

Do Smallholders Gain from Contract with an Oil Palm Company?

Lesson Learned from Jambi, Indonesia

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Motivation



- Rapid expansion of oil palm plantation in Indonesia under contractual schemes between large corporations and smallholders is enforced by the government in order to promote oil palm as a major tool for rural development
- Debates on pro and cons of contract farming (Glover, 1984) in the oil palm industry (Rist et al, 2010)

Objective

- To assess the benefits of contract farming for oil palm smallholders
- To analyze the implication of contract farming in the oil palm industry for poverty reduction

Methodology

Data collection

Data were collected randomly from 245 smallholders consisting of 126 contract and 119 non-contract smallholders in three villages of the District of Merangin, Province of Jambi, one of major oil palm producers in Indonesia.

Model

$$Y_i = \beta X_i + \delta l_i + \mu_i$$

$$l_i^* = \alpha Z_i + \epsilon_i$$

for $l_i = 1$ if $l_i^* > 0$, otherwise $l_i = 0$

- Y_i is the outcome, i.e. net household income, X_i are household characteristics and technical parameters of oil palm production, l_i is a dummy for contract participation and Z_i is a vector of variables attributable to participation.
- Endogeneity exists if ϵ_i is correlated with μ_i . To capture this problem, a two stage treatment effect model is employed by assuming a joint normal error distribution.
- We present two models : (1) model with overall sample to capture the impact of contract participation, (2) separate model for poor and non-poor group to capture equity effect and examine whether contract farming is poverty sensitive

Results

Characteristics of oil palm smallholders

- Most rural households with oil palm plantations have four members; at least 70 % are potential workers
- At least 86% of households are headed by migrants.
- Household income, assets, input use and net revenues per ha of contract smallholders is almost double of non contract smallholders
- Contract smallholders appear to be more dependent on oil palm with 70 % of their income from this activity

Econometric Results

Variable	Model 1		Model 2	
	Overall sample		Poor	Non-Poor
	1st stg	2nd stg	2nd stg	2nd stg
	Participation	Income	Income	Income
Age of hh	0.03**	0.04**	0.04	0.02
Age square of hh		-0.00**	-0.00	-0.00
Household size	0.07	0.07***	0.07	0.09***
Ratio of potential labor	0.68	-0.16	-0.23	-0.18
Education of hh	0.01	-0.01	-0.04*	-0.01
Allocated land	-0.29	-0.05	-0.21	0.03
Social capital	-0.01	0.01**	0.01*	0.01*
Migrant dummy	-1.11**			
Size of oil palm area	0.29***	0.16***	0.29***	0.14***
Size of rubber area	-0.03	0.07***	0.11**	0.05*
Size of other crop area	-0.01	0.07	-1.08**	0.10
Age of oil palm		0.02	0.03	-0.00
Age square of oil palm		-0.00	0.00	-0.00
Off-farm	-0.33	0.31***	0.28	0.36***
Planted in 1989-1994	3.26***			
Planted in 1995-2000	1.63***			
PARTICIPATION		0.47*	-0.86*	0.63**
Constanta	-3.44***	8.19***	8.05	8.74***
Lambda		-0.12	0.63**	-0.19
Rho		-0.22	1.00	-0.36
No of observation	245	245	88	157
Prob > Chi ²		0.0000	0.0000	0.0000

Remarks: * significant at the level of 10 % , ** significant at the level of 5 % , *** significant at the level of 1 %
Source: own calculation

Discussion

- ✓ Participation in the contract scheme can be explained by the age of household head, ethnicity, size of oil palm plot, and time of plantation establishment.
- ✓ Overall, contract farming in the oil palm industry has positive impact on smallholders income.
- ✓ Running separate model for poor and non-poor group underlines the equity effect of contract participation. A significantly positive income effect can be shown for non-poor group only.
- ✓ Poorer smallholders (per capita consumption < \$2 PPP) tend to loose from the contract farming because they are less able to apply input in the required manner and often cannot meet the strict credit repayment scheme.
- ✓ Policy makers should review the contractual schemes and induce oil palm companies to offer suitable contract terms for poor smallholders.

Reference

- Glover, D.J. 1984. Contract farming and smallholders out grower schemes in less developed countries. World Development, 12, (11/12), 1143-1157
- Rist, L. Feintrenie, L. Levang, P. 2010. The livelihood impacts of oil palm: smallholders in Indonesia. Biodivers Conserv 19, 1009-1024