector.

The key lesson from AF is that tree cover needs to be understood and managed as part of landscape, harmonising agriculture and forestry policies. Worldwide 600 tree species are grown in AF system. Because agriculture and forestry are treated separately in policies,

there are challenges in how trees on farms should be managed. Policy makers need to change their views.

Conclusions

Dedicated farmers producers' organisations need to be promoted to organise the farmers and take up agroforestry at economics of scale as envisaged in National Agroforestry Policy 2014.

For the overall growth of the sector, agroforestry programme needs to be implemented in mission mode. A consortium should be formed and wood based industries should financially support the agroforestry programme as their corporate social responsibility. Selection of short rotation fast growing and high yielding tree species suitable for different regions and agroclimatic zones are very much required so that farmers can be advised to grow right kind of tree species on their farm land and Wood based industries can be tagged with the farmers to procure the farm produce for sustaining the requirement of their industries.

Taking example of success of Coffee Board, Rubber Board and Spices Board in India, Agroforestry Board needs to be established on urgent basis to facilitate the growth of agroforestry as a viable commercial option for the farmers and to provide policy inputs to government from time to time for ease of doing business.

For a national level planning of agroforestry to succeed, it is necessary to develop effective means of coordination between different sectors and the development of a common understanding of policy and legal issues affecting the adoption of an agroforestry policy framework. Some of the points to be considered in an agroforestry policy framework are (Kishwan, 2006):

– rational apportioning of land for different land uses at national, regional, and local levels;
– refining government regulations on movement, sale and trade of agroforestry products;
– defining the roles of public and private organizations, banks and NGOs;
– resolving conflicts between different land-uses;
– development of on-farm conditions research;
– Generating sufficient and quality germplasm through accredited nurseries;
– strengthening extension networks and exchanges between user agencies;
– equitable distribution of benefits

References

Bangarwa, K.S. (1998) Tree species for biomass production in fragile environments. pp. 75-84. In: Narula, N. and Bangarwa, K.S. (eds) Perspectives in sustainable Agriculture, Society of Sustainable Agriculture and Resource Management, Bio-Science Publishers, Hisar, Haryana.

CSE (2016). Fumbling with forests, Why we should not handover forests to the private sector. Center for Science and Environment (CSE), New Delhi, 23 p.

Dagar, J.C. and Tewari, V.P. (2017). Evolution of agroforestry as modern science. pp. 13-90. In: Dagar, J.C. and Tewari, V.P. (eds.) Agroforestry: Anecdotal to Modern Science. Springer Nature Singapore Pvt. Ltd.

Dhiman, R.C. (2013). Contractual agreements for sustaining agroforestry with special reference to WIMCO's Poplar programme. pp. 135-168. In: Dhyani, S.K. (ed.) Agroforestry: present status and way forward. Biotech Book Publishers, New Delhi.

Dhysani, S.K., Newaj, R. and Sharma, A.R. (2009). Agroforestry: its relation with agronomy, challenges and opportunities. Indian Journal of Agronomy, 54(3): 249-266.

FSI (2011). India State of Forest Report. Forest Survey of India, Dehradun.

Kishwan, J. (1996). India: Agroforestry Policy Framework. APA News No. 12. Newsletter of Asia-Pacific Agroforestry Network, Bogor, Indonesia. pp. 18-20.

Kumar, P. Singh, R.P., Singh, A.K. and Kumar, V. (2014). Quantification and distribution of agroforestry systems and practices at global level. HortFlore Research Spectrum, 3(1): 1-6.

NCCF (2017). Draft policy paper on promoting sustainable trade of wood and wood-based products in India. Network for Certification and Conservation of Forests (NCCF), New Delhi, 23 p.

Srivastava, S. (2017). Forest productivity – Lumber slumber. Down to Earth, March, 2017.
Tewari, V.P. and Singh, M. (2000) Agroforestry: An alternative land use system in fragile hot arid ecosystem. pp. 71-79. In: Singh, A., Dudeja, S.S. and Singh, S. (eds) Resource management for sustainable agriculture. Society of Sustainable Agriculture and Resource Management, Hisar, Haryana.

Tewari, V.P. and Dagar, J.C. (2017). Introduction. pp. 1-12. In: Dagar, J.C. and Tewari, V.P. (eds.) Agroforestry: Anecdotal to Modern Science. Springer Nature Singapore Pvt. Ltd.
http://worldagroforestry.org/news/india-leads-way-agroforestry-policy

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Thinking and Acting in a Disrupted World: Education, Environments, People, Governance

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Scholars and political commentators have often stressed that business interests have privileged status in public policy debates, in the media coverage, in the "solutions' to the problems of difficult settlement in the world, usually endorsed by vested interests, particularly when it comes to the fore environmental issues, quality of life and marketing domains.

Trying to solve isolated and localized problems, without addressing the general phenomenon, is a conceptual and practical error: the stress on legalistic approaches to “governance”, on institutions and institution building, fails to account for the design, formation and maintenance of institutions, in terms of transparency, completeness and credibility.

Proposals for “development” or “technological solutions”, generally ignore social, cultural and environmental impacts, linking nature (natural capital) to the financial domain, without changing the irrational system of production, transport and consumption that plagues today’s world and where profits are concentrated in the hands of few.

The asymmetry of political and economic power between common people and corporations has led to natural devastation, biodiversity loss, precarious housing, lack of sanitation, fatal epidemics, high levels of crime and violence, conflicts of all kinds, specially in the Global South, with severe environmental, political, economic social and educational impacts.

Nowadays, “common good”, “citizenship” is viewed as an obstacle to “individual freedom” in a “democratic” society, despite the dissolution of cultural and natural heritage, of collective bonds, ethics, aesthetics, equity and justice, encompassing the role of leaders, elites and coalitions and the general patterns of institutional failure.

Changing the paradigms of development, growth, power, wealth, work and freedom, embedded into the political, technological, economic and educational institutions, would imply the development of institutional capacity, judicial neutrality, informational transparency and social spaces for civic engagement and political participation.

Capacity-building can not be restricted to technological and economical issues, encompassing the ethical, social, cultural and educational conditions to live better in a better world. “Productivity paradigms” often have a severe backlash on land preservation, natural forests, traditional habitats, indigenous lands and overall quality of life.

History shows that “technological progress” does not solve all problems, but creates new ones. Scientific research is compartmentalized, the different sectors do not speak with each other; physics, chemistry, economics, stay apart from the social, human and health sciences: what is “technological” has universal value.

The hegemony of technological and technocratic solutions to virtually all individual and collective problems (safety, education, health, environment), is an ecological, economic, political, cultural and educational fallacy and obscures what lies behind the many problems of difficult settlement or solution in today’s world.

Spurring collective action and critical interventions for an equitable, just and sustainable future, would engage civil society, conservation units, the media, journalists, faith leaders, advocates, experts, decision makers, activists, young people, political leaders, organisations, groups and communities from across regions, sectors and generations.

Earth retrieval (regeneration) and People retrieval (regeneration) should be dealt with simultaneously, in space and time, since they depend on each other: problems and the contexts in which they occur should be re-interpreted and restructured through an ecosystemic lens, thus altering the ways to address them.

To know more, please see the link to the author's public profile and selected publications:
https://hcommons.org/deposits/objects/hc:29602/datastreams/CONTENT/content

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The Forest Research Institute of Malaysia (FRIM)

The Forest Research Institute Malaysia (FRIM; Malay: Institut Penyelidikan Perhutanan Malaysia) is a statutory agency of the Government of Malaysia, under the Ministry of Land, Water and Natural Resources (KATS). FRIM undertakes research, development and extension (R, D and E) in tropical forestry and forest products and promotes sustainable management and optimal use of forest resources in Malaysia by generating knowledge and technology through research, development and application in tropical forestry. FRIM is located in Kepong, about 20 kilometres north of the Kuala Lumpur.

In 1926, the chief conservator of the Forestry Department in what was then Malaya (equivalent to today's Director-General of forestry), G.E.S Cubitt, asked F.W. Foxworthy to establish a separate forest research unit for the Forestry Department. It was Foxworthy who selected the present site, at Kepong. He was also to become the institute's first chief research officer.
The site comprised an area that was practically stripped of its original forest cover except for a few remnant trees at the more inaccessible localities. Lalang *(imperata*) grass scrub grew on the hillsides made way to vegetable terraces on the lower slopes, while the valley cradled a few ponds, the left-overs of a past tin-mining operation.

Within two years in 1928, the first 42 hectares (100 acres) of experimental plantation (mainly *Dipterocarps*, tall hardwood species) were in place, carefully nurtured into being using "nurse" trees of other species as shade and food providers (being nitrogen-fixers). By that time the construction of the main building had begun. Completed the following years, this building was to remain the sole centre for the laboratories, herbarium, and museum, as well as the Chemistry, Zoology and Silviculture sections of the institute, until new buildings were added after World War II. The herbarium collection that was also moved to Kepong, numbered 1,500 accessions. FRIM is the world's oldest and largest re-created tropical rain forest.

