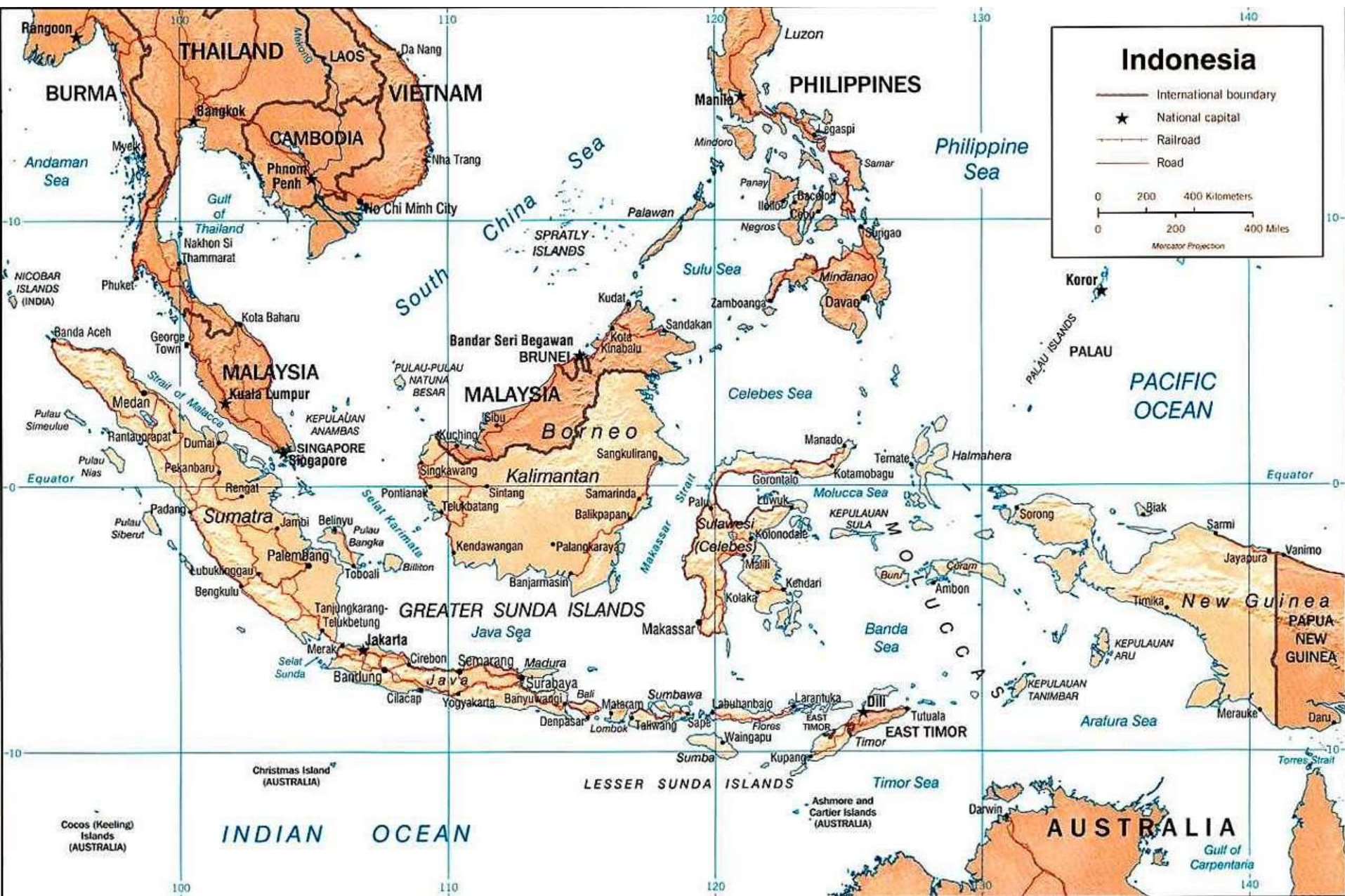


Natural Resources, Degradation and Conservation: Lesson learned from Indonesian

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**Summer course of Study Tour Abroad for Realization and Transformation (START)
Program, Hiroshima University-Brawijaya University, September, 2013**



Country in tropics environment

- tropic ecosystems lack of seasonal differences.
(there is little variation on temperature)
- Rainfall generally exceeds 2,000 mm per year
- Warm and wet climates
- temperature not fall below 20°C
- High humidity

Indonesian Biodiversity

- The Indonesian archipelago's 17,000 islands
- home to roughly 12% of the world's mammals,
- 16% of the world's reptiles and amphibians,
- 17% of the world's birds and
- 25% of global fish populations.

