

DO HOUSEHOLDS' PERCEPTION ON TREE PLANTING FOR WOOD ENERGY PRODUCTION IN THE DEVELOPING COUNTRIES MATTER?

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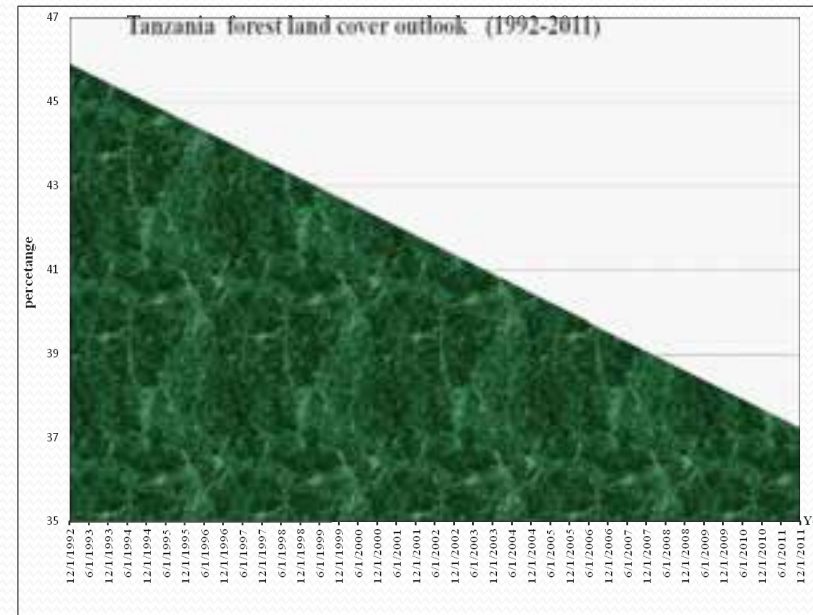
Proposal presented at Gothenburg

INTRODUCTION



Importance and demand for tree planting in developing countries including sub-Saharan Africa

- countries in sub-Saharan Africa lost about 0.5 % per year
- In Tanzania, the forest declining at an annual rate of 1.16% /yrs
- recovery rate of only 0.32% between 1991 and 2010





Importance and demand for wood energy use in developing countries.

— About 5.6 billion people in developing countries depend on wood energy



— In Tanzania > than 94% Hh depend on wood energy

INTRODUCTION



Government strategy in Tanzania

— Campaign to plant trees for energy

— However the programmes are not been successful



Motivation

- The households' traditional ways of felling trees
- Little is understood about the interactions between households' perceptions of tree planting programmes and policies designed to induce changes.
- Few studies examined the households' perception of tree planting for energy

Aim of the study

- The study aims at examining the households' perceptions of tree planting for wood energy and identify the factors that influence these perceptions
- Question
 - what are the households' perceptions on planting for energy prodtn?
 - Which are the main factors that influence household's perceptions?
 - What kinds of policy instruments would be necessary to influence households' perception of tree planting for energy

View from different researchers

- Households' perception has been acknowledged in several studies as an essential link to the actual actions of households.
- Even tree planting programmes with the best intentions and benefits, fail if they are not positively perceived by households in the communities
- policy instruments and socio-economic factors are considered the most important at influencing households' perception.

