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### Change of Advisory Board

Please join us in welcoming ATREE's new Advisory Board members.

Dr. Vijay Raghavan, Director, National Centre for Biological Sciences, Bengaluru

Dr. Raghavendra Gadagkar, INSA SN Bose Research Professor and JC Bose National Fellow, Centre for Ecological Sciences, Bengaluru

Dr. Amita Baviskar, Associate Professor, Institute of Economic Growth, Delhi

Dr. Navroz K. Dubash, Senior Fellow, Centre for Policy Research, New Delhi

Dr. Gita Sen, Professor, Centre for Public Policy, Indian Institute of Management, Bengaluru

Mr. Raj Khoshoo, Senior Vice President, Siemens PLM, CA, USA

Ms. Kalpana Sharma, independent journalist, Mumbai

Dr. Ravi Chopra, Director, People's Science Institute, Dehradun, Uttarakhand

Dr. S. P. Singh, Former Vice Chancellor, Advisor, State Planning Commission, Government of Uttarakhand, Dehradun, Uttarakhand

Dr. Ramesh Singh, Director, Learning, Monitoring and Evaluation, Office of the Director of Programs, Open Society Institute, New York

## Is organic farming a sustainable alternative?



In post independent India, productivity was the measure of agricultural performance. With huge investments in irrigation and electrification, the Indian farmer, propped up with government schemes and subsidies, experimented with 'high yielding' processes, methods and seeds. In recent years the euphoria has waned as scientists and farmers take stock of depleted natural resources and stagnant yields. The grim situation of the farmers—about 60% of India's population—their dependence on the monsoon—55% of land tilled—farmer suicides, outcry against GM, have led to greater reflection on this fixation with productivity.

Sheetal Patil *et al* look at the sustainability—in financial and environmental terms—of alternative practices in agriculture in the long term. The study was conducted in Mysore and Chitradurga districts in Karnataka state, in 2009, three years from the implementation of the Karnataka State Policy on Organic Farming (KSPoOF), and extrapolated to 2015. It compared organic agriculture with practices followed by the green revolution, now embedded in the practices of three generations of farmers, involving extensive use of chemical fertilizer and pesticide, irrigation, dependence on high yielding seed varieties, shifts to commercial crops, and increased crop rotation.

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With this, we also bid a grateful adieu to outgoing members for their guidance and contributions over the last few years:

Dr. Dan Martin, Conservation International, Washington DC, USA

Dr. Jagmohan Maini, Former Coordinator, United Nations Inter-Governmental Panel on Forests, New York, and Former Chairman, Board of Trustees, Centre for International Forestry Research, Bogor, Indonesia

Dr. Peter Raven, President, Missouri Botanical Garden, St. Louis, USA

Dr. R. A. Mashelkar, CSIR Bhatnagar Fellow at National Chemical Laboratory, Pune, India, and Former Director General, CSIR, New Delhi, India

Dr. Nandini Sundar, Professor of Sociology at the Delhi School of Economics, has stepped down from the ATREE Governing Board.



With different type and number of crop rotations in different seasons, the researchers computed technical coefficients using TechnoGIN (technical coefficient generator) – a tool that helps analyse multiple resource use efficiencies. The evaluation was carried out for a set of environmental and economic indicators for both conventional and organic farming. Economic sustainability has been measured by taking the sum total of yields, net fertilizer and labour costs, and net returns/ losses. If net returns were high enough to sustain livelihood, and risks moderate, the system was considered economically sustainable. Since the KSPoOF was introduced to promote organic farming as a way to buffer farmers from debts, the team paid particular attention to the risks associated with each farming practice, and, in particular, examined debts/ economic losses in case of total crop failure. Environmental sustainability required that the cultivation practice not deplete natural resources over the long term. Indicators used were nutrient loss and balance in soil and biocide residue index.

The findings suggest that organic farming can be a sustainable practice, depending on regional conditions and crops cultivated.

### **Findings**

In Chitradurga, which is a dry region, financial returns from organic farming are generally higher than from conventional farming. With current level of nutrient application, nutrient balance in the soil is negative for most of theselected crop rotations, indicating that without replenishing soil nutrient levels, it might not be possible to sustain comparable yields in the long term. The depletion of nutrients in soil is higher with organic farming, and would require maintenance of livestock, crop residues and vermi-compost to maintain a positive nutrient balance in the long term.

In Mysore, which is a wetter region, with greater cropping intensity, the yields and returns from organic and conventional farming are similar. Nutrient losses with organic farming are about half as compared with conventional farming. Also, nutrient application with organic farming



practice in Mysore was higher than optimal for all crop rotations.

