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Featuring

SEANAFE
News



Dear readers

It is indeed a good year as we welcome the Southeast Asian Network for Agroforestry Education (SEANAFAE) and the World Agroforestry Centre (ICRAF) as our partners in the integration of APANews and SEANAFAE News. This collaboration will widen the reach of this agroforestry newsletter and improve efforts to provide timely updates on agroforestry research, promotion and education in a cost-effective manner. More importantly, the integrated newsletter will further promote and encourage others to become agroforestry educators, researchers and practitioners.

We have also come up with a new look for APANews to mark this integration, while retaining the different sections. Let us know what you think as your comments and suggestions will help us improve the future issues of APANews and SEANAFAE News.

Meanwhile, this issue presents interesting articles from India, Nepal

and the Philippines. One article describes the versatile use of *Prosopis juliflora* as a woody component of agroforestry farms in the arid regions of India. The article also stresses the need for more research into *P. juliflora* as this is considered an invasive weed in some parts of India.

Another article discusses the use of trees in agroforestry systems to address water shortage in the semi-arid subtropics of India. The article discusses the results of a research conducted by the Indian Grassland and Fodder Research Institute.

Another article describes the increasing popularity of poplar-based agroforestry in India.

For those interested in raising livestock in an agroforestry system, one article discusses the potential of the Canadian Forage Sorghum Hybrid-30 (CFSH-30) in increasing average fodder yield for small dairy farms in Nepal.

An article from the Philippines provides updates on the new standards and guidelines for the Bachelor of Science in Agroforestry degree.

Our regular announcements on upcoming seminars, available scholarships, new resource materials, and useful websites also appear in this issue.

For this first integrated issue, SEANAFAE News introduces the Network to APANews readers. An article also describes the curriculum framework for the Bachelor of Science program in Agroforestry in Vietnam.

We would like to thank all the contributors to this issue and we look forward to more of your contributions. Let us keep sharing our various undertakings in agroforestry so that agroforestry knowledge is further enriched and practiced. – **The Editors**

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COVER PHOTO. Through alley cropping, Venancio Rimando and his wife Elvira maintain a 1-ha farm in Barangay Tabayag, Cebu City, Philippines. Corn and various vegetables are planted in between the double hedgerows, with forest and fruit trees planted in various parts of the farm. As of 2002, the Rimando family was earning US\$166 from the sale of tomatoes and rice beans, US\$86 from the sale of pepper and US\$34 from the sale of string beans (*Photo courtesy of IAF*).

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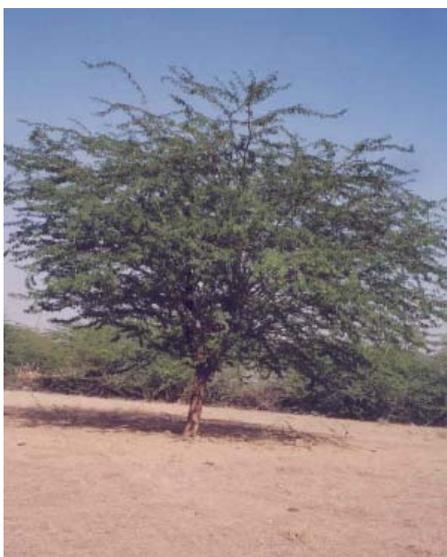
Prosopis juliflora debate: Is it a valuable resource or an invasive weed in India?

J. C. Tewari, L. N. Harsh, A. K. Sharma
and M. A. Khan (jctewari@cazri.res.in) or (a.k.sharma@sify.com)

Prosopis juliflora (Swartz) DC, a leguminous tree species, was first introduced to India 135 years ago. In the early- to mid-1930s, it was widely planted in the arid tracts of western Rajasthan, commonly known as the Thar desert.

Owing to its fast growth and drought hardiness, the species was planted in many of the drier parts of India. Today, it is an acclimatized exotic plant in large parts of the arid and semi-arid tracts, which together constitute about 40 percent of the total land area of the country.

Scientists, policy planners, foresters, developmental agencies, nongovernmental organizations and other institutions have been campaigning against the species since the last decade. Their major concerns are the species' thorny nature and its weedy spread. Today, the species is found in weedy thickets in most parts of the country's arid tracts. However, trees with good girth and height are found in protected sites, sand dune-stabilized areas and roadside



A well-grown *Prosopis juliflora* tree.

plantations. In farmers' crop fields, the species is used as boundary plantings and live fences.

When the species was first introduced to India, it was given the status of royal tree by the then ruler of the state of Marwar, Rajasthan. However, the "royal tree" has now become a "disaster tree." Subsequently, two schools of thought, one favoring its eradication and the other emphasizing its use and developing a proper silvicultural strategy for it, have emerged in India.

Is eradication the appropriate solution?

In the United States, efforts have been made to eradicate the species with a range of herbicides and mechanical removal techniques, but not much success has been achieved. The story has been similar in Mexico, Argentina and Sudan, among other countries.

Once established, *P. juliflora* becomes difficult to remove completely. Even in a seemingly *P. juliflora*-eradicated area, their scattered seeds germinate and the tree spreads much faster than their original growth.

In the past 50 years, millions of dollars have been spent in the United States and Mexico, but a cost-effective solution has not yet been found.

What is required?

Therefore, the best management option for *P. juliflora*, especially in India and Pakistan, is to exploit it (Henry Doubleday Research

Association [HDRA] 2002). Exploiting it for the production of fuelwood, fodder and timber can be a profitable enterprise, particularly when using unproductive, arid tracts of land. National and state governments should try to strike a balance between containing *P. juliflora* and using it to develop a profitable agroforestry system.

In fact, the HDRA-led international team that gathered global knowledge on *Prosopis* species, in general, and *P. juliflora*, in particular, concluded that eradication is not possible. Hence, the available management and control techniques that can convert weedy tree stands into productive, profitable and sustainable agroforestry systems are the better option (Pasiiecznik *et al.* 2001).

P. juliflora in agroforestry practices in the hot arid tracts

Tewari *et al.* (2000) comprehensively discussed the use of *P. juliflora* as woody components in agroforestry practices in the hot, arid regions of India. They suggested that with appropriate management, this species can be successfully incorporated in various forms of agroforestry practices (Table 1).

The species also has tremendous graft compatibility with other *Prosopis* species. Many *Prosopis* species have thornless accessions, which can be easily cleft-grafted on thorny *P. juliflora*, transforming it into a non-thorny tree type—a technology perfected by the Central Arid Zone Research Institute (CAZRI) in Jodhpur, India.

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Prosopis juliflora debate...

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The way forward

Whatever the advantages and disadvantages associated with the species, one thing is certain - *P. juliflora* has tremendous ability to grow in inhospitable areas where not even grass grows. The current need is to develop a national integrated research program on its management and utilization. Cheap, simple, improved kilns for charcoal production, small-scale pod processors and suitable saw-milling technologies for *P. juliflora* wood for

making furniture and small craft items should be developed. Although its leaves can not be used as fodder, they make good-quality compost due to their high nitrogen content.

Moreover, the leaves have pesticidal properties, and have been reported to be good raw material for biopesticides.

All these possibilities can be realized with encouragement and support from state forest departments and state forest development cooperatives that can provide subsidies and training.

Table 1. Spacing requirement of various types of agroforestry practices with *Prosopis juliflora* as a woody component.

| Practice | Purpose | | Spacing | | Density (trees/ha) |
|------------------|---|-------------------------------------|------------|----------------|--------------------|
| | Primary | Secondary | Row to row | Plant to plant | |
| Hedgerow | Live fence | Shelter, erosion control | 0.3-0.5 m | 0.5 m | n/a |
| Agrisilviculture | Fuel and pod fodder | Production of arable crops | 10 m | 10 m | 100 |
| Silvopastoral | Fuel and fodder | Production of grasses/animals | 10 m | 5 m | 200 |
| Shelterbelts* | Soil/moisture conservation, reducing wind speed | Pod for fodder, shade for livestock | 3 m | 3 m | n/a |

(Source: Modified from Tewari et. al. (2000))

**P. juliflora* for inner and outer rows in three row shelterbelt and for second inner and second outer row in five shelterbelt.
n/a- not applicable.