Recent population

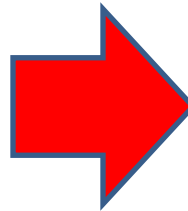
- 2010 population census: 232 million people
- concentrated in Java Island
- JAKARTA (capital) 9.121 million; Surabaya 2.509 million; Bandung 2.412 million; Medan 2.131 million; Semarang 1.296 million (2009)
- Religions: Muslim 86.1%, Protestant 5.7%, Roman Catholic 3%, Hindu 1.8%, other or unspecified 3.4% (2000 census)



Tropical forest

- High level biodiversity (i.e. flora, fauna, fungi, insect, microbes)
- Rich vegetation structure, evergreen flora with large tree, typically more than 30 m tall.
- Tall trees form huge canopy and often become ideal habitat for numerous epiphytes plant species
- Tall and large forest trees species which buttresses roots system
- Rich of creepers species (*Ficus* spp.) and
- Rich of climber species







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Some important ecosystem: Coral reefs



[Comment](#)

CLIMATE CHANGE, CORAL CONSERVATION, CORAL REEFS, CORAL TRIANGLE, ENVIRONMENTAL
DEGRADATION, ENVIRONMENTAL PROTECTION, HABITAT DESTRUCTION, MARINE PROTECTION, OCEAN
ACIDIFICATION, OCEANS

Coral Reef Loss in Southeast Asia to Reduce Food Supplies 80%: Strong International Action Needed

In coral reefs, Coral Triangle, marine protection, ocean, ocean acidification on May 26, 2009 at 11:56 am

fishing lombok indonesia photo

photo: [sektordua](#) via flickr

The effect that warming and [ocean acidification](#) will have on coral reefs will be devastating. At particular risk, a new report from [World Wildlife Fund](#) with the University of Queensland points out, is the [Coral Triangle](#) in Southeast Asia. Without strong action of constrain global temperature rise, coral in the region could be wiped out by 2100, leading to a decline in food production in the region by 80%, imperiling 100 million people:

The report, [The Coral Triangle and Climate Change: Ecosystems, People and Societies at Risk](#), explains that though the Coral Triangle is just **one percent of Earth's**

as 30% of all coral reefs, 76% of reef-b
and is the spawning ground for many c



Some important ecosystem: Mangrove



Human impact to mangrove



Some important ecosystem: Lowland tropical forest



Threats to lowland forest



Illegal logging

Unsustainable tourism in coastal area



Some important ecosystem: Tropical monsoon & savanna



Threats to Tropical monsoon & savanna



- *Forest fire*
- *invasive species*



Impact of invasive plant species:

