The Institute of Foresters of Australia

ABN 48 083 197 586

12 March 2009

Committee Secretary
Senate Standing Committee on Environment, Communications and the Arts
PO Box 6100
Parliament House
Canberra ACT 2600

Dear Sir/Madam

Inquiry into the forestry and mining operations on the Tiwi Islands

The Institute of Foresters of Australia (IFA) welcomes the opportunity to provide a submission to the Inquiry.

Our submission is attached.

The Institute would be pleased to make a member available to discuss the submission and any other issues the Committee may wish to raise.

Yours faithfully

J. Adrian O'Loughlin
Executive Director

PO Box 7002 Yarralumla ACT 2600 - Ph: (02) 6281 3992 Fax: (02) 6281 4693
Web Site: http://www.forestry.org.au - Email: ifa@forestry.org.au

Submission to the Senate Inquiry on forestry and mining operations on the Tiwi Islands

The Senate referred this matter to its Standing Committee on Environment, Communications and the Arts on 4 December 2008 and that committee invited a written submission from the Institute of Foresters of Australia (IFA) on 27 January 2009. The Committee indicated a preference for submissions to be provided by Friday, 13 March 2009.

This submission refers only to Terms of Reference a, b, c and d of the Inquiry and then, due to limitations on the availability of information of a commercial-in-confidence nature, addresses only some aspects of these. The IFA addresses the forestry science, environmental, economic and community impacts of existing forestry operations on Melville Island as far as its limited knowledge of these extends. There are no current forestry operations on Bathurst Island to our knowledge.

Introduction

The Institute of Foresters of Australia is a professional body of 1300 foresters, the members of which are engaged in all branches of forest management and conservation in Australia.

The IFA is strongly committed to the principles of sustainable forest management and the processes and practices which translate these principles into outcomes. Through this submission the IFA offers its professional expertise in land development and forest science to the Committee.

The IFA Tropical Forestry Special Interest Group has recently been established to cater for those members with particular professional interest in tropical forest management and conservation in Australia and overseas. In NT and far northern Western Australia the wide-scale commercial practice of tropical forestry as plantations is a recent phenomenon. Current projects in NT include mahogany ventures in the Douglas-Daly area south-west of Darwin and the *Acacia mangium* plantation on Melville Island.

The Additional Information " Forestry on the Tiwi Islands" by Dr Ken Eldridge, Tree Breeding Consultant, published on the Senate Inquiry website describes Dr Eldridge's personal views and observations, partly ascertained during a visit, as part of the IFA Tropical Forestry Special Interest Group, to Melville Island in August 2008. His views are personal and are not necessarily the views of the IFA or the IFA Tropical Forestry Special Interest Group.

IFA Policies

The IFA has a comprehensive suite of forest policies, some of which are relevant to the ToR for this Inquiry. Key statements for IFA policies, which are relevant to this Inquiry, are given below. The full policies may be accessed at http://www.forestry.org.au/ifa/g/g0-ifa.asp

- **Policy 1.4 Timber Production & Biodiversity**

  The IFA considers that the maintenance of biological diversity is an essential component of sustainable native forest management. Biodiversity can be maintained and enhanced in native forests and plantations managed for timber production through the application of science based Codes of Practice, forest management plans and forest certification standards.

- **Policy 2.2 Management of Private Native Forests**

The potential environmental and economic contribution from private native forests is often under-valued by landholders and the community. As forest production from public forests is reduced there will be increasing demands and opportunities for private forests. In most Australian States and Territories there are inappropriate government policies and inadequate institutional and commercial support for the management of private native forests. The IFA considers that private native forests provide important multiple benefits to the community and that improved institutional support, appropriate incentives and payments for environmental services are opportunities to facilitate sustainable management of these forests.