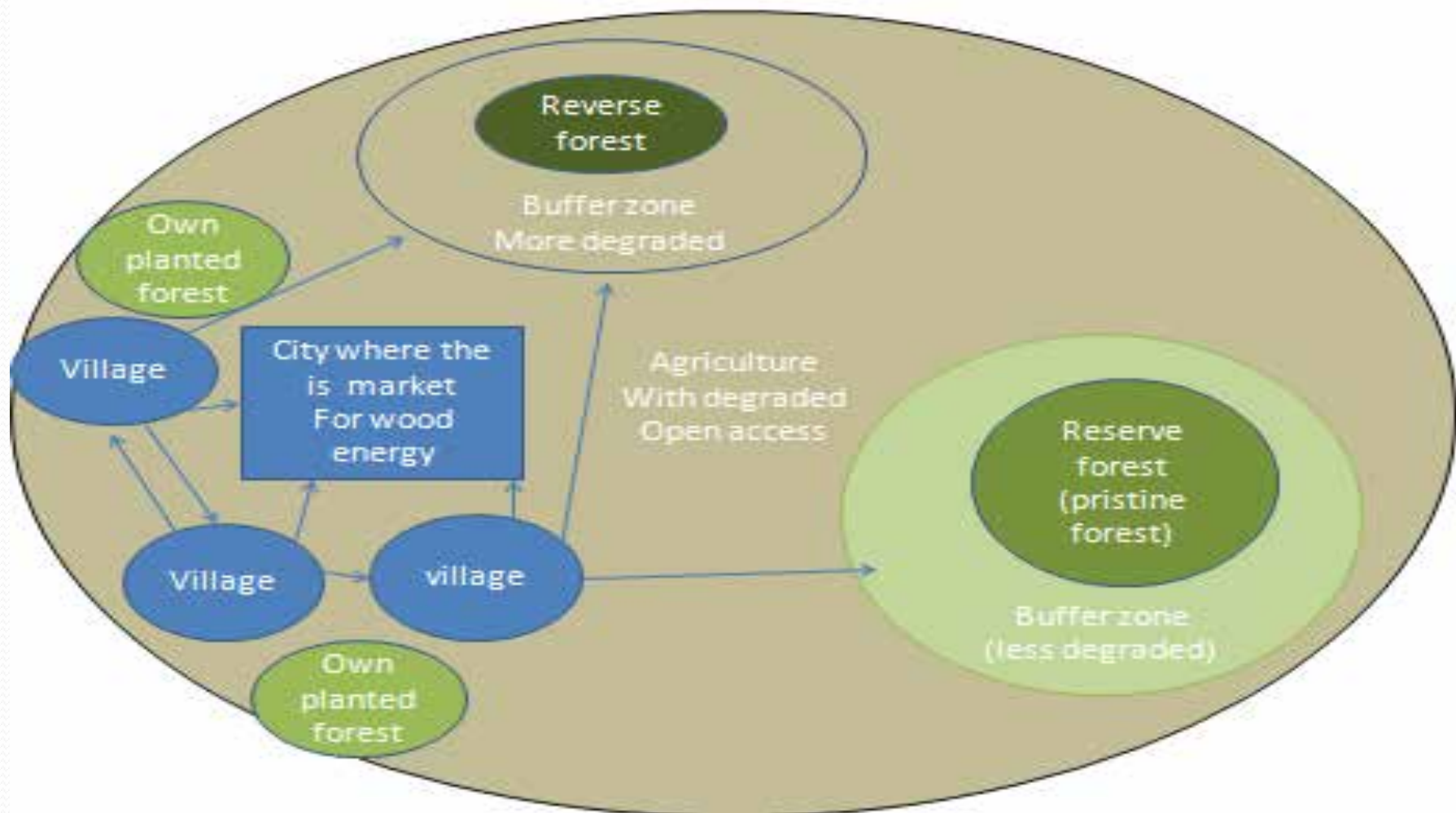
Data collection

- The data were collected in a survey conducted in 202 households in the Coast and the Morogoro regions
- A sample of 202 households list were drawn up from 11 villages

3 Analytical framework of the study

- we model policy instruments and socio-economic factors as constraints to households' tree planting for wood energy production

- We assume that households are likely to plant trees based these factors



Spatial allocation of forests that the policy instruments assume to take into account in the creation of forest recovery across periods include buffer zones

Analytical framework of the study

— We assume that the regulators' problem is to allocate some forest areas as buffer zones for free extractions.

— Households are likely to plant trees only when the utility available to influence their actions.

— A household who does not plant trees will maximize $c(d, q)$ utility subject to cost

Analytical framework of the study

— If the households exceeds the for free and caught will pay cost as tax set by the regulator .

