



SUSTAINABILITY of **FOREST** Business *March 5th – 9th 2018* **IN THAILAND**



SCG

Mr. Mahasan Thieravarut
Managing Director
The Siam Forestry Co.,Ltd.



SUSTAINABILITY of **FOREST BUSINESS** **AGENDA**

- **SCG and SFT Introduce**
(SCG has grown alongside with a thriving development of Thailand)
- **Supply chain management in forest Business**
(Beginning plantation to our customer)
- **Balancing Sustainability of forest Business**
(Economy Society and Environment)
- **Matching economy and agricultural tradition**
(Increasing value-added in agriculture Ex. Planting eucalyptus on paddy , planting on riverside and planting on flood pain areas)
- **Product Innovation**
(Classify Plantation Areas for Trial and Clone&site to Promotion)
- **CONTRACT FARMING**
(Planting kind and plantation management)
- **Supply chain Management**





Business Philosophy

- **ADHERENCE TO FAIRNESS**
- **DEDICATION TO EXCELLENCE**
- **BELIEF IN THE VALUE OF THE INDIVIDUAL**
- **CONCERN FOR SOCIAL RESPONSIBILITY**

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SIAM CEMENT GROUP : SCG



The group has **diversified into 3 core businesses** which include SCG Packaging, SCG Chemicals and SCG Cement-Building Materials. Since the establishment, SCG has **grown alongside with a thriving development of Thailand**

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PACKAGING BUSINESS CHAIN



- **Packaging Paper Business**
- **Packaging Business**

FIBROUS BUSINESS CHAIN

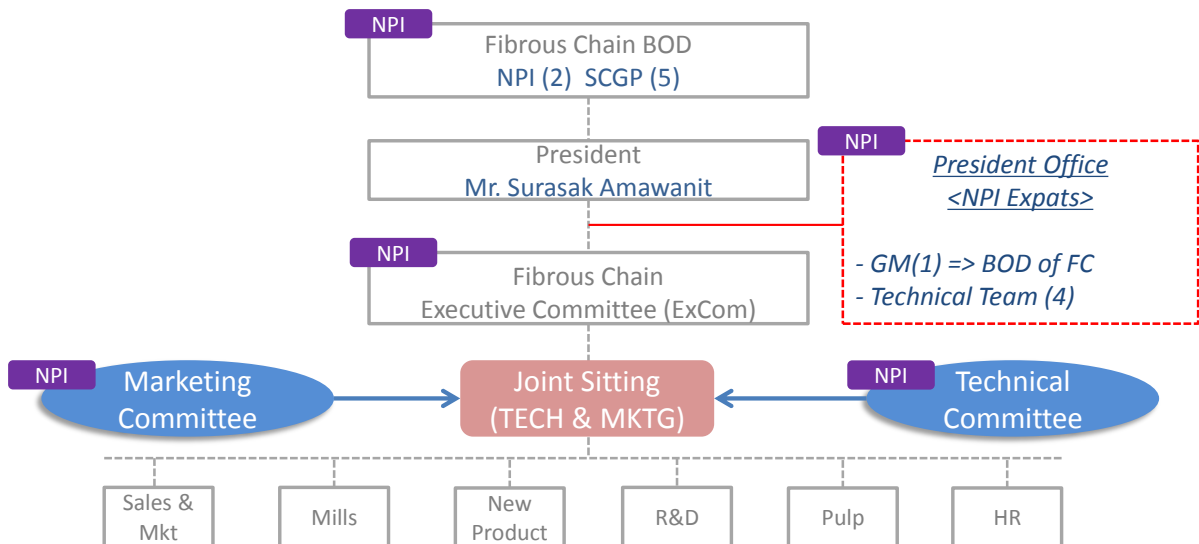


- **Pulp and Paper business**
- **Forestry Business**

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Business collaboration structure





Core Businesses of **FIBROUS CHAIN BUSINESS**

3 CORE

- **Forestry**
(Operates a fully – integrated forestry)
- **Pulp production**
(Produces various types of eucalyptus pulp)
- **Paper Production**
(Printing and Writing paper, Industrial Paper, Glassine Paper , Food contact paper and Food Packaging.)

CAPACITY/YEAR

- **502,000 tons**
(Pulp production)
- **572,000 tons**
(Paper Production)