- **Policy 2.3. Plantations in Rural Landscapes**

  The IFA recognises that well planned and managed plantations can generate substantial economic, environmental and social benefits but may also have negative impacts. The IFA advocates the continued development of plantations in rural landscapes providing that this development balances environmental, social and economic impacts. Native forests should not be cleared for plantation establishment where this would compromise regional conservation and catchment management objectives. Plantation development on private land should be assessed against criteria, which also apply to alternative land-uses.

- **Policy 2.4. Clearing of Native Forests for Plantations**

  The IFA supports and encourages:

  - Protection of regionally significant areas of native vegetation;
  - Scientifically based identification and assessment of the conservation value of remnant native vegetation;
  - Conservation of appropriate areas of native vegetation within plantation developments, including riparian zones, steep slopes and conservation corridors;
  - Adherence to appropriate legislative processes governing the clearance of native vegetation.

- **Policy 2.6. Forest Management Planning**

  Forests have multiple and diverse values that need to be integrated into plans incorporating the principles of ecologically sustainable forest management (expressed in the Montreal criteria). Strategic forest management plans guide forest management activities and takes into account the range of forest uses and values. The IFA advocates the development and implementation of strategic and operational management plans on all forest land tenures to guide sustainable forest management and provide for the diverse range of uses and values. Management plans for public owned forests should incorporate community values in the planning process. Private forest management planning should, as a minimum standard, incorporate public values expressed in government policy and regulations.

- **Policy 2.7. Timber Production in Native Forests**

  The harvesting of native forests outside nature reserves is an appropriate long-term forest use where management embodies the principles of ecologically sustainable forest management. The IFA advocates that areas of public and private native forests beyond the National Reserve System be managed to integrate timber production with other forest services while maintaining ecological sustainability and other forest values.

- **Policy 2.8. Forest Regulation and Codes of Practice**

  Codes of Forest Practice are an effective tool for the regulation of forest management, to meet the expectations of the community and to ensure that forest management activities, such as timber harvesting and roading, contribute to the maintenance of forest values. The IFA considers that all significant forest activities should be subject to codes of forest practice, irrespective of land tenure, that are effectively implemented, regularly reviewed and independently audited. The IFA advocates the ongoing development, implementation, auditing and review of Codes of Forest Practice and associated forest regulations.

- **Policy 6.1 Environmental services**

  Forests produce a wide range of non-wood products and services that have been traditionally treated as public goods with no explicit financial value. These include production of clean air, carbon sequestration, ground and surface water management, land rehabilitation, erosion control and biodiversity enhancement. The IFA advocates development of mechanisms to value and integrate of the range of environmental services into forest management plans and proper consideration of these values when land use decisions are made.

- **Policy 8.1. Wood for bioenergy**

  Wood and other biomass are potentially renewable energy sources that can reduce greenhouse gas emissions when used to replace fossil fuel energy. The IFA supports the use of wood from both native forests and plantations, from all land tenures, for biomass energy when sourced from sustainably managed forests.

- **Policy 8.2. Wood chips from Australian Forests**

  Woodchips are produced from both native and planted forests in Australia, providing a financial return on trees or parts of trees and valuable fibre resources for paper and reconstituted wood products. Where markets for woodchips exist essential silvicultural operations can be implemented and a more complete utilisation of harvested trees can occur. The IFA encourages the use of woodchips from plantations or native forests, on private and public land, managed according to the principles of sustainable forest management, and implemented in accordance with relevant codes of practice.

The IFA considers that all forest types provide important multiple benefits to the community and that improved institutional support and appropriate incentives and payments for environmental services can facilitate their sustainable management.

The IFA advocates that areas of public and private native forests beyond the National Reserve System be managed to integrate timber production with other forest services, while maintaining ecological sustainability and other forest values.

Indigenous forestry partnerships

Northern Australia has a rich diversity of natural landscapes and a significant indigenous population. In contrast to the southern parts of Australia only a small proportion of the landscape in the Northern Territory and Kimberley has been cleared for urban development, mining and agriculture.

