

The 3rd Annual Meeting of the Low Carbon Asia Research Network
(LoCARNet), Bogor, Indonesia, 24–26 November 2014

Voluntary Carbon Project in Gunung Walat University Forest

Tatang Tiryana, Nandi Kosmaryandi, Andi Sukendro, Gunawan Santosa, Budi Prihanto

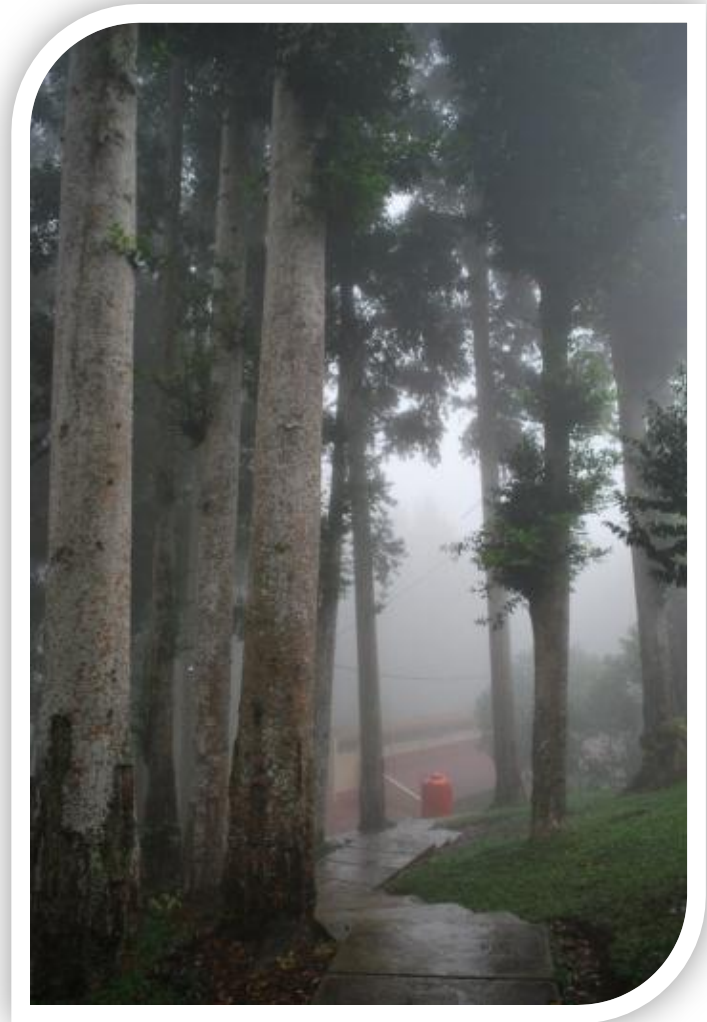
Faculty of Forestry
Bogor Agricultural University (IPB)
INDONESIA