The researchers suggest that organic farming can be an economically viable option in Chitradurga, but not in Mysore. For both places, losses due to crop failure were similar in both the farming practices. In Chitradurga, economic loss due to complete crops failure was lower with organic farming than with conventional farming practice.

Replicating the tools and techniques used in this study, it may be possible to assess economic and environmental sustainability of a farming practice for different regions.

Note: This study was possible with support from Land Use Policies and Sustainable Development in Developing Countries (LUPIS) project.

Read the complete article at  
doi:10.1016/j.landusepol.  
2012.01.006

## Outreach

### Using religious metaphor for pollution-free lake

The wetland conservation programme at Vembanad has been able to use local religious sentiment and custom to spur local conservation action. It was based on the idea that the purification of mind, body and soul, central to the Sabrimala pilgrimage and penance, could be applied to the Vembanad lake as well. The pilgrimage is associated with a 41-day *mandalam* season, when pilgrims abstain from anything the

faith deems unclean. The ATREE team used this religious sentiment to declare plastic unclean for Vembanad, and persuaded fishers to undertake a 41-day clean up campaign.

In absolute terms, it got the lake relatively plastic free. More importantly, it addressed a practical and recurring problem: fishers had always had plastic waste entangled in their nets, and they always removed the waste and threw it back in the lake. The plastic cleaning campaign got fishers to redirect this last step—from allowing plastic to re-enter the lake, it got them to collect the plastic and take it ashore for recycling.

#### Learning from this campaign

One of the reasons this campaign worked was because of the timing. According to the CERC coordinator, Jojo R, “No other timing could have worked better. The feeling associated with the *mandalam* season contributed greatly to the success of the campaign.” Second, he says, fishers and clam collectors acted as a group in this campaign. For them, plastic was a nuisance, so the campaign message resonated at a practical level. Third, the Vembanad fisher community has traditionally been a part of other ATREE programmes like the annual fish survey, where, this year—the fourth annual fish count, decline in fish and clam populations were also directly attributed to plastic pollution. And declining fish populations threaten livelihood security—a reason close to home. Fourth, this stakeholder community was already organised into the community-based Lake Protection Forums, whose initiatives for conservation and sustainability, ATREE has been encouraging over the past years. Last but not the least, the CERC promised to reward best team and individual collector.

The *mandalam* campaign lasted from 17 November to 29 December 2011. The campaign spread to fisherfolk outside the forums. Local MLA P Thilothaman promised that the issue of plastic pollution will be brought up in the legislative assembly and a policy level intervention will be made regarding this issue, as well as the issue of fisher folks’ livelihoods. Muhamma Grama Panchayat President Mrs Deepa Ajith Kumar redirected the plastic waste into road tarring. A report in The Hindu newspaper is available at <http://www.thehindu.com/news/states/kerala/article2653543.ece#.TwqSeqbr4FQ.email>

R Jojo, Vembanad

### You appreciate what you notice

The most exciting moment for DNA Club (Department of Biotechnology’s Nature Awareness Club) members is the opportunity to go on a field trip. Students get to spend time close to nature and observe different ecosystems. This helps them learn and appreciate the importance of the natural world in a human dominated landscape. For those students who have never been out of their villages, this is a great opportunity to learn.







ATREE, in its role as Regional Resource Agency organised a field trip for its DNA club members of SDM High School, Ujire and Jaycees School, Sringeri at Seethanadi Nature Camp, Hebri on 27th and 28th December 2011. Dr Aravind NA held the introductory for the nature camp, explaining differences in forest types, importance of grasslands, river ecosystem and so on. Students were then taken on a nature trail where they observed giant squirrels, birds, butterflies, spiders, dragonflies and other interesting creatures that they had not noticed before. During the walk, he introduced them to the diversity of flora and fauna, epiphytes, parasites, and concepts like mimicry, camouflage and mutualism in the natural world.

Students created a map of Seethanadi river, which helped them observe different types of flora in the riverine ecosystem. They got to see different kinds of fresh water fishes at close quarters and learnt to differentiate them by sketching.

The day ended with an activity to make students aware that trees harbour a rich and complex variety of life. Each student selected a tree and spent time observing it carefully. They drew an outline of the shape of the tree and marked what they saw on it. This also made the students get connected with the tree personally.

