

Sustainable Management of Mangrove Ecosystems

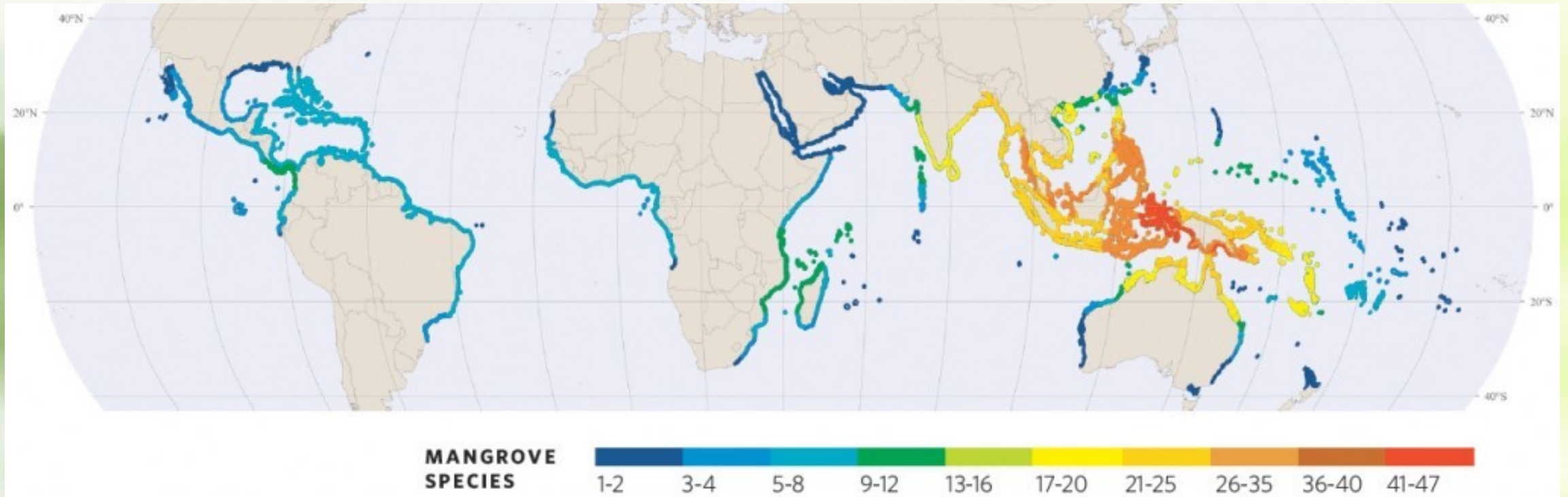
Professor Sanit Aksornkoae, Ph.D.