The end of the decade saw some 125 hectares of plantation established at the institute. Plantation trials with exotic species started in the early 1930s. The plantations covered 154 hectares just before the outbreak of World War II in Europe in 1939, and before the Japanese occupation of the Malay Peninsula in 1941–1945. By this time the *Dipterocarp* and *non-Dipterocarp* arboreta contained 75 species (represented by 360 individual trees), while the Herbarium collection numbered nearly 40,000 accessions.

Establishment

Just before Malaysia won independence from the British Empire in 1957, some 220 hectares of plantations had been established at the institute, while the *Dipterocarp* and *non-Dipterocarp* arboreta held 201 and 168 species respectively. The herbarium collection had grown to 53,600 accessions. The Timber Research Branch had moved from Sentul, just outside Kuala Lumpur, to become a part of the institute at Kepong.

Six years later, Encik Abdul Rahman Mohd. Ali was appointed the institute's first Malaysian director and chief research officer. The ground of the institute was expanded by a further 192 hectares in 1962 and 1964 to a total 600 hectares.

After Haji Abdul Rahman Mohd. Ali, Mr KD Menon was appointed as Director before he was promoted to the post of Assistant Director General of Forestry at the Forestry Department Headquarters at Jalan Swettenham, Kuala Lumpur.

FRI was used as a transit for State Directors of Forestry by the Department Headquarters before these senior forestry officers or Conservator of Forests were transferred to new posts as Directors of Forestry at the State level.

In December 1977, I was appointed to the then post of Director of the institute after I returned from my Ph.D. studies. At that time, FRI had only one other Ph.D. holder and he was Dr. Francis Ng Say Pink, who became an internationally known botanist. So I was the first Ph.D. holder to hold the post of Director of FRI Kepong. There were only 16 other research officers (ROs) and a few Deputy Conservator of Forests (DCFs) who were also not permanent as they could be transferred out as District Forest Officers by the Department Headquarters. There was little true research being undertaken except the documentation of tree flora and timber qualities in what I referred to as the documentation phase of forestry research.

Needless to say, I was not happy with the state of FRI especially that the ROs had little promotion opportunities and there was little motivation for them to truly work hard into research per se. The DCFs had promotion opportunities as they could be transferred out to the districts and states as District Forest Officers (DFOs) or even State Forest Officers (SFOs). It is relevant to note that the Forestry Department Peninsular Malaysia only covers the 11 states in Peninsular Malaysia and does not cover Sabah and Sarawak that have their own Forest Services.

I then sought the advice of the late Tan Sri Dr Ani Arope, the Director of he Rubber Research Institute Malaysia (RRIM) which was formed as a statutory body and funded by the rubber industry. He advised that FRI must become a statutory if it was to move forward.

For those who are unfamiliar, a statutory body is formed by an Act of Parliament. The key advantages of a Statutory body as against part of the Forestry Department are:

1. A statutory body is governed by a Board that manages the organization. Members of the Board come from the industry and the forestry department and the Chairman appointed by the relevant Minister overseeing the organization.
2. It can seek funds from outside and generate revenue for its own use.
3. As a Department, any revenue generated goes to the Federal Consolidated Fund and one has to apply annually for funds during the annual budget presentations.
4. As a statutory body, it can recruit its own staff, promote them with approval by the Board and dismiss them as well (off course through proper disciplinary board procedures).
5. The Director General manages the institute and decides on overseas travel as against getting approval from the Ministry in the past.
6. Research programme was vetted and approved by an external Research Advisory Committee that comprised of well-known and respected members from local and overseas timber and forestry industries.
7. Local publications were introduced such as the International Journal on Tropical Forestry Research (IJTFR) and the International Journal on Forest Products research but the latter did not last long and became amalgamated into IJTFR, which is now thriving with many international contributors.

Prior to this research papers were published in the Malayan Forester published by the Forestry Department.

Thus there are many advantages by being a statutory body.

Funding:

It was planned to establish a Malaysian Forestry Research Cess Fund that can receive funds from the forestry industry similar to rubber and oil palm industries. Rubber Research Institute Malaysia (RRIM) receives funds via a cess on rubber industry and the Malaysian Palm Oil Board (MPOB) receives cess funds from the oil palm industry. However, this was scuttled due to objections not by the industry by the Director General of Forestry Peninsular Malaysia.

The icing on the cake was the official visit of the then Prime Minister of Malaysia, Dato' Seri (now Tun) Dr Mahathir Muhammad, who out of the blue announced that FRI Kepong shall become a statutory body. This caught everyone by surprise especially the Director General of Forestry who was also present during the briefing. Everyone thought that I had planted this idea with the Prime Minister but truthfully, I did not. It was totally his proposal and out of the blue and caught me by surprise. That was sometime in 1980. It took a long five years before FRIM was actually formed.

Finally as FRIM

Finally the Act to form FRIM was approved by Parliament as the Malaysian Forest research and Development (MFRDB) Act 1985 and I was appointed as its inaugural Director General with the first Chairman being the late Tan Sri Murad bin Mohd. Nor the former Director General of Education. One of the first things that we did was to develop a strategic plan for FRIM that was approved by the MFRDB Board and that included the formation of the FRIM Research Advisory Committee that included amongst others, Professor Walter Liese, the then President of IUFRO from Hamburg, Germany, Dr Alf Leslie from CSIRO Australia, a forest products specialist and members of the Malaysian timber industry including the late Chai Fook Loong, then Chairman of the Malaysian Plywood Manufacturers Association (MPAM), who became a close friend until his untimely demise.

Some of the significant Research outputs of FRIM include the following:

1. Research into rubberwood. The technology of treatment, drying and treatment of rubberwood (*Hevea braziliansis*) that was a waste product during the replanting of rubber plantations, resulted in a multi-billion dollar industry and the technology has been used in tropical Africa and South America where rubber is grown.
2. Development of silviculture systems for the management of the Malaysian tropical forest that is used by the Forestry Departments in Malaysia, including the Malayan Uniform System and the Selection Management System.
3. Determining the properties and treatment, drying and preservation of Malaysian timbers that assisted the Malaysian timber industry in exporting these timbers overseas and promoting their use locally.
4. Determining the management systems for the Malaysian mangrove forests that resulted in the Matang mangroves in Perak State being managed on a sustainable basis and recognized as the best managed mangrove forest in the world.
5. Development of a firedoor testing facility that supported the export of timber doors from Malaysia.
6. Development of a Panel Products research facility to support the panel products industry in the country.
7. Developing fast growing species for forest plantations.

8. FRIM has now established FRIM Incorporated to commercialise it's numerous R&D products that includes pharmaceutical, health and skin care products and provides consultancy services to the industry.
9. Development of a 100 acre long term ecological plot in Pasoh Forest Reserve in Negeri Sembilan in collaboration with the Smithsonian Institute of the USA similar to the plot in Barro Colorado Island in the Panama.
10. Establishment of international collaboration with numerous international forestry institutes on various research aspects.

As a result of the above and many more research outputs, FRIM became recognised as the top tropical forestry research institute in the world and has won numerous awards locally and overseas in recognition of its research efforts.

Dr. Salleh Mohd. Nor
3 September 2020
I retired on the 20th October 1995 on my 55th birthday as that was the mandatory date of retirement then.

First World Conference on Dragon Trees

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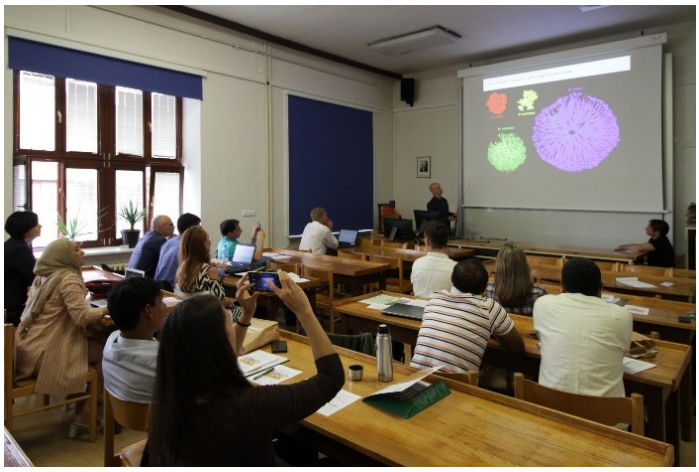
The first conference focused exclusively on Dragon trees, e.g., a few species among more than 60–100 species of Dracaena genus that reach the arborescent form, took place in Brno between 5th and 8th September 2019.

More than 34 participants from 11 countries met with the main objective to present the latest results of their research. Contributions about taxonomy, evolution, distribution, ecology, anatomy, morphology, ethnobotany, eco-physiology, and species-specific relationships of

Dracaena draco ssp. *draco*, *D. draco* ssp. *caboverdeana*, *D. cinnabari*, *D. serrulata*, *D. ombet* s.l., and *D. steudneri* were presented. Most of the presentations were focused on *Dracaena cinnabari*, endemic species form Socotra Island, which seems the most investigated species among arborescent Dracaena species.