The National Indigenous Forestry Strategy (2005) proposed "*that Indigenous communities participate in building competitive and ecologically sustainable forest industries. Participation in these industries can help communities in many parts of Australia become more economically independent, and interact with the wider community, while staying connected to their cultural values*."

The opportunities for improved economic and social outcomes for the Tiwi people are limited. They are isolated from major markets and tourist routes. Some socio-economic benefits may be derived from native forest management, especially where forest products can be harvested and processed locally. Other viable development options would include mining, agriculture or plantation forestry.

Of these economic development options, plantation forestry would have the least impact on the natural environment and cultural values associated with the land, provided it was done at a scale that had minimal impact on natural forest values but was sufficient to be economically viable.

The IFA notes that the Tiwi Forestry project is described in the National Indigenous Forest Strategy (2005) endorsed by DAFF, as creating "*a sustainable and profitable business partnership model based on the development of an integrated forest products industry on the Tiwi Islands*."

On the collapse of Sylvatech Ltd, Great Southern has taken on the project and the associated economic and social commitment to the Tiwi people.

Melville Island forestry history

Forestry operations on the Tiwi Islands date back to 1895, with three sawmills operating on Melville Island between 1895 and 1916 processing cypress (*Callitris intratropica).* In 1921 forestry was identified as a potential industry for the region, because it was considered more productive than mainland areas, with higher rainfall, better soils and a lower level of termite attack. In 1960 the Australian government started to establish plantations of *Callitris spp.,* later switching to *Pinus caribaea* as the cypress did not impress. Plantation development was continued by the Northern Territory Government after self-government (1978) with the active involvement of Tiwi people, but the government forestry activity stopped in 1986, and the land deeded to the Tiwi people. These two species were reported as planted in blocks around Melville Island, centred on Pickataramor.

Over the next 10 years the Tiwi Land Council (TLC) made several attempts to attract joint venture partners to develop a large scale forest resource on the islands based on the original plantations, but it was not until 1996 that the TLC settled an agreement with Sylvatech and in 1998 executed land options in favour of Sylvatech. The development of *Acacia mangium* plantations then commenced. This entailed the replacement of areas of native savannah woodland and tall woodland on deep red laterite soils with short-rotation *A. mangium* plantations. *A. mangium* is a tropical wattle, native to northern Queensland and to Papua New Guinea and its wood is rated highly as pulpwood on international markets.

Sylvatech had developed 5000 ha by 2004 with a bilateral Commonwealth and NT government agreement. The joint proponents of this Agreement were the Tiwi Land Council and Sylvatech. There was Government approval for the project as long as there was commitment by the proponents to eleven comprehensive conditions for Project implementation to a level of 26,000 hectares in the initial stage, and ultimately up to 100,000 ha of plantation.

In 2005, cyclone Ingrid damaged 4000 of the 5200 ha planted to that date. All of the area was replanted by GSP which had negotiated to purchase the development area just before the cyclone. The first 5200 ha were developed under the *Environment Protection (Impact of Proposals) Act* (EPIP). The subsequent development to 26,000 ha was done under the Commonwealth Environment Protection and Biodiversity Conservation Act (EPBC). As previously stated the IFA supports such developments where conservation outcomes have been duly considered in the planning and implementation process and they are in accordance with government policy.

IFA understanding of GSP Involvement in Melville Island Plantation Project

On Monday 25 August 2008 sixteen members of the IFA Tropical Forestry Special Interest Group visited Melville Island as part of a wider tour of plantation developments in Northern Territory and Western Australia. IFA was informed of the following facts:

- GSP operate a substantial permanent headquarters and training centre on Melville Island at Maxwell Creek, as well as a seedling nursery;
- The forestry operation is conducted under stringent environmental controls and there are checks built into the management process by GSP to ensure that developments meet the requirements of the landowner, the company and the various tiers of government;
- GSP employ 29 Tiwi Islanders. This complement includes four graduate employees, ten Tiwi Marine and Land Rangers, two Tiwi Environment officers, five Tiwi apprentices in the GSP-sponsored Forestry Apprentice Program and six Tiwi contractors all working full time on Company and land management roles;
- The ten Marine and Land managers work to control feral species of plants, amphibians (cane toads), buffalo and pigs;
- The forestry operations have significantly improved island infrastructure including formed roads, airstrips, water management and accommodation;
- GSP have a highly qualified management team in the Northern Territory to undertake the planning, supervise operations, and to conduct research;
- This project is the largest commercial forestry venture in Australia based on a joint venture partnership between indigenous land-owners and investors. GSP is in effect a contractor to the Tiwi Land Council and can do nothing without their approval.

The group visited the Kilu Impini Plantation where plantation design, establishment techniques, growth rates, rotation length, and maintenance issues were discussed. At Arrimu Plantation discussion focussed on clearing of savannah and tall woodland, plantation design, site selection within the 11 Federally-stipulated environmental constraints, silvicultural and management research and environmental projects - especially monitoring of the threatened Red Goshawk.

The forestry program is a joint venture between the Tiwi people and GSP, the IFA group expected to be able to discuss with Tiwi representatives their perceptions of the financial and social value to them of the forestry venture, however the IFA visit coincided with a major funeral on Bathurst Island so all Tiwi Land Council members were absent. The IFA was informed that GSL was the largest private sector employer on the Tiwi Islands and Tiwi Islanders represented 50% of the project's full time workforce. It was made clear that GSP's contribution to improved Tiwi livelihoods was considerable and continuing. This social support included a bus service, all-weather airstrip, support for the school, skilled apprenticeship schemes for Tiwi youth and other benefits.

Planning and environmental requirements

Regardless of the economic and social merits of the project, the IFA understands that there is a rigorous process for planning and development of plantation projects on Melville Island as described below.

Proposed plantation areas are subject to evaluation for soil suitability, slope and erosion potential, rare and endangered flora and fauna surveys, future fire

management, harvesting requirement, roading needs, rent assessment, community consultation and various environmental factors as stipulated in guidelines by the Federal Government.

After this evaluation the formal authority to proceed is signed off by parties on a Land Use Request form. This is signed by the GSP General Manager, the Tiwi Land Council and by a trustee of the traditional landowner group (there are eight groups on Bathurst and Melville Islands). Rent is independently determined and reviewed by the Federal government valuer. Subsequently, a Development Block Instruction and Map is signed off by the Environment Manager, the GSP General Manager and the Assistant General Manager (Operations).

Prior to the commencement of any harvesting or clearing of the block, an initial 20 metre wide boundary is cleared with the use of a Global Positioning System (GPS) to ensure that operations are on the agreed area. The strict environmental controls governing operations include various buffers such as100 m from rivers, 50 m from creeks and drainage lines, and designated conservation areas to help ensure threatened species, such as raptor birds, and small marsupials, such as the Dunnart, are protected. All plans and records of consultations are forwarded to the Department of Environment, Water, Heritage and Arts (DEWHA) for final approval.

Independent evaluation of the implementation has largely been effective as evidenced by recent litigation over breaches of environmental aspects of this process. The IFA would advocate closer collaboration between regulatory authorities and plantation developers, with regular on-ground inspections, to ensure a common understanding of legal and environmental requirements. The Commonwealth and NT governments must assume responsibility for these matters.

Silviculture

The silvicultural management of *Acacia mangium* generally follows the pattern of standard commercial hardwood plantations with additional processes such as tree-form pruning to improve stem form and enhance efficiency at the time of harvest.

Sites are cleared, salvageable logs are harvested and exported to generate revenue. Remaining debris is windrowed and burnt – this material may present opportunity for use in wood fired power generation. The soil is ripped and mounded, and pre-plant herbicides sprayed to control weeds and grass. Following this, the sites are planted at a stocking of 1,100 stems per hectare and the trees fertilised.

