

**Agroforestry
Newsletter**

National Research Centre For Agroforestry, Jhansi-284 003

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JANUARY-MARCH, 2009

MODEL TRAINING COURSE ON WATERSHED

NRCAF organized an eight days model training programme on “Watershed Management through Agroforestry Interventions” during 2nd to 9th January, 2009 which was sponsored by Directorate of Extension, DA&C, Ministry of Agriculture (Government of India). Shri. S. Chandra, IFS, Chief Conservator of Forest, Department of Forests, Jhansi inaugurated the training programme. Twenty four participants from different line departments in the country were nominated for the said training programme. Training comprised of 24 lectures with 3 field visits / demonstrations. The main theme included Agroforestry systems for different regions in India, selection, planning, execution and impact analysis of watershed, prospect and potentials of

biofuel for rainfed areas, alternative land use systems for enhanced resource use efficiency, extension strategies for watershed development and field exposure for practical demonstration of the model watershed. Dr. O. P. Chaturvedi acted as Course Director with Dr. R.P. Dwivedi, Dr. Ajit, Dr. A. Venkatesh and Dr. Ramesh Singh as Co-Course Directors for this model training course.

Forthcoming Events

1. Foundation Day -8th
May,2009
2. World Environment Day-
5th June,2009
3. IRC Meeting -25th-27th
June,2009

Issue Highlights

- 15th RAC meeting
- 12th IMC meeting
- Winter School
- PME meeting
- Kisan Goshti at village Shivrampur
- International Women Day
- World Forest Day
- Two Days Trainers Training programme
- Exhibition
- Obituary

RESEARCH ADVISORY COMMITTEE

Combined 15th RAC meeting was held on 2nd & 3rd February, 2009 at IGFR, Jhansi under the chairmanship of Dr. R. M. Singh. Dr. S. D. Ray, Ex. ADG, ICAR, New Delhi; Dr. A. K. Mishra, Ex. Addl. Commissioner (Horti.), DA&C, New Delhi; Dr. V.K. Mishra, Ex. Dean & Head (Forestry), Solan (H.P.); Sh. Sharma Puran, Sr. Journalist, Lucknow and Dr. K. A. Singh, Director, IGFR, Jhansi were the participant of the RAC. At the outset, Dr. S. K. Dhyani, Director, NRCAF presented the action taken report on the earlier RAC (14th). After that, all the programme leaders of NRCAF presented significant research findings of their programmes and actively participated in the discussions.

AGROFORESTRY TO CONTRIBUTE FOR INTERNATIONAL YEAR OF THE NATURAL FIBERS

Agroforestry offers an opportunity to contribute for production of natural fibres. The United Nations Food and Agriculture Organization (FAO) has declared 2009 as the International Year of Natural Fibres (IYNF) with the main objective to raise the profile of natural fibers and to emphasize their value to stakeholders while helping to sustain the income of the poor farmers, particularly in context of the price rise of synthetic substitutes. UN hopes that IYNF will help in raising awareness of the importance of natural fibres, encourage sustainability and efficiency in fibre production, promote policies to encourage production and stimulate international partnerships in the natural fibre based industries. Currently, about 30 million tonnes of natural fibres - those from animals and plants - are produced annually around the world. Further, major production of natural fibres from animal and plant sources comes from agricultural sector, which is produced by small and marginal farmers through out the world. Cotton is a major fibre of plant origin accounting for two-thirds of total production. Other important fibres include jute, sisal, coir, flax, ramie, mesta and hemp. The fibre of plant origin include the seed-hair fibres (cotton, kapok and flosses); the leaf fibres which are primarily used for cordage and obtained from ramie, *Agave sisalana*, *A. cantala* and *A. veracruz*; and bast fibres from the bast tissue or bark of plant stem of Jute, mesta and sunnhemp and are primarily used for textiles, thread, yarn, and twine. Natural fibres are stronger, cheaper and locally available. Moreover, these natural fibres readily compost once abandoned-unlike the synthetic ones, thus, are ecofriendly.