*Abhisheka K*

## Guiding birders

On invitation from the Indian Navy Service at Vijayanarayanam near Tirunelveli, a bird watching training programme was conducted on 27th December 2011 by the Agasthyamalai Community-based Conservation Centre (ACCC). 50 students from Kendriya Vidyalaya, 25 women and 30 sailors participated in this event. T Ganesh, Soubadra Devy, Mathivanan, Saravanan and Thamizhazhagan from ACCC helped participants identify birds and explained how birds can be monitored using SMS. The group will participate in the annual waterfowl census conducted by ATREE.

*T Ganesh, Agasthyamalai*



## Scholarship programme in World Heritage Sites

For the third successive year, the ATREE-WHBPI project in Assam granted scholarships to high school students from the fringe villages of Manas and Kaziranga National Parks. The objective of such a scheme was to raise conservation awareness among the recipients. 90 students benefited from the scheme at each site. The students were selected based on a combination of need and merit, with preference for low-income groups and families affected by human-wildlife conflict. The programme was held in association

with the park authorities and local community-based organisations.

*Niraj Kakati, Assam*

## New

### Recognitions

Lele, S. Elected to Board of International Society for Ecological Economics

### Publications

Avik Ray, Sumangala R. C., G. Ravikanth, R. Uma Shaanker and Suhel Quader. 2011. Isolation and characterization of polymorphic microsatellite loci from invasive plant *Lantana camara*. L. *Conservation Genetic Resources* DOI 10.1007/s12686-011-9501-9

Harisha R. P. 2011. Livelihood and potential conservation roles of wild edible herbs. *International Society of Ethnobiology Newsletter* 3 (2):1-2

Vinayaka, K. S., R. Siddappa Setty and Y. L. Krishnamurthy. 2011. Utilization of lichens in the Central Western Ghats area of Karnataka, India. *British Lichen Society Bulletin* 109: 57-62

Mohana Kumara P., S. Zuehlke, Priti V, Ramesha B. T., Shweta S., G. Ravikanth, Vasudeva R., T. R. Santhoshkumar, M. Spiteller and R. Uma Shaanker. 2011. *Fusarium proliferatum*, an endophytic fungus from *Dysoxylum binectariferum* Hook.f, produces rohitukine, a chromane alkaloid possessing anti-cancer activity. *Antonie van Leeuwenhoek Journal of Microbiology* DOI 10.1007/s10482-011-9638-2

Purushothaman, S. and R. Abraham. 2011. Scaling up and sustainability:

The experience from rural India. *Sustainability in Debate*. 2(2):21-42

### Paper in edited book

Lele, S. 2011. Climate change and the Indian environmental movement. In: *A Handbook of Climate Change and India*. Navroz Dubash (ed). Oxford University Press, Delhi. pp. 208-217

Ravikanth G., Srirama R., Senthilkumar U., K. N. Ganeshiah and R. Uma Shaanker. 2011. Genetic resources of *Phyllanthus* in southern India- Identification of geographic and genetic hot-spots and its implication for conservation. In: *Phyllanthus species: Scientific evaluation and medicinal applications*. Ramadasan Kuttan and K. B. Harikumar (ed). CRC Press, Taylor and Francis, Florida. pp: 97-118

### Popular press

Lele, S. 2011. Thinking about and responding to climate change: How and why should we care? *Teacher Plus*. December, Vol.9 (11): 30-34.

### Talks/ papers presented in seminars/ conferences/ workshops

Lele, S., I. Patil, S. Badiger, A. Menon and R. Kumar. 2011. Forests, hydrological services, and agricultural income: A case study from Mysore district of the Western Ghats of India. At Nature, Economy and Society: 6th Biennial Conference, Indian Society for Ecological Economics. 20 Oct 2011, Hyderabad

Lele, S. 2011. NTFP-based livelihoods: Role and challenges in rainfed areas. Panel discussion on Alternative paradigms for rainfed areas. In 6th INSEE Biennial Conference on Nature, Economy and Society. Indian Society





for Ecological Economics. 20 Oct 2011, Hyderabad

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Lele, S. 2011. Unpacking frameworks for interdisciplinary analysis of social-ecological systems. Pre-conference workshop on Pathways to Interdisciplinarity. Indian Society for Ecological Economics. 20 Oct 2011, Hyderabad

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Lele, S. 2011. Ecological economics as an interdisciplinary framework: Strengths and limitations. Panel discussion on Power and culture in ecological economics in 6th INSEE Biennial Conference on Nature, Economy and Society. Indian Society for Ecological Economics. 22 Oct 2011, Hyderabad

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Lele, S. 2011. Keynote address. Sustainability assessment and EIA. Azim Premji University. 9 Nov 2011, Bangalore