At the end of the conference, the informal Dragon Trees Consortium has been established with the aim to determine main gaps for future investigation and as the bases for conservation management of these tertiary relict species. It will also serve for possible future cooperation. As a result, a special issue called "Dragon Trees - Tertiary Relicts in Current Reality" have published papers about different Dracaena species in the journal Forests https://www.mdpi.com/journal/forests/special_issues/dragon_trees

Rwanda Gorilla Naming Ceremony-Kwita Izina-2020 During COVID-19

Kwita Izina was introduced by Dr. Dian Fossey an American, started giving names to gorillas she was monitoring for her research in 1970's. This is a traditional ceremony prepared by Rwandans to celebrate and welcome a new born in a family. The name attributed to a baby gorilla plays a significant role in the ongoing programme of monitoring each individual gorilla in its family group and habitat. Every year Rwanda organizes a Gorilla naming ceremony for every new gorilla babies. Rwanda is home to 880 mountain gorillas left on the planet

Rwanda has become the first country in sub-Saharan Africa to order a total shutdown because of the corona virus. Due to COVID-19 this historical event will be virtual, it was known to call big names with celebration which different in this year, 2020 and the name givers will be front liners of conservation including the park rangers, guides, wardens, trackers and veterinary doctors to mention the total 24 baby gorillas that call Rwanda's Volcanoes National Park home will be named. The 16th Kwita Izina event will be held on World Gorilla Day – 24 September 2020 under the theme "Conservation and Sustainable Tourism – A Foundation for Future Generations.

24 baby gorillas will be named online due to covid-19 pandemic

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Prospects of Bamboo in Livelihood Enhancement of Rural Women through Incense Stick and its Role in Mitigating Rural Poverty- A model

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Abstract:

Bamboo forms an essential source of livelihood in Tripura, a state in North-Eastern India. Four species of bamboo viz. Barak (*Bambusa balcooa*), Bari (*Bambusa vulgaris*), Mirtinga (*Bambusa tulda*), and Muli (*Melocanna baccifera*) are being used widely in bamboo-based incense sticks. On looking into the prospects of bamboo in the livelihood security a feasibility study was carried out by sampling 2000 rural families where the women and youth had meagre or no sources of livelihood. The training was imparted on incense stick making using bamboo on "handling of bamboo" and "small scale value addition." After the training, it was noticed that 76% of women folks, including single mothers, could earn 150 INR/day, which made themselves-sufficient. Thus from the above study, an inference may be drawn that timely harvesting and effective utilization of bamboos can yield direct and sustained benefits to the poor rural and tribal communities of this area through poverty alleviation. It is suggested that efforts need to be taken up around the deprived villages to initiate bamboo plantations suitable for incense stick making. This model can be applied to regions where bamboo forms the primary resource base of the rural communities which in turn can make the rural communities more self-reliant with increased livelihood support.

Keywords: Bamboo Value Addition, Bamboo utilization, Poverty Alleviation, Rural Livelihood, Women Skill Development, Bamboo Incense Stick

Introduction

Bamboo occupies an area of 15.69 m ha in India, bearing 136 species belonging to 23 genera (FSI, 2017, Selvan, 2018). Bamboos are excellent raw material for many household items and are seen as an important cash crop. Bamboo is an essential resource for livelihood, generating income, and improving the nutritional status of over 2 billion poor people, mostly in rural communities (https://www.tbm.org.in/why-bamboo/). A large section of the population in Tripura, depend on bamboo and derive their livelihoods from the bamboo resources (TBM, 2011-2012). With such properties, bamboo can be considered an excellent entry point for poverty alleviation programs and initiatives (https://naturefabstore.com/about-bamboo/).

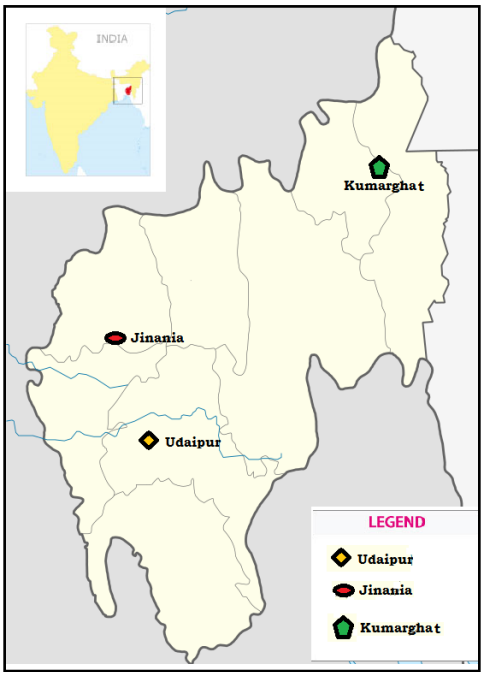
Tripura has a significant amount of homestead bamboo: a clump or two of bamboo in the backyard of rural houses is a common sight (Rao, et al. 2009), with small holdings aggregating to 10,900 ha (Acharya et al. 2016). The abundance of bamboo and its cultural and traditional use has made this resource a common usage among the rural masses, including its usage as a raw material for the incense stick industry. As incense stick production is effortless and learned quickly, thousands of women get into this work. The output of incense stick can be done during

leisure hours, which fetched some money, and so is considered to be a significant rural women-friendly livelihood provider for the poor in Tripura. Although many studies have been carried out on bamboo resources, their diversity, issues connected to poverty alleviation, livelihood enhancement and enterprise development using bamboos worldwide including India and Tripura (Duraisamy, 2003; Rana et al., 2009; Awadh, 2010; Anitha, 2012); but there have not been any studies, on the involvement of women in the bamboo sector to mitigate rural poverty in Tripura. With a focus on the prospects of incense stick production as a livelihood option, it was seen that to tap the available bamboo resource in a way; the present study was undertaken to understand the feasibility of employing women in incense stick production and the impact of women's employment on the level of poverty in Tripura, India.

Materials and Methods:

Study area: The study was carried out in Tripura, India, which is the third-smallest state in northeastern India, having an area of 10,491 km^2. Tripura has a population of 3,671,032 with 1,871,867 males and 1,799,165 females. The State has 73.8 % of the population in rural areas consisting of 19 ethnic groups and many as sub-groups, with diverse languages and cultures. Three Districts of Tripura viz. West Tripura, North Tripura and Gomati were selected for the study looking into the easy availability of the bamboo resources in the rural areas and those areas were the rural communities have been traditionally using bamboo in many of their day to day activities. The location selected for sampling in these districts are marked on the map (Fig. 1).

Fig. 1. Map showing the sampling locations where rural women were selected to undergo skill development training on bamboo incense stick making



Sampling, Data Collection, and Analysis: Purposive sampling was used for the selection of districts, blocks, and clusters during the year 2015. A sample size of 2000 rural women were selected randomly from Udaipur (500 nos), Jirania (500 nos) and Kumarghat (1000 nos) and falling in the Districts of Gomati, West Tripura, and North Tripura, respectively where there was more prevalence of bamboo resource and where bamboo is more used and conceived by the people. The selected women were made to undergo skill development training on bamboo incense stick making. The primary sources of data were based on observations from personal biodata records of the women artisans engaged. Different sources of information from various organizations and the internet were used to obtain secondary data. All the data collected in the field was analyzed using MS-Excel.

Results and Discussion:

The bamboo sector offers many opportunities for reducing poverty and improving the environment (IFAD, 2019). Many programmes world over has emphasised the enormous potential of bamboo in contributing to rural poverty reduction as it can be used to create jobs, economically empower women and protect the environment (IFAD, 2013). Out of the 2000 rural women artisans selected for in this study, 1652 (82.6 %) of the artisans belonged to below poverty line (BPL) with majority women (71%) without any income followed by women who could earn up to Rs 2500 per month (22%) (Table 1 & 2). Of the women who were given one month of skilled training, 81% of the women enrolled themselves for employment, and 19% did not join themselves for work, due to personal reasons. After the skill training, most of the women were engaged in a small but regular production of bamboo sticks. Similar to this study INBAR supported a three-year programme to improve livelihoods and reduce environmental degradation in Ethiopia, Madagascar, Mozambique and the United Republic of Tanzania targeting unemployed young rural people, households headed by women, and disadvantaged groups by providing training on bamboo production, and on activities for women, such as processing and crafts, showed that the programmes enabled communities to substitute wood-based fuels with bamboo, thus contributing to energy security and reducing environmental degradation. This in turn has led to have stable incomes from making and selling bamboo briquettes and other products (IFAD, 2013). Bamboo skill development in rural areas of Balaghat district, Madhya Pradesh, India also led to women employment, improve productivity, reduce drudgery, improve health and give an identity outside of the house by becoming earning members of their families and having community support to be independent (Dhingra et al., 2018).