- Habitat disturbance
- Wildlife local extinction
- Water scarcity

Some important ecosystem: Mountain forest



Threats to ecosystem



- *Over visitor*
- *Fire*
- *waste and polution*
- *Illegal harvesting*
- *etc*

Some important ecosystem: Homegardens-Agroforestry



Our culture and biodiversity



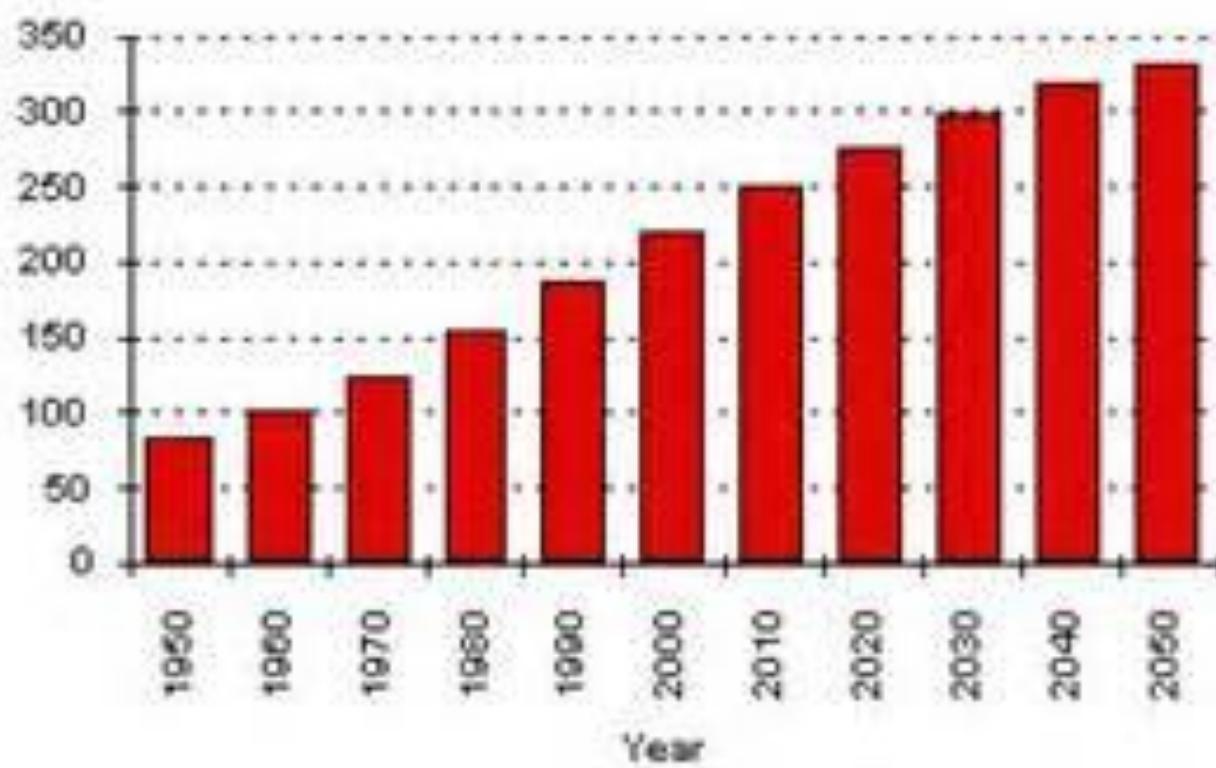
People and forest



People and forest spiritual aspect



Indonesia Population: Past & Projected



DEFORESTATION IN INDONESIA

Forest loss since 1990: 28.1 million hectares
Primary forest loss since 1990: 7.2 million hectares

All forests

1990-2000 Annual deforestation rate: 1.61%

2000-2005 Annual deforestation rate: 1.91%

CHANGE: +19.1%

Primary forests

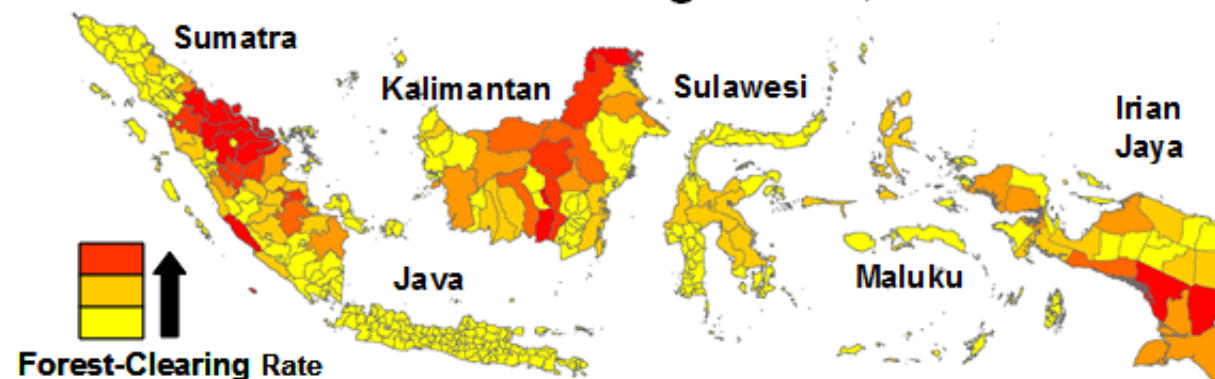
1990-2000 Annual deforestation rate: 2.06%