**1.07
Million**

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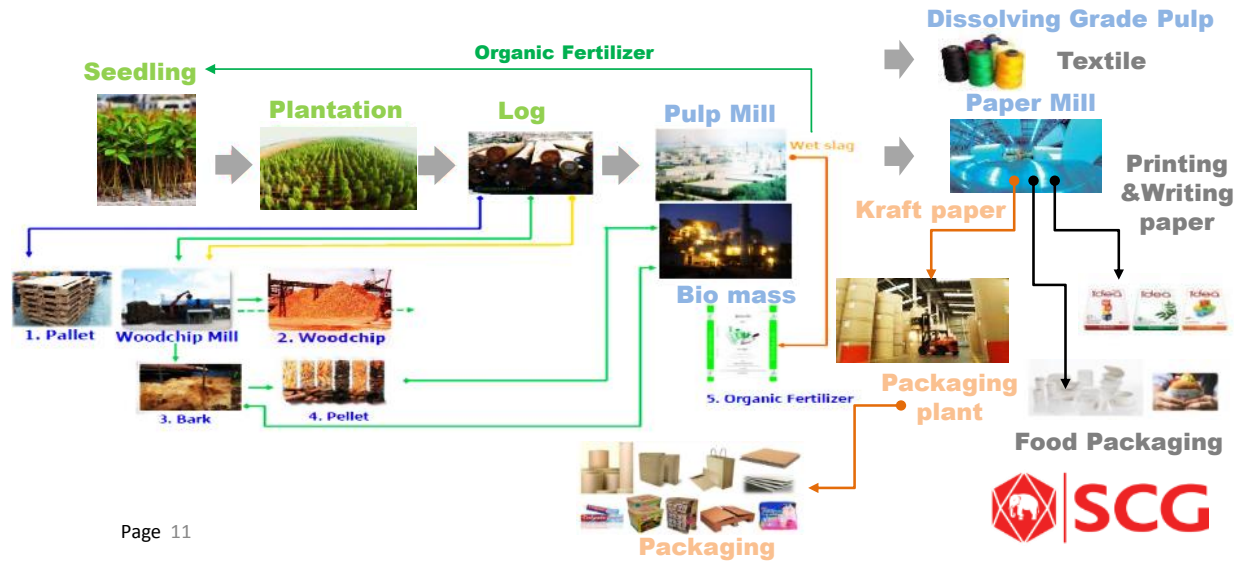


FOREST
The Heart of economy
SUSTAINABLE RESOURCE

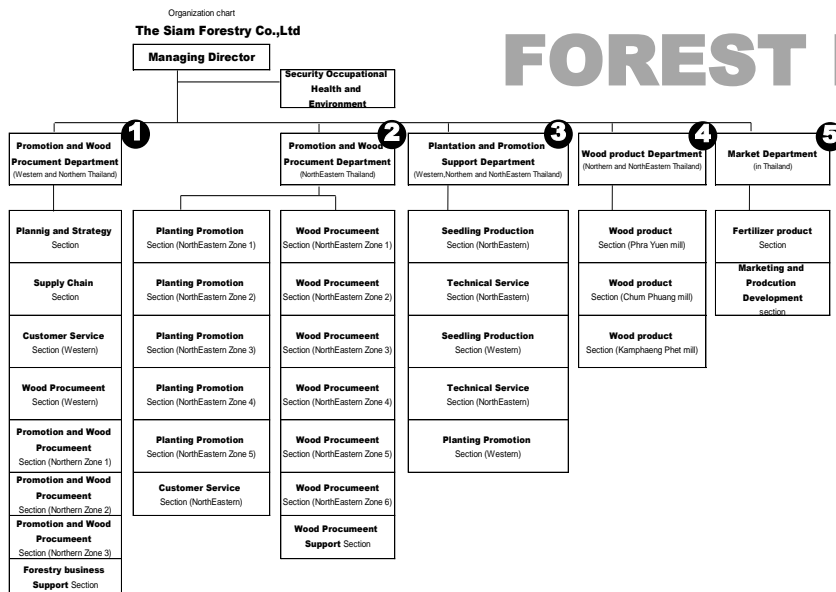


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SUSTAINABILITY of FOREST BUSINESS SUPPLY CHAIN MANAGEMENT



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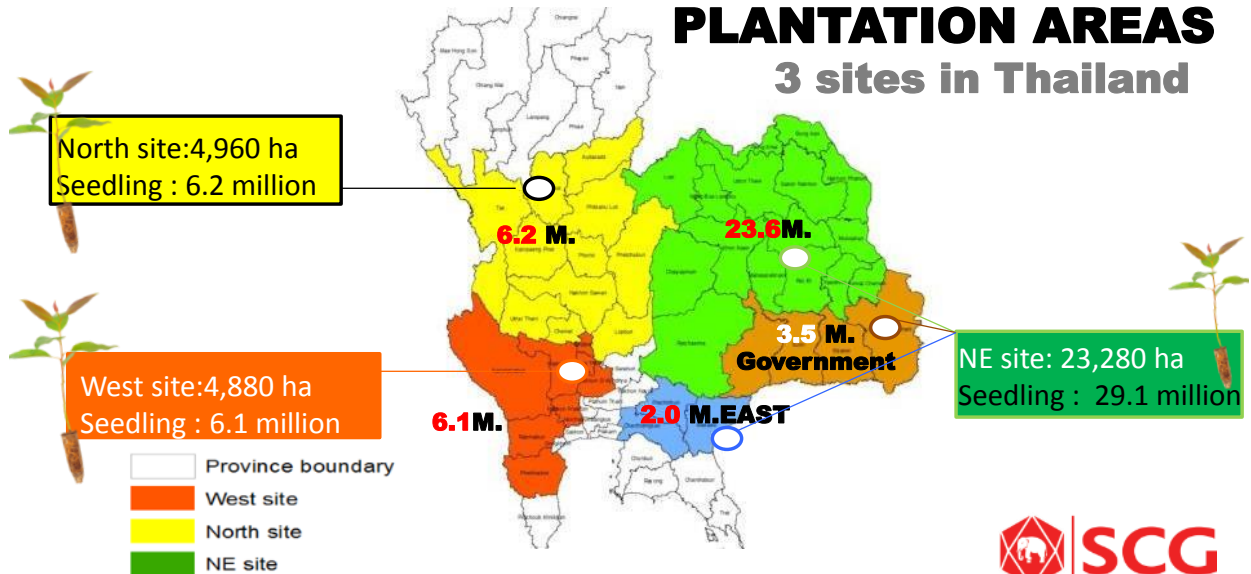
SUSTAINABILITY of FOREST BUSINESS



