Sustainability Issues Surrounding The Production of Palm Oil and Biodiesel
Charlotte Hebebrand:

“Mr Gultom, you surely know the concerns in Europe about palm oil expansion .........”
Palm Oil: *Enemy Number One* of Indonesia's Tropical Rainforests.

Margarine, lipstick, ice cream, shampoo, chocolate -- all use palm oil as a crucial ingredient but with booming demand, the plantations are swallowing up forests, a conference here heard. …..

In recent years, Jakarta has delivered huge concessions to palm oil producers, with many firms employing tens of thousands of people in Southeast Asia's largest economy.

"Up to now the government has only been looking at the profits, not at the impact of releasing so many permits," Fitrian Ardiansyah from conservation group WWF, told AFP.
The oil for ape scandal

How palm oil is threatening orang-utan survival

Friends of the Earth
The Ape Alliance
The Borneo Orangutan Survival Foundation
The Orangutan Foundation (UK)
The Sumatran Orangutan Society
Ban On Palm Oil - based Biodiesel.

The European parliament's industry committee has called for an EU-wide ban on the use of biodiesel made from palm oil.
WWF, September 2004.

**Agriculture is one of the biggest threats to the environment.**

*World Agriculture and the Environment*, published by Island Press, argues that agriculture contributes to serious environmental, social and economic problems, particularly in developing countries. The author Jason Clay, PhD, Vice-President of the WWF US Centre for Conservation Innovation, provides an assessment and prescribes ways to increase efficiency and reduce damage to natural systems.

Link: Article on the WWF website
Sept 12, 2007 - In **May of 1998**, the US Department of Energy (DOE) and **US Department of Agriculture (USDA)** published the results of the Biodiesel Lifecycle Inventory Study. It found that for every unit of energy that goes into making biodiesel, 3.2 units are gained. That’s a very high energy balance, especially compared to diesel. For every unit of energy that goes into making diesel fuel, only .88 of a unit is gained, for a negative energy balance.

The full text of this 312 page study may be found at: [http://www.biodiesel.org/resources/reportsdatabase/reports/gen/19980501_gen-339.pdf](http://www.biodiesel.org/resources/reportsdatabase/reports/gen/19980501_gen-339.pdf)

Biodiesel enables essential protein and carbohydrate stocks to increase in supply and decrease in cost, which in turn allows essential food and feed to be more abundant at lower cost. In other words, biodiesel production actually helps farmers feed the world in a more cost effective manner.
“Et tu Brutus!”
(William Shakespeare)

Global Emission by Fossil Fuel Consumption (Bio Tons)

Source: Netherlands Environmental Assessment Agency, EIA
The average American produces ten tons of direct carbon emissions and 14 tons of indirect carbon emissions per year for a total of 24 tons of carbon emissions, per person, per year. Carbon dioxide emissions are the leading cause of global climate change.
Indonesia Forests:

- 162 mio. Ha in the 50s (Global Forest Watch/GFW, 2002)
- 95 mio. Ha in 1997 (GFW, 2002)
- 120.35 mio. Ha in 2004 (RI Ministry of Forestry/MOF, 2005)
- 86.62 Ha in 2006 (Reuters 2007)
Deforestation Rate

Source:
1990s: FWI-WRI-GFW, 2002
1997-2002: RI Ministry of Forestry, 2005
Last 5 years: INFORM, 2004
2003-2004: RI Ministry of Forestry
2000-2006, Reuters
Palm Planting vs Deforestation Rate

Source:
1990s: FWI-WRI-GFW, 2002
1997-2002: RI Ministry of Forestry, 2005
Last 5 years: INFORM, 2004
2003-2004: RI Ministry of Forestry
2000-2006, Reuters
Total Deforested
75 mill Ha

Deforest, 69,
92%

Palm Plantation, 6,
8%
**OIL PALM, LAND USE 2005**

Malaysia: 32,984,700 Ha

- **Oil Palm**: 4,051,374 (12.3%)
- **Others**: 28,933,326 (87.7%)

Indonesia: 191,944,000 Ha

- **Oil Palm**: 5,426,493 (3%)
- **Others**: 186,517,507 (97%)

- **Malaysia plants 12 %**
- **Indonesia plants 3 %**

**INDONESIA IS THE ONLY PLACE TO EXPAND**
PT Astra Agro Lestari Tbk

“PROSPER WITH THE NATION”

Head Office:
Jl. Puloayang Raya Bl. OR-1
Pulogadung – Jakarta Timur, Indonesia
OIL PALM
Forest
### PT ASTRA AGRO LESTARI, Tbk.