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Trees in agroforestry for soil moisture conservation in the rainfed, semi-arid subtropics

A.S.Gill (asgill29@yahoo.com)

Water continues to be a major limiting factor in India's crop production, particularly because more than 50 percent of the country's cultivated area is solely dependent on rainfall.

In the semi-arid subtropics of India, the average annual rainfall is 900 mm with an evaporation rate of

1 800 mm. The landscape is undulating, and the soils are shallow with poor texture and low fertility. Due to the soil's low water-holding capacity, it is extremely difficult to cultivate crops under rainfed agriculture.

The normal practice is to grow a single crop either in the monsoon season or during the winter season,

depending on the soil texture. Growing a sole crop in a year results in severe soil erosion and moisture loss since the land is left to fallow for much of the year.

A potential remedy can be found in introducing trees, which can be a boon to rainfed agriculture, in the semi-arid subtropics. It is believed that the soils under trees generally have better physical conditions, with higher water-holding capacity, increased permeability and drainage, and greater erosion resistance.

However, the wrong choice of tree can have an adverse effect on soil moisture conservation. Some

eucalyptus species have been blamed for reducing soil moisture. On the other hand, trees with a deep root system take up nutrients and water from soil layers not reached by cultivated crops. Therefore, proper tree selection is crucial for soil moisture conservation.

A field study was thus initiated at the Indian Grassland and Fodder Research Institute in Jhansi, central India (78°35' E longitude and 25°26' N latitude and about 275 m above sea level).

Tree saplings of *Albizia lebbbeck*, *Azadirachta indica*, *Dalbergia sissoo* and *Acacia nilotica* were planted at a spacing of 6 m x 12 m, with and without chickpea (*Cicer arietinum*), in a replicated randomized block design. An additional control plot solely of chickpea was also established. During the monsoon season, a rainfed fodder crop of cowpea was cultivated for a short duration as a common treatment.

Each year, the trees were pruned to 50 percent of their height from 1999 onward in June and October (prior to sowing of chickpea) so as to allow sufficient light to reach the crops raised in the understorey.

Soil moisture was estimated immediately after harvest of the winter crop in February/March at two depths (0–15 cm and 15–30 cm).

Comparing the three treatments of trees without crops, trees with winter crops, and crops without trees, the highest mean soil moisture (8.5%) was recorded from trees without crops; followed by trees with crops (7.3%); and lastly crops only (6.7%).

Both *Albizia* and *Azadirachta* trees have extremely succulent foliage that are highly palatable and relished by livestock and wildlife as compared to *Dalbergia* and *Acacia*. Therefore, the moisture requirements of *Albizia* and

Azadirachta are greater than those of *Acacia* and *Dalbergia*.

For the tree + crop combinations, the highest soil moisture was obtained in *Acacia* tree + chickpea (8.8%) and the lowest was in the *Albizia* tree + chickpea crop and *Azadirachta* tree + chickpea (6.7%).

Among the four tree species (with and without crops), maximum soil moisture was recorded with *Acacia* (9.3%), followed by *Dalbergia* (8.0%), *Albizia* (6.5%) and *Azadirachta* (7.0%).

The study showed that trees planted in rainfed agricultural lands could help conserve soil moisture in the semi-arid subtropics.

Acacia nilotica, commonly known as babul, was found to be the most appropriate species. This tree is traditionally found growing in the semi-arid subtropics. It is an ideal nitrogen-fixing tree species. With its tiny leaves and deep root system, *Acacia* does not greatly reduce moisture availability for the crops. Moreover, the tree is commonly utilized in the farming community for timber, shade, fuel, fodder and medicine.

The results of this study suggest that an agroforestry system can benefit rainfed agriculture in the semi-arid subtropics. ■ *The author works at the Indian Grassland Fodder Research Institute, Jhansi 284003, India.*



*To determine appropriate tree species to be used for conserving soil moisture, Albizia lebbbeck, Azadirachta indica, Dalbergia sissoo and Acacia nilotica were planted at a spacing of 6 m x 12 m, with and without chickpea (*Cicer arietinum*), in a randomized block design with cowpea fodder crop as the understorey.*



Potential of Canadian Forage Sorghum in improving fodder supply for small dairy farms in Nepal

Rameshwar S. Pande, R. P. Sapkota, and J. C. Gautam (rspande@mail.com.np)

Dairy enterprises are a major source of livelihood for over 70 000 small-scale farmers in Nepal. Nepal produces 1.2 million Mt of milk a year from 1.8 million milking cows and buffaloes. In its Tenth Five-year Plan (2002-2007), Nepal has targeted to raise milk production to 1.4 million Mt.

Major constraints in dairy production

The dairy industry in Nepal developed in the 1980s when high-yielding crossbred animals (Jersey and/or Holstein Friesian crosses and Murrah buffaloes) began to be imported. These dairy animals are raised on concentrate-based feeds, resulting in the high cost of milk production. Forage cultivation is not common, which limits the year-round green fodder supply. Due to the acute deficiency and high cost of quality feed and fodder, farmers are not earning adequate income as envisaged.

Discussions with farmers revealed that about 60–90 percent of the income from the sale of milk is used to purchase feed concentrates. Without other means of livelihood, farmers are compelled to continue

their dairy business despite the dismal earnings. To sustain dairy farming in Nepal, a cost-effective feeding system needs to be promoted.

Promoting feed and fodder development in Nepal

Due to the efforts of government and various nongovernmental agencies, significant developments in fodder and pasture have been achieved in Nepal. However, the fodder supply still can not meet the demand. The estimated shortage of dry matter is over 40 percent.

The major fodder crops grown in Nepal are oats (*Avena sativa*), berseem (*Trifolium alexandrinum*), teosinte (*Euchleana mexicana*), stylo (*Stylosanthes guinensis*) and napier (*Pennisetum purpureum*). About 2 000 hectares of land are under fodder cultivation each year.

Promoting fodder-based, low-cost feeding systems

Forage-based dairy farming is one of the cheapest and environmentally sound systems that can improve

animal health as well as reduce the cost of production significantly. Concentrate-based feeding practices are expensive.

Testing and promoting a sorghum hybrid in Nepal

The Canadian Forage Sorghum Hybrid-30 (CFSH-30) was developed by the Agriculture Environmental Renewal Canada (AERC). High-yielding and nutritious, it is the most suitable fodder for dairy animals. It contains 14–15 percent crude protein. The crop is adaptable to a wide range of climates and can be harvested within 35–45 days of sowing, with an average yield of 3–4 Mt DM/ha.

CFSH-30 was first tested by the Nepal Agricultural Research Council (NARC) in Nepal in 2002–2004. It yielded a green matter of 49–74 Mt/ha and was recommended as a substitute for the feed concentrates.

The Agri-Business and Trade Promotion Multipurpose Cooperative Ltd. (ABTRACO) has been promoting the use of CFSH-30 cultivation in Nepal with financial support from the Canadian Cooperation Office-Nepal, and in collaboration with AERC Canada since March 2005. ABTRACO, in collaboration with NARC and the Livestock Department, has established over 620 demonstration and testing sites of CFSH-30 in 12 milk shed districts.

Preliminary results showed that the sorghum's performance and contribution to ensuring fodder



Discussions with farmers reveal that about 60-90 percent of income from the sale of milk is used to purchase concentrated feed.

supply is quite satisfactory. The average green fodder yield was 50 Mt/ha.

Testimonials

Ms. Sunita Chailagain of Labandi, Nepal, found that CFSH-30 was much better than oats, as it grew year-round and produced more fodder than oats. It was also found to be more nutritious and so better liked by the animals that even stems of finger thickness were chewed. Her buffalo has been producing 3 L, an increase from the usual 2 L, of milk per day since she began feeding it with CFSH-30.