3 Site

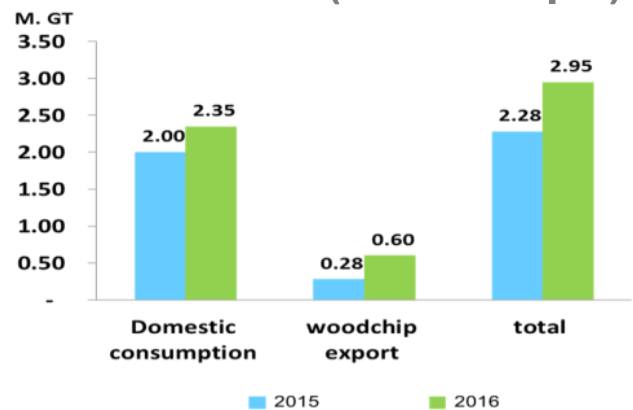
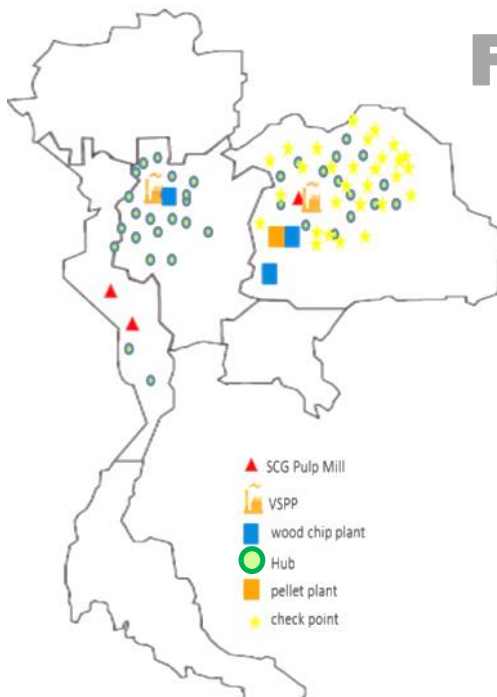
5 Dep.
In Thailand

SUSTAINABILITY of FOREST BUSINESS PLANTATION AREAS 3 sites in Thailand



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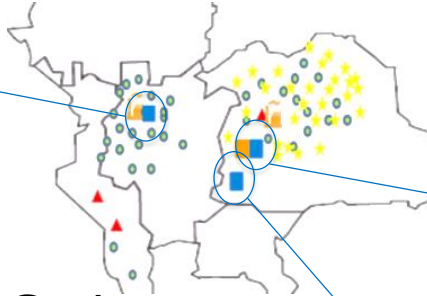
SUSTAINABILITY of FOREST BUSINESS CONSUMPTION & SUPPLY SFT Demand (Domestic +Export)



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SUSTAINABILITY of FOREST BUSINESS SFT Wood Chip Mill



Wood chip mill 3 sites
Capacity 600,000
Ton log/year

SUSTAINABILITY of FOREST BUSINESS BUY WHOLE TREE



Wood Procurement -



Biomass for energy
(wood pellet)



Wood Chip



Pulp

Fibrous Material



wood pallet



FOREST BUSINESS

SUSTAINABILITY of BALANCING SUSTAINABILITY

Economy Society and Environment

Corporate Governance

Supervises our business management to ensure fairness, transparency and accountability in accordance with its business philosophy "Adherence to Fairness".

- Good corporate governance
- Risk management
- Disclosure and reporting



Economy

Creates values not exclusively for profitability, but creates mutual benefits for all stakeholders.

- Contributes to national economic growth through value generated by our operations.
- Income distribution among our stakeholders.

Environment

Commits to conservation of the environment and natural resources, using resources wisely and maintaining ecological balance.

- Energy and climate change
- Water management
- Waste management
- Biodiversity and ecosystem
- Environmentally friendly products and services
- Logistics management

Society

Conducts business with ethics and concern for social responsibility. Participates in improving the quality of life where SCG operates.

