The First Regional Training on Forest Genetic Resources

October 28th – November 2nd 2016

Beijing and Shandong, China

Organized by

National Forest Genetic Resource Platform

Research Institute of Forestry, Chinese Academy of Forestry

FAO

Bioversity International

Asia Pacific Forest Genetic Resources Programme

APAFRI

China Happy Ecology Industrial Co., Ltd.

Sponsor:

China Happy Ecology Industrial Co., Ltd.

Introduction

The State of the World's Forest Genetic Resources (FGR) Report (FAO, 2014) highlighted how populations of many important tree species are declining due to a variety of threats. The Global Plan of Action on FGR is a call for governments, international organisations and others to respond before it is too late. Forest trees are long-lived species with high genetic diversity that is crucial for their survival, regeneration and adaptation. Genetic diversity also provides the foundation for selection and breeding programmes to improve the productivity, resistance or quality of trees and their products. Conservation of tree genetic diversity can be achieved together with the use of trees to produce wood or non-wood products, including food for humans and animals – as long as management and sustainable use practices are designed to safeguard this diversity.

However, forest managers and conservationists are often not well informed about the relevance of genetic aspects to meeting their objectives. Lack of understanding of FGR therefore constrains conservation of tree species, increases genetic risks in subsequent generations and limits adaptation to climate change. Tertiary forestry education curricula shows poor or no coverage of FGR issues at universities and forestry colleges, while biology teaching is often devoid of the social and practical realities. As such there is lack of curricula and training courses available to allow forest managers, conservation practitioners and other non-specialists to effectively integrate genetic conservation of tree species in forest conservation and management.

This training course provides an introduction to the principles of genetic conservation of tree species. It demonstrates the use of a Forest Genetic Resources Training Guide, developed by Bioversity International, as a flexible tool for teaching and learning about FGR issues in formal and informal education, or on-the-job training. Targeting non-specialists, it uses real case studies to focus on the links between sustainable forest management and FGR, covering areas such as conservation strategies, trees outside forests, seed supply chains, forest management, forest restoration and logging. The Guide demonstrates the value of FGR for responsible decision-making in forest and natural resource management. It has a global geographic scope and covers issues of practical relevance to local conservation and sustainable use of FGR.

Training topics

The course will cover two training modules of the Forest Genetic Resources Training Course:

Module 1: Species conservation strategies
- Conservation paradigms – *in situ*, *ex situ*, through use (*circa situm*)
- Biological corridors
- Genetic processes associated with small populations – which populations are too small?
- Identifying threats – genetic and others

Module 3: Seed supply chain
- Reproductive materials – source, collection and distribution
- Genetic processes associated with small populations – bottleneck, increased genetic drift, increased inbreeding and consequently homozygosity
- Effective population size compared to census size
- Sexual systems – dioecy, hermaphrodite
- Self-incompatibility mechanisms

For more information, see:
http://forest-genetic-resources-training-guide.bioversityinternational.org/using-this-training-guide/

Participants

This is an introductory course about the links between sustainable forest management and forest genetic resources. The course is aimed at forest managers, conservationists and lecturers who are not specialized in genetics. During the course, the participants will gain understanding of how forest restoration and species conservation strategies can be made more effective by considering genetic diversity issues. After the course, it is hoped that the participants can apply their knowledge in practice in their work, and also share it with their colleagues at their home institutions or beyond.

Training language

The training will be conducted in English. Participants need to be fluent enough in English to be able to read course materials and participate in group discussions in English (for examples, see http://forest-genetic-resources-training-guide.bioversityinternational.org/using-this-training-guide/

Application process

Interested candidates may apply to participate in the course with two funding options:

- *Self-funding:* participants pay a participation fee of 2000 RMB (approx 300 US$). The fee covers tuition, training materials, accommodation, meals and local transportation during the course (from 28 Oct to 2 Nov morning). Participants are expected to pay their own air travel to and from Beijing. Self-funding participants are accepted on a first-come-first-served basis.
- *Supported participants:* participants may apply for funding support, to have the participation fee waived. Supported participants are expected to pay their own air travel to and from Beijing. Supported participants are invited based on the quality of applications.

