

Dalbergia sissoo dieback : a common sub-regional problem

Dalbergia sissoo is an important multipurpose tree species in the Bangladesh, India, Nepal, Pakistan and many other countries. Generally, there is a narrow gene base and original seed source/planting material is unknown. The tree is variously grown by governmental organisations, communities, individual farmers and by private owners and generally management appears to be inadequate or non-existent. The tree is mostly grown in single stand species by individual farmers to provide ready cash at time of harvest, starting from twenty years, however, with the increased incidence of dieback., farmers are being discouraged from planting and landuse may consequently be altered.

The cause of dieback may be multi-faceted and primary causes are as yet to be confirmed. Common with all countries is the increased incidence of symptoms occurring with increasing clay content of the soils and with water-logging, both factors which are known to impede the normal growth of the tree and to increase stress. Highest incidence is recorded in planted trees growth on the margins of agriculture land, particularly paddy fields.

Possible pathogens associated with the dieback included a wide range of fungi, including *Fusarium* spp. and *Ganoderma* spp., are strongly indicated as part of the complex but as yet pathogenicity tests have to be confirmed. A complex of insect species have been implicated in later symptoms of the tree dieback but these are likely to be secondary agents unless of course proven to be transmitters of fungal pathogens.

This is a common problem faced by the South Asian countries including Nepal. As serious damage to *sissoo* plantations has occurred worrying the *sissoo* entrepreneurs, scientists from India, Pakistan, Bangladesh and Nepal have gathered in Kathmandu from 25-28 April 2000 to resolve the problem.

Kathmandu Resolution

Whereas the participants of the sub-regional seminar recognises that dieback of *Dalbergia sissoo* has occurred and is further spreading in all the countries of the sub-region with related socio-ecological and economic losses.

Whereas the causes (both biotic and abiotic stresses) and effects of the dieback problem are unsolved, the participants have agreed on the following.

In each country the selected focal institution/ person will co-ordinate to undertake additional studies, analyse the problem in more details, and provide immediate, short and long-term solutions. The focal institutions and individual (s) of the participating countries will communicate and collaborate with other institutions and individuals.

Whereas further resources are required to analyse and resolve the *Sissoo* dieback problem each focal institution/person will seek respective Governmental and donor support for the same.

In order that this problem of *Sissoo* dieback is pursued in a timely fashion, the department of Forest Research and Survey, Ministry of Forests and soil Conservation, Nepal has been unanimously selected to act as Regional Co-ordinator for the network to be established and implemented.

At the end of the Workshop the scientists have however, suggested the *sissoo* entrepreneurs the following:

- plough the soil immediately for better soil-moisture- fertility- aeration regime.
- Create hygienic condition to save the population by immediate removal of effected trees.
- Stop logging and grazing in these plantation areas to allow the plants to restore vigour.
- Stop using artificial fertiliser containing Nitrogen
- Improve drainage in plantations by digging channels, 30 by 15 cm (depth) .

The Department of Forest Research and Survey will inform the Ministry of Forest and Soil Conservation about the outcome of the seminar and will start to take the necessary actions as Regional Co-ordinator. Each participating Country / institution(s) will inform the respective country / Government about the outcome of the seminar and will start taking necessary actions for nomination of focal institutions / persons.