- Community investment and donation
- Labor practices and human rights
- Human resources and human capital development
- Health and safety
- Stakeholder engagement

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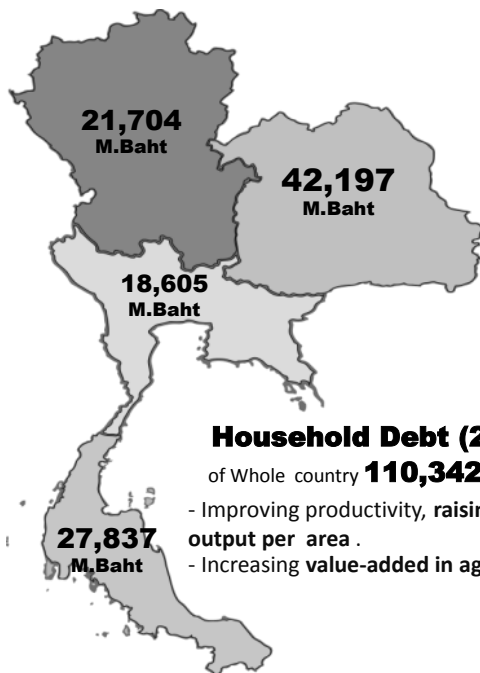
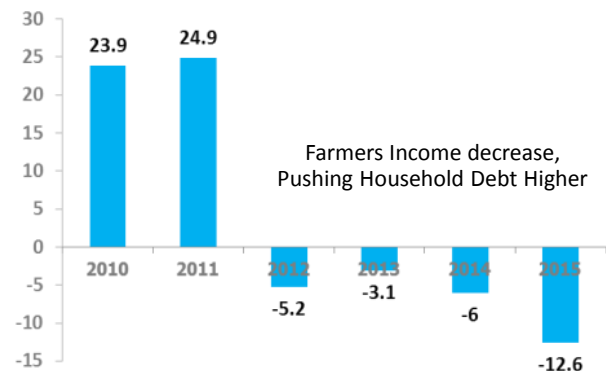


FOREST BUSINESS

SUSTAINABILITY of STARTING ECONOMY

FARMER INCOME GROWTH RATE (%)

Source : Office of Agricultural Economics



Household Debt (2015)

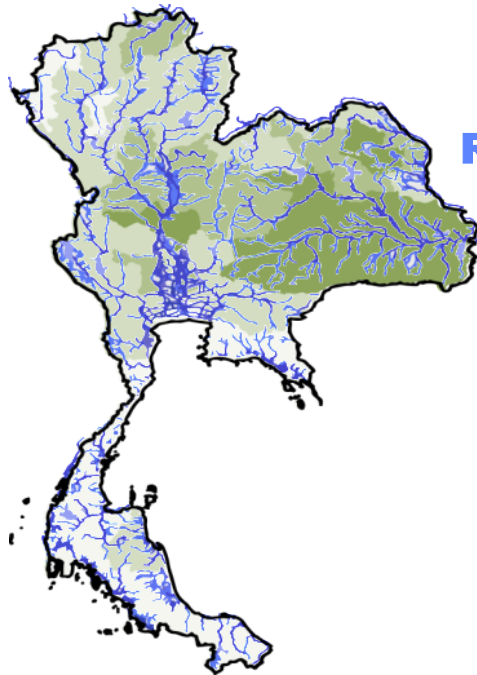
of Whole country **110,342** M.Baht

- Improving productivity, raising farming output per area.
- Increasing value-added in agriculture.

How too?

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SUSTAINABILITY of FOREST BUSINESS ECONOMY and AGRI-TRADITION River(Flood pain) and Paddy areas

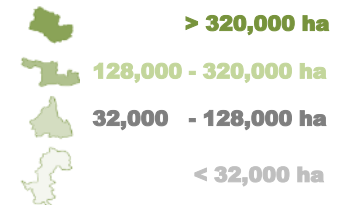
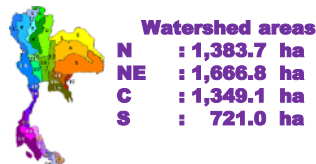


Source : Water Watch and Monitoring System



Source : Office of Agricultural Economics

25 Main watershed
254 Sub watershed



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“KAMPHAENGPHET MODEL”

Planting on riverside

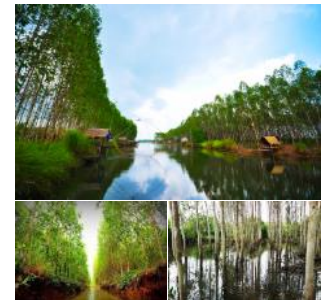
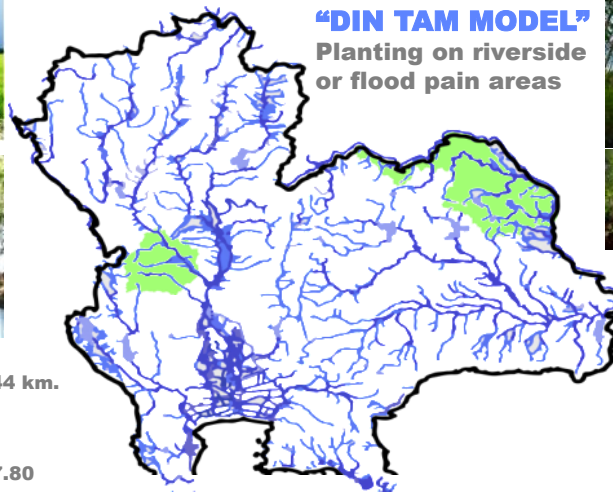