**2006**

<table>
<thead>
<tr>
<th>Line of Business</th>
<th>Oil Palm Plantation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planted Area</td>
<td>231,000 Ha</td>
</tr>
<tr>
<td>Product</td>
<td>Crude Palm Oil</td>
</tr>
<tr>
<td>Production</td>
<td>917,000 Tons</td>
</tr>
<tr>
<td>Employee</td>
<td>30,000 MP</td>
</tr>
<tr>
<td>Revenue</td>
<td>US$. 413 mill</td>
</tr>
<tr>
<td>Net Profit</td>
<td>US$. 85 mill</td>
</tr>
</tbody>
</table>
RICH CROP BUNCHES
FRESH FRUIT BUNCH (FFB)
Kernel

Mesocarp
FFB
TRANSPORTATION
EEFLUENT
ENVIRONMENT
&
LAND APPLICATION
AGRONOMIC
IMPROVEMENT
Use of poison is danger to environment
Fire watch guard

EXPANSION
(HCVF guided)
Expansion takes place only after optimum yield of existing operation has been achieved.
KED estates. 14,600 Ha
Located in Wahau and Telen Subdistrict, Regency of East Kutai, East Kalimantan Province
HIGH CONSERVATION VALUE FOREST (HCVF) : a must !
HCVF assessment, July – Sept 2006, with assistance by:
• BEBSIC (*Borneo Ecological & Biodiversity Conservation*)
• WWF Indonesia
Protected Fresh Swamp Forest
Shorea Balangeran, protected concentration of ecosystem.
Preserved area along riverside
HCV 1.2. Concentration of threatened and endangered species

Scratch from Helartos malaynus (Honey Bear) nails
# HCVF ASSESSMENT FINDING
## July – September 2006

<table>
<thead>
<tr>
<th>HCV</th>
<th>Element</th>
<th>Existence</th>
<th>area, ha</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HCV .1. Biodiversity values</strong></td>
<td>1.1. Protected Areas</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.2. Endangered species</td>
<td>Yes</td>
<td>1,565</td>
<td>Overlap with other HCV areas</td>
</tr>
<tr>
<td></td>
<td>1.3. Endemics species</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.4. Critical temporal</td>
<td>Yes</td>
<td>716</td>
<td>overlap</td>
</tr>
<tr>
<td><strong>HCV.2. Large landscape forest</strong></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HCV.3. Threatened ecosystems</strong></td>
<td>Yes</td>
<td>849</td>
<td></td>
<td>overlap</td>
</tr>
<tr>
<td><strong>HCV.4. Critical ecosystem services</strong></td>
<td>4.1. Watershed protection</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.2. Erosion control</td>
<td>Yes</td>
<td>734 315</td>
<td>overlap restoration</td>
</tr>
<tr>
<td></td>
<td>4.3. Fire barriers</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.4. Impact to farmer, fishery</td>
<td>Yes</td>
<td>734</td>
<td>Overlap</td>
</tr>
<tr>
<td><strong>HCV.5. Fundamental to basic need</strong></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HCV.6. Critical to cultural identity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Local conservation ( self assessment)</strong></td>
<td>Yes</td>
<td></td>
<td>325</td>
<td></td>
</tr>
<tr>
<td><strong>Total HCV in PT KED ( 1,565 + 315 + 325 )</strong></td>
<td></td>
<td></td>
<td>2,205</td>
<td></td>
</tr>
</tbody>
</table>
EMPLOYEE WELFARES
OLD HOUSING, wooden made

NEW HOUSING, concrete made

HOUSING, workers
HOUSING, staff
What you saw in CNN news is not what you will see in Oil Palm plantation ... 

... mosque and church stand in peace side by side.
LIVING IN HARMONY
SCHOOL BUS

EDUCATION
Improving Quality of Education

Faculty of Pedagogic of Christian University of Indonesia to grade-up quality of educational in AAL’s schools.

- This program directly benefited 11 Primary School, two Junior Secondary School, and one Vocational Middle High School, involving 3,156 students and 143 teachers in Sumatra, Kalimantan and Sulawesi.
HEALTH CARE
CPO PRODUCTION

FROM THE SAME ACRES of PLANTATION
MULTIPLIER EFFECTS
(Local economy)
Opportunity
for local economy

- Transportation
- Construction
- Home industries
- Service workshops
- Office supplies
- Home supplies, employee spending
Opportunity for local economy

- **Transportation**
  - **FFB** from field to mills
  - **CPO, PKO**, from mills to refineries or to seaport
  - **EFB** from mills to field
  - **Fertilizers** from seaport to estate w/h to field
Opportunity for local economy

- **Construction**:
  - bridges, houses, roads
We do not give fish
We do give hook to catch fish
We then teach how to make hook
INCOME GENERATING ACTIVITIES

I.G.A
Resources:

800 Agriculture Graduates

KNOWLEDGE & TECHNOLOGY TRANSFERRED to LOCAL (traditional) FARMERS

INCOME GENERATING ACTIVITIES (I.G.A.)
Through Income Generating Activity schemes, the company transfers technology and knowledge to local farmers to enable them generate and improve their income and be more independent.
Cocoa Farming
West Sulawesi

Productivity increased by 130%

Income increased by 130%!
Rubber Small Farming  
South Kalimantan

Latex quality improvement

Price 100%

Price 300%!
Oil Palm Farming
In Central Kalimantan, 15 blacksmith entrepreneurs received trainings in:
- Workshop Layout
- Equipment & Tools
- Materials Efficiency
- Effective Forging Process
- Product Quality, etc.