2000-2005 Annual deforestation rate: 2.59%

CHANGE: +25.9%



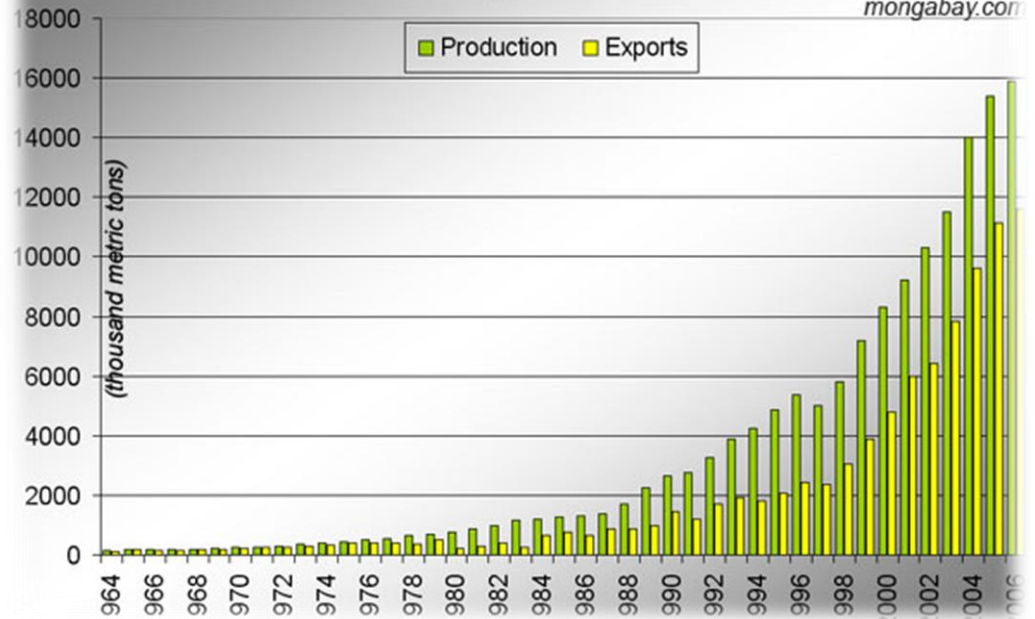
Indonesian Forest Clearing Rates, 2000-2005





