#### Asia-Pacific Forest Genetic Resources



# CONSERVATION AND SUSTAINABLE UTILIZATION OF FOREST GENETIC RESOURCES IN ASIA AND THE PACIFIC



(An ITTO Funded Project)

#### **THAILAND**

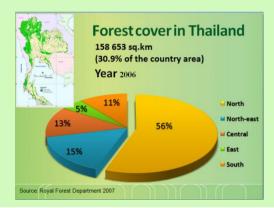
### **Current status & challenges**

Current (2006) forest area is estimated at 158 652.59 sq. km or 30.92% of the country's land area.

*In situ* conservation – national parks and wildlife sanctuaries, forest parks, non-hunting area, and bioshere reserve.

**Ex situ conservation** – plantation stands, genebanks, clone banks, gene conservation plots, botanical gardens and arboreta, tree improvement plots, clone banks, progeny tests, provenance trials, clonal tests and seed orchards with more than 30 species. The main species are *Tectona grandis*, *Pinus* spp., *Eucalyptus* and *Acacia*.

#### **Challenges**



Update FGR status including finding out better germplasm

Extensively support better germplasm to tree farmers Establish network/partnership between stakeholders Share knowledge and germplasm within regional networks



Plus tree selection (<u>Tectona grandis</u>)



Seed orchard of Acacia mangium



Progeny test of <u>Eucalyptus urophylla</u>

# Number of species Flora: 15,000 (5.56% found in the world) Fern: 633 Orchid:>1,000 Fungi: > 3,000 Medicinal Plant: >1,000 Fauna: 1,408,500 (2.6-10% found in the world) Mammals: 292 Birds: 962 Reptiles: 318 Amphibians: 123 Fresh Water Fishes 606 Marine Fishes 1,672 Source: Biodiversity-based Economy Development Office, 2008



*In situ* in the form of national park



## Tree Improvement

\*Indigenous Tree Species:
Tectona grandis
Dalbergia cochinchinensis
Aquilaria crassna
Chukrasia spp.
Pterocarpus marcocarpus
Azadirachta indica
Casuarina equisetifolia
Gluta usitata

Phyllanthus emblica



Exotic Tree Species

 Eucalyptus spp.
 Acacia spp.
 Casuarina junhuhniana
 Pinus caribaea



Seed orchard of Teak (Tectona grandis)



# **National priorities**

PRIORITY FGR CONSERVATION ACTIONS FOR INDIGENIUS TREE SPECIES

Priority&Scientific name	Research needs			0.0000000000000000000000000000000000000	In situ conservation Ex situ conservatio				
	Taconomy	Genetic process & variation	Distrivytion	Species Conservatio n Strategy	Current	Additional site (s)		Additiona l stands	
TOP PRIORITY									
Afzelia xylocarpa Craib.		3	3	3		1(S)	<b>A</b>	1	
Dinterocarpus alatus Roxb.		3*	3	3			<b>A</b>	1	
Hopea odorata Roxb.		3	3	3			<b>A</b>	1	
Pierocarpus macrocarpus Kurz.		3+	3	3*			<b>A A</b>	1	
Tectona grandis Linn.		3+	2	+		- 11	<b>A</b>	-1	
(VERY HIGH PRIORITY)									
Alstonia scholaris (L.)R.Br.		2	2	2			<b>A</b>	2	
Aquilaria crassna Pierre ex Lec.		2	3	2	<b>A A</b>			1	
Dalhergia cochinchinensis Pierre.		2+	3	2*	<b>A A</b>		<b>A</b>	I	
Dalbergia oliveri Gemble.		2	3	2	<b>A A</b>		<b>A</b>	1	
Intsia palembanica Mig.		2	2	2				2	
Mangifera (wild species)	1	2	3	2				2	
Millettia kangensis Craib.		2	3	2	<b>A</b>	2(N)		2	
Pinus merkusii Jungn &De Vriese.		1+	1+	+		2(NE)	<b>A A</b>	2	
Wrightia tomentosa Roem, & Schult.		2	2	2		-()		2	
Xvlia xvlocarna var. kerrii Craib& Hutch.		2	2	2			<b>A A</b>	2	
OTHER PRIORITY		-							
Azadirachta excelsa (Jack) Jacobs		i i	1	ï	<b>A A</b>			3	
Chukrasia tabularis A.Juss	2	1*	i	1*	AAA		<b>A</b>	3	
	<del></del>	1+	1	1	<b>AA</b>	2(S)		3	
Cotylelobium melanoxylon Pierre.	_	1	i	-:-	AAA	2(0)		3	
Dinterocarnus tuberculatus Roxb.	_	i i	1	1		2(S)		3	
Durio mansoni Bakh.		1	1	1	44	2(C,E)		3	
Fagraea fragrans Roxb.	+	1+	1	1		2(C,E)	_	3	
Gmelina arborea Roxb.	+	1	1	1	***	2(NE,E,W)	_	3	
Holootelea integrifolia (Roxb.) Planch.	_	1	1	1		2(W,C)		3	
Hopea ferrea Pierre.		1	1	1				3	
Manglietia Garretti Craib.	_	_	_	_	<b>A A</b>	2(W,C)		_	
Mansonia gagei Drumm.		1	1	- 1	<b>A A</b>			3	
Melia azedarach Linn.		1	1		<b>A A A</b>			3	
Melientha suavis Pierre.	+	1	1	1	<b>A A A</b>	0(11)		3	
Parashorea stellata Kurz.	+	1	1	- 1	<b>A A</b>	2(E)	_	3	
Parkia speciosa Hassk.		1	1	1	<b>A A A</b>	2(C)	<b>-</b>	3	
Pinus kesiya Royle ex Gordon.		1+	1+	1	<b>A A A</b>	2/2	<b>A</b>	3	
Shorea henryana Pierre.		- 1	1	- 1	<b>A</b>	2(S,E,W)		3	
Shorea roxburghii G.Don.		- 1	1	1		2(C,E,W)	_	3	
Tetrameles nudiflora R.Br.		1	1	8				3	
Toona ciliata M.Roem.	*	1	1	1		2(C, W)		3	