Mr. Ram Prasad Gautam of Chitwan saw a difference in milk yield when

the concentrate feed was replaced with CFSH-30 fodder.

Similarly, Mr. Charitar Mahato found CFSH-300 to be very good as it could be grown off season and his buffalo came in heat earlier after being fed with the fodder.

During the testing phase, only a small proportion of farmers were involved. The research team hopes to scale up the promotion of CFSH-30 to a wider scale covering a large number of milk producers cooperatives.

Seed production at the local level will also be strengthened.

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2005, <http://www.dfairdev.com.np>; (3) Pande, R.S. 2004. Ensuring forage supply from Nepal's community forests. APANews, Asia-Pacific Agroforestry Newsletter No. 25, December 2004; (4) NPC, 2002. National Planning Commission, HMG/Nepal; (5) Pande, R.S. 1994. Livestock feeds and grassland development in Nepal (Nepali). National Forage and Grassland Research Center G.P.O. Box 10245, Kathmandu; (6) Pande, R.S. 1997. Fodder and pasture development in Nepal. Udaya Research and Development Services Pvt. Ltd, Sanepa, Nepal; (7) Pande, R.S. 2005. Pro-poor community forage production program in the NACRMLP, Nepal. In: Proceedings of the Workshop on Fodder Oats, TCP/NEP/2901; FAO; 8-11 March 2005. ■ The author works at the Indian Grassland Fodder Research Institute, Jhansi 284003, India.

Poplar-based agroforestry is ideal for Punjab, India

Sanjeev K. Chauhan (chauhanpau@rediffmail.com) and Paramjit S. Mangat (prm_s@rediffmail.com)

Intensive monocultural practices that take place on 84 percent of Punjab's total land area are deteriorating the state's agroecosystems at an alarming pace.

Deteriorating soil health, lowering water tables, and increasing environmental pollution are matters of great concern for the future of the state. The present agricultural system involving a monoculture of crops such as rice, wheat, and sugarcane is exhausting natural as well as financial and human resources.

To correct the problem, agroforestry, which is a resource-conserving system, is emerging as one of the diversification options for farmers.

The tree component circulates nutrients from deeper soil layers to the surface and adds organic

matter. Agroforestry thus helps maintain soil health and safeguards against overexhaustion of the soil while addressing the basic needs of agrarian societies.

The choice of trees for an agroforestry system depends upon the farmer's purpose - whether to grow them for personal use or industrial use. Trees for industrial use are especially attractive to the farmers because of the potential profit.

In Punjab and the adjoining northwestern states of India, poplar-based agroforestry systems have proven successful.

Poplars are among the world's fastest-growing industrial softwoods. Their deciduous nature and slender crowns permit the cultivation of a variety of seasonal and annual agricultural crops, depending on their age, planting design and season.

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Block plantation of poplar with wheat.



Poplar-based agroforestry...

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Poplars, being sensitive to waterlogged conditions, can check the vicious cycle of wheat-paddy rotation.

For intercropping, the spacing for poplar plantation is generally kept at 4 m x 5 m, which allows mechanical plowing and other operations without any difficulty. Poplar is planted either on field bunds along irrigation channels in single rows (boundary planting) or in the field as block planting.

Moreover, there is a sustained demand for poplar since it is the sole raw material for the region's plywood industry. With the intensive management of a poplar-based agroforestry system, farmers are getting better financial returns than from other cropping rotations. This has created a wood-based industry and various employment options for people.

Thus, poplar-based agroforestry models, whether block or boundary, are now popular throughout Punjab, with some regional variations in the intercrops. A number of agricultural crops (wheat, mustard, turmeric, ginger, colocasia, cabbage, potato, spinach, garlic, etc.), and fruit crops (citrus, guava, mango, etc.), can be profitably raised with poplar. Some crops, e.g. sugarcane,

sorghum, soybean and mentha, can be grown only during poplar's initial two years.

Moreover, in projecting the future scenario with respect to cultivation of more shade-loving species, the intercropping of high-value crops such as flowers, vegetables and medicinal plants may have potential. There is great potential in extending poplar cultivation in the northwestern states of the country to lift the socioeconomic status of farmers and to meet industrial requirements at the same time.

To achieve the full potential of poplar-based agroforestry, however, a fundamental understanding of motivations behind the farmers' long-term land use decisions is needed. In addition, poplar production needs to be aligned with market/industry requirements in order to make it a profitable venture.

Standardizing the cultivation of this sought-after species may also help keep the poplar-based agroforestry system profitable and viable into the future. ■ *The author can be contacted at the Department of Forestry and Natural Resources, Punjab Agricultural University, Ludhiana – 141 004 Punjab, India.*



Boundary planting of poplar with paddy.



Poplar and citrus plantation.



Poplar and mustard plantation.

The Philippines: new standards and guidelines for B.Sc. in agroforestry

Leila D. Landicho (iaf@laguna.net)

Despite the lack of a minimum standard for the Bachelor of Science in Agroforestry (BSAF) program in the Philippines, a number of higher educational institutions have been offering the program as early as 1976. The extent to which agroforestry is being practiced in the Philippines, and the large number of institutions engaged in agroforestry projects, has resulted in the development of agroforestry as a science.

To ensure the quality of agroforestry education programs and of its graduates, the Commission on Higher Education (CHED) created the Taskforce on Agroforestry Education (TAFE) to formulate the minimum standard for the BSAF program.

The BSAF program specifies that the environment is the context in which agroforestry is relevant. It carries with it a commitment to care for the environment while its resources are being utilized for socioeconomic productivity. It is in this context that the BSAF program places value on the quality of human life.

Defining the program objectives

The BSAF program consists of a set of multidimensional courses, designed to produce professionals with general competencies in carrying out the various operational aspects of managing an agroforestry system, including production, management and utilization of trees and other woody perennials, production of agricultural crops and/or animals, and management of soils and related environment in the same unit of land. This curriculum is process-based and

is predicated on critical thinking and analytical reasoning.

Developing the core competencies

The BSAF program seeks to develop the following competencies:

1. conduct research and identify cause-effect relationships in critical situations;
2. show initiative and creativity, and assess risks;
3. diagnose problems, constraints, needs and opportunities;
4. design and attest appropriate ecology-based interventions;
5. develop familiarity with the policies, plans and programs of agencies involved in the uplands, lowlands and coastal development;
6. demonstrate ability to identify website and use appropriate agroforestry technologies;
7. conduct feasibility studies;
8. prepare project proposals and management plans;
9. establish and manage agroforestry enterprises;
10. develop good communication skills in oral, written and electronic forms;
11. conduct community organization and participatory extension and development activities;
12. demonstrate leadership skills; and
13. develop a mature, sensitive and ethical relationship with individuals, families and groups with varied political, social, emotional, cultural and intellectual backgrounds.

With these competencies, agroforesters are expected to become technicians, teachers, researchers, and technical consultants.

Structuring the curriculum

Since it was designed to produce well-rounded agroforestry professionals with competencies in the art, business and science of agroforestry, the BSAF curriculum is sectioned into three major parts-- general education courses aimed at developing basic skills in the arts and sciences; core courses that will develop the fundamental skills needed by agroforestry professionals; and major courses that will nurture competencies in the science of agroforestry. Each section comprises 62, 39 and 46 units, respectively, for a total of 147 units.

Setting the minimum requirements

The policy standards and guidelines (PSG) for the BSAF program call for a minimum of 12 full-time equivalent instructors (3 in forestry, 3 in agriculture, and 6 in agroforestry and related technical courses) with advanced degrees in agroforestry, crop science, animal science, soil science, food science, silviculture, forest biological sciences and forest resources management.

The school library should have a minimum of two book titles of less than 10 years old for each general education course, and at least one book title each for the major courses. A minimum of one refereed journal each in forestry and agriculture as well as a minimum of two refereed journals in agroforestry and related fields should be available in the library.

