Intensively Managed Forest Plantations in Indonesia:

Overview of Recent Trends and Current Plans

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Meeting of The Forest Dialogue
Pekanbaru, Indonesia -- March 7-8, 2007

Outline of the Presentation

- Overview of Indonesia's forest crisis
- Ministry of Forestry's 9.0 million ha plantation plan
- Indonesia's HTI industrial plantation program
  - Achievements
  - Lessons
- Pulpwood plantation development in Riau
- Overview of the HTR community plantation program
- Indonesia's experience with outgrower schemes and nucleus estates
- Summary and recommendations

Indonesia's forest crisis

- Deforestation is estimated at 1.6 – 2.0 million ha/yr, with similar rate of forest degradation
- Illegal logging is widespread
- Most timber companies are logging at unsustainable levels
- Parks and protected areas under heavy encroachment
- Large areas of forest being converted for oil palm, biofuels
- Central and regional governments are in tug-of-war

Legal wood supply from natural forests is rapidly declining

- Since late-1960's, Ministry of Forestry has issued > 60 million ha of HPH timber concessions, for selective logging on a 35 year rotation
- But HPH log production is rapidly declining in much of Sumatra and Kalimantan, as concessions are depleted

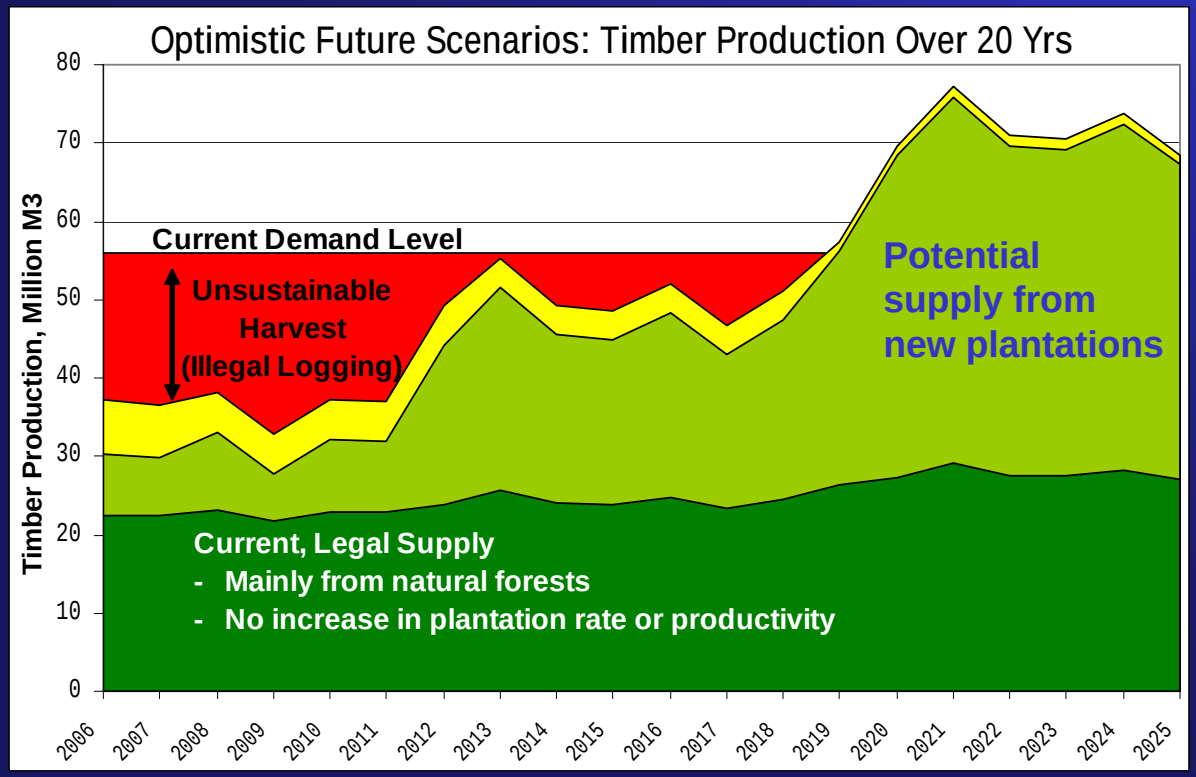
- Current legal supply is approx. 22 million m3/yr – mostly from natural forests
- This amounts to 40% or less of domestic log demand
- Balance is from illegal sources
- Industrial forestry sector faces decline if revitalization is not initiated