President,

International Society for Mangrove Ecosystems



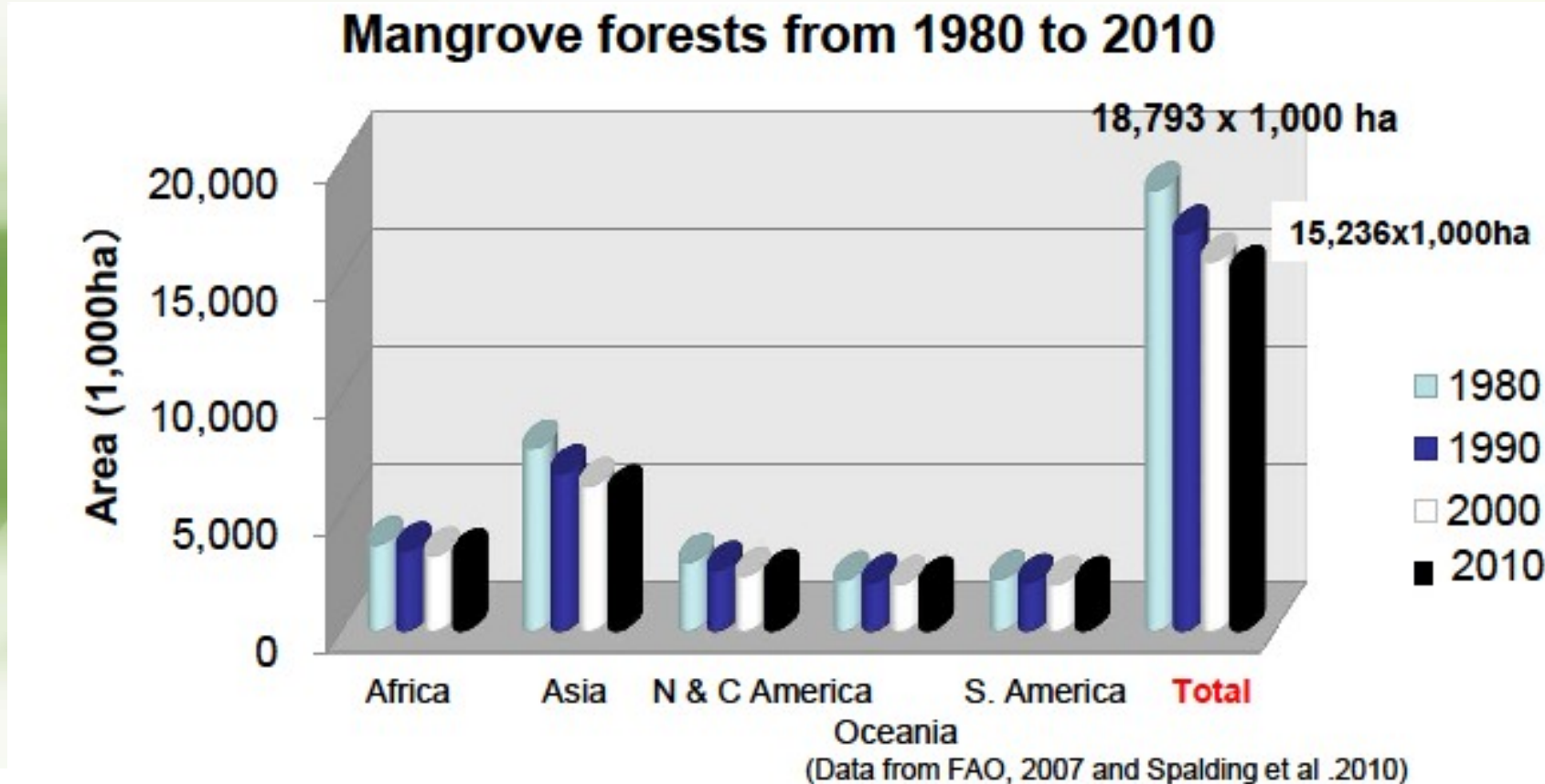
Current Status of Mangroves Worldwide



The Indo-West Pacific and Atlantic East Pacific Regions have 62 and 12 mangrove species and hybrids, respectively.

The global centre of mangrove species is in Southeast Asia where the highest diversity (41-47 species) occurs in Indonesia, Malaysia and the Philippines

Current Status of Mangroves Worldwide



The loss of mangroves worldwide is considerable and continuing at rate of ~1% yearly, which is 3 to 5 times higher than the overall global forest loss.

Criteria Considerations for Sustainable Management of Mangrove Ecosystems

- Values of mangroves
- Benefits of maintaining mangroves
- Threats to mangroves
- Structure and functioning of mangroves
- National policies on mangroves



Values of Mangroves: Flora



Values of Mangroves: Fauna

Common Fishes in Mangroves

Total fishes in Mangrove about 72 Species

Common Shrimps in Mangroves

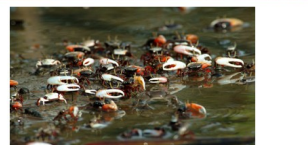
Total shrimps in mangrove about 15 species

Common Crabs in Mangroves

Total crabs in mangrove about 30 species

Common Molluscs in Mangroves

Total molluscs in mangrove about 25 species



Benefits of Maintaining Mangrove Ecosystems



ปริมาณดูดซับคาร์บอนไดออกไซด์สีน้ำเงิน
(Blue carbon) ภาคทะเล

การดูดซับคาร์บอนไดออกไซด์ ~ 106 ล้านตันต่อปี

This block contains a collage of images. At the top left is a small aerial view of a mangrove waterway. Below it are two rows of mangrove plants: the top row shows green, upright stems, and the bottom row shows a dense thicket of colorful mangrove flowers in shades of red, orange, and yellow. To the right is a map of Thailand with a yellow highlight on the southern coastal region, labeled 'พื้นที่ป่าชายเลน' (Mangrove forest area). Further right is a photograph of a mangrove wetland with shallow water and dense vegetation. At the bottom right is a close-up of a mangrove flower with bright yellow and red petals.