Form-pruning is done in the first year. Until canopy closure, usually at 2.5 years of age, the growth of woody weeds, herbs and grass is controlled with herbicide to reduce competition with the young trees. Firebreaks are also maintained with herbicide sprays. Based on foliar sampling, an application of granular fertiliser and liquid fertiliser is applied at mid-rotation age. The fertiliser is NPK with copper (Cu) and zinc (Zn) trace elements.

The challenge for plantation developers is to find the right soil with best water regimes, keep up the soil nutrient status and grow a profitable tree crop to sell for the benefit of landowners and investors.

Soils in Melville Island land systems are deeply leached laterites. The best soils on are lateritic profiles formed on Tertiary sandstones and Cretaceous siltstones. These are old soils and not particularly fertile subject to high rainfall and reasonable moisture holding capacity, which is essential to maintain growth and tree health through the dry season. The monsoons bring 1500 mm, with a further 520 mm of rain from the localised convection storms that occur every day on some part of the Island during the build-up to the wet season. These storms break the seasonal drought.

Due to the intensity of the heavy monsoonal rains only sites with slopes less than 5% are prepared. The majority of sites (90%) have a slope between 0 and 4%.

There are also late dry season storms that are often windy, electrical storms with less rainfall and provide additional nitrogen inputs.

The trees experience some foliage browsing by insects but predators keep the defoliators at bay. Green ants prosper under the closed canopy and they harvest defoliating insect eggs and reduce their impact. Termites are present but do little harm to the majority of trees, and recycle the nutrients in the deep ground litter of fallen leaves and twigs.

There is a fungal pathogen, *Kirramyces*, which causes minor defoliation. Mangium is also a nitrogen fixer and the deep litter layer tends to conserve the soil moisture.

The plantation estate on Melville Island

The *Acacia mangium* rotation is set at about 8-10 years with an anticipated height at that age of 20 m. The rotation age is determined by contractual arrangements in the Management Investment Scheme.

Acacia mangium is a native of northern Queensland and Papua New Guinea. It has only recently been "domesticated" for use in commercial plantations in south-east Asia, Africa and northern Australia. It is regarded as having poor stem form. These plantations have been established using available seed which has been collected from native stands.

CSIRO, Queensland DPI Forestry and Indonesia have *A. mangium* tree-form improvement programs. GSP is cooperating with them and has established trials of some seed-lots on Melville Island. It is expected that as tree breeding programs advance then seed will be available which will improve the form and productivity of future plantation developments. This may also provide future employment, technical and economic development opportunities for Tiwi people by participation in seed orchard management.

Further training, employment and infrastructure development will occur as the Melville Island plantations are harvested. There will also be opportunities for consideration of alternative plantation options in the second and subsequent rotations on this converted land. This could include use of other species, additional forest products for use other than pulpwood or biofuel, including solid wood products such as sawn timber and veneer.

Members of the IFA Tropical Forest Special Interest Group questioned the use of *Acacia mangium* as a plantation species on Melville Island, suggesting other species may perform better on the laterite soils. Some members were critical of the clearing of native forest for plantation establishment, but recognised that due to little earlier clearing of land on Melville Island, a sufficient area for an economically viable plantation estate would inevitably require the clearing of native forest. Elsewhere in Australia, much of the land had been cleared during the early European settlement phase for agriculture and grazing and a small proportion is now being used for plantation establishment.

Development policy

Melville Island has a land area of 5,786 square kilometres while the current plantation area is 26,000 ha of Mangium and 2,200 ha of Pine, together, approximately 4.9% of the total area.. GSP has decided to curtail earlier plans for a much larger plantation and limit Mangium establishment to a ceiling of 30,000 ha, which represents 5.2% of the land area of the island. This scale of development is appropriate when considered against other parts of Australia, such as Tasmania where native forest

conversion has been limited to 5% of pre-1990 areas (Tasmania Community Forest Agreement 2006).