- Since 2005 - 2015
- Riverside length 5,044 km.
- Areas 32,282 ha
- Ping watershed
- Contract farming
- Farmer income 2,787.80 baht/ha

SUSTAINABILITY of FOREST BUSINESS 2 SUCCESSFUL MODELS

“DIN TAM MODEL”

Planting on riverside
or flood pain areas



- Since 2013 - 2016
- Areas 4,473 ha
- 3 province (Mae Khong watershed)
- Contract farming
- Farmer income 1,518.80 baht/ha



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SUSTAINABILITY of FOREST BUSINESS DIN TAM MODEL



Planting on riverside or
flood pain areas



SUSTAINABILITY of FOREST BUSINESS KAMPHAENGPHET MODEL



Planting on riverside
MODEL



SUSTAINABILITY of FOREST BUSINESS Product Innovation

Traits for Eucalyptus Improvement

- Volumetric yield ,Pulp yield, Wood density
- Adaptability (Calcareous soil, Drought, Saline soil ,**Flood areas, Riverside and Paddy field**)
- Gall insect tolerance
- Disease resistance

CLONAL TEST



Breeding



Clonal Test



Propagation

CLONAL TEST

- Testing since 2001-2016
- There are more than 250 plots for Clonal Test Thailand
- In 2016, There are **7 clone commercial**

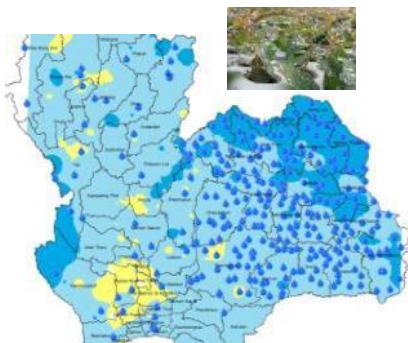


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SUSTAINABILITY of FOREST BUSINESS Product Innovation

Classify Plantation Areas for Trial and Promotion.

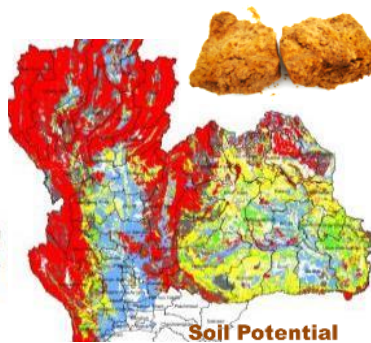
Rainfall information Analysis



Annual Rainfall
Classifieds 3 Site

- Drought** (<1000 mm./yr)
- Normal** (1000-1600 mm./yr)
- Wet** (>1600 mm./yr)

Soil information Analysis



Soil Potential

Classifieds 6 class

- Lowland (basin)
- Suitably
- Moderate
- Little Suitable
- Poor
- Very Poor

Clonal Trial plot (2011-16)



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Selected Commercial clone for Customer 2016-18

SUSTAINABILITY of FOREST BUSINESS Product Innovation

E. camaldulensis or
E. camaldulensis x *E. urophylla*



P6 and H4



Drought(<1000mm.)

E. camaldulensis x *E. urophylla* or
E. camaldulensis x *E. pellita*



H4, H8, H14, H18 and **H34,H32**



Normal (1000-1600mm.)

E. camaldulensis x *E. pellita*



H22,H26,H28,H36 and H38



Wet (>1600m.)



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Selected Commercial clone for Customer

Ex. Clone Commercial



For normal site **H32**

Fine sandy loam



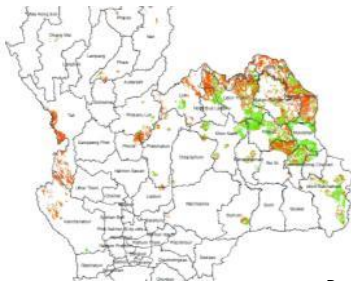
Potential site ;
Soil detail ; **sandy loam and loam(soil depth more than 50 cm.)**
Climate detail ; **average rainfall 1,000-1,400 mm.**

H34

Sandy loam



Potential site ;
Soil detail ; **sand ,sandy loam (soil depth more than 50 cm.)**
Climate detail ; **average rainfall 1,000-1,400 mm.**



For wet site **H22**

Fine sandy loam



Potential site ;
Soil detail ; **sandy loam and loam(soil depth more than 100 cm.)**
Climate detail ; **average rainfall 1,600- 2,500 mm.**