MoF's 9.0 million ha plantation plan

- In Dec. 2006, Ministry of Forestry announced a target of establishing 9.0 million ha (gross) of plantations for industrial wood by 2016 – integrated with a broader forest sector revitalization process
- 40 % of total area (3.6 m ha) will be large-scale plantations
- 60 % of total area (5.4 m ha) will be managed by small-holders
- Funds from Reforestation Fund will be allocated through a new state finance agency
- Approx. US$ 8.0 billion will be invested from public and private sources

Potential benefits are substantial….

- If targets are met, plantation expansion could offset the current supply-demand gap – and even generate a surplus -- at moderate production levels



- Small-holder plantations expected to provide livelihood opportunities for 360,000 households
- Direct and indirect employment expected for larger numbers of rural poor

Source: T. Brown et al. (2005)

…. so are the challenges and risks

- Establishing 9.0 million ha (gross) of commercially viable plantations poses huge technical, logistical, and administrative challenges …
- … particularly with 5.4 million ha to be allocated to small-holders in 15-ha blocks

- Past experience, in Indonesia and elsewhere, suggests this initiative could pose new risks for forests and rural communities
- Need to review potential lessons from Indonesia's HTI industrial plantation program, outgrower schemes, and nucleus estates

Indonesia's HTI plantation program

- Since late-1980s, Ministry of Forestry has allocated HTI industrial plantation concessions to private and state co's
- Licenses allocated for 'marginal' or 'degraded' forest areas – i.e. < 20 m3/ha of commercial species with dbh > 30 cm
- Co's allowed to clear remaining forest, with IPK license
- HTI license-holder then obliged to replant and manage plantation for 35 years + length of 1 rotation
- Subsidized financing provided from Government's Reforestation Fund

HTI plantation area allocated

- In 2002, the IUPHHK replaced the HTI license, and the maximum duration for a plantation concession was extended to 100 yrs
- Through August 2006, 219 licenses covering an area of 9.0 million ha had been issued or were pending

- These were concentrated in:
  - Papua = 1.63 million ha
  - East Kalimantan = 1.46 million ha
  - Riau = 1.18 million ha
  - South Sumatra = 970,000 ha
  - West Kalimantan = 912,000 ha

Net planted area reported

- In October 2006, Ministry of Forestry reported a total net planted area of 2.8 million ha
  - 1.8 million ha for pulpwood
  - 1.0 million ha for solid wood

- But numbers need to be treated with caution, as large areas were never fully stocked, have been poorly managed, or have had heavy losses
- Net *commercial* area is likely to be much smaller than these figures indicate

Most intensively-managed commercial plantations are for pulp

- During 1990's, 23 pulpwood plantation licenses issued, covering 4.3 million ha (gross); many more since then

Acacia mangium is main species on dryland sites

- Rapid growth (7 year rotation)
- Adaptability to degraded soils
- High pulp yields

Acacia crassicarpa is dominant on peat sites

Conversion of natural forest

- Much of the area allocated for HTI plantation development was covered by commercially valuable forest *(technically 'degraded')*
- This encouraged rent-seeking, as plantation companies were first allowed to clear the wood with royalties well below stumpage value

- Many HTI license-holders never replanted after clearing their concession area
- To avoid further negative impacts on natural forests, greater care will be needed to prioritize sites that no longer have forest cover

Tenure conflict and displacement of forest communities

- In many cases, HTI licenses have overlapped with land or forests managed by local communities under customary tenure systems

- During the Suharto era, this often led to the displacement or relocation of local peoples

- In the post-Suharto era, tenure disputes and violent conflicts have become common, particularly as timber plantations tie up the land for long periods (now 100 years)

Financial fraud – misuse of the Reforestation Fund

- Through 1997-98, GoI allocated US$ 417 million from the Reforestation Fund to finance plantation development, as cash grants and discounted loans

- Many recipients 'marked up' their costs or overstated the areas planted
- A 1999 Ernst & Young audit recorded losses of US$ 223 million during 1993-98
- In 2006, ex-President Suharto's half-brother was convicted for fraudulent use of loans from the Reforestation Fund