Key: 3 = Top priority - to be undertaken within the next three ye 2 = High piority - to undertaken within the next five years

- 1 = Medium priority to be undertaken within the next ten years
- $\blacktriangle \blacktriangle = \text{very well conserved}$   $\blacktriangle = \text{well conserved}$   $\blacktriangle = \text{partly conserved}$  NE = north-east, N = north, C = central, E = east, W = west, S = south/peninsula

Target to increase forest cover to 40% of land area: protected forests for nature conservation, recreation and environmental protection (25%), and economic forests for production of timber and non-timber goods (15%).



Forest Genetic Resources Conservation and Management Programme (FORGENMAP 2002) formulated several priority actions for the conservation of FGR of indigenous tree species in Thailand, for example studying the status of in situ and ex situ conservation, strategies of FGR conservation, and research needs regarding some of the priority species.

# Policy and institutional support

#### **Thailand National Forestry Policy**

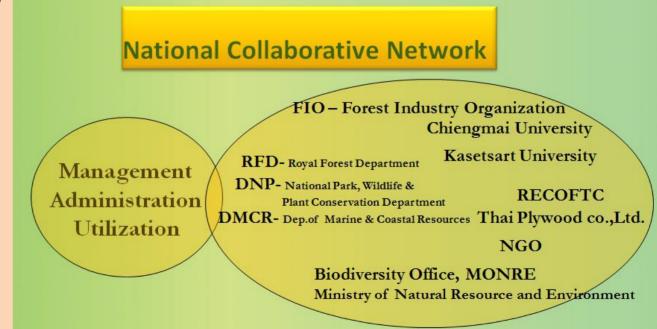
- Establish long term guidelines for environmental protection, and harmonized utilization of forest resources and other natural resources
- 2. Promote role and responsibility sharing among various government agencies and the private sector
- Increase public and private sectors participation in forest management and reforestation
- 4. Improve efficiency in timber production and utilization
- 5. Conserve and protect natural environment
- 6. Raise public awareness and instil positive attitude
- 7. Support efficient forest resources conservation and utilization
- 8. Promote wood energy through energy plantations
- 9. No other land use permitted on steep slope of 35% or more
- 10. Established guidelines to tackle shifting agriculture, forest fires, forest clearing by the hill tribe minorities, etc.

The Thai Royal Forest Department and several universities and other bodies such as Kasetsart University (KU), Forest Research Centre of KU, Chiang Mai University, Khon Kaen University, the Social Research Institute of Chulalongkorn University, Mahidol University. the Forest Industry Organization, Thai Cement Company Limited, Phoenix Pulp and Paper Company Limited, and the Kitti Plantation Company Limited, are actively pursuing these policies to achieve the desired targets:

#### Summary of major stakeholders involving in FGR in Thailand

	Name of the Organization		anagemen	Admini	Utiliza-	
			In Situ Area	Molecula rmarkers	stration	tion
	Royal Forest Department- RFD	✓	$\checkmark$	-	-	-
	National Park, Wildlife and Plant Conservation Department- DNP	-	$\checkmark$	$\checkmark$	$\checkmark$	-
	Department of Marine and Coastal Resources- DMCR	$\checkmark$	$\checkmark$	-	-	$\checkmark$
	Faculty of Forestry, Kasetsart University	$\checkmark$	-	$\checkmark$	-	$\checkmark$
	Forest Restoration Research Unit, Chiangmai University	-	$\checkmark$	$\checkmark$	-	$\checkmark$
	Thai Plywood co., Ltd.	$\checkmark$	$\checkmark$	-	$\checkmark$	$\checkmark$
	Regional Community Forest Training Center for Asia and the Pacific- RECOFTC	-	$\checkmark$	-	-	$\checkmark$
	Non Government Organization- Community leaders in Northeast & South	-	-	-	-	$\checkmark$
	Biodiversity Office, Ministry of Natural Resource and Environment	-	-	-	$\checkmark$	-

Source: RFD (2008)



# **National Focal Point**

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