The IFA is of the opinion that as long as the Northern Territory establishes and retains a comprehensive, adequate and representative (CAR) reserve system for forests which ensures conservation of ecosystems to national and international standards, there is no reason why the Northern Territory or Australian government should deny any Australians, including Tiwi on Melville Island, the opportunity to derive a sustainable living from farming (including forest plantations) on areas cleared specifically for the purpose. Regulations and mandatory Codes of Practice tied to planning instruments should underpin development while protecting conservation values.

Forestry in the Territory would benefit from the development of a Forest Strategy with a strong legally enforceable Code of Practice as part of that overall strategy.

Conservative management founded on principles of sustainability can ensure the livelihoods for all who are dependent on the utilisation of resources. This includes forest resources, both native forest and intensive plantations. Approximately 45% of land in the Northern Territory is in the hands of indigenous people. There is a need for a secure system of trusteeship, education and training for these land owners so that managed forests can be part of a pathway to independent living and provide an opportunity to move away from welfare dependency and despondency. It should also be recognised that traditional landowners have developed appropriate management practices over thousands of years and their stewardship of traditional lands should be recognised.

The recent plantation industry developments on Melville Island have had benefits for Tiwi. The all weather airstrips now allow for more reliable medi-vacs to Darwin when required. The levels of employment have injected more money into the community and the interest in school education has increased. GSP has provided full accommodation facilities for all employees at Maxwell Creek. The Melville Island development is the largest commercial forestry development which has been established on indigenous land. Although there are tourism and mining ventures on the Tiwi Islands, the forestry venture is regarded as a successful example of a joint land use venture from which most Tiwi people will gain, both financially and socially.

Moving forward

Forestry in the Northern Territory would benefit from more orderly and sustainable development if there was a stronger policy framework. There needs to be a more systematic approach to identification of areas suitable for development, native forest silviculture appropriate to the forest types, CAR Reserve systems and the development and operation of a Code of Forest Practice.

Despite the clear potential for rapid development of a forestry industry in the Northern Territory, there has long been and continues to be, a paucity of public investment in forest research, education and administration.

Education will be a key driver of sound forestry development for the Tiwi people and other indigenous communities in Northern Territory. The long-term sustainability of the Melville Island joint venture depends largely on the development of technical skills, managerial expertise and financial administration within the Tiwi people. GSP clearly recognises the need for further technical and business education, and has adopted many measures which aim to give that effect. It is obvious that such education should be available to all indigenous peoples of the Territory, and the NT Government has initiated numerous programmes to foster this. The challenge is huge and requires a concerted application of resources. It would appear however, that on Melville Island, skill-based training and broader managerial and administrative

education is largely in the hands of GSP. GSP has tried to respond to the need, but it is suggested that the scale of needs of the Tiwi people demand a greater input from the Australian and Northern Territory government.

It is recommended that the Northern Territory Government:

1. develop a Northern Territory Forestry Strategy for the development of sustainable forest industries, identifying strategically important forests and key opportunities for plantations and native forest management. This strategy should be complimentary to the National Forest Policy Statement, which is currently under review.
2. determine the institutional and regulatory strengthening required to oversee these developments
3. in consultation with the Tiwi people, permanently reserve representative areas of major ecosystems on the Tiwi Islands from development, with other areas continuing to be available for development under the control of and for the benefit of Tiwi landowners.

It is further recommended that a Northern Territory Forestry Strategy would include the:

i. development of a comprehensive, adequate and representative (CAR) reserve system for the NT;
ii. development and application of a legally-enforceable Code of Forest Practice;
iii. review of existing and needed levels of research by government and private industry to support forest industry development in the NT;
iv. encourage partnerships between indigenous communities, private and public sector businesses to encourage environmentally sustainable and viable economic developments which directly benefit and involve the community;
v. assessment of the level of support needed to provide skill-based, financial and business management training for indigenous peoples of the NT.

Dr Peter Volker FIFA RPF
President
Institute of Foresters of Australia