Table 1: Economic Status of Rural Women involved in Bamboo Stick Making selected to undergo skill development training on bamboo incense stick making

Category	**Number of Artisans**	**Percentage**
Above Poverty Line (APL)	348	17.4
Below Poverty Line (BPL)	1652	93
Total	**2000**	**100**

Table 2: Personal Income Levels of Rural Women selected to undergo skill development training on bamboo incense stick making

Income earning/month before training	No of Members (%)	Income earning/month after training	No of Members (%)
Not earning	71	Not earning	19
Up to Rs. 2500	22	Up to Rs. 2500	51
Rs. 2501-3500	4	Rs. 2501-3500	21
Rs. 3501-4500	3	Rs. 3501-4500	6
Rs. 4501-6000	0	Rs. 4501-6000	3
Above 6000	0	Above 6000	0
Total	**100**	**Total**	

In the present study it was seen that after receiving training on incense stick production, 51% of the women started earning up to Rs 2500, 21% earned Rs 2500-3500, 6 % earned Rs 3500-4500, and 3% women earned Rs 4500 – 6000 per head per month, respectively (Table 2). Further, it is seen that only 15% of unemployed women were capable of making decisions about family savings before training; however, after training, 68 % of the same women were involved in family decision making and had an influence on family savings (Table 3 & 4). This shows that the higher the income of the woman, the more influence she had on family and social matters. It was also seen that for millions of poor people in East and Southern Africa, bamboo has huge potential to alleviate poverty, protect the environment and help achieve the Sustainable Development Goals (IFAD, 2019). The IFAD study also revealed that farmers trained in sustainable bamboo management had added benefit of providing not only savings for farmers and women, but also increasing cow milk production. In yet another "Bamboo Livelihoods Business Enterprise Project" for Kotwalia community, one of the primitive tribal groups in South Gujarat, India led most of the community to seek alternative livelihoods and gained confidence that we can manage the financial expenses well (INBAR, 2010). The concept of saving money has been highlighted in this study as 'personal, and family savings' are a means of social security and act as a source of insurance against indebtedness, the two factors which influence poverty to a great extent.

Table 3: Influence of Income Level on Decision making Capacity for Savings of rural women selected to undergo skill development training on bamboo incense stick making

Decision Making		Income of Respondent (No. in percent)				
		Not earning	Up to Rs. 2500	Rs. 2500-3500	Rs. 3500-4500	Rs. 4500 & above
Before	Low	89	79	73	71	68
	High	11	21	27	29	32
Total		100	100	100	100	100
After	Low	88	33	24	15	7
	High	12	67	76	85	93
Total (%)		100	100	100	100	100

Table 4: Decision making capacity of women before and after participation in skill development programme selected to undergo skill development training on bamboo incense stick making

Extent of Decision Making		Personal and Family matters
Before	Low	85
	High	15
Total		100
After	Low	32
	High	68
Total		100

Conclusion:

Increased women's employment would mean a decreased level of rural poverty. Bamboo related skill training and employment generation for women has an unlimited amount of opportunities for the rural women of Tripura. The bamboo sector offers scope for the creation of employment in areas such as plantation, skill training, and production of incense (agarbatti) sticks and their marketing and sale. The involvement of women in the livelihood generation programme of incense stick production has led to a rise in the level of income among women. This has further paved the way for the economic empowerment of women, which can be seen as a means of poverty alleviation of the rural communities of Tripura. This study has brought together the poor of Tripura and the abundantly growing local bamboos. The findings of this research are therefore invaluable for the poor of Tripura, as they form the basis for a new and brighter future. The scope of this study can extend to the formulation of policy framework for many areas/states in countries where bamboo forms the primary resource base of the rural communities leading to enhanced livelihood options. This can, in turn, avoid the import of bamboo for incense stick industry from China and other South East Asian countries by making the states more self-reliant in incense stick production.

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References:

Acharya S K, Gupta M, Mishra G C, Biswas A (2016). Bamboo: The Economy-Ecology - Sociology. In S. K. Acharya, G. Moumita, A. Biswas, & G. C. Mishra (Eds.), Bamboo in North-East India: The Ecology, Economy and Culture (pp. 24-60). New Delhi, India: Krishi Sanskriti Publications.

Anitha V (2012) Bamboo in sustainable rural livelihood. BTSG R&D Project Report, KFRI, Peechi, Kerala, India. 80p

Awadh A H (2010) An Assessment of the Viability and Potential of Bamboo Micro Enterprises in Environmental Conservation and Poverty Alleviation in Nairobi City, Kenya. M Sc Thesis. School of Environment and Earth Sciences, Environment Science Programme, Maseno University. 94p.

Dhingra S, Tanvir B, Henriksen U B, Jaboyedoff P, Sinha S, Ziegerer D (2018) Rural Electrification and Livelihood Generation for Women Enterprises in Rural India: Experience of

Implementing Two-Stage Biomass Gasifiers. In: Hostettler S., Najih Besson S., Bolay JC. (eds) Technologies for Development. UNESCO 2016. Springer, Cham
Duraisamy J (2003) Bamboo resources, enterprises and trade development opportunities for livelihood development and poverty reduction Journal of Bamboo and Rattan 2(4): 429-439
Forest Survey of India (2017) State of Forest Report- 2017, Available at: http://www.fsi.nic.in/forest-report-2017
IFAD (2013) The benefits of bamboo: support for livelihoods, the environment and women's empowerment ANNUAL REPORT 2013. pp. 74-75.
IFAD (2019) South-South knowledge transfer strategies for scaling up pro-poor bamboo livelihoods, income generation and employment creation, and environmental management in Africa. https://www.ifad.org/documents/38714170/41219860/poverty_bamboo.pdf/3dcd50ba-43e5-80aa-21bc-b446487ac599 Accessed on 23rd May, 2020.
INBAR (2010) Bamboo & Women (Part 1) – Livelihood Impacts of Bamboo. https://www.inbar.int/bamboo-women-part-1-livelihood-impact-of-bamboo/ Accessed on 23rd May, 2020.
NatureFab (2020) https://naturefabstore.com/about-bamboo/ Accessed on 23rd May, 2020.
Rana M P, Mukul S A, Sohel M S, Chowdhury M S H, Akhter S, Chowdhury M Q, Koike M (2010) Economics and Employment Generation of Bamboo-Based Enterprises: A Case Study from Eastern Bangladesh. Small-scale Forestry 9:41–51.
Rao IV R, Kumar A, Reza S and Motukuri B (2009) A Pathway Out of Poverty Bamboo incense sticks production as a livelihood option for rural women in Tripura, India. International Network for Bamboo and Rattan & Centre for Indian Bamboo Resource and Technology. 52p.
Selvan T (2018) Bamboo Resources, Their Status, Conservation and Strategies for ImprovementIn: Forest, Climate Change and Biodiversity Sood, KK & Mahajan, V (Eds.) Kalyani Publishers New Delhi, India. pp. 263-286
Tripura Bamboo Mission (2011-2012) *Annual Progress Report,* Available at: http://www.tripurabamboo.com/portals/0/Reports/TBM-APR-2011-12.pdf
Tripura Bamboo Mission (2020) https://www.tbm.org.in/why-bamboo/ Accessed on 23rd May, 2020.

Indigenous Chepang conserving Chiuri species for sustainable livelihood

Bhola Bhattarai, Roshan Chikanbanjar

The livelihood of Indigenous Chepang community is directly or indirectly linked with forest, land, water and wildlife. They used to live nomadic life in the past and are living semi-nomadic lifestyle in the present time by involving in agricultural activities. Most of their time were spent on collecting Non-Timber Forest Products (NTFPs) and hunting of wild animals in the past. The Chepang live in the different corners of fragile Chure and Mahabharat range where fertile soil is hardly found for cultivation. That is the reason for practicing slash and burn technique of farming by Chepang community for their livelihood. The produced food in their farmland and *khoria* (sloppy land) is hardly enough for 3-6 months to feed the family.

The Chiuri tree, a medium-sized tree that inhabits in sub-Himalayan tracks of steep slopes and cliffs at an elevation of 400 to 1400 meters from west to east of Nepal, belongs Sapotaceae family of plant kingdom. Chiuri grows mainly in rocky and fragile Chure and Mahabharat range protecting the hills from landslide and soil erosion. The scientific name of Chiuri found in Makwanpur is *Diploknema butyracea.*

Figure 1. Chiuri tree

The Chepang community who lives in steep and sloppy hills have special relation with the Chiuri. There is social, cultural, traditional and economic relation of Chiuri with the Chepang community. A Chepang family is considered rich or poor depending upon the number of Chiuri trees they have. They regard Chiuri tree as their property. They even give Chiuri tree as a dowry to their newly married daughter. Almost every part of Chiuri tree is useful to them. They use bark, leaves, flower, fruit, branches, timber and seed for different purposes. The Chiuri seed is used to extract oil/ghee which is used for cooking food and burning lamp. The oilcakes produced after extraction of ghee are used for fish poisoning and as an insecticide in their farmland.