The higher educational institutions planning to offer the BSAF program should likewise maintain at least

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agroforestry education and training

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50 ha of land for instruction, research, and extension activities in agroforestry. If the school lacks the required area of land, they are encouraged to collaborate with private institutions, nongovernmental organizations and other agencies for the use of their lands.

Recognizing the collaborative efforts

The policy standards and guidelines were formulated by TAFE, whose members are from the University of

the Philippines Los Baños (UPLB), Board of Agriculture, University of Rizal System, and CARESS Technology. The UPLB Institute of Agroforestry serves as the secretariat.

Aside from this group, the faculty members of some member-institutions of the Philippine Agroforestry Education and Research Network (PAFERN) have been involved in the course specification workshop where the course outlines of the fundamental and major courses were finalized.

Preparing for the full-blown program

The proposed PSG went through a series of review processes. Finally, CHED approved the proposed policy

in December 2005. This year, a CHED memorandum order officially launched the new PSG for B.Sc. in Agroforestry for adoption by the state colleges and universities currently offering or planning to offer the program. ■ *The author is a University Research Associate at the Institute of Agroforestry, University of the Philippines Los Baños.*

International seminar on forests and forest products set for November 2006

D. S. Chauhan (forestseminar@rediffmail.com)

Scientists, policy makers, academicians, forest managers and researchers are invited to the "International seminar on forests, forest products and services: research, development and challenges ahead" to be held 1-3 November 2006, at the Department of Forestry, HNB Garwhal University, Srinagar (Garwhal), Uttaranchal, India. Interested individuals can submit oral and poster presentations focusing on any of the following themes:

- Ecosystem service accounting;
- Implications of afforestation/reforestation through clean development mechanism;
- Mountain development through watershed management;
- RS and GIS in forest resource management;
- Management of nontimber forest products – policy and legislation;
- Criteria and indicators of sustainable forest management;
- Conflicts in right to livelihood and biodiversity conservation;
- Technological developments in the forestry sector;
- Traditional ecological knowledge and intellectual property rights for exploitation of natural resources and conservation;
- Strategies and methodology for conservation of wild genetic resources;
- Role of biotechnology/genetic engineering in forestry research; and
- Implication and indicators of sustainable forest management.

The seminar is being organized by the Department of Forestry, HNB Garwhal University, Srinagar (Garwhal) Uttaranchal, India, and sponsored by the Indian Council of Forestry Research and Education in Dehradun, India; ICIMOD in Kathmandu, Nepal; and the Ford Foundation in New Delhi, India.

For more information, please contact the Seminar Secretariat, International Seminar on Forests, Forest Products and Services: Research, Development and Challenges Ahead, Department of Forestry, HNB Garwhal University, Srinagar (Garwhal) – 246174, Uttaranchal, India; Telefax +91 1370 267529; E-mail forestseminar@rediffmail.com; or visit their website <http://www.uttara.in>. ■

SEARCA announces opportunities for research and collaboration

Althea Joyce T. Aragon (ajta@agri.search.org)

The SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA) based in Los Baños, Laguna, Philippines, is announcing opportunities for research and collaboration in its priority areas of agricultural competitiveness and natural resource management through the following programs:

SEARCA Adjunct Fellows (SAF) Program

SAF offers research opportunities for selected staff of the University of the Philippines (UP) System. It seeks to contribute to the University's pursuit of excellence by advancing their research interests and capabilities, and expanding their research horizons. It also promotes productivity by publishing the adjunct fellows' outputs.

The adjunct fellows shall be provided with a workspace and access to necessary office facilities and equipment; a pre-approved amount of funds, depending on the nature of the activity to be carried out, to cover communication, supplies, travels and related expenses; and other support schemes.

Interested individuals may write a letter of intent addressed to the SEARCA Director, with an attached CV, together with a completed application form to post@agri.searca.org.

Seed Fund for Research and Training (SFRT)

Promising Southeast Asian researchers and scientists, with high-quality research and training backgrounds, and who are without

significant funding support, are invited to apply for the SEARCA Seed Fund for Strategic Research and Training (SFRT).

Proposals for submissions should be innovative and within SEARCA's priority areas. They should have potential for large-scale impact on rural welfare, and for attracting long-term funding support.

SFRT will provide the successful project proposals with start-up funds ranging from US\$10,000 to US\$15,000.

The annual deadline for submission is 1 September. For more information, send inquiries to sfirt@agri.searca.org.

Aside from these two programs, SEARCA also offers graduate scholarships in agriculture and PhD research scholarships. For more information on these programs, please visit www.searca.org. ■
The author works as a Public Relations Officer at SEARCA, Laguna, Philippines.



Online sourcebook on funding for sustainable forest management

Locating funding for sustainable forest management projects has not always been easy. Thus, the Collaborative Partnership on Forests Network (CPF) developed the online **Sourcebook on Funding for Sustainable Forest Management** to provide information on funding sources, policies and delivery mechanisms, with focus on projects in developing countries. Its contents come from donor agencies and countries, CPF members, international

forest-related organizations and instruments, development banks, private sources, regional processes, foundations and international nongovernmental organizations.

A major component of the sourcebook is the database of funding sources, with information on over 600 funds. The sourcebook is a valuable starting point in the search for funding opportunities.

It also provides a simple, moderated online discussion forum where users can post queries related to forestry funding, and where they can share information and network with other forest actors.

The sourcebook is being maintained by the United Nations Food and Agriculture Organization (FAO), in collaboration with other CPF members and the National Forest Programme Facility.

While great care has been taken to check the information presented in the online sourcebook, CPF, FAO and its partners still encourage users to confirm the requirements with the local offices of the funding agency or donor, since policies, organizational set-up and procedures are subject to changes. For inquiries, please contact CPF-Sourcebook@fao.org.



New publications from FAO

The United Nations Food and Agriculture Organization (FAO) Regional Office for Asia and the Pacific (RAP) is promoting the following publications at <http://www.fao.org/>. PDF versions of some of these publications are also available from their website.

FAO statistical yearbook 2004, Vols. 1 and 2. Country profiles

The yearbook gives users worldwide access to data on food and agriculture. It provides a selection of indicators from FAOSTAT, the world's largest online agricultural database. Volume 1 presents indicators by topic for all countries and Volume 2 presents the same selection from FAOSTAT by country for all topics. This yearbook replaces FAO's Bulletin of Statistics, and the Production, Trade, and Fertilizer Yearbooks. It is available in English, French, Spanish, Arabic and Chinese versions.

Global forest resources assessment 2005 – progress towards sustainable forest management

This is the result of the Global Forest Resources Assessment 2005 (FRA 2005) that collated information from 229 countries, carried out between 2003 and 2005. It is the most comprehensive assessment of forests and forestry to date as it examines the current status and trends for about 40 variables that cover the extent, condition, uses and values of forests and other wooded land to assess all benefits from forest resources. The results are presented in six thematic elements of sustainable forest management. This report has undergone regular review and updating by country specialists and incorporates findings from expert consultations, training for national correspondents and 10 regional and subregional workshops resulting in better data, a more

transparent report process and enhanced national capacity in data analysis and reporting.

Properties and management of drylands: FAO land and water digital media series no. 31

Released in 2005, this DVD is a useful information source containing more than 1 000 selected documents, articles, hyperlinks, maps, statistics, photos and data sets on drylands. It provides state-of-the-art information on natural resources in dryland ecosystems and their current conditions and status of degradation, techniques and practices to manage dryland resources and the socioeconomic situation of the populations living in drylands.

Rice is life - the International Year of Rice 2004 and its implementation

The book presents the celebration of the International Year of Rice in 2004. The book is divided into three parts. The first part presents the events to celebrate the Year of Rice that took place in various parts of the world in 2004. The second part focuses on rice production and hunger reduction; rice and human nutrition; rice as a symbol of cultural identity and global unity; rice and the environment; rice and agricultural biodiversity; and labor, gender and livelihood in rice. The last part emphasizes the importance of rice and agriculture in and beyond the new millennium. The book also highlights the various photos taken by amateur and professional photographers who participated in the global photography contest.

