The Future of Agriculture:
Scenarios, Concepts, Vision

Partnership Farming:
Towards Sustainability of Oil Palm Smallholders in Thailand

Dr. Yotsawin Kukeawkasem

Sustainable Palm Oil Production for BioEnergy

gtz

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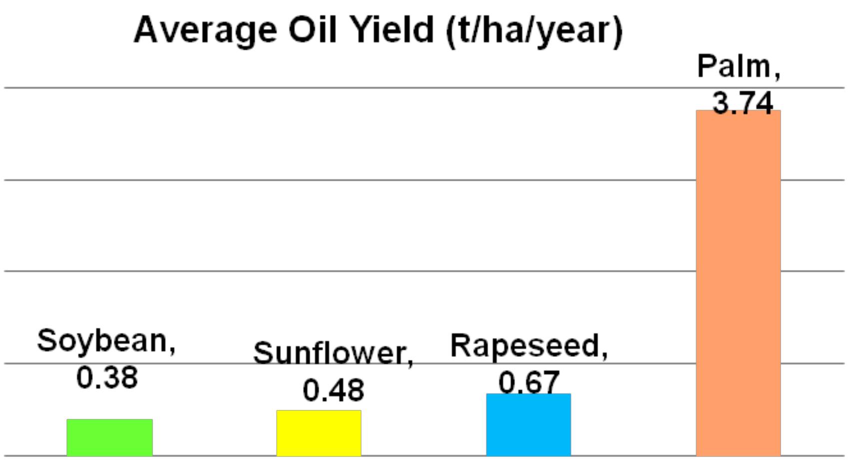
Outline of the presentation

- Palm oil outlook
- Thailand profile
- Challenges of sustainable palm oil production in Thailand
- Project’s intervention (5 Success Factors)
- Conclusion
- Snapshots

Palm Oil Outlook



Oil Crop	Production (mln ton)	% of total production	Avg. Oil Yield t/ha/y)	Total area mln ha	% Area
Soybean	35.19	34.24	0.38	92.63	42.27
Sunflower	11.09	10.79	0.48	22.95	10.47
Rapeseed	18.34	17.84	0.67	27.29	12.45
Oil palm	36.90	35.90	3.74	9.86	4.50
Others	1.26	1.23		66.42	30.31
Total	102.78			219.15	

Source: cited by WWF (2009)

- The most efficient (up to 5 t/ha/year), cheapest and versatile vegetable oil
- Perennial crop, ca. 25 productive cycle years
- Accounted more than a third of total world vegetable oil and surpassed soy oil
- Wide-range used and fast growing demand in food and non-food industries

Global challenges

• Impact on social (land, labor) and environmental(deforestation, biodiversity, wild life, etc.) aspects
• Sustainability certification schemes
• Smallholder's participation in the booming market commodity

Oil Palm Production in the 4 Countries

Item / country	Indonesia	Malaysia	**Thailand**	Papua NG
Total land area (Mln Ha)	181.16	32.85	**51.29**	45.29
% Forest area	46.78	62.73	**28.19**	64.39
% Agricultural area	26.77	23.95	**38.66**	2.30
Oil palm harvested area (Mln Ha)	5.00	3.90	**0.45**	0.096
% Oil Palm to Agricultural area	10.31	49.56	**2.28**	9.23
Yield (Mln. tonnes)	85	83	**7.9**	1,4
Productivity (ton/Ha)	17.00	21.28	**17.49**	14.58
Area under smallholder(%)*	44	41	**76** **ca. 100,000 SHs**	42

Source: FAOSTAT (2010), * World Bank (2006)

Thailand Profile

Population (million)	63.5 (82.5)
Land area (1,000 sq. km)	513 (358)
GDP (us$bln)	162 (2,741)
% Av. Real GDP growth (94-04)	3.2 (1.5)
% Av. annual inflation (00-05)	2.3 (1.6)
% Industry GDP	**44.6**
% Services GDP	**44.7**
% Agriculture GDP*	**10.7** (1.1)
% Agriculture employment*	**45** (2)