Benefits of Maintaining Mangrove Ecosystems



Photos by J.E. Ong

Mangroves are home to a great variety of birds, both resident and migratory

Threats to Mangroves

Harbor and other development



**Oil Palm
Encroachment**



Resettlements



Shrimp farms

Threats to Mangroves

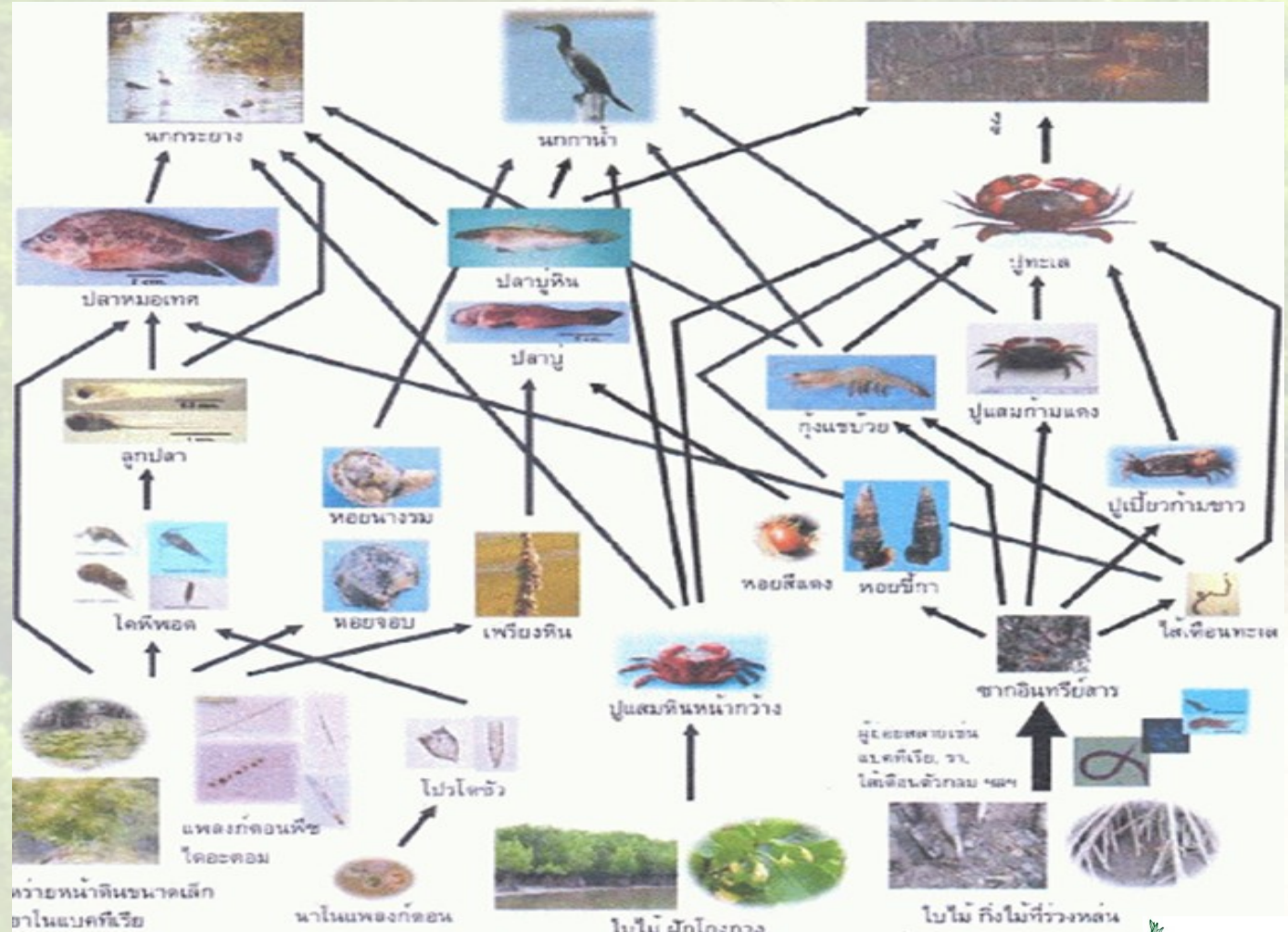


Severe coastal erosion at Samut Prakan, Thailand



Banda Aceh, Indonesia, after the 2004 Indian Ocean tsunami

Structure and Functioning of Mangrove Ecosystems



Structure and Functioning of Mangrove Ecosystems



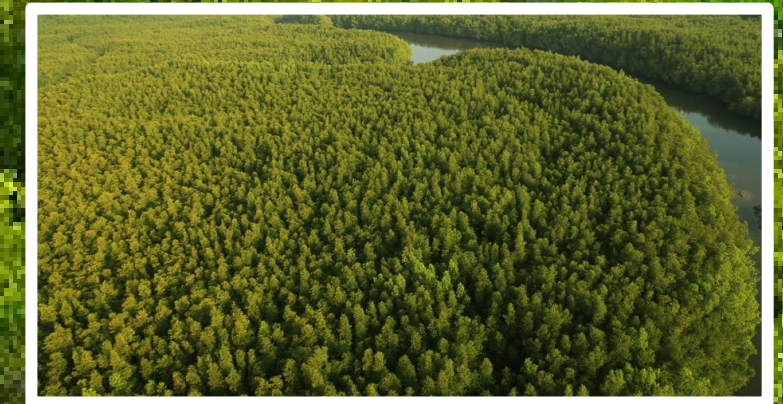
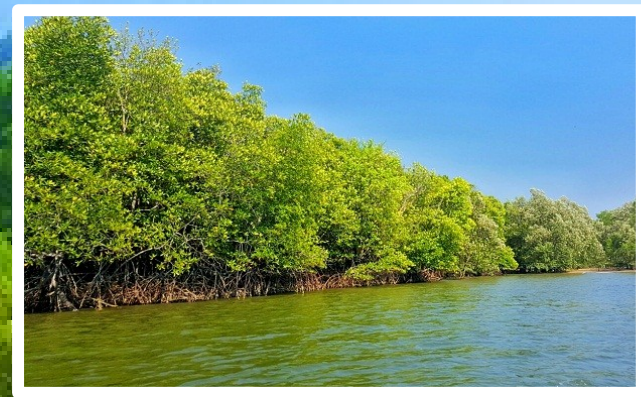
Mangroves are of different forest types with genera having different rooting systems and propagules

National Policies on Mangroves

- Protection and conservation of existing mangroves
- Increasing mangrove areas by rehabilitation
- Wise use of mangrove resources
- Public participation in mangrove management



Protection and Conservation of Existing Mangroves



Protection and Conservation of Existing Mangroves

Examples of totally protected mangroves of international significance in S.E. Asia:

- Ranong Biosphere Reserve (30,000 ha) in Thailand
- Can Gio Mangrove Biosphere Reserve (31,800 ha) in Viet Nam
- Lower Kinabatangan-Segama Wetlands Ramsar Site (78,800 ha) in Sabah, Malaysia