Apart from the above fibre crops, there are large number of trees and shrubs known to produce fibres. The prominent ones are *Sterculia villosa*, *S. urens*, *Helicteris isora*, *Grewia glabra*, *G. tiliaefolia*, *G. optiva*, *Bauhinia vahilil*, *Butea monosperma*, *Ougeinia oojeinensis*, *Calotropis procera*, *C. gigantia*, *Marsdenia roylei*, *Ficus species*, *Hardwickia binata*, *Girardia heterophylla*, *Bombax species*, *Cochiospermum species*, *Beaumontia species*, *Holarrhena species*, *Wrightia species*, etc. However, of the multitude of tree based fibres known today, only a few have commercial importance and the rest being collected only in limited quantities for local use. But, these can potentially be incorporated in agroforestry systems.

There is a great potential to develop fibre based rural enterprises. Some villagers and tribal people are already manufacturing fibre based products like ropes, fabrics, mats, bags and other handicrafts in their cottage and house hold industries. Farmers may be encouraged to grow such fibre yielding trees and crops in and around their fields. Most of such plants, besides providing fibre, will also meet other requirements of the farmer regarding food, fodder, timber, fuel wood, and fencing. On degraded lands, fibre oriented appropriate silvipastoral systems can be adopted. Further, animal components particularly, sheep, goat, rabbit, etc. can be reared in the silvipasture to yield wool and fibres apart from producing meat. Some grasses like *Saccharum munja*, *Eulaliopsis binata*, etc. are also used for extracting fibres and making ropes. Silk can be produced by incorporating the host plants like *Morus alba*, *Terminalia arjuna*, *Paulownia*, etc. in agroforestry systems. Coconut based agroforestry is already very popular in coastal areas of our country and extensively used for producing coir, a short fibre extracted from the outer shell of coconuts. Furthermore, the post Multiple Fiber Agreement (MFA) and WTO era has opened new opportunities and challenges in the textile sector and agroforestry will play a big role in this regard.

Identification of Various Features and Agroforestry Systems on Remote Sensing Image of Yamunanagar District

Poplar and Eucalyptus based agroforestry systems are prominent among farmers of Yamunanagar district in Haryana. In order to assess and estimate the area under agroforestry in this district, a DST sponsored project entitled “*Spatial and Temporal Analysis of Agroforestry Interventions in North-western India using GIS and Remote Sensing*” was initiated in Oct., 2007. Multispectral remote sensing data (IRS P-6 LISS III) of Yamunanagar district for year 2007 was procured from National Remote Sensing Agency, Hyderabad. False Colour Composite (FCC) of the district was generated in ARC GIS 9.2 using remote sensing data of three bands viz. green, red and near infrared.

Various features of interest such as plantation, agriculture fields, forest, water bodies and residential areas etc. have been identified on FCC image on the basis of shape, size, pattern, texture and tone variations. Forest area is identified on the hills and small patches in plane areas including some scattered group of trees in dark red color. Settlements are identified as light blue pixels, generally appearing in circular shape and connected by roads. Likewise riverbed and dry streams are characterized by a long irregular shape along the hill slope. Water in perennial river, canals and small water bodies situated near settlements or within settlement area is identified in bluish –black tone on the digital image. Canals are characterized by long roap like feature having planted trees on either of bank appearing in reddish- black color, while perennial rivers can be easily identified as long wavy shape associated with wide river bed (Fig. 1).

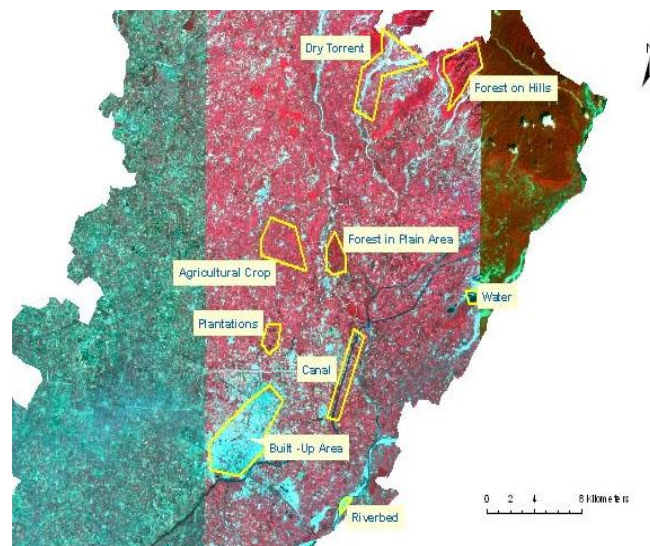


Figure 1: Different features identified on the False Colour Composite of Yamunanagar