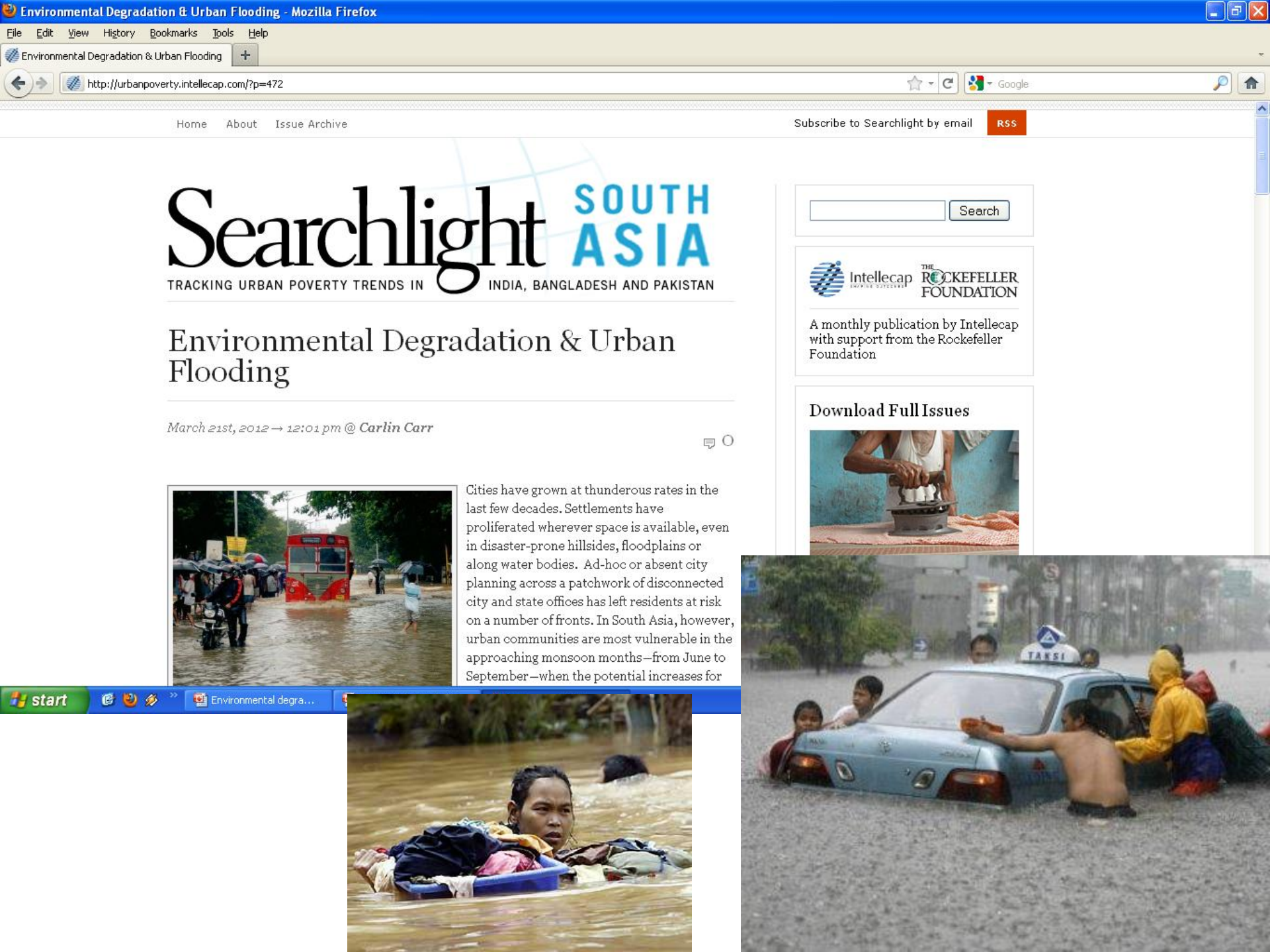
Palm Oil Production & Exports in Indonesia 1964-2006