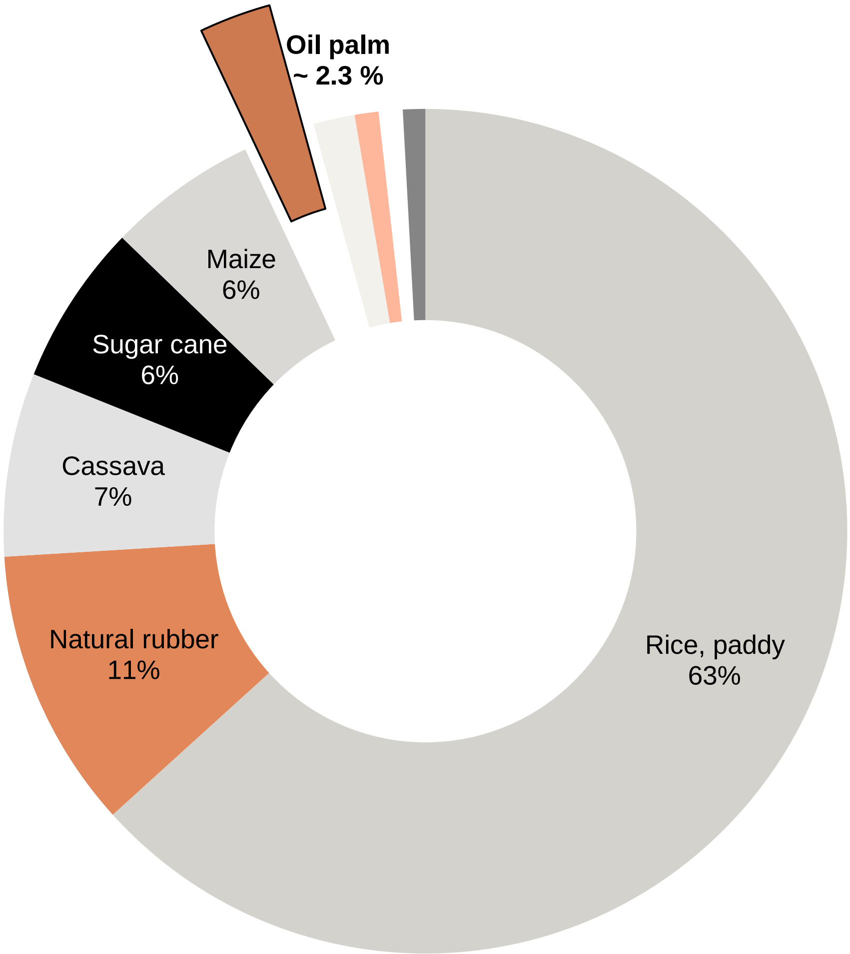
Major exporting agri. products with world ranking (95 – 05):
Rice (1st), Natural rubber (1st), Sugar cane (2nd), **Casava (1st),**
Fish and fishery products (3rd), ***Chicken meat (6th)***

Remarks: (GERMANY)
Source: FAOSTAT (2010)

Agricultural land use and productivity

Crops	Mln (Ha)	Yield (t / Ha)
Rice, paddy	10.36	2.69
Natural rubber	1.76	1.77
Cassava	1.15	22.92
Sugar cane	1.01	63.71
Maize	0.94	3.84
Oil palm	**0.45**	**17.56**
Coconuts	0.26	6.68
Bananas	0.15	13.07
Beans, dry	0.15	0.78
Soybeans	0.14	1.56
others	1.64	

Source: FAOSTAT (2010)



Land Distribution of Key Crops in Thailand (%)

Challenges of the TH Palm Oil Industry

LOW YIELD + POOR FRUIT QUALITY = LOW PALM OIL OUTPUT

"Market Failure"