— Hh will pay Bq *if exceeds* H /month in a year

$$C_d = \lambda$$

$$C_q = \lambda + \lambda B_q$$

Analytical framework of the study

— Consider households planting for wood energy

— We assume Tax to those exceeds = the value of subsidies refunded back to those households planting

$$v(q) = \lambda + \lambda Bq$$

— We assume zero distance $-C_d$ implies welfare gained not influenced by distance. And $+vq$ *welfare gain*

Empirical Model for the regression analysis

- We used the Tobit model to estimate the probability and the intensity since it accounts

- for corner solution & upper limits of dependent variable

- need for a censored model to correct four sample selec. bias.

- We also used Heckman models to correct the same direction of effect (- or +) of explanatory variable

Findings

- We find that households plant trees, they also extract wood fuel from the forest reserve with their mean not much different
- We find no policy instruments necessary to influence households' perception of tree planting for energy.
- Those households who perceive that tree planting is favourable obtained energy from planted trees (80%)

Qn1. What are the three most important factors influencing your household not to plant trees for wood energy production?

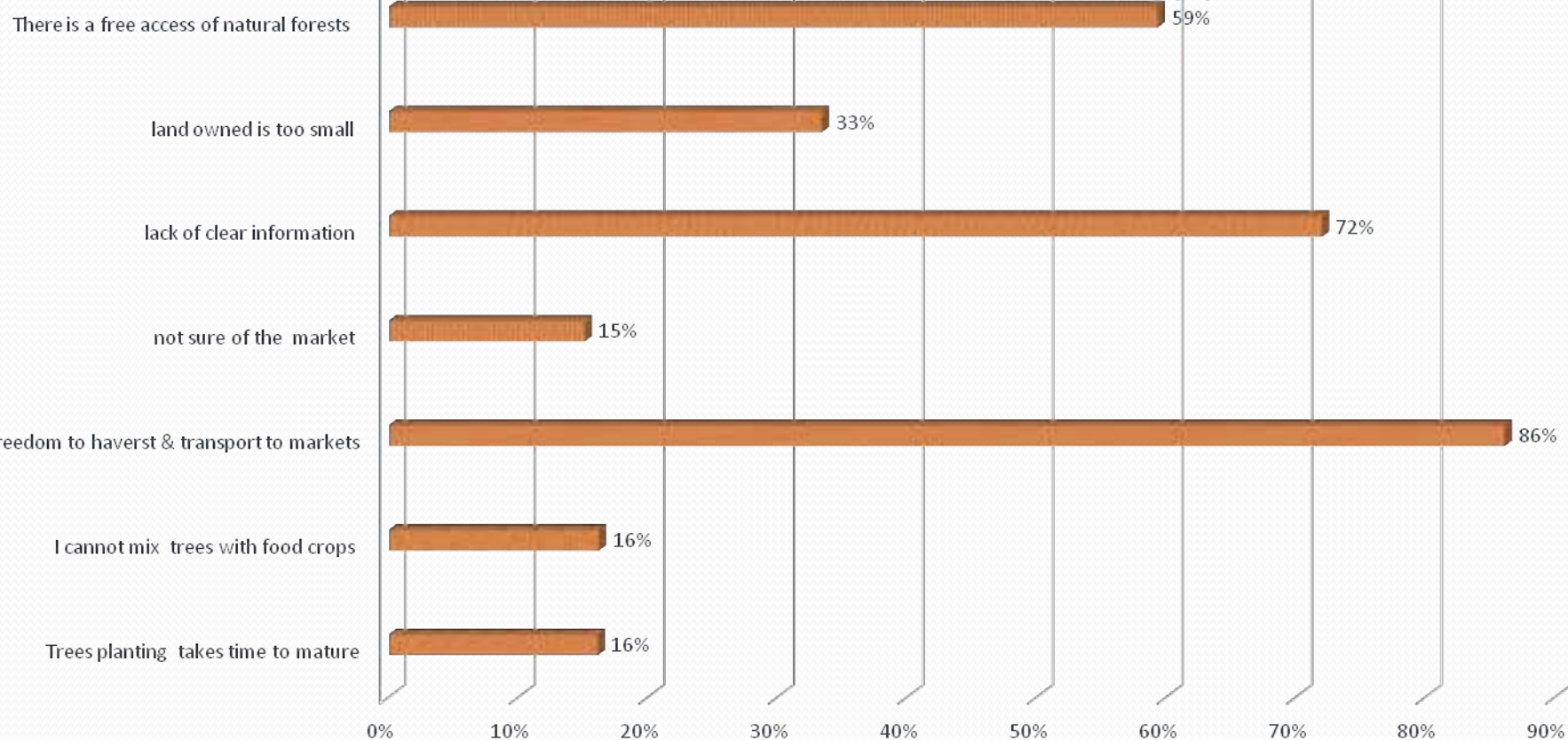


Figure 1: Responses from households interviewed in the field survey

Qn3. How do you think does legal regulations' enforcement hinder wood fuel production/ supply from private tree planted?

