Community-based reforestation of Jempang Lake catchment in East Kalimantan, Indonesia

To be presented at the workshop on "Reforestation, Biofuel & Culture, Landscape & Lakes" at the 12TH INTERNATIONAL LIVING LAKES CONFERENCE "LINKING CULTURAL LANDSCAPE VALUES TO LAKE PROTECTION"

23 – 26 September 2008, Lake Trasimeno, Italy

Ir. Budiono
Conservation Foundation for
Rare AquaticSpecies of Indonesia (YK-RASI)
E-mail: yk-rasi@samarinda.org
http://www.geocities.com/yayasan_konservasi_rasi

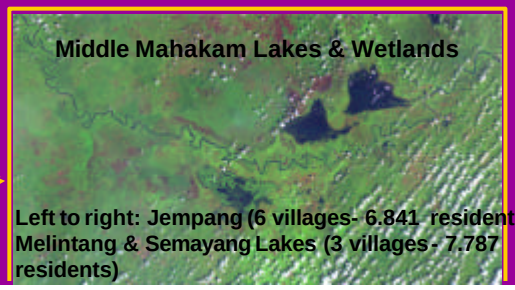
Yayasan Konservasi RASI 2000:

- Mission: Promoting sustainable use of natural resources to enhance human livelihoods, protect biodiversity, safeguard a healthy ecosystem and human environment with particular reference to aquatic (related) environments

The Middle Mahakam Lakes & Wetlands

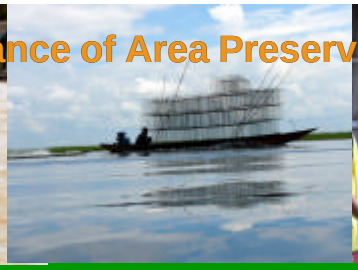
- Located in East Kalimantan (Sundaland ecoregion) connected with the Mahakam River, Indonesia
- Mahakam River catchment area – 9.700.000 ha; length 910 km (size 77.095, 460 km2); Lake catchment area minus Mahakam River – 810.000 ha;
- Jempang lake (15,000 ha), Melintang lake (11,000 ha) and Semayang lake (13,000 ha)
- Maximum depth is c. 6-7 m, annual fluctuations can reach more than 6 m
- Annual rainfall 2,100-2,400 mm. Temp = <34 ° C and >22 ° C. Annual humidity = 85%.


East Kalimantan, Indonesia

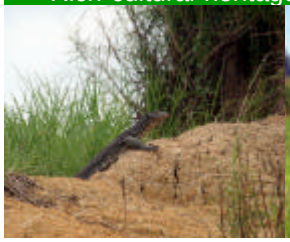
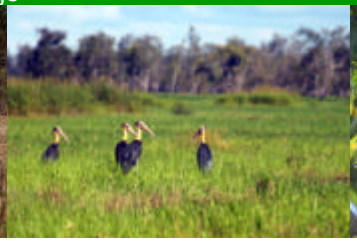
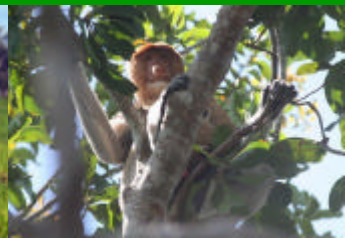


Left to right: Jempang (6 villages- 6.841 residents), Melintang & Semayang Lakes (3 villages - 7.787 residents)

Importance of Area Preservation


- Water-catchment area and river regulatory system
- Area of high socio-economic value for the local human settlements (mainly fisheries)
- A crucial breeding and migration site for at least 298 identified bird species. 86 species of freshwater fish, 24 mammal species & 300 tree species
- Rich cultural heritage

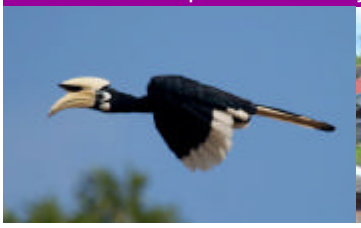
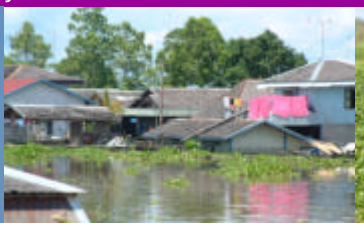
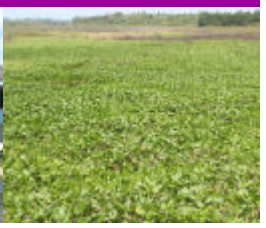




Deforestation of lake water catchment areas



Loss of 90% of original peat and freshwater swamp forest surrounding the lakes through forest fires, forest conversion (large-scale mining and oilpalm plantations small-scale agriculture) causing:

- Increased shallowness (highest inJempang) and euthrophication (+ fish kill)
- Massive waterweeds (50%-90% lake surface) causing transport problems
- Flooding of downstream and near upstream settlements
- Habitat and species diversity loss

Reforestation of Jempang Lake catchment

- In total 400.000 ha original (swamp) forest destroyed by forest fires in 1982 & 1997/1998.
- Regeneration of untouched & accidentally burnt forest for c. 60-70% including original tree species- good indication for reforestation potential

-Feasibility study planned by RASI & Mulawarman University (Forest Landscape Researches Group) in Jempang Lake for future reforestation activities & recommendations to government & Co2 buyers

Reforestation of Jempang Lake catchment (Cont.)

- Assessing priority areas for reforestation due their negative impact on ecosystem;
- Identifying suitable species for reforestation combining pioneers and native species together with species that can be harvested by local communities;
- Assessing current land use and ownership in critical areas;
- Assessing community interest in reforestation and maintenance of native tree species for which in return they will receive an allocated number of seedlings per reforestation area to plant tree species they consider interesting for their harvest products. This allocated number depends on the outcome of the feasibility and community assessment study.

Pictures by Budiono, Danielle, Sumaryono & Rani

DESKRIPSI KAWASAN DANAU JEMPANG

Wilayah studi 00° 05’ 00’’ – 00° 36’ 00’’ LS dan 116° 40’ 00’’ BT.

Sungai yang mengalir menuju danau Jempang antara lain Sungai Jantur, Sungai Kiliran, Sungai Baroh, Sungai Bongan, Sungai Ohong, dan Sungai Isuy. Danau Jempang posisinya di sebelah selatan Sungai Mahakam

Kondisi Iklim
Curah hujan 1.806 mm/tahun hari hujan 131 hari hujan
intensitas 20,7 mm/hari

Konsisi Bio-geo-fisik
Konfigurasi bergelombang ringan sampai sedang, profil 7 - 15 meter
Ketinggian dari permukaan laut 25 – 75 meter
Formasi geologi aluvium
Sistem lahan: Tanjung (TNJ), Sebangau (SBG), Teweh (TWH), Mantalat (MTL), dan Lawanguwang LWW.
Jenis tanah podsolik merah kuning yang peka erosi (bahan organik di horizon A tipis (< 15 cm), agregat tanah kurang stabil dan permiabilitas tanah rendah serta pH yang rendah antara 4,2 – 4,8.)