- Poor plantation management
- Lack of Agricultural knowledge&inputs: fertilizer, credit, etc
- Low quality seedlings
- Harvesting of unripe fruit
- Poor ramp management: water spray and sand mixture
- Low quality control of FFB purchasing
- Low OER (Inefficient) of crushing mill

Farrmer	Harvest team	Ramp (middleman)	Palm Oil Crushing Mills

Ministry of Agri. (DoAE, DoA, ACFS)	Academic Institutions	Provincial Govt. Office	Agr. Inputs Supplier	Asso. of Palm Oil mills/refinery	National Palm Oil Board

Independence & loose coordination

Roles, interest and relationship of the key stakeholders in TH palm oil industry

Stakeholder	Roles	Interests/strategy	Relationship
Mills	•Purchase fresh fruit bunch	• Sufficient FFB to the mill's capacity	• Self interest • Short-term relationship • Opportunism • Spot market • Limited information sharing • Flexibility • Weak control by buyer • loose coordination • Independence
Middlemen	•Ramp: collect oil palm fruit, provide agri. Inputs (credit, fertilizer, workers), transportation, etc.	• maximize margin of FFB trading by adding water, sand, loose fruit	
Farmer	•Large, medium, small scale plantation •Smallholder: family labour & hired labor	• Least cost and work	
Agri. Input supplier	•Seed: domestic & import •Seedlings: registered and non- registered •Fertilizer: quality & prices •Pesticide, Herbicide: usage •Labor/worker: low skill & shortage •Credit, land: free market	• highest sales	

Value added of the supply chain improvement with 20 x 20 target

Rough calculation	Productivity (t / Ha)	Yield FFB Mln ton	Oil Extraction rate (%)	Crude Palm Oil Mln ton
Status quo (based on 0.45 mln Ha)	17.5	7.9	17	1.34
Target	**20.0**	9.0	**20**	1.80
Gap (to be increased)	2.5	1.1	3	**0.46**
Increased value/ year (Market price in July, 2010 in **THB**)	*4,300 /ton*	**4.7 billion**	*25,000/ton*	**11.5 billion**
In **US Dollar** (32:1) In **Euro** (42:1)		150 million 112 million		360 million 274 million

Characteristics of project's pilot Smallholders (n = 108)

- Age (avg.): 49.3 years old
- Education:
  - Primary level 67.6 %
  - Secondary level 23.1 %
  - Higher level 9.3 %
- Family size: 3.8 person
- Land size: 6.2 Ha
- Access to credit: 67.6 %
- Palm farming experiences: 16 years
- Household annual income (THB):
  - ≤ 300,000 (7,000 €) 50.0 %
  - < 500,000 (12,000 €) 34.3 %
  - > 500,000 15.7 %
- Household income depending on oil palm (%)
  - 10 – 30 % 5.6 %
  - 31 – 60 % 43,5 %
  - 61 – 80 % 24.1 %
  - 81 – 100 % 26.9 %

Source: Project baseline study in Krabi province, Thailand

Project's intervention: STRATEGY

National level (policy framework)

Develop sustainable Palm Oil certification system in Thailand

Support Thailand National Initiative Working Groups

Facilitate the TH NI process

Thai NI on RSPO P&C
(Approved on 9th July, 2010)

Local level (field, production)