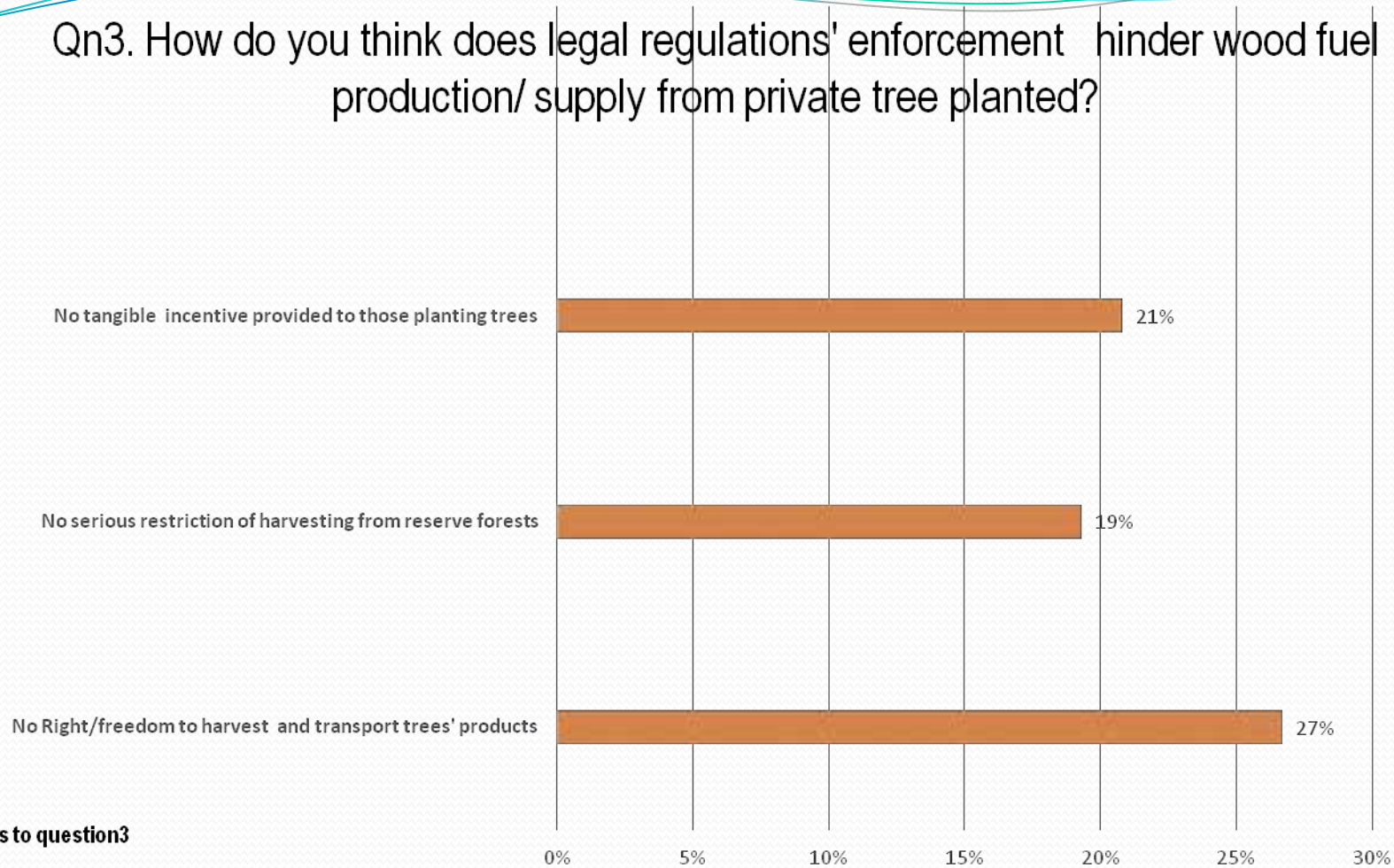


Figure 3: Responses to question 3

Qn5. What do you think about tree planting in your farm/plot within the next 5 years?