State of food and agriculture: 2005

This report focuses on how trade and trade liberalization are affecting the poor and food-insecure countries. The report affirms the role of trade as a catalyst for change, promoting conditions to increase income and enabling the poor to live longer, be healthier and more productive. The report emphasizes the need for trade and policies to complement each other and promote pro-poor growth. It recommends a twin-track approach: that of investing in human capital, institutions and infrastructure so that the poor can take advantage of trade-related opportunities, and at the same time establish safety nets to protect vulnerable members of society.

The report also includes a mini CD-ROM of the FAO Statistical Yearbook 2004 Vol. 1/1 in Arabic, Chinese, English, French and Spanish.

The state of food insecurity in the world 2005: eradicating world hunger – key to achieving the Millennium Development Goals

This report examines the progress toward achieving the World Food Summit goals and the Millennium Development Goals (MDGs). Only nine years remain to 2015, the deadline set by world leaders who pledged to reduce hunger and extreme poverty by half, while attaining gains in education, health, social equity, environmental stability and international solidarity.

The report presents compelling evidence that hunger and malnutrition are the major causes of the deprivation and suffering targeted by all the other MDGs. The report emphasizes that most, if not all, of the MDGs can be reached by 2015 if efforts are doubled and refocused. ■ *Descriptions have been reprinted with modifications from the FAO website. Compiled by Leah P. Arboleda.*

Agroforestry manual for the Asia-Pacific region now available

The Secretariat of the United Nations Convention to Combat Desertification (UNCCD), the Ministry of Environment and Forests of the Government of India, and Global Mechanism have come up with the **Agroforestry manual for the Asia-Pacific region** for agroforestry researchers, practitioners and policy makers.

Released in 2005, the manual is among the priority outputs identified in the regional workshop on the Asia Regional Thematic Programme Network (TPN-2) on "Agroforestry and soil conservation in arid, semi-arid, and dry sub-humid areas" held in Bangalore, India, in December 2003. The workshop was attended by representatives and experts from countries in the Asia-Pacific region.

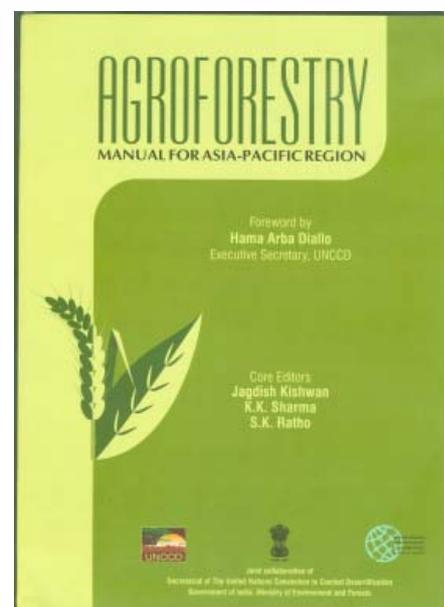
The manual presents a compendium of best practices in agroforestry being practiced by farmers in the arid, semi-arid, and sub-humid regions. It was reviewed by agroforestry experts from the Asia-Pacific region, and further deliberated in the regional consultation held in May 2005 during the third session of the CRIC in Bonn, Germany. It aims to provide information that would help plan, implement and monitor agroforestry practices, particularly in drought-prone or degraded lands. In addition, the manual presents agroforestry systems and models with a wide range of combinations of different components.

The manual comprises two parts. Part 1 consists of six chapters that describe agroforestry as a sustainable land use system that can help address the global problem of land degradation. It also describes the traditional agroforestry systems being practiced in the Asia-Pacific region, and different agroforestry models by climatic regions. It also presents an overview of existing

policies, national and international collaborative efforts, considerations for choosing appropriate species, and marketing options and strategies.

Part 2 consists of three chapters that provide detailed information on agroforestry models for the arid, semi-arid and sub-humid regions. Chapter 7 presents agroforestry models in the arid region based on tree components consisting of *Acacia nilotica*, *Azadirachta indica*, *Ailanthus excelsa*, *Prosopis cineraria*, *Populus euphratica*, *Acacia senegal*, *Acacia tortilis*, *Faidherbia albida*, and *Zizyhus mauritiana*. Chapter 8 presents agroforestry models for the semi-arid region based on tree species of *Dalbergia sissoo*, *Tamarindus indica*, *Eucalyptus* sp., *Albizia lebbbeck*, *Leucaena leucocephala*, *Casuarina cunninghamiana* and *C. equisetifolia*, *Psidium guajava*, and *Mangifera indica*. Chapter 9 presents agroforestry models in the sub-humid region with *Tectona grandis*, *Grewia optiva*, bamboo, *Alnus nepalensis*, *Paulownia* sp., *Sesbania grandiflora* and *S. sesban*, *Populus* sp., and *Gmelina arborea* as the tree components.

In the preface, Chief of the editorial board, Jagdish Kishwan, states that the manual highlights three critical elements: 1) that the combination of crops depends on the best judgement of the farmer according to local socio-economic and ecological considerations; 2) that the climatic variations at the country and regional levels should be considered in the nursery and planting operations of agroforestry; 3) awareness and understanding of local laws and regulations on the use of insecticides and pesticides are critical but it is still preferable to employ locally acceptable traditional practices, bio-pesticides



or organic farming in controlling pests and pathogens.

UNCCD Executive Secretary Hama Arba Diallo states in his foreword that this manual also hopes to address livelihood concerns of dryland communities and pave the way for more successful stories on community-driven agroforestry practices.

For more information about the manual, please contact the core editors: Jagdish Kishwan (jkishwan@nic.in), K.K. Sharma (kksharmagg@yahoo.com), and S. K. Ratho (sisir_ratho@yahoo.com). ■
Jagdish Kishwan and Leah P. Arboleda



Information sources for agroforesters

The following information sources were compiled from Springer Publications, CABI Publishing, Forest Shop, the World Agroforestry Centre (ICRAF), Canada's International Development Research Centre (IDRC), research and contributions. The Low-External Input Sustainable Agriculture (LEISA) also gave permission to publish some sources.

Agriculture as a producer and consumer energy

Edited by J. Outlaw, K. Collins and J. Duffield and released in July 2005, this book discusses the integration of biomass energy into energy systems, policy issues and outlooks for energy production and consumption. It also presents a compendium of research on the economic viability of ethanol and biodiesel, energy conservation and efficiency in agriculture, new methods and technologies, and environmental impacts and considerations. For more information, please visit <http://www.cabi-publishing.org/>.

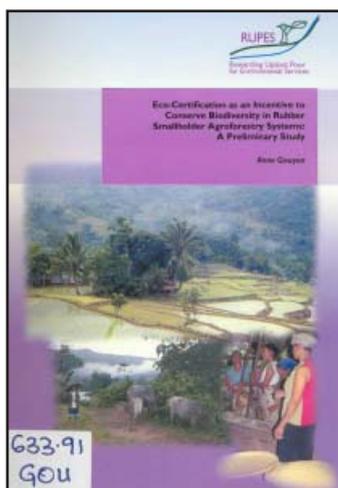
Eco-certification as an incentive to conserve biodiversity in rubber smallholder agroforestry systems: a preliminary study

Written by Anne Gouyon and released by the World Agroforestry Centre (ICRAF) in 2005, this report examines the prospects of selling eco-certified products from rubber agroforests being managed by smallholder farmers in Indonesia, and outlines the potential benefits and constraints of eco-certification.