H28

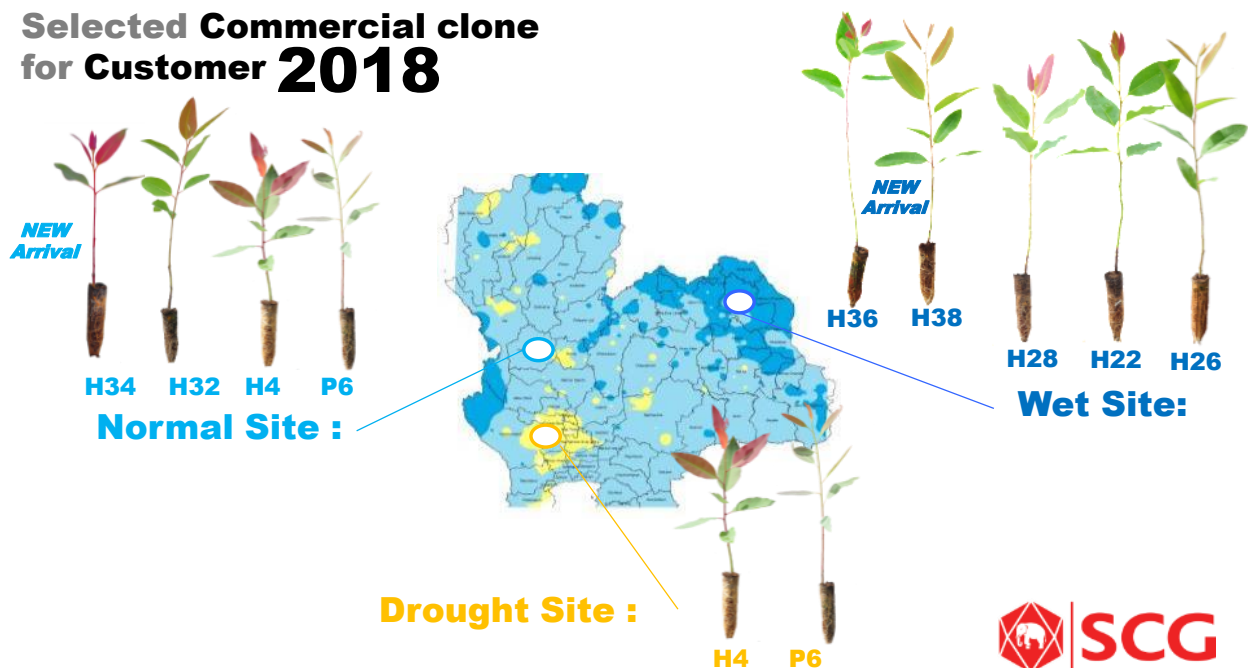
Moderate soil depth(pebble)



Potential site ;
Soil detail ; **moderate soil depth(pebble)**
Climate detail ; **average rainfall 1,600-2,200 mm.**

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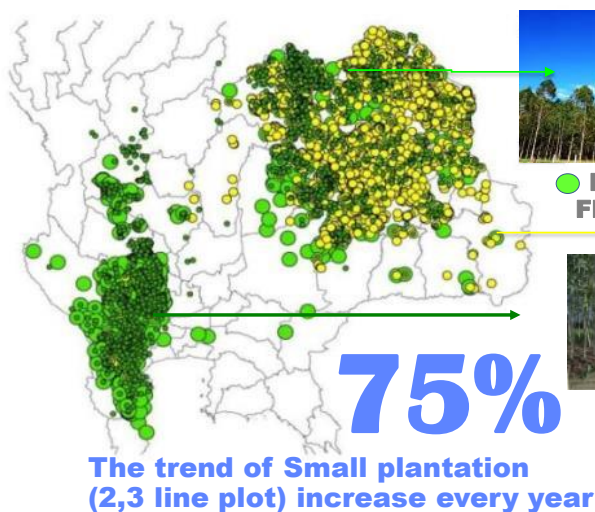
Selected Commercial clone for Customer **2018**



SUSTAINABILITY of FOREST BUSINESS CONTRACT FARMING

25%

The trend of Big plantation (1) decrease every year



● Plantation and Flood plain areas



Irrigation ,Riverside
● (line plot)

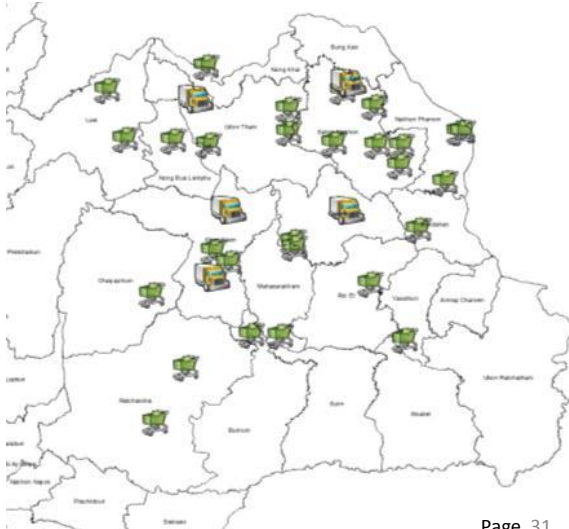


Paddy field
● (line plot)