Probably since they know the importance of Chiuri tree, they are involved in conservation of the Chiuri tree around their locality. Normally, they do not fell the Chiuri tree. They feed Chiuri

leaves to their domestic animals and cook food using the branches as firewood. Every year they plant thousands of Chiuri Seedlings privately in the name of community and leasehold forest. The support is provided by local government, Division forest office or non-governmental organizations. Recently, Chepang community of ward number 8 of Raksirang Rural Municipality (RRM) planted 1000 chiuri seedlings in Bal kalyan leasehold forest and 2000 seedlings in Jana Jagriti community forest with their own initiative and financial support of National Forum for Advocacy, Nepal (NAFAN) which is a nonprofit making social organization. Every year community forests and leasehold forest of RRM organize plantation program in which they plant thousands of Chiuri seedlings.

Figure 2. Chiuri seedlings being transported for planting

Figure 3. Local people transporting chiuri seedlings for plantation in RRM

A recent survey showed that there are four types of Chiuri namely Asare, Shrawane, Bhadaure and Mangsire in RRM which are also named as Tomyo, Wayo, Langyo and Jayo (Crokiyo) respectively in local Chepang language depending on the time of flowering and ripening of seed. The Chepang community is conserving all the species in RRM. Many of the local Chepang grow Chiuri seedlings in their nursery. Some grow privately whereas some grow in group with the

support of Division forest office and NGOs. NAFAN have also initiated to conserve all four types of Chiuri by growing the seedlings of all four types in demonstration plot. NAFAN is planning to produce 6000 seedlings of each type with the total of 24000 seedlings in RRM by involving the user groups of Chepang and Tamang. According to a social mobilizers of ward no.8, RRM they have collected the seed of two types and will make the nursery in few days. She also added that other two types of the seed will be collected within next month and will grow in the nursery of the demonstration plot.

Figure 4. A planted chiuri seedling in RRM-8

NAFAN has formed two cooperatives (self-help groups) in RRM, one in ward no. 8, Devitar and other in ward no. 7, Damrang. Both cooperative have been registered and are running efficiently by conducting financial activities. Some of the members of the cooperatives are bee keeping farmers. Chiuri is an important tree for bee farming in RRM as the flowering duration of this species is relatively longer. They earn certain amount of money by selling the honey for NRs. 200-300 per kg which is supporting them for their livelihood. They know the importance of Chiuri in their business and hence they are also playing the active role in conservation of the Chiuri species.

The cooperatives of ward no. 7 and 8 namely Muna Agricultural cooperative and Himali Devitar Agricultural cooperative respectively are planning to establish a collection center of Chiuri seed and honey in their respective wards. It is because they now want to sell the Chiuri seed commercially for making oil to private companies and create job opportunities for the youths. They will produce quality seeds and will get comparatively higher price after the establishment of the collection center. They are seeking the support in different governmental organizations (province level and local level) and non-governmental organization for the financial support for the construction of the same.

Figure 5. A nursery in demonstration plot of NAFAN in RRM-8


Figure 6. Training to FUG for forest conservation and management

NAFAN has reached to 1302 beneficiaries till June 2020 in which 794 are male and 508 are female to whom we oriented about importance of and conservation of Chiuri species in different intervals of time. They are now able to understand the importance of Chiuri in their socio-economic, traditional and cultural aspects. They demand themselves the seedlings of Chiuri for plantation.

Formation of the Mexico chapter of ISTF

Carl W. Mize
30 August 2020

Being a retired researcher with some interest in tropical forestry, when I heard that some rules and regulations needed to be developed to form a Mexican chapter of the ISTF, I volunteered to be in charge of a group to develop the by-laws. Sheila Ward, the ISTF-Central Coordinator and contact for developing the by-laws, sent various documents, including a by-laws template. I sent an email to all members of the ISTF who live in Mexico asking for help. Sheila provided the email addresses. I talked with a few members that I know, Francisco Chapela Mendoza and Martin Mendoza-B, about the few changes that needed to be made to adapt the generic by-laws to the mexican chapter, like would there be dues and how much. Then I sent the adapted by-laws to the members and asked for suggestions or approval. After a couple of rounds of this, I sent the latest version to Sheila who presented it to members of the ISTF Central Board, who made suggestions and finally approved the chapter by-laws.. A final draft was sent to all Mexico ISTF members for a final vote and it passed among those who returned votes.

Sheila informed me that the chapter needed to elect officers and get started as a chapter. I emailed all members and asked if they were interested in serving in one of the four positions and got four affirmative responses, and after some discussion, we decided that those four would be the initial group of officers of the Mexican chapter of the ISTF with no election. As a general rule very few members responded to most requests for feedback.

Formación del capítulo México de la ISTF

Carl W. Mize
30 de agosto de 2020

Siendo un profesor jubilado con algo de interés en la dasonomía tropical, cuando me enteré que era necesario generar algunas reglas y estatutos para formar el capítulo mexicano de la ISTF (por sus siglas en inglés), decidí ser el voluntario para encabezar un grupo encargado del proceso. Sheila Ward, Coordinadora Central del ISTF y contacto para desarrollar el capítulo, nos envió varios documentos, incluyendo el formato de los estatutos. Envié un correo electrónico solicitando ayuda a todos los miembros del ISTF que viven en México, lista proporcionada por Sheila Ward. Directamente me comuniqué con algunos miembros que conozco, entre ellos Francisco Chapela Mendoza y Martín Mendoza-B acerca de algunos cambios que se necesitaban hacer a los estatutos internacionales para adaptarlos al capítulo mexicano, cómo por ejemplo ¿habría cuota de membrecía y de qué monto? Posteriormente, envié los estatutos adaptados a todos los miembros solicitando sugerencias y/o aprobación. Después de dos rondas de consultas, envié a Sheila la última versión de los estatutos para presentarlos a la junta directiva de las oficinas centrales del ISTF, que hicieron sugerencias y finalmente aprobaron los estatutos del capítulo México-ISTF. Finalmente, la versión final de los estatutos se enviaron a todos los

miembros de ISTF en México para su voto final, quedando aprobado por los miembros que respondieron con su voto.

Sheila me informó que el capítulo necesitaba elegir representantes para iniciar como capítulo. A través de un mensaje electrónico, enviado a todos los miembros, solicitando quienes estarían interesados en desempeñar alguno de los cuatro puestos disponibles. Llegaron cuatro respuestas de interesados y después de algunas conversaciones decidimos que los cuatro voluntarios sería el primer grupo de representantes del capítulo ISTF-México, sin llevar a cabo elecciones. Como regla general, muy pocos miembros tienden a responder las solicitudes de opinión.

Representantes ISTF-México/ ISTF-Mexico officers

OpenForests Blog on Nature and Environmental Destruction

Alexander Watson's blog "Our disconnect from nature is key to understanding environmental destruction" can be found at this link:

https://blog.openforests.com/our-disconnect-from-nature-is-key-to-understanding-environmental-destruction/

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For ISTF members, CotW is a space to share the individual experiences that make up our work and personal lives as foresters, environmentalists, researchers, advocates, and engaged people. ISTF members have many interesting stories to share! Reach out to correspondentsoftheworld@gmail.com or to ISTF member and CotW editor Melaina Dyck at melaina.kathleen@gmail.com to submit a story or get more information. Check out our published stories at https://correspondentsoftheworld.com/ .

Ho Chi Minh plants trees during the first tree-planting festival, 1969. VNA/VNS File Photo

Litter and soil biogeochemical parameters as indicators of sustainable logging in Central Amazonia

Abstract: One-fourth of Brazilian Amazonia is managed for timber production, but only a small portion of active logging sites follow sustainable forest management plans (SFMPs). Amazon forests without SFMPs are susceptible to deforestation because such plans integrate the use of forest products and conservation goals by allowing selective wood extraction following regulations aimed at reducing the long-term impact of logging. However, it remains uncertain whether reduced-impact selective logging typical of SFMPs (17–20 m3 ha−1 yr−1 of 38–70 species) changes forest regeneration, carbon (C) stocks, and nutrient cycling. Here, we tested the hypothesis that litter and soil biogeochemical parameters serve as indicators of sustainable logging as forest regeneration, C stocks, and C-to-nutrient ratios in soil and litter become progressively similar to those of primary forests as time elapses after logging. We used a chronosequence spanning nine years since logging to relate litter and soil (at 0–10, 10–30, 30–50 cm depth) C stocks and 12 and 15 biogeochemical parameters, respectively, as well as canopy cover and tree seedling density (10–150 cm tall) in upland evergreen Amazon forests. In one unlogged and four logged stands sampled three, five, seven, and nine years after logging, we compared 15 permanent plots (three replicated 0.5 ha plots per time-since-logging category). We found that five parameters explained ~80% of the variation in soil and litter properties among logged and unlogged stands. Litter parameters were more sensitive to logging than soil parameters, as litter C stocks and C-to-nutrient ratios increased systematically after logging. Canopy cover decreased over time and was ~14% lower nine years after logging. Total seedling density did not change consistently over time but was ~54% higher seven years after logging. Our data suggest that the SFMP guidelines have served the purpose of maintaining soil quality and forest regeneration. Litter and soil parameters can be useful indicators of sustainable forest management in upland evergreen forests in Central Amazonia.

