



Interview Professor Zhang Shougong, Chinese Academy of Forestry (CAF)

**Keynote speaker at the IUFRO Regional Congress for Asia and
Oceania -
*Forests for Sustainable Development: The Role of Research***

Professor Zhang, the IUFRO Regional Congress for Asia and Oceania 2016 is jointly organized by IUFRO and the Chinese Academy of Forestry. This is the first Congress of its kind to be held in the region of Asia and Oceania and will offer an extraordinary opportunity for enhancing forest science cooperation. You are one of the leading scientists in silviculture and forest management in China and have a long experience in the establishment of planted forests on the one hand, and sustainable forest management on the other hand. The Congress will particularly focus on these two areas with its themes "*Planted forests for fostering a greener economy*", and "*Sustainable forest management for enhanced provision of ecosystem services*".



**Professor Zhang
Shougong, Chinese
Academy of Forestry
(CAF)**

Q: Professor Zhang, you are the President of the Congress host organization, the Chinese Academy of Forestry. Can you tell us why the theme *Forests for Sustainable Development: The Role of Research* has been chosen for the Congress?

*A: The development of forest science is globally in favour of the improvement of forest quality, conservation of biodiversity, safeguard of water resources and environmental health, increase of energy supply, remission of climate change as well as poverty alleviation, which will contribute to the fulfilment of the aim of sustainable development. This viewpoint has gradually been accepted and affirmed along with the rapid progress and prominent functions of forest science. In face of the global issues of climate change, ecological degradation and etc., a consensus is reached about the promotion of the role of forest science in realization of sustainable development. On this basis, acceleration of the collaboration of science research would satisfy the requirements of forest administration and management so as to make due contribution in the pursuit of sustainable development. Therefore, the theme of *Forests for Sustainable Development -- The Role of Research*, has been chosen for the Congress.*

Q: What role do forests play in the pursuit of sustainable development in Asia and Oceania?

A: Forest is the main body of territorial ecosystem and a renewable resource with a public attribute, which plays an irreplaceable and vital role in the sustainable development. As one of major forest regions in the world, Asia and Oceania is rich in forest resources, which enjoys an important position in the global forestry, such as forest employment, forest production value and trade of forest products. Consequently, the influence of its forest economic benefit, ecological benefit and social benefit are great to Asia and Oceania, much higher than that to the rest of the world.



Timber houses applying larch wood

Q: How have forests and forestry developed in China over the past decades and what is the current situation?

A: The recent 35 years has seen great strides made in the Chinese forestry. The conservation of natural forest and the energetic growth of planted forest have enabled China to accomplish the dual increase of forest quantity and forest quality. The forest area is expanded by 80%, the standing volume is boosted by 68% while 2,740 nature reserves have been established, covering 14.83% of the national land area, higher than the world average level. In addition to improving the ecological environment in China by forests, the forest production function and ecosystem services have been in an effective play, by producing multiple forest products, creating employment opportunities, and thus contributing to poverty alleviation in hilly areas. A high number of venues also have been offered for the conduction of forest tourism and forest cultural activities, receiving billions of visitor person-time.

Q. Can you give an example of how research has contributed positively to the evolution of forestry in China and in the Asia and Oceania region?

A: Attaching great importance to the sustainable development of forestry, the Chinese Government has attained an apparent result in intensifying the efforts of R & D in ecological construction and protection, selective breeding and high effect culture, technologies desired by the upgrading and transition of forest industries. The techniques proposed for the conservation and ecological rehabilitation of natural forest have provide technical support to the natural forest that accounts for 70% of China's forest area. The theory and technical model of low coverage degree desertification control and forestation sees a 40% cost reduction in dune-fixation forestation, and a 40 - 60% reduction of ecological water consumption. The comprehensive reconstruction technique for low-yielding oil-tea tree plantation increases the oil yield to over 20 kg from 5 kg.

"The Cooperation of Oil Tea Camellia Development between China and Thailand" as an inter-governmental science cooperative project between China and Thailand has been carried out jointly with the Royal Agricultural Research Centre, Chiangmai, Ministry of Agriculture and Cooperatives, Thailand. In 2015 ~2016, the Chinese Academy of Forestry has undertaken the

project of Comparative Study on Bamboo Industry Chain to Promote the Development of Bamboo Industry in China, Nepal and Vietnam, funded by UNDP, which has strengthened the regional forest science cooperation and promoted the regional forest development.

Q: How has the Chinese Academy of Forestry as a multi-discipline and public research institution contributed to the forest development in China?

A: Clinging to the significant scientific and technological demands of the national and sectoral development, the Chinese Academy of Forestry emphasizes original innovation and technology integration, and carries out key researches responding to major scientific and technological issues that bear overall, comprehensive, critical and fundamental significance in China's forest development and ecological construction. CAF created 75% of the improved varieties of principal tree species for forestation in China and developed the technical systems in support of the national key forest ecology programs and forestry policy consultation. Collaborative innovation is conducted among industrial enterprises, institutes of higher education and research academies by the establishment of strategic alliance for forest industrial technology innovation. The national forest science data platform and the national forest germplasm (including bamboo, rattan and flower) resource data platform have been set up, which are free of charge and open to the society for data sharing. Large promotion activities are sponsored for the transfer of research results, scientists and technicians are sent to forest region and enterprises to facilitate the enterprises in tackling key technical bottleneck, to help forest farmers increase income and get rich, and to accelerate the conversion of research results into productivity.