Agriculture fields are identified as bright red pixels outside settlements. Bright-red color of crops on the digital image is due to high chlorophyll content, while mature crop is represented

by bluish-red pixels. Fallow fields are appearing in light blue tone near agriculture fields. Agroforestry systems like Poplar plantation with crop, Poplar plantation on boundary and Eucalyptus block plantation have also been identified on the FCC. Poplar and Eucalyptus plantations are recognized as dark red color patch in rectangular shape surrounded by agriculture fields (Fig. 2). The boundary plantations are represented by reddish- black pixels lying outside the bright red pixels of crop (Fig. 3). The tone, texture and colour for agroforestry systems as found on the FCC were different than the forest or pure crop. With the careful analysis of spectral signatures of different vegetations and applying image transformation (NDVI & PCA) and classification techniques (supervised, unsupervised), the agroforestry areas can be delineated and estimated. These classifications are being further verified and rectified on the basis of reference/ground data already collected through GPS from six blocks of Yamunanagar district.

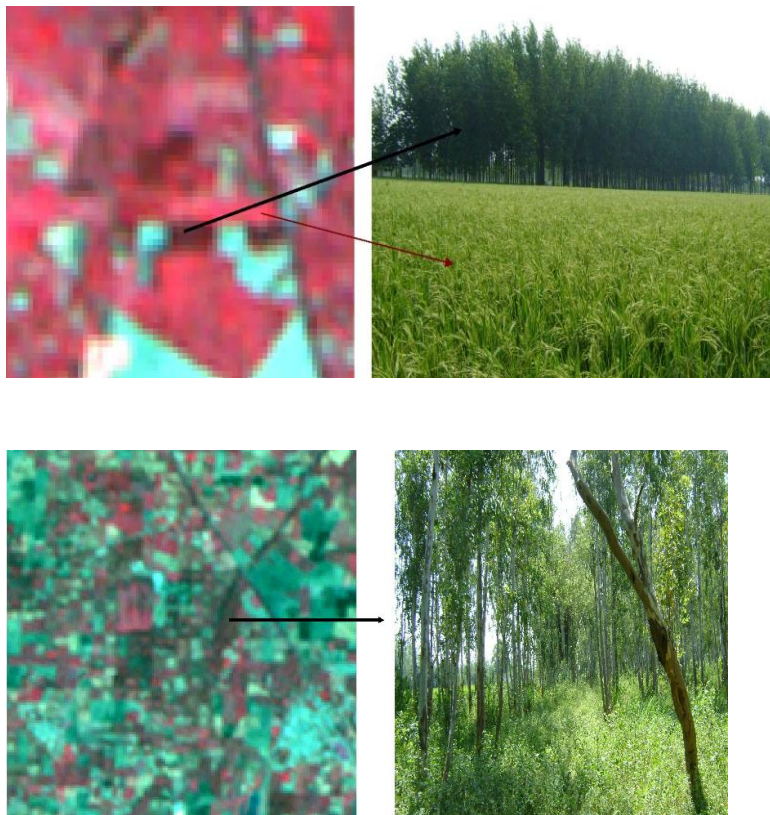


Figure 2: Poplar and Eucalyptus plantations appearing in dark red tone as seen in Yamunanagar FCC

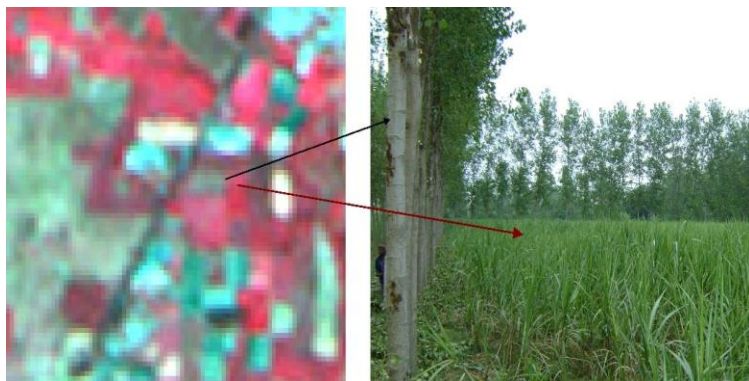


Fig. 3: Poplar boundary plantation appearing in blackish red pixels adjacent to bright red pixels of agriculture crop