Support the implementation of a certified Palm Oil production in pilot areas

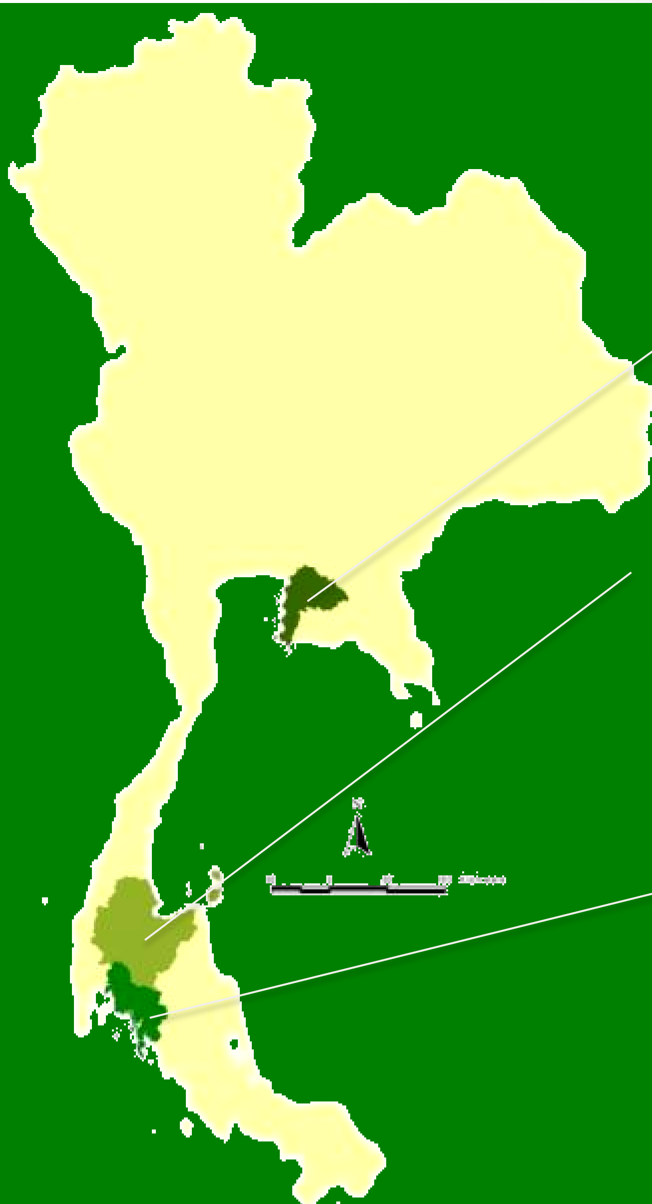
Select mills and small farmer/groups in pilot areas

Value chain coordination and better farm practices: productivity, quality, reduce cost

Improve livelihood of smallholders (Socio-economic & environment)