Q: What importance would you attach to planted forests both in China and in the entire Asia and Oceania region?



Planted forests of *Larix gmelinii*

A: Planted forest is inferior to natural forest in ecological services. But with the establishment of large-scale fast-growing and high-yielding plantations and expansive networks of shelter belts, China has, at least, achieved two aims, one is the effective relief of China's huge timber shortage (present foreign-trade dependence is 50%); the other is the facilitation of ecological

rehabilitation of vast ecological-weak ecosystems, which has kept many farm fields, pastures, roads and villages free from natural calamities while has solved the issues of fuelwood and timber for local people and safeguarded the agricultural production in major geographical regions in China. Moreover, 69.33 million ha planted forest has allowed China to implement the conservation of natural forest and natural vegetation. Active development of planted forest is perhaps a good choice for countries in Asia and Oceania that are scarce in forest and have a gap of timber supply and demand.

Q: You have also done important scientific work in the field of tree breeding, especially regarding the improvement and breeding of larch species for pulpwood. How does this research technology contribute to a greener economy?

A: Greener Economy is a core concept put forth by "Rio + 20", the UN Congress on Sustainable Development in 2012, which is a fine green development concept that puts stress on the investment into natural capital, decrease of the consumption of natural capital and increase of human capital to promote economic development, and build up the welfare of forest regions by forest sustainable management. The research of forest tree breeding done by my team, especially the oriented selection and breeding of varieties of larch species for softwood pulp, the corresponding high-effect cultivation techniques and the large-scale extension and application, is a concrete action for the implementation of development of a greener economy and it has helped improve the wood quality and associated biological products to a great extent.

Q: As an expert in silviculture, you have placed particular emphasis on the theory and technology of sustainable forest management (SFM) in China. What are the main challenges in SFM, in your view?

A: There are three main challenges i.e., poverty, obsolete concept and lack of knowledge. This would lead to two consequences, one is the unbalance of rights and benefits among forest stakeholders (forest owners, forest operators, inhabitants in forest, and the public), the other is that the forest's economic, ecological and social benefits can't be taken into account altogether.

Poverty is one of factors for the destruction of forest. Poverty-stricken people or people who totally depend on forest for subsistence are often forest destructors as well as the springheads for illegal logging and unlawful timber trade. Backward knowledge about forest and weak understanding of sustainable development will give rise to an irrational use of forest resources. Lack of forest knowledge also constitutes one of the factors that restrict the sustainable development of forest. On the one hand, modern forest knowledge is not sufficient to hold up the scientific forest management while on the other traditional forest knowledge is often despised or neglected. Sometimes so called "new techniques" are blindly put into application e.g., the abuses of pesticides and chemical fertilizers.

Q: How are these challenges being faced?

A: First of all, the international community should pay continuous close attention to the eradication of poverty, and keep a watchful eye on the conditions of existence for inhabitants and indigenous people in forest regions. In Asia and Oceania, attention should be also given to numerous left-behind elderly, women and children caused by urbanization, whose livelihood depends heavily on forest.

Secondly, forest policies should be directed to balance the relations of rights and benefits among forest stakeholders, to avoid over exploration of forest resources, and to guarantee the forest benefit sharing and equilibrium over generations. For example, policies regarding watershed ecological compensation should be formulated and implemented.

Thirdly, technologies for sustainable forest management should be researched and developed, including multifunctional forest management, remote sensing monitoring and early warning techniques for prevention of forest disasters. Meanwhile great importance should be attached to the collection, filing and use of tradition forest knowledge.

Fourthly, legislation and international cooperation should be strengthened and efforts be made to eliminate illegal logging and illegal timber trade.

The old routine of "forest destruction before forest restoration" is not expected to be followed, the restoration would cost much higher.

Q: How could China's experience and lessons in forestry be helpful for other countries that are seeking to achieve the goal of sustainable forest management?

A: The best forest management practices for sustainable forest management in China incorporates the smart utilization of NTFPs and poverty alleviation, large-scale forest ecological construction programs, ecological compensation policies, reform of forest tenure, demonstration of research and development (RDD), and international cooperation, all of which show a great efficiency. China's grand program for eradication of poverty in 2020 is formulated and is under implementation now, an important part of which is constituted by forestry. It correlates closely with the national sustainable development goals and addressing climate change and will greatly accelerate the realization of sustainable forest management.

Q: What are your hopes and expectations for this IUFRO Regional Congress for Asia and Oceania?

A: Countries in Asia and Oceania is characterized by a highly diversity in economy, culture, science and forest resources, and are confronted with the common problems of climate change and ecological degradation. The Congress is expected to elevate the attention to the forest science of Asia and Oceania from the academic world of international forest science, and to speed up the progress of the forest science of Asia and Oceania, so as to provide assistance to the sustainable development in Asia and Oceania.

Thank you very much!