Incentives for high-risk and/or unsustainable investments

- Access to HTI plantation concessions with large volumes of natural forest fiber that could be liquidated at low cost allowed Indonesian companies to secure funding for high-risk and unsustainable pulp mills

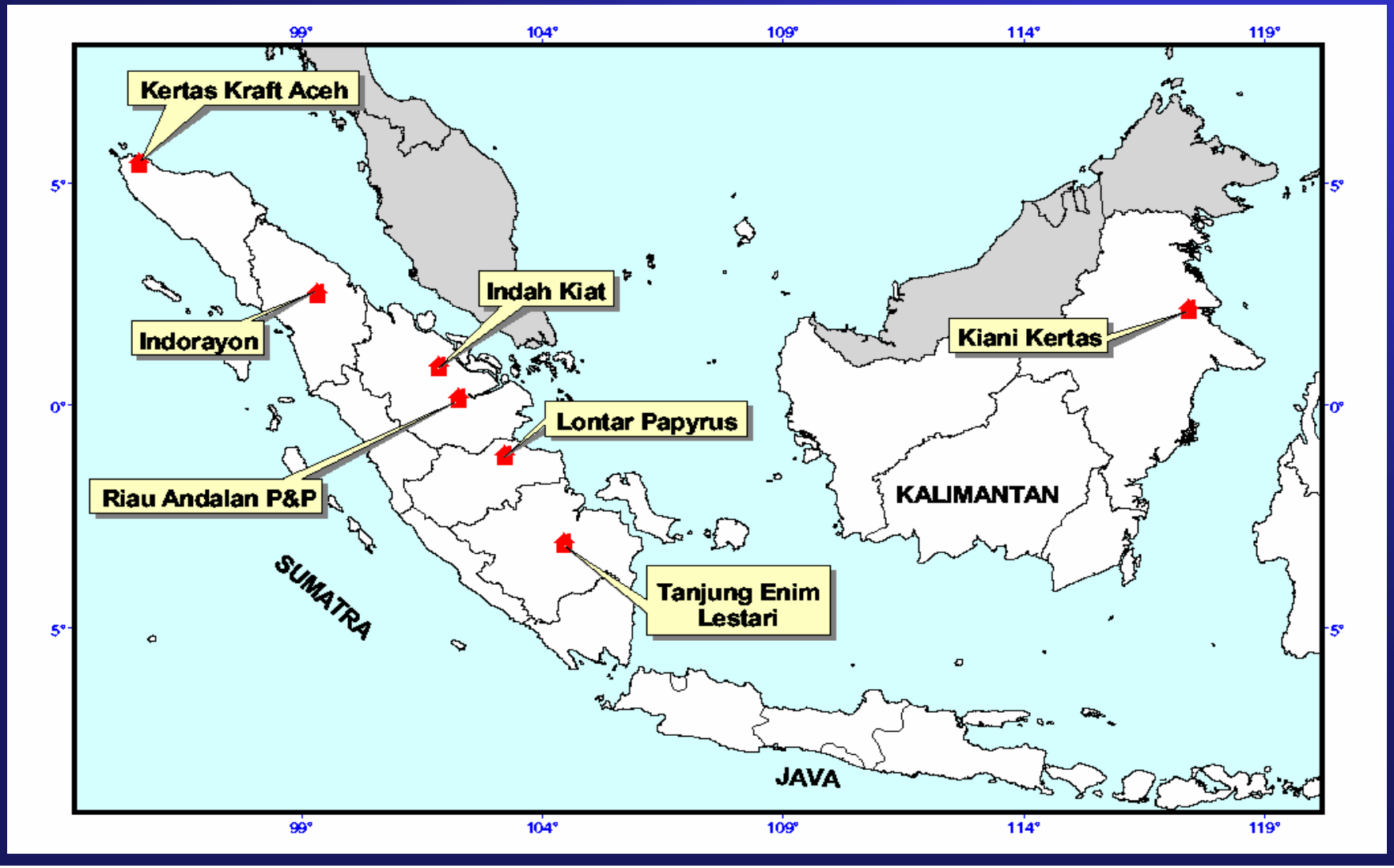
- Banks and ECA's routinely failed to conduct due diligence to determine whether borrowers could sustain such low-cost operations over the long-term
- Defaults of APP, APRIL, Kiani Kertas, Barito Group have meant the Government and private investors have absorbed substantial costs
- New regulations allow plantation license-holder to use forest assets as collateral for bank loans