Sustainable palm oil production

Project Pilot mills and areas



Cholburi

Suksomboon Palm Oil Mill

Surat Thaini

Southern Palm Oil Mill

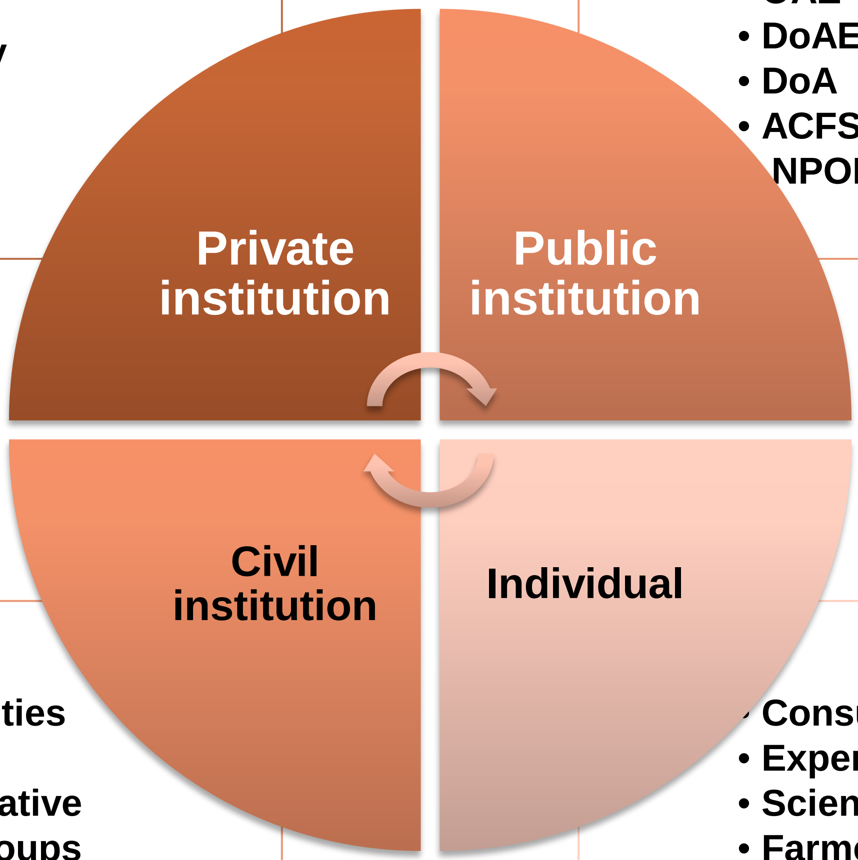
Krabi

Univanich
United Palm Oil Industry Company
Ao Leuk Co-operative

Project intervention: COOPERATION

- **Mills**
- **Refinery**
- **Traders**

- **OAE**
- **DoAE**
- **DoA**
- **ACFS**
- **NPOB**



- **Universities**
- **Ramps**
- **Co-operative**
- **Farm groups**

- **Consultants**
- **Experts**
- **Scientist**
- **Farmers**

Project intervention: STEERING STRUCTURE

Project Director

Support office in Bangkok/Eschborn:
Certification system, GHG calculation, Monitoring, Policy & advocacy

Private Mills

Project Manager

- Field Manager Assistant
- Technical Management Officer
- Farmer Coordinator (1, 2)
- Oil Palm Expert (part-time)
- Admin. Officer

Farm Advisor 1 - - - Mill Coordinator 1 — UPOIC

Farm Advisor 2 - - - Mill Coordinator 2 — Univanich (Univanich Palm Oil Public Company Limited)

Farm Advisor 3 - - - Mill Coordinator 3 — SOUTHERN PALM OIL INDUSTRY(1993)

Farm Advisor 4 - - - Mill Coordinator 4 — SUKSOMBOON PALM OIL CO.,LTD

Farm Advisor… - - - Coordinator — Ao Luek Cooperative

Project intervention: PROCESSES

Farm Productivity

- Training & technical support: Fertilizer use, Leaf & soil analysis, Good Agricultural Practice, Best management, IPM, OSH, etc
- Farm inputs coordination

Fruit Quality

- Price premium based on quality
- Grading system
- Harvesting and fruit handling guidelines

Sustainability

- RSPO Certification
- Farmer group & institutional development
- Database management system
- Mutual interest, benefit & information sharing
- Long-term relationship
- Interdependence of the smallholder and the mill

Project intervention: LEARNING & INNOVATION

Partnership agreement

(Voluntary and market driven approach)

Mill's support

- Fertilizer at the mill's price & quality
- Seedlings provision (price & priority)
- Free empty fruit bunches (EFB)
- Premium price based on QUALITY
- Express delivery channel
- Technical & training supports

Farmer's commitment

- Regular delivery
- Plantation Best Management
- Commitment to the group's agreement towards sustainability on socio-, economic and environmental aspects

Project intervention: LEARNING & INNOVATION

- **Clear exit strategy (private sector carry on the project model and staffs are employed by the palm oil industry)**
- **Learning by doing & participatory approach**
- **Project introduces the first sustainability certification system into Thai agricultural sector and the palm oil industry**
- **Develop various models on sustainable palm oil production for independent smallholders**

Conclusion

- Growing demand of palm oil in food, chemical and bio-fuel industries
- Sustainable production and certification are becoming neccesary for international market to cope with social and environmental impact
- Smallholders can be excluded from the international market participation, if there is no supports (investment) on the value chain coordination
- Partnership farming as a model for independent smallholder towards sustainability for:
  - transaction cost reduction
  - productivity & quality improvement
  - rural development

Snapshots: project activity

Various forms of meeting & training ….

Snapshots: project activity



In the field



Snapshots: project activity



Fresh fruit bunch handling



Snapshots: project activity

Means of palm transportation ….

Bundesministerium
für Umwelt, Naturschutz
und Reaktorsicherheit

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Thank you very much !