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Lele, S. 2011. Understanding REDD+ and GIM. Workshop on Voices of the vulnerable: Speaking climate change and development to Durban and beyond. Organised by Indian Network on Ethics in Climate Change. 15 Nov 2011, Bangalore

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Lele, S. 2011. REDD+: Dense forest ahead. South Asia Media Briefing Workshop on Climate Change. Centre for Science and Environment. 16 Nov 2011, Delhi

---

Lele, S. Panelist. Book release event. Politics of Climate Change and the Global Crisis: by Praful Bidwai. Centre for Contemporary Studies. 1 Dec 2011

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Purushothaman, S. Environmental governance in India – some lessons from production land use. Preparatory seminar for Rio+ 20 at Centre for Sustainable Development, University of Brasilia. Oct 2011

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Purushothaman, S. Implications of trends in access, benefits and status of common lands in Karnataka (with Lele, S.). International Conference on Public Policy and Management. IIM Bangalore. Dec 2011.

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Purushothaman, S. Policies and socio-ecological changes in agrarian Karnataka: An empirical assessment. ATREE. Dec 2011.

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Purushothaman, S. Problems and prospects for PES in coffee forestry ecotones. At a session on the Payments for Ecosystem Services for the different landscapes of Kodagu: A policy document. College of Forestry, Ponnampet. Nov 2011. (With Abraham, S)

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Ravikanth G., Recovering endangered species. To botany students of College of Arts Science and Commerce, Quepem, Goa ATREE, 9 Nov 2011.

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**Siddappa Setty R.** Climate change and mitigation. At Earthwatch programme for HSBC employees. Banerghatta National Park, Bengaluru. 24 Sept 2011.

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**Siddappa Setty R.** Conservation and livelihood work in BRT. To visiting DePaul University students on 6 Dec 2011; and students of Indian Institute of Forest Management on 26 Dec 2011

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**Siddappa Setty R.** Forest Right Act and conservation. Workshop on Property Rights and Development organised by Liberty Institute in association with SUGRAMA for elected women of Grama Panchayat. 16 Nov 2011.

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**Siddappa Setty R.** gave ten talks on Environment and sustainable use of natural resources. For Gram Panchayat representatives of Hasan, Tumkur, Udupi, Raichur, Koppal, Davanagere and Haveri district at Mahatma Gandhi Institute of Rural Energy and Development, from October to December 2011

## Workshops

CEPF-ATREE Western Ghats Programme Coordinator Bhaskar Acharya attended a Nature Conservation Foundation (NCF)-Rainforest Alliance workshop (funded by CEPF) on Sustainable Agriculture Network (SAN) Standards local interpretation guidelines and training event in Bangalore, on 18 and 19 November 2011.

The focus of the workshop was review of the draft of local interpretation guidelines prior to wider consultation and implementation of the SAN Standard in the field, in the factory, and at the group level.

Representatives from Rainforest Alliance, Nature Conservation Foundation (as SAN member), various NGO partners, and SAN Auditors reviewed the interpretation and interacted with and trained various coffee and tea producers.

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Nilmani Rabha, Research Assistant with the ATREE-WHBPI project in Assam, attended a national training programme on Conducting Effective Research on Large Carnivore Ecology and Habitats, organized by H.N. Gujarat University in partnership with the Smithsonian Institution-Global Tiger Initiative Conservation and Development Network, Smithsonian Conservation Biology Institute, USA, held at Dudhwa National Park, Uttar Pradesh from October 9 to 15, 2011.

## Press

YETI 2011 throws up strategies to meet conservation challenges in NE. The Hindu. 16 December

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Students' seminar on NE ecology at IIT-Guwahati. Times of India. 14 December 2011

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Ecological experts call for open data sharing at YETI. The Hindu. 14 December 2011

---

Young ecologists to discuss biodiversity issues. 4 December 2011. IBN Live.

---

IIT to host ecology meet. The Telegraph. 26 November 2011.

---

41-day campaign to clean Vembanad Lake. The Hindu. 23 November 2011. Why activists and scientists should talk to each other. The Alternative. 17 Nov 2011.

---

GIS mapping gaining popularity. Economic Times. 13 October 2011.

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Some freshwater molluscs in Western Ghats under threat. The Hindu. 10 October 2011.

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*Check the latest issue of Nesara – bilingual newsletter of DBT's Natural Resource Awareness Club and Agasthya – the Agasthyamalai team newsletter at <http://atree.org/newsletters>.*



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