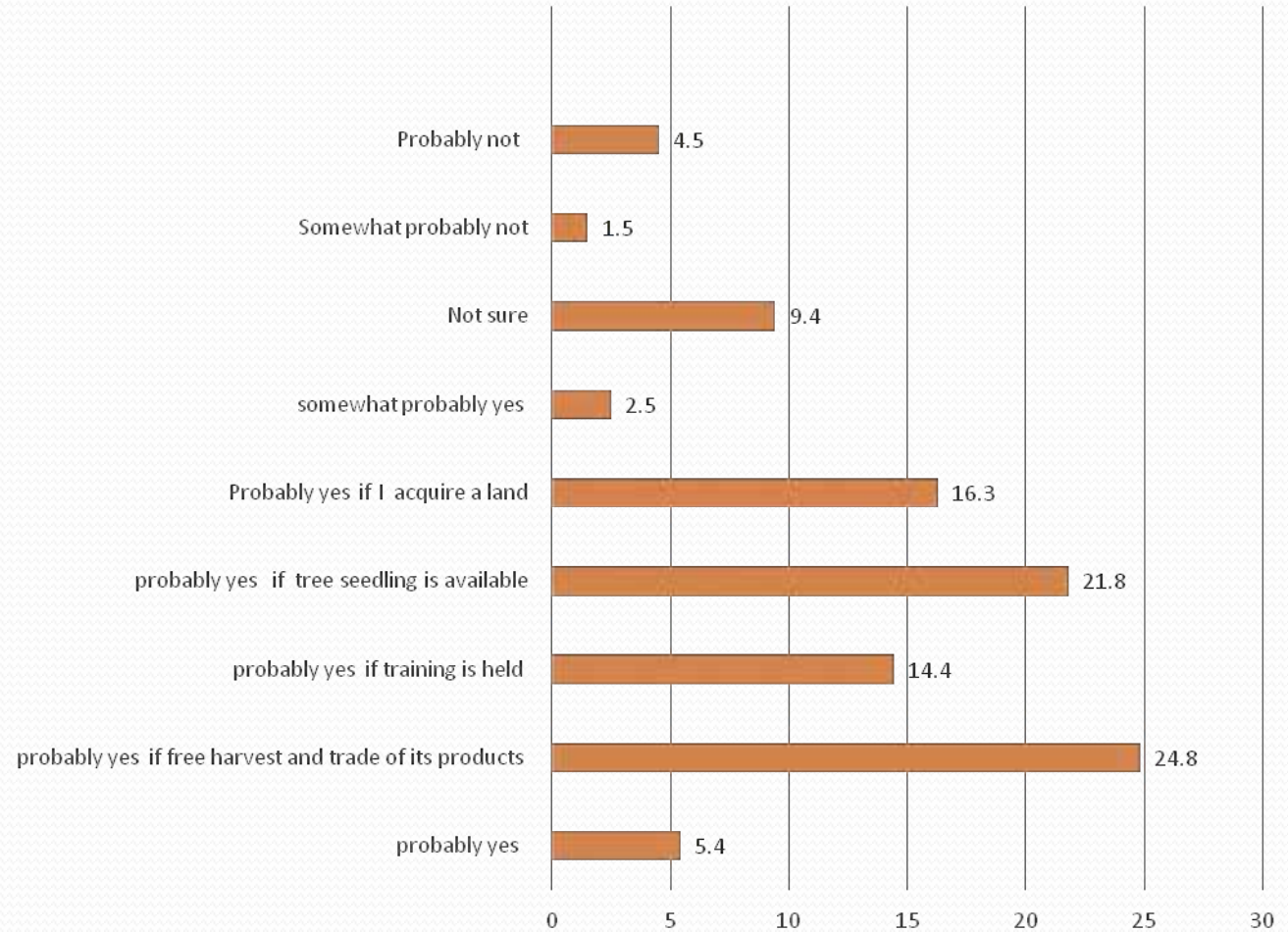


Figure 5: Responses to question 5

Findings cont...

- Indicates the the factors which have positive influence on households' perceptions of tree planting including;
 - the right/or freedom to harvest and transport tree product
a unit of a right or freedom hhs' perceptions 75.7%
 - perceive the potential in tree planting for trade tends to plant
 - household's awareness of tree planting programmes
 - Education level of a hh ↑ the probability households' perceptions
 - household farm size

Determinant of households' perception of tree planting for energy; (Tobit model)

Dependent variables: Households' perception of planting trees & number of trees planted

<i>Explanatory variables</i>	<i>Households' perception of Tree planting</i>	<i>Marginal effects</i>	<i>Number of trees Planted</i>	<i>Marginal effect</i>
hhplantree	0.501 (0.253)**	0.346 (0.174)**	2.712 (2.587)	1.26 (1.208)
PTrPlatng	-0.199 (0.0226)*	-0.138 (0.056)*	-12.264 (8.610)	-5.73 (4.015)
ISFPoIBFTP	2.223 (0.262)***	0.757(0.176)***	27.622 (8.764)***	12.91 (4.05)***
HHEOFA	-0.280(0.438)	-0.08(0.30)	17.750 (8.621)**	8.29 (4.020)**
HHorMPM	0.50 (0.253)**	0.34(0.17)**	74.102 (9.109)***	34.63(3.944)***