<http://www.gunungwalat.net>



Outline

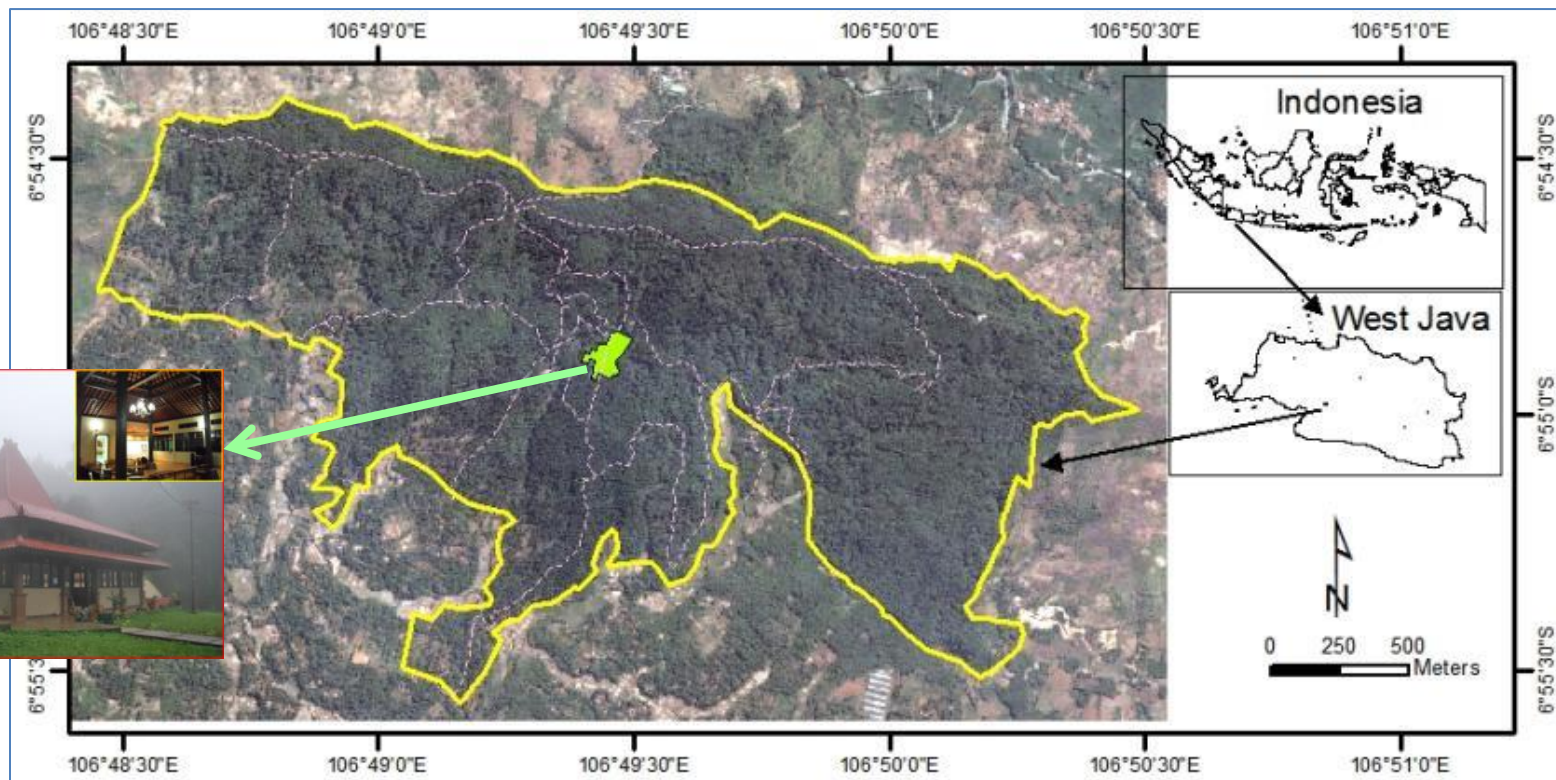
- Uniqueness of GWUF
- GWUF carbon projects
- GWUF expectations
- Closing remarks



Uniqueness of GWUF



- Small-scale forest management unit: 359 ha
 - state-owned forest for supporting education
 - managed by Faculty of Forestry of IPB since 1969



Uniqueness...(2)

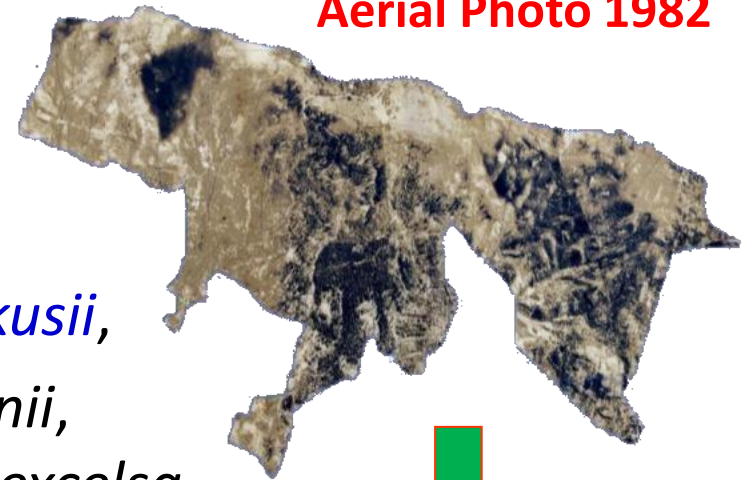
- Started from almost bare-lands...

- Planted by students and local communities

- Plantation species:

- *Agathis loranthifolia*, *Pinus merkusii*,
- *Schima wallichii*, *Maesopsis eminii*,
Swietenia macrophylla, *Altingia excelsa*,
Dalbergia latifolia

Aerial Photo 1982



Google Earth 2010



Uniqueness...(3)



- Provides **multiple benefits**:
 - Economic: **resin** (pine & agathis) production
 - Environment: habitat for various **flora** and **fauna**, **water** reserve, **carbon** sequestration, etc.
 - Social: resin **tapping**, **agroforestry**, etc.