Rubber agroforests have been found to contribute significantly to the conservation of forest species, and at the same time offer low development costs and minimal risks to the smallholder farmers. However, they offer a smaller return on land and labor than alternative land uses (i.e. monoculture of high-yielding

hevea clones, oil palm, and intensive food crop production) in areas close to urban markets. Hence, the conservation community must be ready to reward the services rendered by the smallholders who are willing to conserve their agroforests instead of converting these into more highly productive land uses.

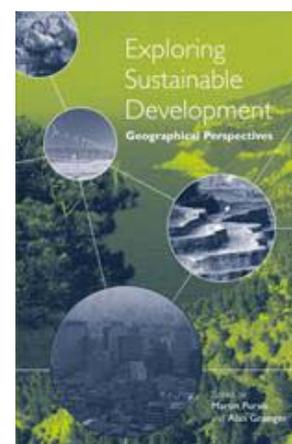
The report proposes the eco-labelling of agroforest products that would sell at a higher than average price, thereby increasing the economic returns from the agroforests. For more information, please visit <http://www.worldagroforestrycentre.org/> (*Reprinted with modifications from a portion of the report's executive summary*).



Exploring sustainable development: geographical perspectives

Edited by Martin Purvis and Alan Grainger and released in September 2004, this book explores different interpretations of sustainable development in both theory and practice, in developed and developing countries, and in rural and urban areas. It focuses on the local, national and international politics of implementation, the future of climate and energy, the role of business and the different conceptions of agricultural

biodiversity. The book aims to serve as the foundation for the evolving concept of sustainable development, how it is applied on the ground, and the influence it exerts on people's perceptions of change in the physical environment, economic activity and society. For more information, please visit <http://shop.earthscan.co.uk/>.



Forestry and environmental change: socioeconomic and political dimensions (Report #5, IUFRO Task Force on Environmental Change)

Edited by J. L. Innes, G. Hickey and H. F. Hoen and released in October 2005, this book examines the interactions between forestry and environmental change from a social, economic and political perspective. It presents insights into the influence of forest reserves on timber prices, the relationship between forestry and aboriginal populations, the certification of forest management and wood products and the issues facing forests in countries in transitional phase.

It also discusses deforestation in temperate and tropical forests, application of forest zoning as an alternative to multiple-use forestry, capital management, establishment of large-scale reserves in temperate and boreal forests and social revolutions in forest management.

For more information, please visit <http://www.cabi-publishing.org/>.

Forests in landscapes: ecosystems approaches to sustainability

Edited by Jeffrey Sayer and Steward Maginnis and released in 2005, this book provides an overview of ecological approaches to sustainable forestry, presents the challenges they entail and examines the key issues and themes of institutional arrangements and structures in the areas of forest ownership, access and property rights, legal frameworks, joint/community management, precision forestry and many others.

It presents a thorough examination of ecosystem approaches to sustainable forest management at the policy and practice levels. It also contains samples of best practices in the US, Western Europe, Australia, Canada, Russia, India and central and east Africa. For more information, please visit <http://www.forestshop.com/>.

Introduction to sustainability: road to a better future

Written by Nolberto Munier and released in 2005, this book explains concepts, gives ideas, proposes methods and suggests actions to help users follow a "natural set of steps to reach an established goal," thereby developing a supporting structure for sustainable development. The author presents an analysis of a community in search of sustainable development. For more information, please visit <http://www.springerpub.com/>.

Recording and using indigenous knowledge: a manual

Edited by D. Abbass, E. Mathias, A. R. J. Montes, P. Mundy and T. Willard, this manual compiles the varied experiences of the staff of the International Institute for Rural

Reconstruction (IIRR) from decades of participatory development fieldwork.

It describes how existing methods can be used to record indigenous knowledge (IK). It does not provide ready-to-use approaches but offers "building blocks" which users can put together to meet their specific objectives.

The contents are heavily biased toward participatory methods as the IIRR staff members recognize their usefulness in capturing information on IK, but at the same time recognizing their limitations and the value of other methods (sample surveys and in-depth interviews). For inquiries, please e-mail information@iirr.org. (*Reprinted with modifications from LEISA Magazine, March 2006*).

Regional environmental change

Edited by W. Cramer, this journal focuses on the interactions between human and natural systems at the regional levels in the context of global change, vulnerability and sustainable development. The journal addresses the historical and future changes in environmental quality. It also describes the methods to analyze these changes, vulnerability of the natural and human systems to environmental change, decision-making processes, land-use change, the use of environmental resources, restoration/rehabilitation of degraded systems, regional aspects of climate, climate change and impacts on ecosystems, hydrology and human systems, and sustainability theories. For more information, please visit <http://www.springerpub.com/>.

Self-sufficient agriculture: labour and knowledge in small-scale farming

Written by Robert Tripp and released in early 2006, this book analyzes the contributions and limitations of low

external input technologies (LEIT) in sustainable agriculture to help address the needs of resource-poor farmers. It contains in-depth case studies, analysis of debates, extensive review of literature, and practical suggestions on the management and integration of low external input agriculture in rural development programs. The author concludes that the innovative LEIT indeed offers significant contributions to make agriculture more productive, increase the protection of the environment and intensify the empowerment of farmers. He likewise cites weaknesses, including the need to strengthen smallholder farming by transferring funds, dedication, and ingenuity to build local capacities instead of focusing them on isolated and technology-specific efforts. For inquiries, please e-mail earthinfo@earthscan.co.uk or visit <http://www.earthscan.co.uk> (*Reprinted with modifications from LEISA Magazine, March 2006*).

Silvopastoralism and sustainable land management

Edited by M. R. Mosquera-Losada, A. Riguerio and J. McAdam, and released in December 2005, this book compiles 125 papers that examine the productivity and quality of silvopastoral systems and outlines ways to successfully manage forestry and agronomic areas. The papers also examine the ecological benefits of silvopastoral systems and their cultural, economic and social implications. These papers were presented at an international conference held in Spain in April 2004. For more information, please visit: <http://www.cabi-publishing.org/>.

State of the world 2006: the challenge of global sustainability

Published by the Worldwatch Institute and released in December 2005, this book is the 23rd edition of

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Information sources...

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the *State of the World* published annually in 28 languages. This edition focuses on China and India, two of the world's most rapidly developing countries in terms of industry, population, significance to the global economy and associated impacts on the environment. The book discusses meat production and consumption, corporate social responsibility, nanotechnology, environmental and nongovernmental organization movement in China, freshwater and ecosystems services, biofuels, mercury, trade and security. For more information, please visit <http://shop.earthscan.co.uk/>.

Technology integration through agro-ecosystem analysis using participatory approaches

Written by S. Jamal and H. P. S. Arya, this 2004 book discusses the role of science and technology in agricultural development. It looks at the different approaches that can update farmers on various agricultural innovations. These innovations include transfer of technology by participatory approaches, and the process and methods of agro-ecosystem analysis.

One of the highlights of the book is the discussion on the concept and principles of participatory rural appraisal, participatory technology development, participatory research for empowerment of women, participatory planning and technology dissemination and technology integration. For more information, please e-mail publishing@conceptpub.com.

The farm as a natural habitat: reconnecting food systems with ecosystems

Edited by D.L. Jackson and L.L. Jackson, this 2002 book presents the common values shared by farmers

and environmentalists. It emphasizes that "conservation is not just about building another terrace, it's sharing the land with 100,000 other species." It shares the experiences of authors from the fields of conservation biology, sustainable agriculture and ecological restoration.

The book examines the problems of industrialized agriculture, presents the experiences of farmers engaged in agroecological farming practices, explores options for sound ecosystem management, and outlines steps needed to initiate ecological agriculture. It also shows the need for partnership among farmers, consumers and politicians. For more information, please visit <http://www.islandpress.org>.

The wellbeing of nations: a country-by-country index of quality of life and the environment

Written by Robert Prescott-Allen, this 2001 book discusses how indicators of human wellbeing can be combined with the indicators of environmental sustainability to obtain a comprehensive picture of the world's situation. The author combines 36 indicators of health, population, wealth, education, communication, freedom, peace, crime and equity into a Human Wellbeing Index, and 51 indicators of land health, protected areas, water quality, water supply, global atmosphere, air quality, species diversity, energy use and resource pressures into an Ecosystem Wellbeing Index. These two indices are then combined into a Wellbeing/Stress Index that measures "how much wellbeing each country obtains for the amount of stress it places on the environment."