To apply for the course, please complete the application form **no later than 3 October 2016** at:
https://www.surveymonkey.com/r/FGR_training_Oct2016
Selected participants will be notified on 7 October 2016.
Registration forms in .doc format are available upon request from Dr. HUANG Ping (pippin09@163.com)

Contact information

Chair of the Organizing Committee:
Prof. ZHENG Yongqi (zyq8565@126.com)

Registration, logistics and inquiries:
Dr. HUANG Ping (pippin09@163.com)
Dr XU Cai (xu.cai@qq.com)

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Tentative Programme

Friday, 28 October 2016 (Opening Day)

09:00-13:00	Arrivals and registration at the Chinese Academy of Forestry
13:00	Lunch
14:00	***International seminar on Forest Genetic Resources conservation and management*** Opening
14:10	Genetic resource conservation initiatives in China *Zheng Yongqi, Chinese Academy of Forestry*
14:40	Strengthening capacities on Forest Genetic Resources conservation and management : common problems *David Boshier, Bioversity International / University of Oxford*
15:00	Indicators for monitoring forest genetic resources *Judy Loo, Bioversity International*
15:20	Global Plan of Action on Forest Genetic Resources *Jarkko Koskela, FAO*
16:00	Tea break
16:30	***Signing Ceremony: Memorandum of Understanding for the establishment of a Regional Training Centre on Forest Genetic Resources*** Chinese Academy of Forestry, China Happy Ecology Industrial Co. Ltd. and Bioversity International
18:00	Welcome Dinner

Saturday, 29 October 2016 (Training Day 1)

09:00	Opening, Welcome and introductions *Zheng Yongqi, Chinese Academy of Forestry*
9:15	Forest Genetic Resources training guide *David Boshier*
9:45	Introduction to Module 3: Seed supply in forest restoration
10:45	Tea break
11:15	Case studies: group work
13:00	Lunch
14:00	Group work continued
14:30	Case studies: group presentations
16:00	Tea break
16:30	Summary and conclusions of Module 3
17:00	Asia Pacific Forest Genetic Resources Programme (APFORGEN) *Riina Jalonen, Bioversity International*
17:30	Announcements and closing of day 1

Sunday, 30 October 2016 (Tour and field visit Day)

09:00	Travel to Shangdong
10:30	Visit *Salix* germplasm nursery in TianJing;
12:00	Lunch
14:00	Field visits: cultural sites
19:00	Arrival and dinner

Monday, 31 October 2016 (Training Day 2)

08:30	Recap of First Training Day 1
08:45	Introduction to Module 1: Species conservation strategies
10:00	Case study: group work
12:00	Lunch
13:15	Case study: group presentations
15:00	Summary and conclusions of Module 1
15:30	Tea break
16:00-17:00	Discussion: Priorities for regional collaboration on forest genetic resources
18:00	Dinner

**Tuesday 1 November 2016 (Closing Day)**

8:30-14:00	Visit Seed production facilities of China Happy Ecology and afforestation sites on the Yellow River Delta
15:00	Discussion: Future trainings and activities of the FGR Training Centre
16:00	Concluding remarks Presentation of certificates to participants Closing
18:00	Ending Banquet

Wednesday 2 November 2016
Departures

Lead Trainers:
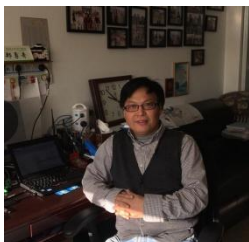
Yongqi Zheng, Research Institute of Forestry, Chinese Academy of Forestry

Yongqi is Research Professor, Principal Scientist and Director of Forest Genetic Resources at the Chinese Academy of Forestry, and Adjunct Professor at Nanjing Forestry University. He is also the Program manager of China's National Forest Genetic Resources Platform and project leader of the national priority research projects "Key Technologies for Conservation and Sustainable Utilization of FGR" and "Exploration and innovative use of critical genes from FGR". He is also supervising MSc and PhD students working on genetic conservation projects and teaching population genetics at the Graduate School of Chinese Academy of Forestry. He is also advisor to government agencies and forestry industries on issues related to forest genetic resources and tree breeding.

David Boshier, Bioversity International and University of Oxford, UK

David is Senior Research Associate focusing on the genetics of tree populations, human impacts (e.g. fragmentation, logging) on such populations and applications to issues of use and conservation in natural and agro-ecosystems. He has keen interest for knowledge exchange through the development of appropriate materials. He has developed the series of training modules for use in the teaching of forest genetic resources, which will be used during the regional training course. He has co-published the *Central American trees: source book for extension workers* and conducted a training programme on the production of extension materials throughout Central America.

Judy Loo, Bioversity International, Rome

Judy Loo leads Bioversity International's research on conservation and sustainable use of forest and tree genetic resources. With her team of scientists located in different continents and research partners, she co-develops and manages research projects in sub-Saharan Africa, Asia and Latin America, and supports capacity strengthening initiatives for managing and conserving tree genetic resources. Judy contributes to international initiatives such as the Food and Agriculture Organization of the UN's first 'State of the World's Forest Genetic Resources' report and promotes implementation of the Global Action Plan on Forest Genetic Resources. Prior to joining Bioversity, her work included teaching short courses on conservation genetics in Mexico, through the North American Forestry Commission of the FAO.