Increasing Mangrove Areas by Rehabilitation



Mangrove Plantation in Oman



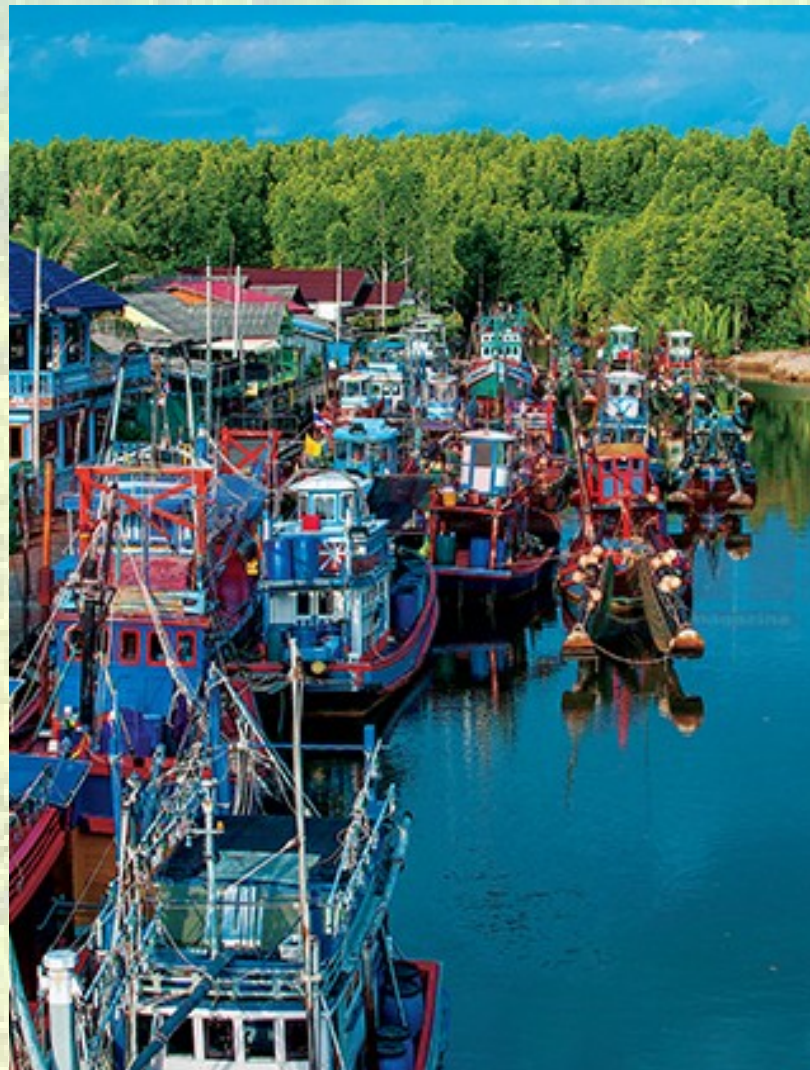
Mangrove Plantation in India



Mangrove Plantation in Thailand



Wise Use of Mangrove Resources



Wise Use of Mangrove Resources



Wood carving



Fodder



Weaving

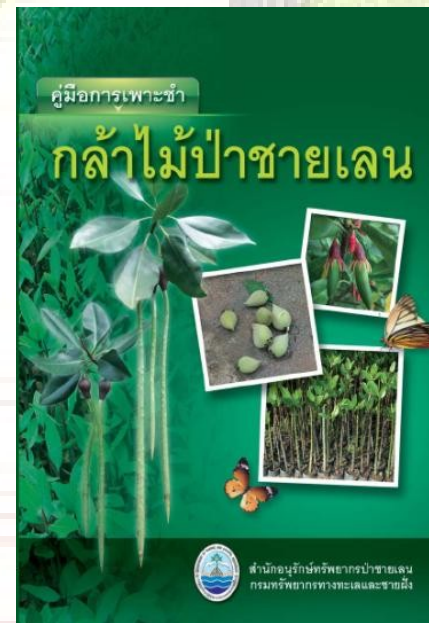
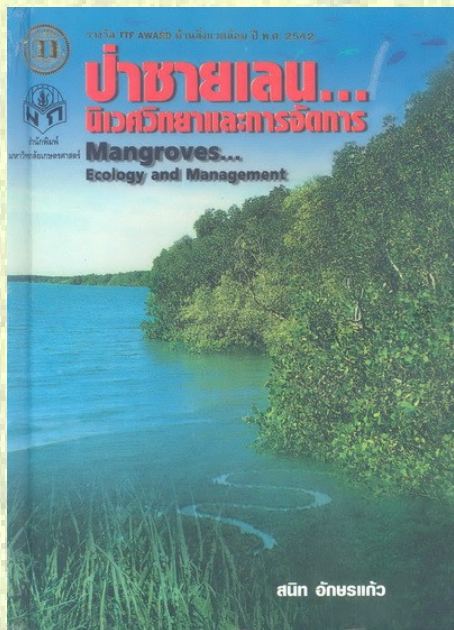


Dyeing



Tapping *Nypa* sap for sugar and wine making

Public Participation in Mangrove Management



Public Participation in Mangrove Management



Planting of mangroves on atolls
by school children in Kiribati



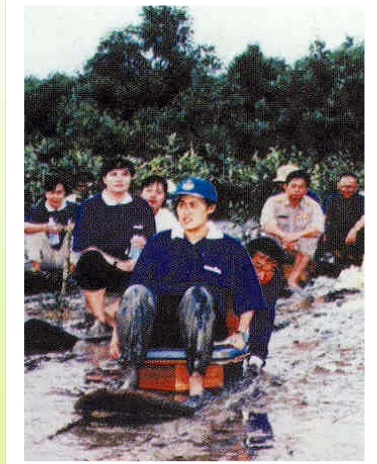
Friendship planting of mangroves in Sabah,
Malaysia, by university students from Japan
and Sabah

Key Indicators of Sustainable Mangrove Management

At the country level:

- Good governance and law enforcement
- Management of mangroves based on strategic plans
- Active restoration of degraded mangroves
- Establishment of totally protected mangroves
- Curtailing of conversional use and mangrove loss
- Capacity building in mangrove management and conservation
- Participation by all stakeholders including private sectors

Key Success in Thailand



Key Success in Thailand

In 1998, the Cabinet of Thailand revised the 1987 national policy and management practices for mangrove forests. In the conservation zone, any utilization that leads to the loss of the mangrove forest is prohibited. In the development zone, degraded mangrove areas are rehabilitated and utilization activities are strictly controlled.

The Sirindhorn International Environmental Park in Cha-Am, Phetchaburi Province in Thailand, highlights the importance of mangrove conservation through training and research, among its many activities.

An aerial photograph of a mangrove forest. The foreground and middle ground are dominated by dense, green mangrove trees. A winding, light-colored waterway or canal cuts through the forest, creating a complex network of channels and small islands. In the background, the water opens up to a larger body of water, where several large, dark, rounded islands or hills are visible under a clear sky. The overall scene is a lush, natural landscape.

**Thank you for
your attention**