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National Research Centre for Agroforestry, Jhansi**

INSTITUTE MANAGEMENT COMMITTEE

Twelfth IMC meeting was held on 16th February, 2009 at NRCAF Jhansi under the chairmanship of Dr. S. K. Dhyani, Director, NRCAF, Jhansi. At the outset, Dr. S K Dhyani welcomed the members and presented a brief introduction on the recent achievements of the Centre. Thereafter, the agenda items were placed and discussed in the meeting: The meeting was attended by the members (Dr. V K Gupta and Dr. O.P. Chaturvedi, Pr. Scientists, NRCAF, Jhansi; Dr. M. M. Roy, Pr. Scientist, IGRI, Jhansi; Dr. K. S. Dadhwal, Head, CSWCR&TI, Dehradun; Sh. Sharma Puran, Sr. Journalist, Lucknow) /invitees (Dr. Rajeev Tiwari, Sr. TO; Sh. S.P.S. Negi, AAO; Sh. S. B. Sharma, AF&AO).

WINTER SCHOOL

Centre organized Winter School on “Agroforestry to Meet the Challenges for Sustainable Natural Resource Productivity, Livelihood Security and Mitigation of Climate Change” during 04th to 24th February, 2009 sponsored by ICAR, New Delhi. Dr. A.K. Mishra, Hon’ble Member, Joint RAC & Former Additional Commissioner (Horticulture) inaugurated the winter school. Twenty five participants representing 12 states from SAU’s (19) and ICAR institutes (6) attended the winter school. Sixty five lectures, seven field visits were arranged for the benefit of the participants. The content of the course covered 7 different themes viz., Agroforestry systems and suitable technologies, Ecosystem development, Bioremediation, enrichment of soil fertility and biodiversity, System diversification for livelihood, climate moderation, land degradation, environmental nexus and measures for improvement, Biofuel and bioenergy and Public-private partnership. Dr. A.K. Bisaria (IFS), CCF, Dept. of Environment & Forest, Gwalior, M.P. graced the the valedictory function as Chief Guest. Dr. O.P. Chaturvedi /Dr. A. Venkatesh was the Course Director and Dr. R.S. Yadav, Dr. Badre Alam and Dr. R.P. Dwivedi as Co-Course Directors for the winter school.

PME MEETING

PME meeting was held on 26th February, 2009. All the Scientists participated in the PME meeting.

KISAN GOSHTI

The Centre organised Kisan Goshti at village Shivrampur, District Tikamgarh (MP) on 28th February, 2009 and more than 600 farmers, members of NGOs including 350 farm woman participated in the programme. During the goshti major emphasis was given on watershed development programme conducted by the NRCAF in participatory mode at Garh Kundar-Dabar watershed located near Niwari in Tikamgarh district of M.P. The programme was widely covered by print media.

INTERNATINAL WOMAN DAY- 8th MARCH

Women Cell of NRCAF and IGFRI, Jhansi observed International Women Day on 8th March, 2009 by organizing one day workshop on 9th March 2009 at IGFRI, Jhansi. Dr. S.K. Dhtyani delivered the chief-guest lecture on the occasion. Dr. K.A. Singh, Director, IGFRI, Jhansi presided over the function. The speakers on the occasion were Mrs. Sarojni Dhyani, Drs. Gitanjali Sahaya, Sadhana Panday, Niti Shastri, Diya Sharma and Shobita Nayar. The participants included women staff of the two institutes.

WORLD FORESTRY DAY-21ST MARCH

NRCAF observed world forest day on 21st March, 2009. On the occasion the participants of two days trainers training programme improvement and cultivation of TBOs were given lectures and visit to Social Forest Survey, Gwalior was organized.