Troides helena
(Appendix 2 CITES)



Uniqueness...(4)

- Self-funded university forest with a “zero cutting policy”:
 - Resin production (NTFP): $\pm 60\%$
 - Others (forest services): $\pm 40\%$



Uniqueness...(5)



- Visited by: 29 nationalities



INDONESIA



MALAYSIA



JEPANG



KOREA SELATAN



AMERIKA SERIKAT



JERMAN



AUSTRALIA



BELANDA



FILIPHINA



VIETNAM



HUNGARIA



FINLANDIA



SUDAN



KENYA



CEKO



CHILI



NEPAL



SINGAPURA



GUATEMALA



SELANDIA BARU



SAUDI ARABIA



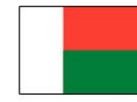
SWEDIA



MALI



DENMARK



MADAGASKAR



AFRIKA SELATAN



KANADA



TAIWAN



CHINA

29 NEGARA



GWUF Carbon Projects



- GWUF program since 2009: “Forest Rehabilitation for Increasing Carbon Stocks”
 - Enrichment planting in some degraded forest areas
 - Participants: TOSO, Conoco Phillip, NYK
 - Voluntary scheme within a contract period (1–5 yrs)



Carbon projects...(2)



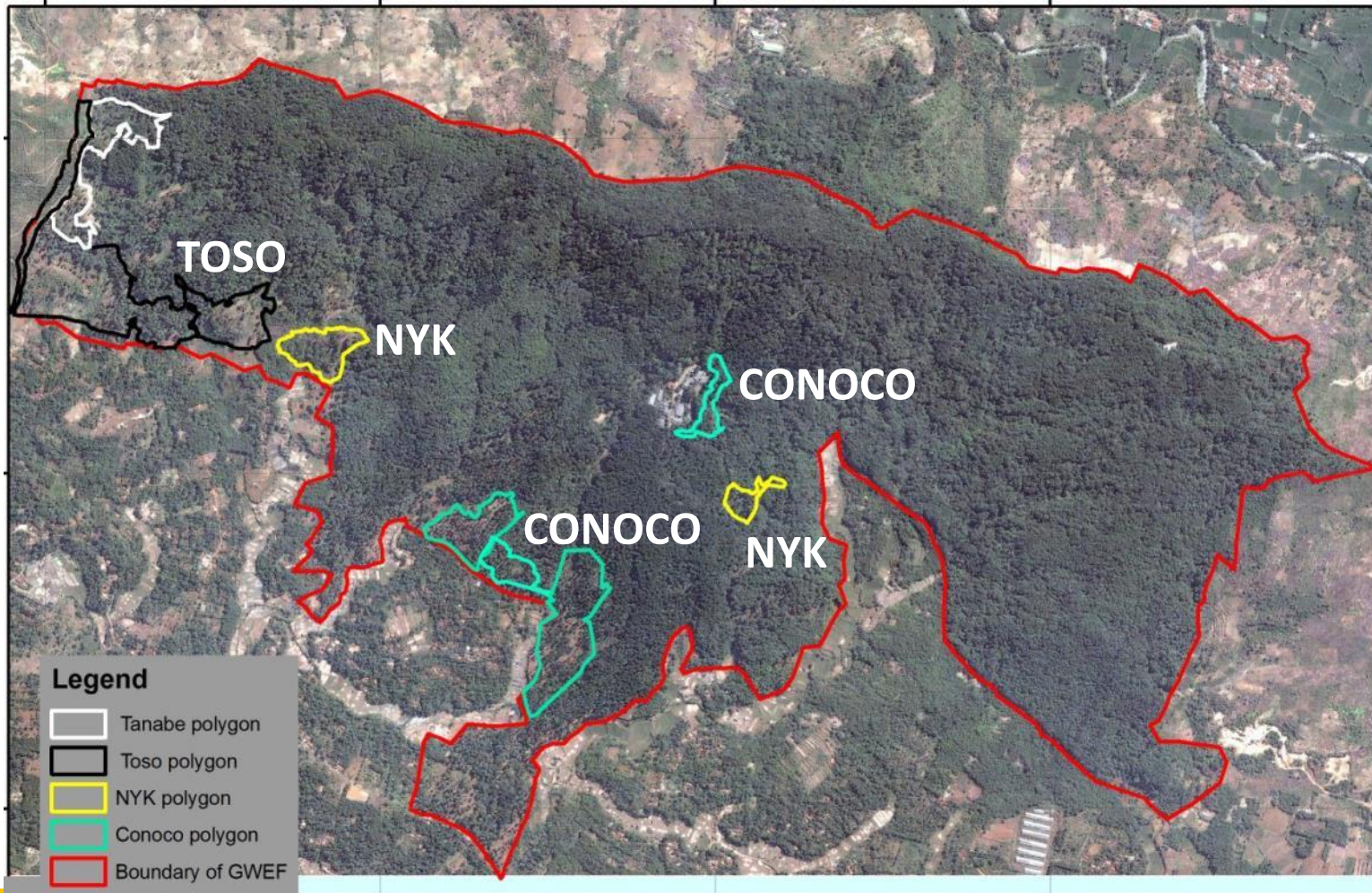
- Role and benefit:

Positioning	GWUF	Participant
Role	<ul style="list-style-type: none">▪ Planting, tending/maintaining, and monitoring the plantations	<ul style="list-style-type: none">▪ Providing funding
Benefit	<ul style="list-style-type: none">▪ Improving forest land productivity▪ Enhancing carbon stocks▪ Enriching non-timber forest products (e.g. resin) and biodiversity▪ Involving local community in managing GWUF	<ul style="list-style-type: none">▪ Effectively investing CSR funding for educational and environmental purposes▪ Enhancing green company image branding▪ Participating in reducing CO₂ emission

Carbon projects...(3)



- Site of carbon projects in GWUF



Carbon projects...(4)



- Annual income: \pm IDR 200 million (\pm USD 21,000)

Participant	Volume	Tree species	Contract duration	Contract value
TOSO Industry Indonesia	4,000 trees (10 ha)	<i>Agathis loranthifolia</i>	30 years (2009–2038)	IDR 725 million (\pm USD 74,000)
TOSO Company Limited, Japan	6,000 trees (4.5)	<i>Pinus merkusii</i>	5 years (2010–2014)	IDR 300 million (\pm USD 31,500)
Conoco Phillips Indonesia	7,000 trees (13 ha)	<i>Pinus merkusii, Agathis loranthifolia, Altingia excelsa, Arenga pinnata, Coffea robusta</i>	5 years (2009–2014)	IDR 449 million (\pm USD 47,000)
NYK Group	1,500 trees (0.8 ha)	Fruit trees	1 years (2009)	IDR 30 million (\pm USD 3,100)
NYK Group	1,100 trees (2.1 ha)	<i>Pinus merkusii</i>	2 tahun (2012-2013)	IDR 44 million (\pm USD 4,600)
TOTAL	19,600 trees (30.4 ha)			IDR 1.55 billion (\pmUSD 160,200)

Carbon projects...(5)



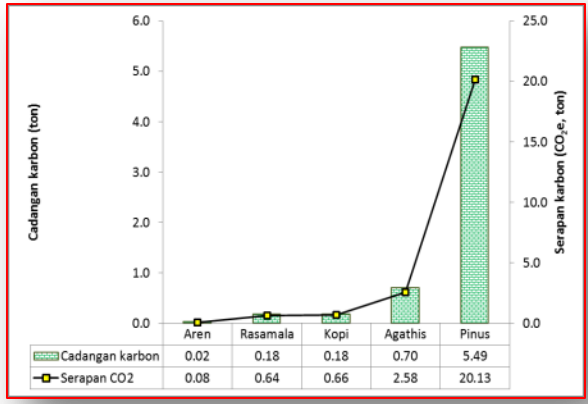
- Contract values were determined based on **costs required for forest rehabilitation** (planning, planting, tending, monitoring, etc.)
- Estimated carbon price of the 30-yr TOSO project:
 - Agathis timber: $1 \text{ m}^3 \approx 0.29 \text{ tC} \approx 1.05 \text{ tCO}_2\text{e}$
 - Timber increment (MAI): $15 \text{ m}^3/\text{ha}/\text{yr}$
 - CO_2 sequestration: $15 * 1.05 = 15.74 \text{ tCO}_2\text{e}/\text{ha}/\text{yr}$
 - Total CO_2 sequestration: $15.74 * 10 * 30 = 4,722 \text{ tCO}_2\text{e}$
 - Price: $\text{IDR } 725,000,000 / 4,722 \text{ tCO}_2\text{e}$
 $= \text{IDR } 153,537 = \text{USD } 17/\text{tCO}_2\text{e}$

Carbon projects...(6)

- Some related activities...
 - Plantation **tending** (involves local communities):



- Plantation **monitoring** and reporting:



Carbon projects...(7)



- Some related activities...

www.toso.com/general/environmental_03.html

3. Social contributions

Tree planting in the Republic of Indonesia

P.T. TOSO INDUSTRY INDONESIA, a TOSO overseas affiliate, manufactures curtain rails and blinds in the Republic of Indonesia. Forests in Indonesia are shrinking significantly due to excessive logging, causing shortages of potable water, depletion of soil and crops, floods, and landslides. As a corporate citizen operating in Indonesia, the TOSO Group has implemented a tree planting program to advance reforestation efforts. Since 2009, we have planted trees in cooperation with the Gunung Walat University Forest, Faculty of Forestry, Bogor Agricultural University Indonesia.