mongabay.com



Forest and community





Indonesia: Education and Environmental problems

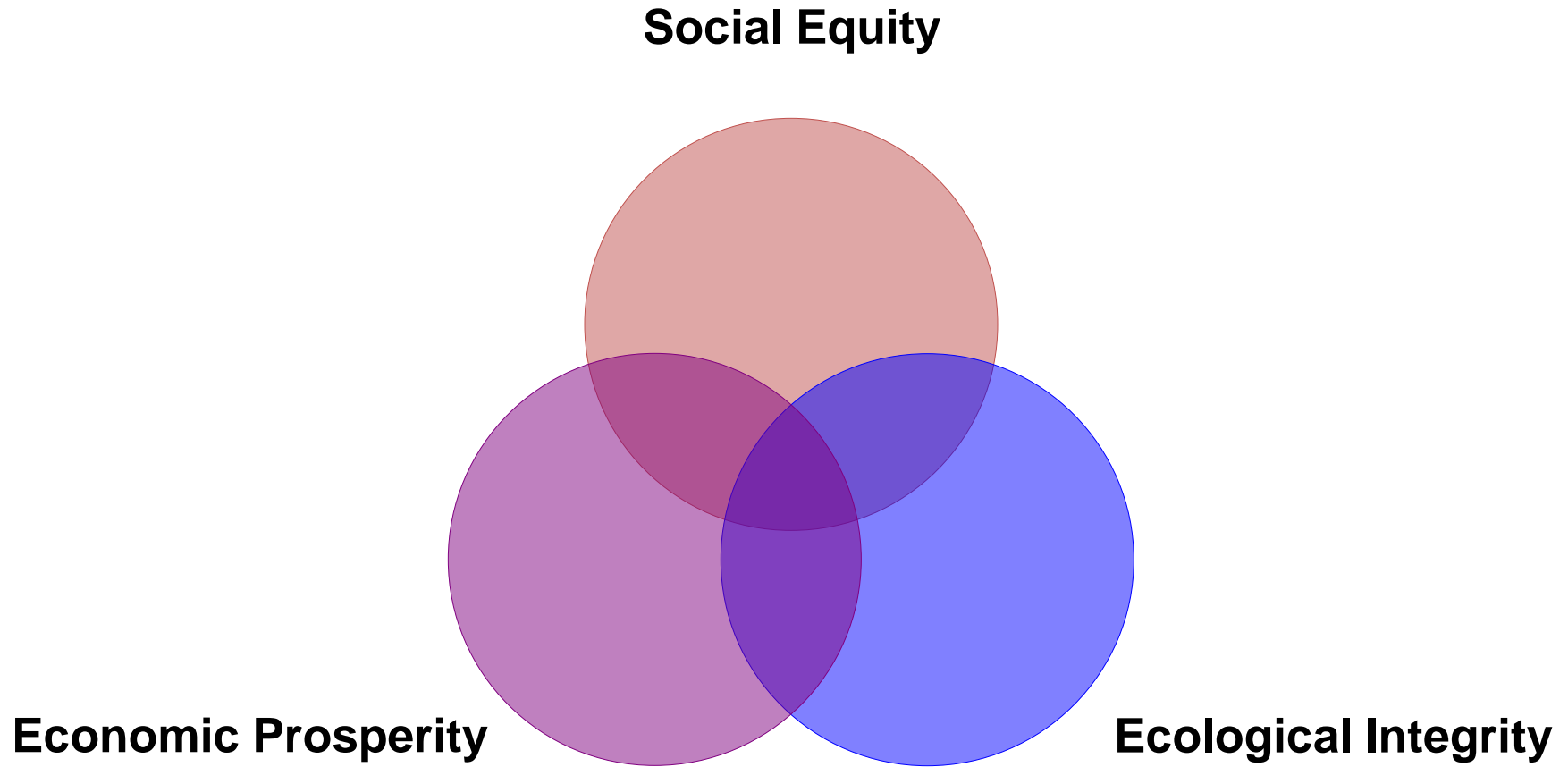


A process aimed at developing a community that is aware and concern about the environment and sustainable development



Recent issues in Indonesian Rural Development

- Reducing land degradation
- Improving water management
- Sustainable forestry
- Sustainable fisheries
- Incorporating global warming into development planning



***"Development that meets the needs of the present
without compromising the ability of future
generations to meet their own needs."***

Agenda 21 Indonesia consist of:

1. Human Service

2. Waste managemet

3. Land resources management

4. Natural resources management

Agenda 21 Indonesia consist of:

1. Human Service

Poverty reduction
Changing consumption pattern
Human health and education
Human settlement development
Economic instrument

Agenda 21 Indonesia consist of:

2. Waste management

Atmospheric protection
Hazardous chemical management
Toxic waste management
Liquid and solid waste management

Agenda 21 Indonesia consist of:

3. Land resources management

Land resources planning

Agriculture and rural development

Forest management

Water resources and water quality

Agenda 21 Indonesia consist of:

4. Natural resources management

Biodiversity conservation
Biotechnology development
Marine and coastal zone
management

Towards the sustainable development: the role of global collaboration

Benefits:

- Getting global political support
- Technical approach and methodologies
- Experience sharing
- Funding support
- Material and equipment support
- Sustainable project agenda and activities
- etc