Key words: Disturbance, Harvesting, Reduced-impact logging, Sustainability, Tropical soils, Tropical forests

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How to get the article: bbomfim@lbl.gov or
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This article has recently been featured in this science blog
https://voicesfromdevelopingcountries.home.blog/2020/07/13/different-logging-schemes-impact-forest-management-in-the-brazilian-amazon/ (Abstract of the paper on sustainable forest management in central Amazon is here)

Forest Landscape Restoration—What Generates Failure and Success?

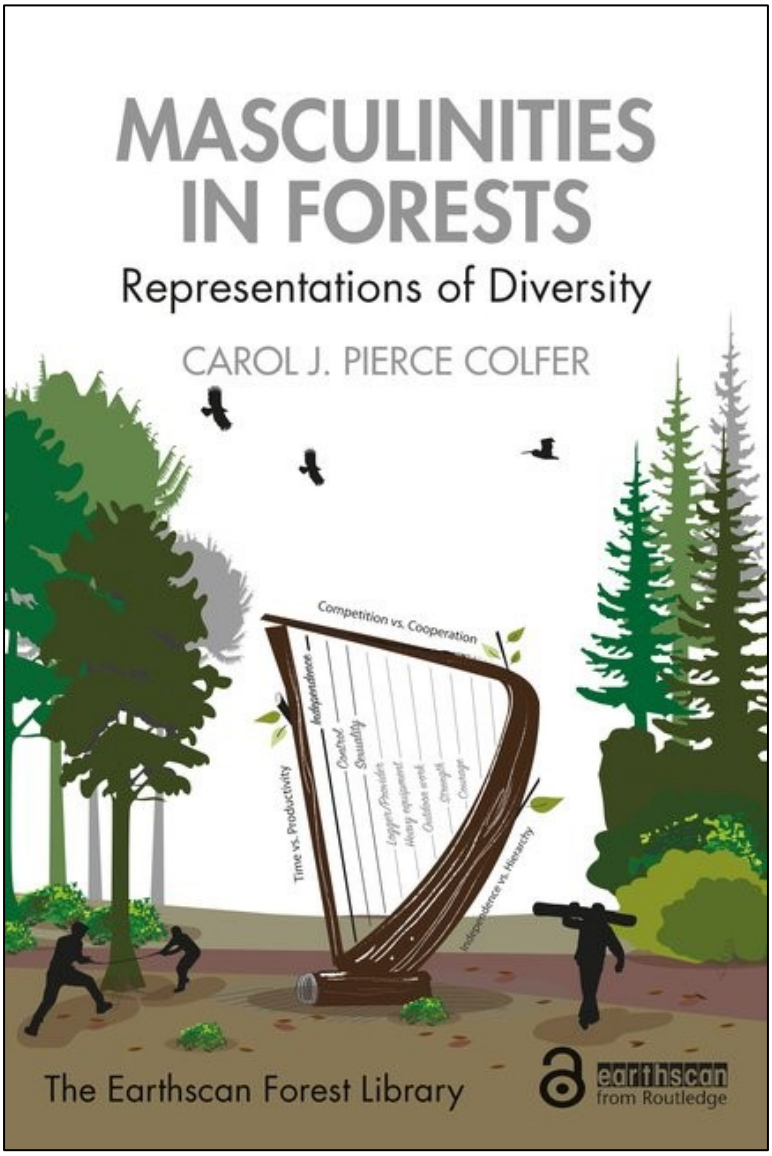
Abstract: Research Highlights: The global Forest Landscape Restoration ambitions could be impaired by projects that ignore key principles such as the engagement of local communities in decision making and implementation, equitable benefit sharing, and monitoring for adaptive management. This entails the danger of continued degradation, disappointed local stakeholders, and ultimately, project failure. Other projects face technical problems related to tree establishment and nursery production. Background and Objectives: There are high hopes for Forest and Landscape Restoration to regain ecosystem integrity and enhance human well-being in deforested and degraded areas. We highlight various problems and success factors experienced during project implementation on a global scale. Materials and Methods: We use data from a global online survey to identify common obstacles and success factors for the implementation of forest restoration. Results: While the majority of respondents reported successful projects, others indicate drastic problems and failed projects. Major obstacles to forest restoration experienced by survey respondents were a lack of local stakeholder involvement and a mismatch between goals of local communities and restoration managers, as well as environmental, anthropogenic, and technical barriers to tree regeneration. Conclusions: When local communities, their goals, and needs are disregarded in project planning and implementation, as reported from various cases in our survey and the limited available literature, there is a risk of project failure. Failed projects and disappointed stakeholders, as well as discouraged funders and policy-makers, could lessen the momentum of global forest restoration ambitions. Adhering to key principles of Forest and Landscape Restoration can promote much-needed community support, with the potential to overcome barriers to forest regeneration and enable communities for the protection, management, and monitoring of the restored forests beyond the limited project and funding periods. Research is needed to gain a better understanding of the perception of local communities towards restoration activities. Further studies on the implementation of forest restoration at the intersection of environmental factors, socioeconomic conditions, forest regeneration/silviculture, and nursery production are needed.

Key words: forest and landscape restoration; forest restoration problems; forest restoration success; community participation; forest regeneration; nursery production

Citation: Höhl, M.; Ahimbisibwe, V.; Stanturf, J.A.; Elsasser, P.; Kleine, M.; Bolte, A. Forest Landscape Restoration—What Generates Failure and Success? *Forests* **2020**, *11*, 938.

How to get the article: https://www.mdpi.com/1999-4907/11/9/938

Masculinities in Forests: Representations of Diversity



Masculinities in Forests: Representations of Diversity demonstrates the wide variability in ideas about, and practice of, masculinity in different forests, and how these relate to forest management.

While forestry is widely considered a masculine domain, a significant portion of the literature on gender and development focuses on the role of women, not men. This book addresses this gap and also highlights how there are significant, demonstrable differences in masculinities from forest to forest. The book develops a simple conceptual framework for considering masculinities, one which both acknowledges the stability or enduring quality of masculinities, but also the significant masculinity-related options available to individual men within any given culture. The

author draws on her own experiences, building on her long-term experience working globally in the conservation and development worlds, also observing masculinities among such professionals. The core of the book examines masculinities, based on long-term ethnographic research in the rural Pacific Northwest of the US; Long Segar, East Kalimantan; and Sitiung, West Sumatra, both in Indonesia. The author concludes by pulling together the various strands of masculine identities and discussing the implications of these various versions of masculinity for forest management.

This book will be essential reading for students and scholars of forestry, gender studies and conservation and development, as well as practitioners and NGOs working in these fields.

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Author(s)

Biography

Carol J. Pierce Colfer is a Senior Associate at the Center for International Forestry Research (CIFOR) and Visiting Scholar at Cornell University's Southeast Asia Program, Ithaca, New York, USA. She is author/editor of numerous books, including co-editor of *The Earthscan Reader on Gender and Forests* (Routledge, 2017) and *Gender and Forests: Climate Change, Tenure, Value Change and Emerging Issues* (Routledge, 2016).