TRAINERS TRAINING ON IMROVEMENT AND CULTIVATION OF TREE-BORNE OIL-SEEDS

NRCAF Organized Two Days Trainers Training programme on cultivation of tree borne oil seeds under agroforestry system during 20th to 21st March, 2009 at Social Forest Nursery, Gwalior. Forest officials (35) and NGO representatives (28) attended the programme. The training was aimed at disseminating scientific knowledge on production and cultivation of tree borne oil seeds to grass root level workers for proliferation to end user of technologies.

AWARD

- NRCAF received First Prize for Best Office Garden (500 m²) and best Garden (100 m²) of Director's Residence in the Regional Phal, Shak Bhaji Avam Phool Pratiyogita organized by the State Government Horticulture Department, Jhansi from 21st & 22nd February, 2009.
- Dr. R. P. Dwivedi, Sr. Scientist (Extension) got best paper award in the Extension Education Workshop on "Extension Perspective in Changing Agricultural Environment" at CSAU&T, Kanpur from 5th to 7th March, 2009.

ICAR ZONAL SPORTS MEET

A contingent of 25 participants from the Centre participated in ICAR Zonal Sports Meet at CIFE, Mumbai from 2nd to 6th February, 2009 and got 3rd prize in cycle race.

EXHIBITION

NRCAF participated in the Kisan mela at KVK, Bharari on 23rd February, 2009. A stall was displayed to depict agroforestry technologies. Due emphasis was given on adoption of agroforestry land use on marginal lands.

SELECTION

Dr. O.P. Chaturvedi, Pr. Scientist (Agroforestry/Forestry) has been selected as Head (Plant Sciences), CSWCR&TI, Dehradun. He was relieved from his present assignment on 16th February, 2009.

PROMOTION

Sh. R.K. Singh, Sr. Tech. Assistant (T-4) promoted to the post of Technical Officer (T – 5) w. e. f. 19th June, 2008.

PARTICIPATION

- Dr. Ram Newaj, Pr. Scientist participated in 4th World Congress on “Conservation on Agriculture” from 4th to 7th February, 2009 at New Delhi and presented a paper.
- Dr. S. K. Dhyani, Director; Dr. O.P. Chaturvedi, Pr. Scientist and Dr. A. Venkatesh, Sr. Scientist of the Centre participated in the launching workshop of Network Project on “Harvesting, Processing and Value addition of Natural Resins and Gums” on 9th February, 2009 at IINR&G, Ranchi.
- Dr. R. P. Dwivedi, Sr. Scientist participated in the Extension Education Workshop on “Extension Perspective in Changing Agricultural Environment” at CSAU&T, Kanpur from 5th to 7th March, 2009.

VISITORS

- Sh. Ramendra Tripathi (IAS), Commissioner, Jhansi (U.P.).
- Dr. V. K. Bahuguna, Technical Expert, NRAA, New Delhi.
- Dr. R. M. Singh, Professor Emeritus, Dept. of Genetics & Pl. Breeding, BHU, Varanasi (U.P.).
- Sh. M. Devraj (IAS), District Magistrate, Jhansi (U.P.).
- Dr. S.D. Rai, Ex. ADG, ICAR, New Delhi.
- Dr. A. K. Mishra, Ex. Addl. Commissioner (Horti.), DA&C, New Delhi.
- Dr. V.K. Mishra, Ex. Dean & Head (Forestry), Solan (H.P.).
- Sh. Sharma Puran, Sr. Journalist, (Member, IMC), Lucknow (U.P.).
- Sh. S.Chandra, Chief Conservator of Forest, Jhansi (U.P.).

- Dr. A.K. Bisaria, Chief Conservator of Forest, Gwalior (M. P.)

OBITUARY
Dr. K.G. Tejwani

Dr. K.G. Tejwani, the legendary signature in the field of natural resource conservation and agroforestry, passed away on 9th March, 2009 at New Delhi. Dr. Tejwani, has devoted five decades to Conservation and Management of Natural Resources (Land, Water, Forest and Agroforestry). He was an excellent Researcher, Teacher, Author, Science Manager and Builder of Institutions. He obtained B.Sc. (Agril.) as well as M.Sc. (Agril.) degree from University of Bombay (India) and Ph.D. from University of Adelaide, Australia. He was the first founder Director of Central Soil and Water Conservation Research & Training Institute, Dehradun, India.