Now they are able to supply all the needs of harvesting cutters to Astra Agro’s 40,000 Ha plantation in Central Kalimantan.
Project Pakava

A primitive indigenous tribe in Sulawesi

Uma i Gampaya Panggo, Head of The Pakavan tribe, fertilize the oil palm in his own farm.
NUMBER OF POPULATION >5 YO : 756

- NO EDUCATION, 347, 46%
- ELEMENTARY, 322, 43%
- JUNIOR HIGH, 61, 8%
- SENIOR HIGH, 26, 3%
COMPOSITION BY INCOME

LABOR AGE POPULATION: # 504

HAS NO INCOME
356
71%

HAS INCOME
148
29%
A preliminary study completed in June 2005. This project includes:
- Infrastructure
- Income Generating Activity
- Education
- Public Health
- Social, Culture and Religion
Improving productivity of Cacao farmers
Improving productivity of Cacao farmers
Start planting

Oilm Palm

2007
In 2006 the company introduced a new business to the Pakavan people: honeybee farm.

This program has conservation value because its inspire and encourage the people to keep the forest since diversity of floral affects productivity of honeybee.
Starts

Brick Making
Infra Structure

Governments' road:  THIS IS NO ROAD!
THIS IS A BETTER ROAD!
Project Pakava
-Education & Health
Project Pakava - Education
Social Responsibility
—conventional
(Charity)

- Education
  - *School Building*
  - *Scholarships*
  - *Teacher’s Salary*

- Health Care

- Religious - Cultural – Arts – Sports Activities

- Social Welfare
Charity

- Education

- The company paid attention to the teachers, by composed honorarium subsidy. In 2005, the company subsidized more than Rp145 millions as an incentive for those who are teaching in schools neighboring to our plantations.
Charity

- Health Care

For the health service, the company has established health care and medical treatment, circumcision and extra nutrition foods for kids under five years, as well as ambulance facilities for the community.
Charity

- Religious, Cultural

- In social activities, the company builds praying houses like mosques, churches, as well as local traditional buildings (Rumah Adat) for cultural events.
The company also conducts infrastructure improvement programs which include roads, bridges, etc.
Charity

-Emergency Helps

There are times, especially when natural disasters like flood, earthquake, took place, people could not afford the sky rocketing price of foods or supply of foods is not even available. In such emergency situation an Emergency Team will automatically mobilized to support communities surrounding the plantation.
Ground Zero, Tsunami
On December 26, 2004, Aceh devastated by a series of earthquakes and tsunami. The day after disaster, 2 AAL plantations turned into a refugee camp for victims of the disaster.

AAL mobilized all its heavy equipment to clean-up Meulaboh from debris.

AAL set-up an “Air-Bridge” from Singkil to Meulaboh to supply logistics such as foods, clothes and medicines to the isolated area of Meulaboh using a helicopter.

AAL’s rescue team reportedly was the first successful entry to the isolated area of Meulaboh after Tsunami destroyed everything.
palm oil ...... Road to prosper
PALM OIL:
TO PROSPER THE PEOPLE
PALM OIL: for the People & the Planet
No more death penalty in plantation company

Worker hanged in Onderneming

Hukuman gantung dilaksanakan di perkebunan sendiri.

Courtesy of Jan Breman
Nor WHIPPING punishment

Hukuman cambuk dengan rotan untuk kuli yang melanggar peraturan.

Courtesy of Jan Breman
Awards

CORPORATE CITIZEN OF THE YEAR, 2005
People spends more money for less food

CPO Price Impact

<table>
<thead>
<tr>
<th></th>
<th>Ytd Aug 06</th>
<th>Ytd Aug 07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td></td>
<td>143%</td>
</tr>
<tr>
<td>Revenue</td>
<td>100%</td>
<td>89%</td>
</tr>
</tbody>
</table>

IPC 07: Sales: Yellow, Revenue: Red
Creating income for the people living in marginal land thru JC plantation & Biodiesel production
Jatropha Curcas

- To replace palm oil for fuel so to release price pressure from food-fuel competition

**Power Prices**
Estimated cost per barrel of fuel produced by selected biofuel feedstocks

- Cellulose: $305
- Wheat: $125
- Rapeseed: $125
- Soybean: $122
- Sugar beets: $100
- Corn: $83
- Sugar cane: $45
- Jatropha: $43

Source: Goldman Sachs
Jatropha Curcas

- To gain climatic improvement
- To make wasteland productive
- To alleviate soil degradation, desertification and deforestation.
.... even in rocky surface
Success of JC will slow down OP expansion significantly
If we want to slowdown expansion of Oil Palm:
- promote alternative low cost biodiesel feedstock, i.e. Jatropha Curcas
- help Palm Oil producing countries to improve oil yield production can grow without new planting
- Boycott on CPO will not solve any problem. Instead, it will create new problems.

If we want to have more forest to catch world emission: world should help countries like Indonesia to replant and reforest its deforested land

The root of the problem is: **CO2 PRODUCTION**! Why do we get lost?
Thank You.