"I enjoyed reading this book and tried to look at my own harp before and after. I hope you will like it... A must-read, especially if you are a proud male forester (like me)." *— Robert Nasi, Director General, Centre for International Forestry Research (CIFOR)*

"Carol Colfer shows us how masculinities affects us all in a deep, critical and personal reflection that exposes the unconscious assumptions about the distribution of powers and privileges, and appropriate roles, relations and identities of men and women in environment and development contexts around the world. By her example, Colfer challenges her readers to re-examine deeply-held beliefs that are both personal and political." *— Maureen G. Reed, Distinguished Professor, School of Environment and Sustainability, University of Saskatchewan*

"It is a rare and precious thing for a reader to be able to learn from the rich insights garnered in over a long career as a professional anthropologist working in some of the world's most important forest landscapes. This important book on masculinities and their relatedness with forests is a gift: a timely reminder that making sense of gender in this way is a crucial step in understanding questions of equity in forest livelihoods and professional lives. " *— Rebecca Elmhirst, Human Geographer, University of Brighton*

"Masterful scholarship with a purpose... this book has wide-ranging relevance across many fields, non-anthropologists not only may have something useful to say about it but also *need to read it* for their own benefit. Bravo for a brave and timely work!" *— Michael S. Cummings, Professor (retired), Political Science, University of Colorado, Denver*

A lengthy review of Carol J. Pierce Colfer's forthcoming book *Masculinities in Forests: Representations of Diversity* (Earthscan from Routledge 2020*)* can be found at:

https://forestsnews.cifor.org/67062/men-in-forests-new-book-shatters-stereotypes?fnl=en

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Understanding public willingness to participate in local conservation initiatives of urban trees in Benin City, Nigeria

Abstract
As global populations become increasingly urban, public participation has emerged as a new and more direct initiative for the conservation of urban trees and ecosystem services (ES). However, little effort has been made to understand the willingness of residents to participate in conservation programs for trees and ES in Benin City, Nigeria. To fill this gap, a survey to understand residents' knowledge of ES and their perceptions around ES conservation, i.e., personal willingness to participate in voluntary conservation initiatives (VCIs), was conducted. Unlike the general misconception that trees are not appreciated in African cities, this study

showed that most residents had a positive appreciation for the ES provided by urban trees in Benin City. Additionally, irrespective of respondents' demographics, the findings from this study indicated a growing importance of the ES that trees provide, such as regulation of excess heat, scenic beauty, flooding and erosion control, and provision of shade. Hence, willingness to participate in VCIs was related to the growing importance of ES in the study area. Respondents' knowledge of ES, education, and years of residency increased the probability of an individual's participation in VCIs in the city. Other sociodemographic factors commonly related to urban forest participation (e.g., gender, marital status, income, profession, and residential location) did not significantly influence the willingness to participate in the conservation programs. Findings from this seminal study could assist future planning and emphasize to city developers, government (at all levels), resource managers, and decision makers the need to consider public values and perceptions towards enhancing conservation initiatives for urban trees in Benin City and/or elsewhere.

Keywords: Ecosystem Services; Indigenous Knowledge; Socio Survey; Urban Forests; Urban Residents; Voluntary Conservation Initiatives

Citation: Arabomen, O., Chirwa, P.W and Babalola, F.D. (2020). Understanding public willingness to participate in local conservation initiatives of urban trees in Benin City, Nigeria. Arboriculture and Urban Forestry, 46(4): 247-261.

Contact the corresponding author via email: oarabomen14@gmail.com for the full paper.

Implementing forest landscape restoration, a practitioner's guide.

Abstract: Forest landscape restoration (FLR) in a nutshell FLR was defined in 2000 by a group of 30 specialists as "a planned process that aims to regain ecological integrity and enhance human wellbeing in deforested or degraded landscapes". It does not seek to recreate past ecosystems given the uncertainty concerning the "past", the significantly altered conditions of the present as well as anticipated but uncertain future changes. However, it does seek to restore a forested ecosystem that is self-sustaining and that provides benefits both to people and to biodiversity. For this reason, the landscape scale is particularly important as it provides the opportunity to balance ecological, social, and economic priorities. The emphasis on the landscape also indicates that tree cover is not needed throughout the landscape, but rather the focus of FLR is on restoring functional forest ecosystems within landscapes so that forests can co-exist and subsist in a landscape mosaic together with other land uses. The restored forests within the forest landscape may also form mosaics of forest types emphasizing the various objectives and functions of the forests depending on the landscape, sites, and people living there. Some parts of the restored forests may serve protective functions for watersheds, soils, livestock or crops; other parts may be highly productive and efficiently produce high-quality timber, firewood or biomass while yet other parts may restore habitats for flora and fauna.

Citation: Stanturf, John; Mansourian, Stephanie; Kleine, Michael (eds.). 2017. Implementing forest landscape restoration, a practitioner's guide. Vienna, Austria: International Union of Forest Research Organizations, Special Programme for Development of Capacities. 128 p.

How to get the article: https://www.iufro.org/science/special/spdc/netw/flr/flr/pract-guide/ https://www.srs.fs.usda.gov/pubs/books/2017/book_2017_stanturf_001.pdf

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Implementando la Restauración del Paisaje Forestal, Una Guía para Practicantes

Abstract: ¿Por qué una guía para la implementación de la RPF? La restauración del paisaje forestal (RPF) está siendo ampliamente promovida como una solución frente a la pérdida y degradación de los bosques del mundo y como una contribución para el desarrollo sostenible a través de la restauración de los valores ecológicos, sociales y económicos, y las funcionalidades de los paisajes degradados. Un gran interés e ímpetu político ha sido generado alrededor de la restauración y, en particular, de la RPF (Recuadro I.1). Metas ambiciosas basadas en hectáreas han sido establecidas a través de distintos esfuerzos globales y regionales tales como – por ejemplo – el Desafío de Bonn y la Declaración de Nueva York sobre los Bosques al nivel global, la meta AFR100 en África, así como la Iniciativa 20X20 en América Latina. Al mismo tiempo, la restauración forestal, particularmente a escala, puede contribuir a otros objetivos globales tales como los Objetivos de Desarrollo Sostenible (ODS), notablemente por medio de mejorar la resiliencia; apoyar la adaptación social y ambiental, proteger suelos y recursos hídricos; y por lo tanto, contribuir a la seguridad alimentaria y los medios de vida rurales. También puede contribuir a las tres Convenciones de Río: la Convención de las Naciones Unidas sobre Cambio Climático por medio de las contribuciones nacionalmente determinadas (NDCs, por sus siglas en inglés) bajo el Acuerdo de París, las Metas de Aichi del Convenio de las Naciones Unidas sobre Diversidad Biológica, a través de las Estrategias Nacionales de Biodiversidad y Planes de Acción, y los Programas Nacionales de Acción bajo la Convención de las Naciones Unidas de Lucha contra la Desertificación.

Citation: Stanturf, John; Mansourian, Stephanie; Kleine, Michael; eds. 2017. Implementando la Restauración del Paisaje Forestal, Una Guía para Practicantes. Traducción: Marianela Argüello L. y Róger Villalobos. Unión Internacional de Organizaciones de Investigación Forestal, Programa Especial para el Desarrollo de Capacidades (IUFRO-SPDC). Viena, Austria. 132 p.

How to get the article: https://www.iufro.org/fileadmin/material/science/spps/spdc/flr_toolkit/IUFRO2019_Implementing_Forest_Landscape_Restoration_Spanish.pdf

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FOREST LANDSCAPE RESTORATION IMPLEMENTATION: LESSONS LEARNED FROM SELECTED LANDSCAPES IN AFRICA, ASIA AND LATIN AMERICA

Abstract: The need for large-scale forest landscape restoration has been increasingly recognised, with significant political support globally and locally. Greater investments have been initiated for restoring landscapes through forest protection, tree planting, and other measures as well as livelihood improvements. These efforts seek to achieve the restoration goals expressed by global initiatives such as the Bonn Challenge and the New York Declaration on Forests. Considerable effort has been devoted globally to promote forest landscape restoration (FLR) and its potential to provide desired benefits to nature, climate and society; however, thus far, there is limited evidence that progress has been made on the ground in restoring specific local landscapes. In

order to fill this gap, IUFRO with support from the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety undertook an analysis of FLR implementation in Africa, Asia, and Latin America. An IUFRO team set out to enhance understanding of the ecological, social and economic dimensions of forest landscape restoration, as well as the underlying challenges involved, thus to better judge the progress made in achieving the Bonn Challenge goals. A total of 17 landscapes in nine countries with Bonn Challenge commitments (three each in Africa, Asia and Latin America) were analysed as "snapshots" of FLR implementation. Following a common methodology developed by the IUFRO Team, local forest scientists selected landscapes with past and ongoing restoration activities. Local teams collected data and interviewed people on-site, according to an agreed questionnaire and reporting format. Questions sought to determine, notably, who is involved, what actions are taken, what is working, what is not working, what has been achieved, what policies are supporting or hindering implementation, what has been learned to date, and what could be done differently. Building on this information, over 60 specific lessons learned were derived from the landscape studies. These were further distilled into the ten overarching lessons that are presented in this publication. Our results are intended to specifically inform FLR stakeholders operating in three different spaces; i.e., field implementation, FLR facilitation, and governance and policy. Through this publication IUFRO hopes that the overarching lessons can provide valuable experiences for others involved in implementing forest landscape restoration.

Citation: Stanturf J. A., Mansourian S., Darabant A., Kleine M., Kant P., Burns J., Agena A., Batkhuu N. O., Ferreira J., Foli E., Guerra A., Miah M. D., Ranjatson P., Sabogal C., Addo-Danso S. D., Badugu S., Brienza S., Chandel P. V., Chander S., Chandra S., Cujcuj B., Derero A., González O., Gutierrez B., Guuroh R. T., Hossain M. A., Juárez M. A., Kometter R., Lokesh J., López F. L., Pereira C., Rajendra K., Randrianasolo R., Razafimbelo N. T., Reddy M. C., Reddy G. C. S., Sharma D. S., Sukhbaatar G., Thakur S. K., Tavares P. A., Tewari V. P., Verma R. K., (2020) Forest Landscape Restoration Implementation: Lessons Learned From Selected Landscapes In Africa, Asia And Latin America. Occasional Paper NO. 33 IUFRO, Vienna, Austria.