Indonesia's pulp industry

- Rapid expansion of BHKP capacity since early-1990s, with Indonesia reaching 6.45 million Adt/yr in 2005
- Industry dominated by APP and APRIL, which control over 75 % of total pulp capacity – both linked to China
- 2005 BHKP production = 5.47 million Adt/yr (85 % capacity)
- 2005 pulpwood consumption = 25-27 million m3/yr

  -- 70 % was 'mixed tropical hardwoods' (MTH) from natural forest
- Est'd 1.5 million ha of plantations (net), > 80 % *Acacia spp*
- New capacity expansion 'planned', including 1 greenfield BHKP mills

Kraft Pulp Mills in Indonesia



APP and APRIL mills in Riau

APP and APRIL have developed 2 of the world's largest pulp mills in Riau, each of which consumes 9-10 million m3/yr

- APP's Indah Kiat = 1.85 million Adt/yr (pulp)
- APRIL's RAPP mill = 2.0 million Adt/yr (pulp)

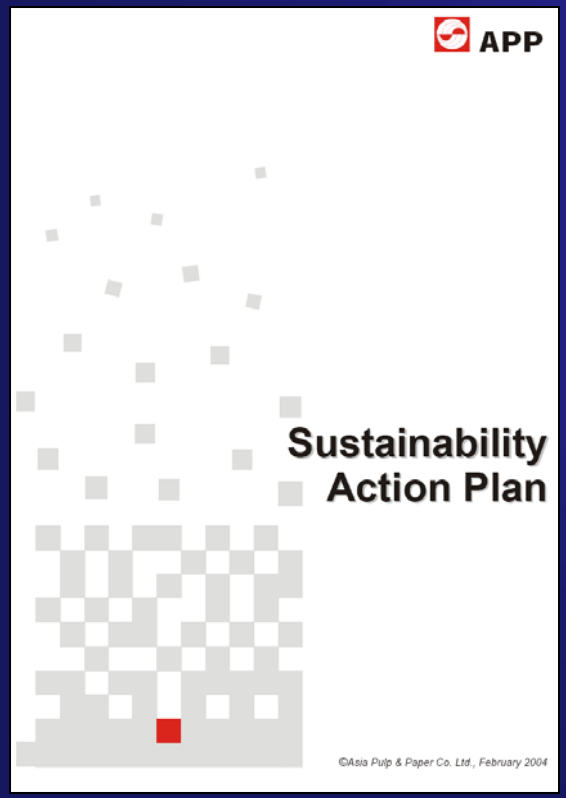
However, both groups have expanded pulp capacity much faster than plantation development

- Continue to rely heavily on MTH from natural forest
- Own plantation sites to supply only 50-60 % of fiber needed on a sustained basis

Both groups trying to secure large new JV areas for conversion to meet 2007 (APP) and 2009 (APRIL) targets for 100% acacia

APP's 'Sustainability Action Plan'

- In 2004, APP released a 'Sustainability Action Plan', detailing how it would meet its 2007 'sustainability target'