The book also includes geopolitical maps that portray the performance of the 180 nations in all the indices, including the specific indicators that were used. For more information, please visit <http://www.idrc.ca>.

Tree diversity analysis

Written by Roeland Kindt and Richard Coe and released in 2005, this manual, together with its software, was prepared as a result of a series of training events held in East and West Africa on the analysis of tree diversity data collected by scientists of ICRAF and its collaborating institutions in Africa.

The manual describes various statistical methods that can be used for a wider range of organisms, for different hierarchical levels of biodiversity and for a wider range of environments. The software "Bioiversity.R" analyzes biodiversity data, focusing on the results of species surveys. The various analyses contained in the manual are on species richness, diversity, counts of trees, presence or absence of species, differences in species composition, ecological distance by clustering and ecological distance by ordination. For more information, please visit <http://www.worldagroforestrycentre.org/>.

Using diversity: enhancing and maintaining genetic resources on-farm

Edited by Louise Sperling and Michael Loevisohn, this 1997 publication presents the proceedings of the "Using Diversity" workshop that brought together scientists, farmers and nongovernmental organization workers from across South Asia to discuss on-farm genetic diversity as a key to rural people's food security and the need to involve farmers in its maintenance and enhancement. It is available online at <http://www.idrc.ca>.

Valuing crop biodiversity: on-farm genetic resources and economic change

Edited by M. Smale and released in December 2005, this book examines the challenges faced by farmers in

trying to maintain crop biodiversity in developing and transitional economies. It contains case studies of farmers and crop scientists across a range of agricultural economies and income levels, presents economic tools and methods for valuing and managing crop biodiversity, discusses the economic benefits of crop biodiversity for farmers and suggests ways in which crop biodiversity can be supported by national policies. This is an invaluable book for students, researchers and professionals involved in developing strategies that facilitate sustainable management and conservation of crop genetic diversity for future generations. For more information, please visit <http://www.cabi-publishing.org/>.

Wastewater use in irrigated agriculture: confronting the livelihood and environmental realities

Edited by Christopher Scott, Naser I. Faruque and Liqa Raschid, this 2004 publication reviews the environmental and health impacts and risks of using untreated wastewater in agriculture from case studies in Asia, Africa, the Middle East and Latin America. The editors also discuss a methodology, applied in selected countries, that quantifies the magnitude of wastewater use in agriculture. For more information, please visit <http://www.idrc.ca>.

World resources 2005: the wealth of the poor – managing ecosystems to fight poverty

Produced by the United Nations Development Programme, the United Nations Environment Programme and the World Bank, this report details the steps necessary to empower the poor to use ecosystems wisely. Released in 2005, it provides case studies and examples, and presents a wealth of statistics on current environmental, social and economic trends in more than 150 countries. The full report is available at <http://www.wri.org>; while the resource database can be accessed online at <http://earthtrends.wri.org> (Reprinted with modifications from LEISA Magazine, March 2006). ■ Descriptions have been reprinted with modifications from the respective websites unless otherwise specified. Compiled by Leah P. Arboleda.

Useful websites and links

Acknowledgement is due to the World Agroforestry Centre, Permanent Agriculture Resources, through its e-newsletter "The Overstory," and the Low External Input and Sustainable Agriculture (LEISA) from which a number of the following websites and links were obtained:

WEBSITES

Australian Government Rural Industries Research and Development Corporation manages and funds priority research and translates the results into practical outcomes for industry development. Its research and activities focus on new and emerging industries to help diversify rural enterprises in Australia. It also provides a small number of postgraduate scholarships around September of each year.

The website offers a rich source of publications, include a farmers' guide to the Internet, free

AgFactsheets, free Australia-wide fact sheets, free downloadable research reports, handbook of new rural industries, monthly e-mail newsletter, online catalogue of all its publications, and an e-shop. Its programs are categorized into 1) new industries which include new animal and plant products, Asian foods, essential oils and plant extracts, rare natural (animal) fibers, tea tree oil, and wildflowers and native plants; 2) established industries which include chicken meat, honeybee, rice, horses, fodder crops, pasture seeds, deer and buffalo; 3) national rural issues which include agroforestry and farm forestry, environment and farm management, rangeland and wildlife systems, organic produce, global competitiveness, food integrity and biosecurity, human capital, communications and information systems; and 4) corporate information which presents the returns of research and development efforts. It is also promoting its newsletter, "Rural Diversity," and

Rural Women's Award (<http://www.ruralwomensaward.gov.au/>). For more information, please visit <http://www.rirdc.gov.au/>.

Capacity.org is a web magazine-cum-portal intended for practitioners and policy makers engaged in capacity development work. The website is accompanied by a printed journal and an e-mail newsletter published quarterly in English, French and Spanish. Each issue of Capacity.org focuses on a specific theme relevant to capacity development, with feature articles, reports on policy and practice, interviews and a guest column, and annotated links to related web resources, publications and events.

Professionals involved in the field of capacity development are also invited to contribute their views or to exchange and share information with other professionals in the sector. For more information, please visit <http://www.capacity.org/>

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Useful websites and links...

Continued from page 17

CIAT, International Centre for Tropical Agriculture promotes the sharing of knowledge and learning in research and development organizations, and the creation of communication networks in rural communities. The website describes the center's activities, especially the development of its "Innovation histories" methodology where people can co-construct written accounts of an innovation process they were involved in. The methodology allows people to reflect on what they did in order to improve their performance in the future. The methodology is currently being scaled up in different countries such as Honduras, Colombia, Bolivia and Nicaragua. For more information, please visit <http://www.ciat.cgiar.org/> (Reprinted with modifications from *LEISA magazine*, March 2006).

FAO Best Practices and AskFAO are two new sites of FAO which can be found at <http://www.fao.org/bestpractices/> and <http://www.fao.org/askfao>, respectively. The "Best Practices" section provides a series of summaries on some of the best practices in FAO's areas of expertise. These practices have been adopted successfully in more than one region, and are interdisciplinary, reflecting the complex nature of the problems addressed. This section also provides links to further resources with supporting technical information.

"AskFAO," meanwhile, provides answers to specific queries related to the organization's areas of expertise, serving as FAO's mechanism for information exchange with technical experts and other clients (Reprinted with modifications from *LEISA magazine*, March 2006).

Honey Bee is the website of the Honey Bee Network composed of innovators, farmers, scholars, academicians, policy makers, entrepreneurs and nongovernmental organizations. It offers the "Honey Bee Newsletter," which is published in six Indian languages and serves as the medium for dialogue between and among farmers, artisans, pastoralists and other grassroots innovators. For more information, please visit http://www.sristi.org/cms/honeybee_newsletter (Reprinted with modifications from *LEISA magazine*, March 2006).

Canada's **International Development Research Centre (IDRC)** provides relevant research findings and publications on environment and natural resource management, information and communication technologies for development, innovation, policy and science and social economic policy. It funds projects in several countries in Africa, Asia, Latin America and the Caribbean. For more information, please visit <http://www.idrc.ca>.

International Institute for Sustainable Development helps advance policy recommendations on international trade and investment, economic policy, climate change, measurement and assessment, and natural resources management. The website reports on international negotiations and broker knowledge and research findings. For more information, please visit <http://www.iisd.org/>

The **Center for International Forestry Research (CIFOR)** is an international research and global knowledge institution committed to conserving forests and improving the livelihoods of people in the tropics. CIFOR has a wide range of resources available on its website <http://www.cifor.cgiar.org>

The **Center for the Study of Institutions, Population and Environmental Change** presents relevant publications, research and training opportunities on the processes involved in the fragmentation, degradation, loss of species of forests and likewise with their regrowth and expansion. The center's activities focus on people who can "self-organize" efforts to stem the steady loss of ecological systems and the mechanisms on sharing these processes and knowledge to the scientific community and the general public. For more information, please visit <http://www.indiana.edu/~cipec/>.