How to get the article: https://www.iufro.org/publications/series/occasional-papers/article/2020/02/14/occasional-paper-no-33-forest-landscape-restoration-implementation-lessons-learned-from-selected/.

Wood anatomy of Indian oaks, with reference to systematic, ecological and evolutionary perspectives

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Abstract: The present study provides a comprehensive analysis of the wood microstructure of 16 species of the genus Quercus (Fagaceae) inhabiting the Himalayan region of India. Indian oaks can be categorised into two groups: ring porous oaks and diffuse porous oaks. Most of the diffuse porous oaks were quite homogenous in their microstructure and showed only slight variations in ray cellular composition and axial parenchyma distribution. The results revealed that the current classification of Quercus is not in concordance with the wood microstructure. Instead, cluster analysis suggested that the quantitative wood microstructure of Indian oaks reflects the environmental/climatic differentiation of the eastern and western Himalayas. All the species of oaks showed a combination of both primitive and advanced wood anatomical characters.

Keywords: cluster analysis, Himalayas, identification, Quercus, wood microstructure

Citation: Gupta, P. and Gupta, S. 2020. Wood anatomy of Indian oaks, with reference to systematic, ecological and evolutionary perspectives. Nordic Journal of Botany, 38(4): e02570. DOI: 10.1111/njb.02570.

Full article: https://onlinelibrary.wiley.com/doi/full/10.1111/njb.02570

Towards identification of important plant areas (IPA) for Peninsular Malaysia. Methodology and future directions

Abstract:
Malaysia is a megadiverse country and listed as one of the world's biodiversity hotspots. Land use changes and deforestation have led to the threat of, and extinction of plant species. In order to mitigate loss in population numbers, and to prevent species extinction events, Important Plant Areas (IPA) for Malaysia shall be identified. The identification of IPA is important to ensure that key natural areas are adequately protected and managed to preserve the species and its habitats. Currently, there are 1771 IPA identified globally and only seven tropical countries are actively involved excluding Malaysia. Inventory and biodiversity research are actively conducted in Malaysia, however, the initiative to identify IPA is still in its infancy. The first attempt for IPA identification was in the state of Terengganu by using herbarium database through scoring technique. In this paper, we discussed methods and criteria used in IPA identification globally.

We also deliberated current IPA development in Terengganu and challenges such as collections biases and the need for a robust scoring technique to reduce judgement uncertainty. We suggested GIS based multi-criteria decision making, analytical hierarchy process and species distribution for Malaysian IPA. These strategies were considered to be effective tools in providing decision support for spatial planning aimed at plant conservation in Malaysia.

Key words: Environmental science, Earth science, Important plant area, GIS, Multi-criteria decision making, Analytical hierarchy process, Species distribution modeling

Citation: M. Hamidah, I. Mohd Hasmadi, L.S.L. Chua, K.H. Lau, I. Faridah-Hanum, W.S.Y. Yong, H.Z. Pakhriazad. 2020. The Potential of GIS-Based Multi-Criteria Decision Making in Identification of Important Plant Area (IPA) for Peninsular Malaysia. *Heliyon*, ISSN: 2405-8440,6(7), July 2020. *https://doi.org/10.1016/j.heliyon.2020.e04370*

How to get the article:
https://www.sciencedirect.com/science/article/pii/S2405844020312147
or email mhasmadi@upm.eu.my

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EVALUATION OF TIMBER HARVESTING PLANNING IN INDONESIAN CERTIFIED SMALL AND LOW-INTENSITY MANAGED FORESTS

Abstract: At present, Indonesian certified small- and low intensity-managed forests area (hereafter community forests) are consistently increasing with the growth of smallholder or privately owned forests (hutan rakyat). Timber harvesting planning poses a challenge for community groups to implement their agreed upon harvesting plan, because farmers may delay harvesting schedule or cut the trees earlier (harvesting needs). This study aims to evaluate timber harvesting planning in Indonesian certified community forests by comparing annual harvesting targets and the actual cutting, following discussions with farmers and forest managers. Through observation, interviews and data analyses of two Forest Stewardship Council certified sites, CV. Dipantara and Koperasi Wana Lestari Menoreh, we found that almost every year, forest managers could not strictly push farmers or members to meet the annual harvesting target. It was mostly due to unexpected events on the part of farmers, e.g. marriage, celebrations, illness, or even not needing money during the harvesting period. Consequently, the group of certified community forests was unable to supply wood continuously to industries due to low timber production. The forest certification board should also review their standard requirements to bring them in line with the actual conditions of community forests in order to achieve sustainable forest management goals.

Key words: Forest Stewardship Council, sustainable forest management, community forests, annual allowable cut, smallholder forests, tropical forests

Citation: Hermudananto & Supriyatno, N. 2020. Evaluation of timber harvesting planning in Indonesian certified small and low-intensity managed forests. Journal of Tropical Forest Science, 32(3): 283-288. doi: https://doi.org/10.26525/jtfs32.3.283.

How to get the article: https://info.frim.gov.my/infocenter_applications/jtfsonline/jtfs/v32n3/283-288.pdf

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More policies and laws, is it better for biodiversity conservation in Malaysia?

Abstract: Malaysia is a megadiverse country, and it ratified the Convention on Biological Diversity (CBD) in 1994. Since then, Malaysia has initiated procedures to fulfill its obligation to this multilateral environmental agreement. Among the key developments are the formulation of national biodiversity policies and mainstreaming in Malaysia. Drafting biodiversity-related policies and laws across different sectors is a means to an end in conserving biodiversity. However, the declining forest cover and the relatively high number of threatened species in Malaysia may indicate that biodiversity conservation is not working.

Key words: biodiversity laws, biodiversity policies, Convention on Biological Diversity, governance, Malaysia

Tong, P.S. (2020) More policies and laws, is it better for biodiversity conservation in Malaysia? *Conservation Science and Practice.* https://doi.org/10.1111/csp2.235

How to get the article: https://conbio.onlinelibrary.wiley.com/doi/full/10.1111/csp2.235

Cocoa agroforestry systems versus monocultures: a multi-dimensional meta-analysis

Abstract: Scientific knowledge, societal debates, and industry commitments around sustainable cocoa are increasing. Cocoa agroforestry systems are supposed to improve the sustainability of cocoa production. However, their combined agronomic, ecological, and socio-economic performance compared to monocultures is still largely unknown. Here we present a meta-analysis of 52 articles that directly compared cocoa agroforestry systems and monocultures. Using an inductive, multi-dimensional approach, we analyzed the differences in cocoa and total system yield, economic performance, soil chemical and physical properties, incidence of pests and diseases, potential for climate change mitigation and adaptation, and biodiversity conservation. Cocoa agroforestry systems outcompeted monocultures in most indicators. Cocoa yields in agroforestry systems were 25% lower than in monocultures, but total system yields

were about 10 times higher, contributing to food security and diversified incomes. This finding was supported by a similar profitability of both production systems. Cocoa agroforestry contributed to climate change mitigation by storing 2.5 times more carbon and to adaptation by lowering mean temperatures and buffering temperature extremes. We found no significant differences in relation to the main soil parameters. The effect of the type of production system on disease incidence depended on the fungal species. The few available studies comparing biodiversity showed a higher biodiversity in cocoa agroforestry systems. Increased and specific knowledge on local tree selections and local socio-economic and environmental conditions, as well as building and enabling alternative markets for agroforestry products, could contribute to further adoption and sustainability of cocoa agroforestry systems.

Key words: Economic performance; system yield; pests and diseases; biodiversity; sustainability; *Theobroma cacao*

Citation: Niether et al. 2020. Cocoa agroforestry systems versus monocultures: a multi-dimensional meta-analysis. *Environ. Res. Lett*. in press. DOI: 10.1088/1748-9326/abb053

How to get the article: https://doi.org/10.1088/1748-9326/abb053

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http://www.itto.int/market_information_service/

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The IUFRO-WFSE Publications can be found here:

http://www.iufro.org/science/special/wfse/wfse-publications/

FAO State of the World's Forests 2014

The Food and Agriculture Organization's (FAO) Report on the State of the World's Forests 2014 can be found at this website: http://www.fao.org/forestry/sofo/en/

Reports from earlier years are also available at this site.

FAO InFO News
A newsletter from FAO Forestry

The Food and Agriculture Organization's Forestry newsletter is available at this link:

http://www.fao.org/forestry/infonews/en/

Unasylva

http://www.fao.org/forestry/unasylva/en/ - An FAO forestry publication going back to 1947.

Global Forest Information Service (GFIS)

https://www.gfis.net/gfis/en/en/ (also available in Spanish and French) Global Forest Information Service contains up-to-date information on news, events, publications and job vacancies (on the homepage) and lists other info resources such as databases, as part of the GFIS system.