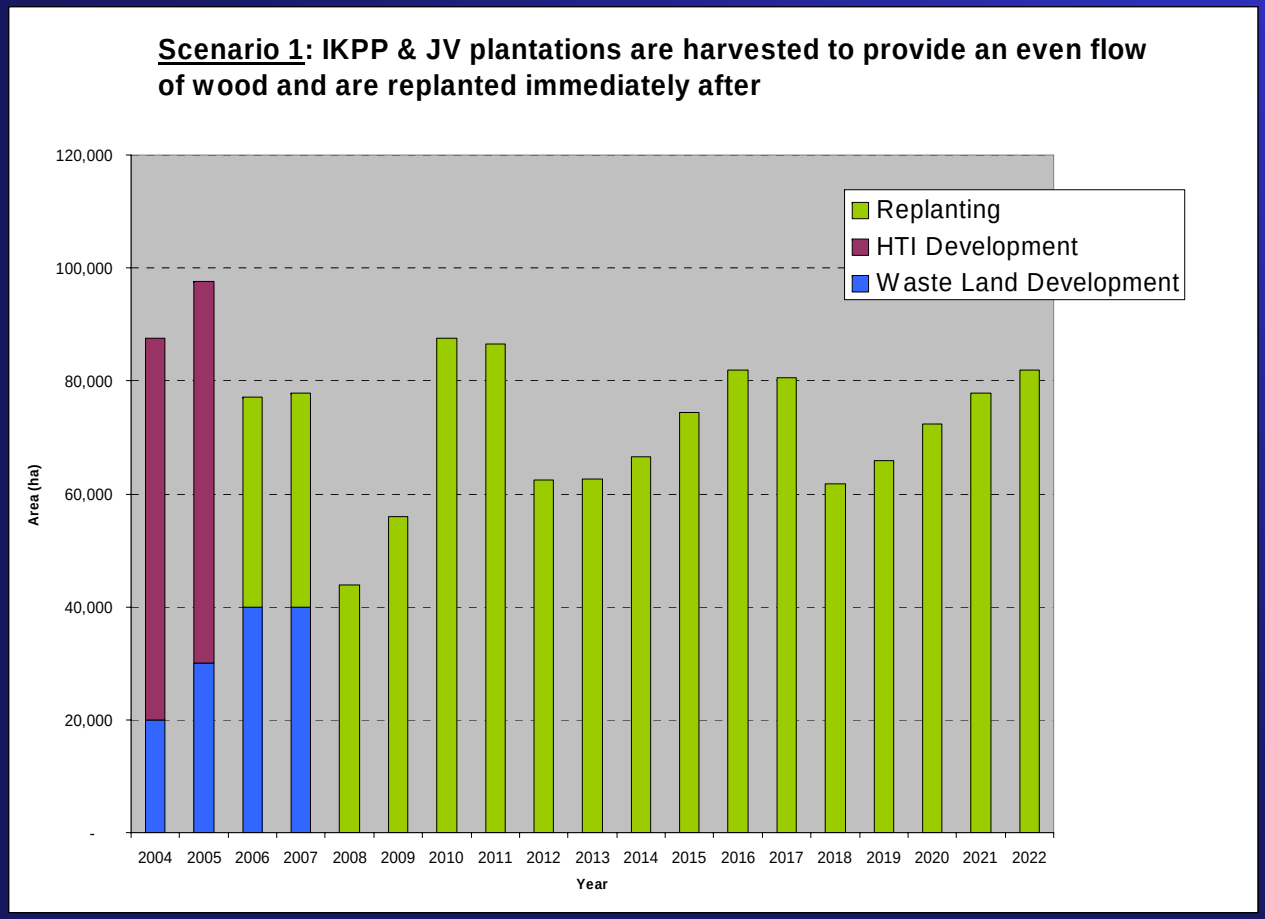
Key findings:

- As of 2003, net planted area: 121,179 ha (own HTI) and 34,000 ha (JV sites)
- Ambitious growth rates now revised downward:
  - MAI on mineral soils = 23.2 m3/ha/yr
  - MAI on peat soils = 19.6 m3/ha/yr
- Additional 252,828 ha (net) would be needed to sustain mill at 1.85 million Adt/yr

APP's plan for 2004-2007

- APP proposed to secure the additional 252,828 hectares of net plantation over 4 years (2004-2007)
- 72% of the new expansion (182,828 hectares) would occur in 2004 and 2005
- The areas targeted for plantation development consists of:
  - 122,828 hectares currently under peat swamp forest in Riau.
  - 30,000 ha is 'waste land' on mineral soil and peat swamp in Riau;
  - 100,000 ha are wet / swampy land in South Sumatra.
- Conversion of an additional 130,000 ha of natural forests is required

APP's plan to reach 100% acacia for Indah Kiat Pulp & Paper



Annual planting targets:

2004: 85,000 ha (net)

2005: 98,000 ha (net)

Prior to this, APP had never planted more than 30,000 ha per year for IKPP.

Source: APP Sustainability Action Plan (2004)

APP's reported results

- In 2004, APP reportedly planted nearly 65,000 ha (net) to supply fiber to Indah Kiat, including:
  - 52,275 ha in Riau
  - 12,483 ha in Palembang (S. Sumatra)
- In 2005, APP reportedly planted 81,000 ha (net), including:
  - 46,182 ha in Riau
  - 35,426 ha in Palembang

Company sources indicated, however, that these a substantial portion of these areas are poorly stocked due to push to meet planting targets.