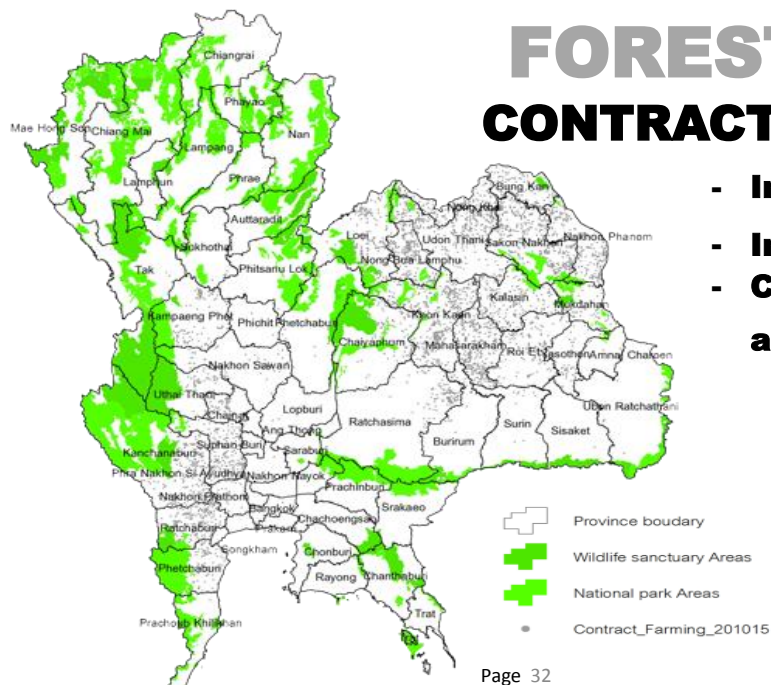


**Product Convenient by EuCA
SIAM Ex. Selling point**

SUSTAINABILITY of FOREST BUSINESS CONTRACT FARMING



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SUSTAINABILITY of FOREST BUSINESS CONTRACT FARMING areas

- Increase **39,440** ha/yr.
- Increase **2.47** M.GT/yr.
- **CONTRACT FARMING** areas are **LEGAL**.





- Large users' database
- Free software to efficiently run their business
- Royalty program
- Agricultural knowledge to farmers

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Map

Legend

Group Type

- ★ 1000-1500
- ★ 1500-2000
- ★ 2000-2500
- ★ 2500-3000
- ★ 3000-3500
- ★ 3500-4000
- ★ 4000-4500
- ★ 4500-5000
- ★ 5000-5500
- ★ 5500-6000
- ★ 6000-6500
- ★ 6500-7000
- ★ 7000-7500
- ★ 7500-8000
- ★ 8000-8500
- ★ 8500-9000
- ★ 9000-9500
- ★ 9500-10000
- ★ 10000-10500
- ★ 10500-11000
- ★ 11000-11500
- ★ 11500-12000
- ★ 12000-12500
- ★ 12500-13000
- ★ 13000-13500
- ★ 13500-14000
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- ★ 21500-22000
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- ★ 98500-99000
- ★ 99000-99500
- ★ 99500-100000

TAMBOUR 10-11

Sum of 10-11

0-100

100-200

200-300

300-400

400-500

500-600

600-700

700-800

800-900

900-1000

1000-1100

1100-1200

1200-1300

1300-1400

1400-1500

1500-1600

1600-1700

170

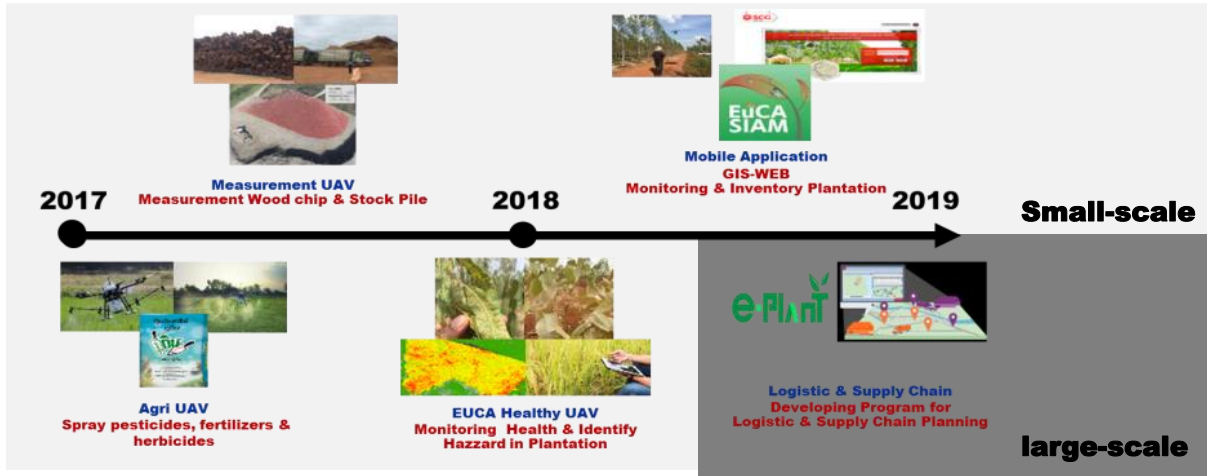
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Procurement Point: Cover promotion areas