After superannuation from ICAR, Dr. Tejwani became Director of Land Use Consultant (Int'l), New Delhi (1981 to date). In view of his outstanding contributions in India, many international agencies of United Nations (UNDP, UNESCO, FAO, UNCCD), Foreign Organizations (World Bank, Mekong Committee) and International Governments (USA, Nepal, India) and NGOs (Ford Foundation, World Resources Institute, ICIMOD, East-West Centre, ICRAF, SPWD etc.), have utilized his services. He has worked in many countries of Asia (Pakistan, Bhutan, Afghanistan, China, Thailand, and Indonesia), Pacific (Philippines, Hawaii) and Africa (Kenya, Ethiopia, Nigeria, Zambia, Sierra Leone, and Tanzania). He has contributed to three global development projects namely (i) Tropical Forests: A Call for Action (by WRI/WD/UNDP), (ii) Tropical Forestry Action Plan (by FAO) and (iii) Agriculture and Environment (by FAO) besides number of Asia-Pacific Regional Projects, and many country projects in Asia, Pacific and Africa.

He has been visiting Professor, and delivered lecture at many Universities in USA, Netherland and Australia. He established Tejwani Charitable Trust and was its Chairman since 1985. This Trust is engaged in promoting Professional, Social and Cultural activities. He has contributed vigorously to the growth and activities of ISCO and WASWC. He was conferred Hon. Membership of the WASWC in 2002. He was the recipient of UNESCO Fellowship. His name was included in many “who-is-who” in India and USA.

He has been cosponsoring National & International Conferences on Natural Resources Management organized by various Indian societies. He has established a biennial award for best performance in Soil & Water Conservation Research & Development in India and awarded for Excellence in Agricultural Research & Development. He was the Editor of International Agroforestry Systems Journal (1983-2000) and Editor-in-Chief of Land Husbandry Journal. He published over 150 publications in various books & Scientific Journals and authored three books.

On 17th December, 2008 at the time of National Symposium on “Agroforestry Knowledge for Sustainability, Climate Moderation and Challenges Ahead” organized by Indian Society of Agroforestry and National Research Centre for Agroforestry, Jhansi he was conferred Honorary Fellowship award for life time contribution in the field of agroforestry research. This was the last official function.

The Indian Society of Agroforestry with deep sense of gratitude bids farewell to its Founder Member and doyen of agroforestry. May he rest in peace.

VISTS OF Dr. K.G. Tejwani, AT NRCAF

As RAC Chairman-

1st RAC Meeting on 18-20 December, 1996

2nd RAC Meeting on 26 -27 December, 2007

3rd RAC Meeting on 18-19 February, 1999

As Chief Guest in-

- (i) National Symposium on 11th -13th July, 1998
- (ii) 18th Foundation Day- 8th May, 2006
- (iii) National Symposium on 16th -18th December, 2007
- (iv) National Symposium on 15th -16th December, 2008
- (v) Silver Jubilee Function of AICRPAF on 15th December, 2008

Founder Member of Society

(a) Recognition Awards -

Honorary Fellowship award given to Dr K. G. Tejwani for life time contribution in the field of agroforestry research.

**Application for Annual Dr K.G. Tejwani Award for
Excellence in Agroforestry Research and Development
(2008 – 2009)**

The President, Indian Society of Agroforestry (ISAF) invites application from Indian citizens engaged in research and development of agroforestry (age 35 years and above) for **“Dr. K.G. Tejwani Award for Excellence in Agroforestry Research and Development (2008 - 2009)”**. The award consists of cash prize of Rupees Ten Thousand and a Citation. The eligible persons should submit four copies of duly filled in Nomination Form along with a Bank Draft of Rs 250/- in favour of ISAF, Jhansi payable at SBI, Jhansi. The last date for receiving applications is **31st July, 2009**. The application is to be addressed to

The Secretary,
Indian Society of Agroforestry,
National Research Centre for Agroforestry,
Gwalior Road, Jhansi - 284003
E. mail : secretaryisaf@gmail.com

The nomination forms can be downloaded from the website of NRCAF, Jhansi (<http://www.nrcaf.ernet.in>)