APP also reportedly suffered substantial plantation losses due to fire in 2004-05.

APP fiber supply – risks (1)

- Increasing reliance on peatland sites poses a significant technical challenge and a potentially serious (underestimated) risk

  -- 75 % of APP's total sites in Riau and Jambi will be on peatlands

APP fiber supply – risks (2)

Social conflict and uncertain land tenure

- Regional autonomy has led to sharp increase in land claims and illegal logging

- Security of existing plantation sites not guaranteed
  - -- In Jambi, APP lost 70,000 ha to local claims in 2001
    - → *(25% of total concession)*
  - -- In Riau, 57,000 ha at APP sites subject to claim in 2002

AMEC audit: *"The existing level of claim disputes can have a large impact on sustainable wood supply plans. If the number of successful claims escalates, it will have a further severe impact."*

APRIL fiber supply strategy (1)

APRIL is competing with APP for land and fiber in Riau province to supply Riau Andalan Pulp & Paper

- RAPP BHKP capacity = 2.0 m Adt/yr
- 60 % of wood supply was MTH in 2006 (est.)

APRIL seeking to develop 330,000 ha of Acacia in Riau

- 195,000 ha at own sites; 85,000 ha at JV sites (with other plantation companies); 20,000 ha at community sites
- Approx. 264,000 ha (net) planted by mid-2006
- → 43 % of existing planted area is on peatland sites

APRIL trying to convert large JV areas to meet 2009 target of 100% acacia

APRIL fiber supply strategy (2)

- Generally, APRIL's plan for meeting its 2009 target for 100% acacia seems more achievable than APP's, in terms of annual planting
  - Based on increase in annual planting from 19,000 ha (2000) to 47,000 ha (2002 and beyond)
  - In 2004, APRIL reportedly planted 49, 242 ha across all sites.
  - In 2005, APRIL reportedly planted 51,377 ha across all sites.

- **But,** APRIL's commitment to 100% acacia applies only to currently installed pulp capacity – i.e. the existing 2.0 million tonnes.
  - **The company offers no assurances that any additional capacity will be fed with acacia**

APRIL fiber supply strategy (3)

- **For APRIL, what do 'sustainability commitments' really mean in light of the company's plan to expand its pulp capacity?**
  - The company reportedly plans to expand pulp capacity to 4.0 million Adt/yr – the timing of this expansion is not yet announced
  - APRIL also plans to expand its net plantation base to 600,000 ha (suggesting that it aims to obtain a gross plantation base of up to 1.2 million ha in Riau)
  - Expansion on this scale raises fundamental questions about the significance of the company's stated commitment to assess and protect high conservation-value forest (HCVF)

HTR Community-based plantations

- The Ministry of Forestry's 'Nine Million Hectare Plantation Plan' intends to allocate 5.4 million ha to small-holder tree planters in 15 ha blocks.
- Credit will be provided through a new financial institution to be created by MoF, and will use Reforestation Funds
- The small-holder component will reportedly be limited to Sumatra and Kalimantan
- Land allocated has been determined to be 'free of existing rights' ('lahan bebas dari hak')

Lessons from out-grower schemes and nucleus estates

- Indonesia has a long history with small-holder tree-planting schemes, structured both as out-grower arrangements and nucleus estates

These offer potentially important lessons related to:

- Accountability and terms of partnership
- Labor, access to markets, and indebtedness
- Land tenure and conflict

Issues for stakeholders

- How to ensure that new plantation development does not place new pressures on Indonesia's remaining natural forests?
- What can be done to clarify tenure rights of local communities, and address tenure claims before they turn into conflicts?
- How to approach HTR community plantations – to allow small-holders to choose species and to whom they will sell their trees?
- What mechanisms are needed for transparency and accountability in use of the Reforestation Fund?
- Should new pulp industry capacity expansion be supported before a legal and sustainable fiber supply has been fully secured?
- What pace should be taken? –Need to review lessons from prior initiatives, carry out pilot projects, establish a system for monitoring and assessing progress, adapt the targets as needed