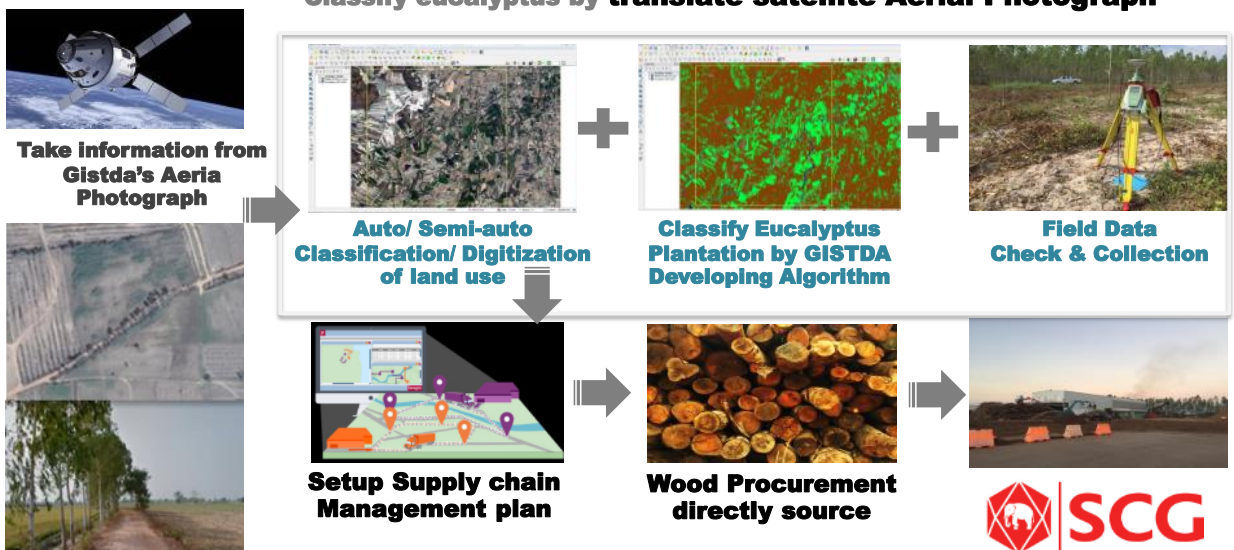
SUSTAINABILITY of FOREST BUSINESS

Supply chain management CASE STUDY and PROJECT PLANNING DEVELOPMENT COOPERATION



SUSTAINABILITY of FOREST BUSINESS

Classify eucalyptus by translate satellite Aerial Photograph



SUSTAINABILITY of FOREST BUSINESS

Using UAV collected survival rate and
forecast yield



**Old Process : Using man
collected survival rate.**

100 rai (**Sampling 10%**)
Man : **4 manpower.**
Time : **1 day**
Cost : **1,200 baht**

Promotion Areas : **200,000 rai/yr.**
Cost : 2.4 Mbaht.
Time : 2,000 day



**New Process : Using UAV
collected survival rate.**

100 rai (**Collected 100% / Error ±5%**)
Man : **3 manpower.**
Time : **1 day / 100 km² (625 rai)**
Cost : **900 baht**

Promotion Areas : **200,000 rai/yr.**
Cost : 1.8 Mbaht (-0.6 Mbaht)
Time : 320 day (-1,680 day)

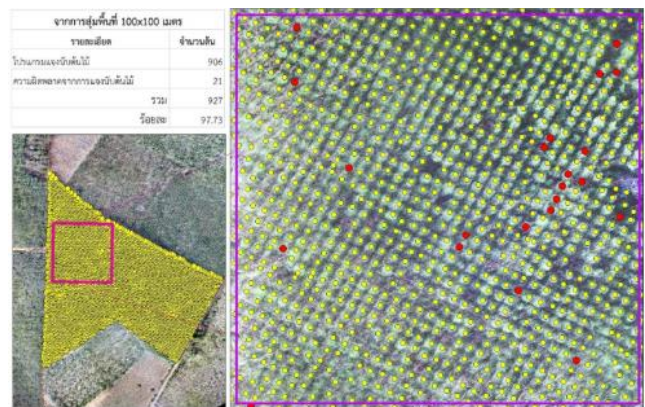
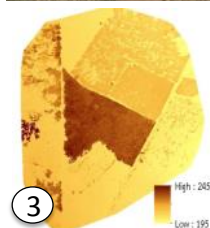
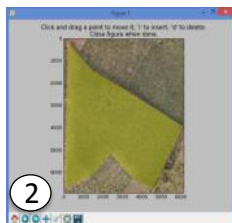
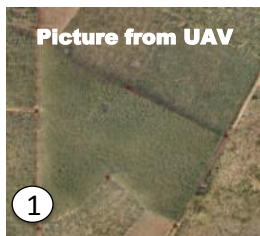


SUSTAINABILITY of FOREST BUSINESS

Using UAV collected survival rate and
forecast yield

**Our customer
in Manchakhiri, Khon Kaen**

Ex. report : Survival rate



SUSTAINABILITY of FOREST BUSINESS

Economy

- Farmer income increase.
- Community income increase.
- Government reduce expenses



Society

- low labor mobility.
- Increasing value-added in public land.

Environment

- Reducing utilization from Forest.
- Reducing deforestation.
- Increasing O₂ .

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