

Issues related to movement of tree germplasm for research purposes

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Good afternoon distinguished COFO delegates

My name is Lex Thomson ... I work for Bioversity International... you may know our Institute by its former names of IPGRI or IBPGR when it was still part of FAO. The Director of CAMCORE, Bill Dvorak, assisted in this presentation.

This afternoon I want to address you, briefly, on some key issues related to movement of tree germplasm, particularly for research purposes, many of which relate to forest health matters.

Why is international movement of research samples of tree germplasm needed?

There are several very good reasons why international movement of tree germplasm, for research, is vital for the well-being of humankind and indeed our fragile planet.

These include:

- Identification of new products and opportunities;
- Tree improvement;
- Re-introduction of species/populations;
- Adaptation to climate change;
- Provide resistance to introduced and new pests and diseases.

New products and opportunities

Firstly, Identification of new products and opportunities

There are thousands of examples of how we have benefited from earlier movements of tree germplasm, both in historic times and especially over the past 50 years.

I would like to highlight the excellent work and catalytic role of the FAO Forestry Department and its Panel of Forest Gene Experts.

I will give two recent examples. One is from the SPRIG project in the South Pacific. This involved the movement of traditionally selected large nut varieties of *Terminalia catappa* from Solomon Islands and Papua New Guinea to benefit of rural peoples living on outer islands of Tonga.

The second example is the movement of *Acacia coelestis* seed by CTFT and CSIRO from Australia to West Africa. This species has tremendous potential for incorporation into new agroforestry systems, such as the Sahel Model Eco farm being developed by ICRISAT in Niger.

Tree Improvement

In order to maximise gains, tree improvement programs need access to diverse genetic materials from throughout the natural range of the species under improvement.

This often requires seed from several or many countries.

I will use the example of mahogany in Fiji. Fiji has a comparative advantage in plantation grown mahogany... It is one of a handful of tropical countries which are free of the mahogany shoot borer or *Hypsipyla* and now has more than 40,000 ha of mahogany plantations.

Until 10 years ago, Fiji's mahogany improvement program was based on selected phenotypes of largely unknown and narrow genetic base.

In 1997, SPRIG, CATIE and others assisted Fiji to trial mahogany from 11 countries from the Americas.

This research has identified germplasm which grows up to 50% more quickly, with stem better form, and with major economic benefits for growers and the national economy of Fiji.

This diverse mahogany germplasm might also be useful to identify more resistant germplasm to endemic diseases such as *Phellinus noxius*, or brown root rot, a potential hazard for 2 generation mahogany plantations.

Re-introduction of species & populations/climate change

International germplasm movement may also be needed for re introduction of extinct species and populations.

For example, CAMCORE and its private sector partners have conserved, ex situ, populations of rare central American pines, now extinct in the wild, but which could be re-introduced in future from conserved overseas populations.

Another example is the recent re-introduction of *Terminalia richi* from Samoa to Niue. It is also worth mentioning that this *Terminalia*, a good timber tree, has extremely high cyclone resistance and may be of value to other tropical regions, such as the Caribbean, Indochina and Madagascar, which are facing increasing frequency of severe tropical cyclones.

Climate change will redistribute current climate regions, often shifting them into neighbouring countries so one promising coping strategy is to move pre-climatically adapted germplasm from neighbouring countries.

Factors that have hampered international movement of tree germplasm in recent years

Two factors have hampered cross-border exchanges of tree germplasm over the past 10 or so years.

Firstly, in the post-CBD era there is oi confusion at national level of how to handle requests for tree germplasm which Ministries need to be involved in the approval processes, Forestry, Environment, Attorney- General compounded by lack of, or confusing national legislation.

Secondly, whilst there is an increased awareness of the risks posed by exotic pests and diseases and invasive alien species, this is often not matched by an enhanced national capacity to deal with such issues.

Facilitating international movement of tree germplasm for research

How then may we facilitate international movement of tree germplasm for research?

For the custodian nations of forest genetic resources we need to have:

- Discussions on Access and Benefit sharing regimes for tree germplasm;

- Development of agreements for germplasm exchange, such as Codes of Conduct and non-binding guidelines, of like-minded institutions;
- These could be considered as interim arrangements leading to development of more standardised Material Transfer Agreements for exchange of tree species germplasm.

On the part of the recipient countries we need to have:

- Better information on pests of quarantine concern and invasive species;
- Good legislative regulations, For example care should be taken when prescribing trade marked insecticides and fungicides as these may go out of production or become banned;
- Quarantine measures should be appropriate., not unduly onerous, and unnecessarily time-consuming or costly, or this might result in illegal smuggling of germplasm With potentially disastrous consequences for introduction of pests and diseases;
- Well-trained quarantine inspection staff (... in this field a little bit of knowledge can be a dangerous thing!).

Conclusion

Our take home message, provided by Bill Dvorak and CAMCORE, is that

“Tree germplasm transfer must not be restricted: Everyone should have the chance to test new genetic material”

THANK YOU!