■Planted trees

Year	Species	Number of trees planted
2009	Agathis	4,000
2010	Pinus	2,000

Since the trees planted are saplings, the current CO₂ absorption is relatively modest. However, by 2015, we expect these 6,000 trees to absorb some 75.31 tons of CO₂ annually.

■Area where trees are planted



Website
publication of
TOSO's
project



P.T. TOSO INDUSTRY INDONESIA



Planting of April, 2009



Planting of December, 2010

Carbon projects...(8)



- Some related activities...
 - Student **researches**:
 - Developing **allometric biomass models** for small diameter trees
 - Estimating **carbon sequestration** of young plantations
 - **Improving tree growth** by using Lateral Root Manipulation (LRM) techniques



Carbon projects...(9)



- **Enabling condition** for voluntary carbon projects in Indonesia:
 - **CSR (Corporate Social Responsibility)** programs of (emitter) companies provide **funding** for supporting **environmental programs**
 - The **government** has issued relevant **regulations**:
 - **Permen LH No. 5/2011**: companies should participate in **reducing emission** programs (e.g. CDM)
 - **Permenhut No P.63/Menhut-II/2011**: companies that use forested lands (e.g. mining companies) must conduct **forest rehabilitation** in a watershed beyond their concession areas

GWUF Expectations



- Gain further financial incentives through “forest carbon conservation” or “payment for environmental services (PES)” mechanism:

Some facts of the GWUF forest (*Silviana 2011*):

- timber: 398,55 m³/ha, biomass: 198,32 ton/ha, carbon stocks: **93,21 ton/ha**, CO₂ sequestration: **342,08 ton/ha**

- Expand carbon projects to community forests nearby the GWUF

Closing Remarks



- GWUF provides a unique example on:
 - a success story of transforming **bare-lands** into **forested-lands**
 - how a forest management unit can **survive without ‘cutting the trees’**, while it continuously provides **environmental** and **social benefits**
- GWUF carbon project:
 - **voluntary** and **uncomplicated** scheme can effectively absorb CSR funding
 - could be **replicated** in other areas for implementing **voluntary domestic carbon markets** from private companies in Indonesia

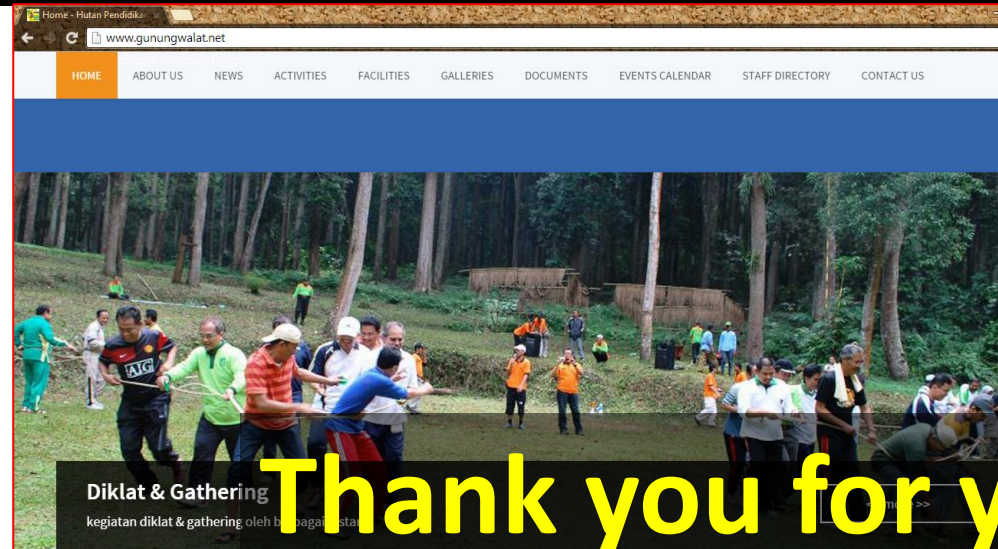
Further information:

<http://www.gunungwalat.net>

<https://www.facebook.com/HutanPendidikanGunungWalat>

<https://twitter.com/gunungwalat>

<https://www.youtube.com/user/hpgwfahutanipb/videos>



Thank you for your attention



Search...
HPGW
Gunung
Walat