The **Collaborative Partnership on Forests Network (CPF Network)** is an informal network of 14 major forest-related international organizations, institutions and convention secretariats. It was established in April 2001 upon the recommendation of the Economic and Social Council of the United Nations (ECOSOC).

The network aims to support the work of the United Nations Forum on Forests (UNFF) and its member-countries by supporting the implementation of proposals for action of the Intergovernmental Panel on Forests (IPF) and the Intergovernmental Forum on Forests (IFF), and providing expertise and advisory services. Membership is open to all individuals, international, regional and national organizations, institutions, nongovernmental organizations, indigenous peoples organizations and the private sector interested in forests. For more information, please visit <http://www.fao.org/forestry/cpf/> or e-mail unff@un.org.

The **Deccan Development Society** is a 20-year-old grassroots organization composed of 5 000 women working in about 75 villages in the Medak District of Andhra Pradesh, India. Representing the poorest of the

poor in their village communities, the women members are working on developing a model for people-oriented participative development in the areas of food security, ecological agriculture and alternative education.

The website offers information on the society's core programs on media and communications, particularly on the FM radio that the members have put up and are maintaining, and the series of videos that they produced, all of which are being shared with their *Sanghams* or voluntary village level associations of the poor. For more information, please visit <http://www.ddsindia.com/> (*Reprinted with modifications from LEISA magazine, March 2006*).

The **International Institute for Communications and Development** assists developing countries in realizing locally owned sustainable development by harnessing the potential of information and communication technologies (ICTs). IICD works with its partners in selected countries and serves as a knowledge broker to help local stakeholders assess the potential uses of ICTs in development. The website presents information on IICD's activities particularly regarding the collection and dissemination of best practices and lessons learned, promotion of local networks of information partners where the institute works, and the distribution of the "ICT stories" which capture the learning process, the introduction and the implementation of ICTs for development. For more information, please visit <http://www.iicd.org>. The website also features iConnect and a monthly e-Bulletin that provides information on the use of knowledge, information and communication technologies in sustainable development in all sectors. These sites can be found at <http://www.icconnect-online.org/home> (*Reprinted with modifications from LEISA magazine, March 2006*).

The **National Agriculture and Forestry Research Institute (NAFRI)** was established in 1999 to consolidate agriculture and forestry research activities in Laos, and eventually help develop a National Agriculture and Forestry Research System. It focuses on adaptive research to provide technical options, recommendations and results to support agriculture, forestry and fisheries development, and the strategic formulation of policies and programs.

The website offers information on NAFRI's research agenda in the areas of agriculture, animal husbandry, fisheries and forestry. Its information services provide users with assistance in terms of NAFRI's library and data management services, GIS services, ICT services, and information production and dissemination. Visitors can also download NAFRI's various reports for free, including its farmer technology sheets and research reports. For more information, please visit <http://www.nafri.org.la>.

The **US Department of Agriculture's Natural Resources Conservation Service** helps people to conserve, maintain and improve natural resources and the environment. For more information, please visit <http://www.nrcs.usda.gov/>

The **World Association of Soil and Water Conservation (WASWC)** is an international nongovernmental organization of professionals and informed laypersons dedicated to promoting the sustained use of the earth's soil and water resources. For more information and/or subscription to the WASWC newsletter, now published in English, Spanish, French, Chinese and Portuguese, please visit <http://www.waswc.org> and its photo websites <http://community.webshots.com/user/waswc> and <http://community.webshots.com/user/waswc1>

UC SAREP Cover Crop Resource Page provides data on thousands of species used for organic matter production and erosion control. For more information, please visit <http://www.sarep.ucdavis.edu/ccrop/>

LINKS

Alternative/renewable energy newsletter. <http://www.arennewsletter.com/>

Australian Master Tree Grower (MTG) Program. <http://www.mtg.unimelb.edu.au/>

Australian New Crops. <http://www.newcrops.uq.edu.au>

Center for Alternative Technology. <http://www.cat.org/uk/>

EcoEarth.Info. <http://www.ecoearth.info/>

FAO's Forest Products Division's Non-Wood Forest Products. <http://www.fao.org/forestry/FOP/FOPW/NWFP/nwfp-e.stm/>

FAO's Gender and Food Security. <http://www.fao.org/Gender/en/fore-e.htm>

FORUM: Science and Innovation for Sustainable Development. <http://sustsci.aas.org/>

FRAME: Knowledge Sharing for the Natural Resource Community. <http://www.frameweb.org/>

Globalization, agricultural growth and the environment in Southeast Asia. <http://www.aae.wisc.edu/coxhead/projects/sanrem/>

Institute for Culture and Ecology. <http://www.ifcae.org/>

International Centre for Underutilized Crops. <http://www.icuc-iwmi.org/>

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Useful websites and links...

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International Plant Genetic Resources Institute.
<http://www.ipgri.cgiar.org/>

Irish Forest Service.
<http://irishforests.com/farm/>

Mississippi State University's Extension Service. <http://msucares.com/forestry/index.html>.

New Zealand Farm Forestry Association - A Network of Successful Tree Growers.
<http://www.nzffa.org/nz/>

Nontimber Forest Products for Pacific Islands: An Introductory Guide for Producers.
<http://www.agroforestry.net/afg/book.html>.

Resource Center on Urban Agriculture and Forestry (RUAF).
<http://www.ruaf.org/>

Special Forest Products.
http://www.sfp.forprod.vt.edu/special_fp.htm/

Sustain: The Alliance for Better Food and Farming.
<http://www.sustainweb.org/>

The Sustainable Human Ecosystems Laboratory.
<http://lanra.anthro.uga.edu/us/>

University of Hawaii's College of Tropical Agriculture and Human Resources Hawaii Forestry Extension.
<http://www.ctahr.hawaii.edu/>■

Compiled by Leah P. Arboleda.

Call for contributions

We are inviting contributions to the 29th issue of the Asia-Pacific Agroforestry Newsletter (*APANews*) on or before 31 October 2006. Let us help you share the relevant programs and projects that you are doing in the areas of agroforestry research, promotion and development, and education and training.

Contributions for agroforestry research may contain results of short- and long-term studies on agroforestry.

Contributions for agroforestry promotion and development may contain information on various extension services aimed at promoting and developing agroforestry among communities.

Contributions for agroforestry education and training may contain announcements on conferences, symposiums, training opportunities and other news on the various efforts being made toward

generating more agroforestry professionals and practitioners, and providing venues for interpersonal sharing of agroforestry information, and networking opportunities.

We will also help you announce new information sources and useful websites.

For several years now, *APANews* has continued to reach out to people from various sectors. Hence, we would like to request interested contributors to adopt the simple, straightforward and popular style in writing the articles instead of that used in journals. By adopting the popular writing style, your articles can help farmers, development agents, researchers, practitioners and other interested individuals in coping with the challenges of promoting and developing agroforestry in their respective countries, and at any level of project or research implementation.

In addition, the FAO and IAF editors would like to accommodate as many articles as possible in every issue. Hence, kindly limit your contributions to 1 000 words, and include good-quality photographs (scanned at 300 dpi) that are properly labeled and referred to in the text. Please don't forget to include your complete contact details, especially your E-mail address, should the readers have questions, clarifications or requests for further information.

Please send contributions through E-mail as attachments or via snail mail in diskettes/CD-ROM or in printed form to the FAO/RAP Office or to the UPLB Institute of Agroforestry, 2/F Tamesis Hall, College of Forestry and Natural Resources, UP Los Baños, PO Box 35023, College, 4031 Laguna, Philippines; Fax +63 49 5363809; E-mail fao_apanews@yahoo.com.■