LwoodergINC	-0.442(0.340)	-0.196(0.178)	-17.85 (9.10)	-8.344 (10.202)
PwoodEBus	-0.616(0.214)	-.426 (0.146)	--16.86(7.389)	-7.882(3.448)
HHsize	-.015(0.079)	-0.010(0.055)	-7.581(2.639)***	-3.54(1.223)***
hhedu	0.240(0.132)*	0.173 (0.096)**	-1.141(2.156)	-0.53(1.007)
hhage	-0.007(0.009)	-0.003 (0.006)	0.353 (0.318)	0.165 (0.148)
DOCFoVill	-0.010 (0.013)	-0.007(0.009)	-1.312(0.429)***	-.613(0.199)***
hhwooderg	1.3992(1.573)	0.968(1.087)	112.729(131.61)	52.69 (61.504)
ForeReVill	-0.817(0.248)***	-0.565(0.170)	10.791(10.011)	5.04(0.694)
hhfarmsize	-0.008(0.032)	-0.006 (0.022)	2.536(1.068)***	1.18 (0.492)***
intercept	1.732(0.672)***			
Log likelihood	-250.499		-518.66	

Findings cont...

- Results of Heckman selection model indicates positive factors that have influence on households' perceptions of tree planting as;
 - the right/or freedom to harvest and transport tree product
 - household's awareness of tree planting programmes
 - the perceived business environment for wood energy were -vely perceived

Results of full-information maximum likelihood estimation

Number of trees planted

Households' perceptions ant planted trees

Explanatory variable	Regression	Marginal effects of number of trees plated	Regression	Marginal effects of tree plating
Column I	Column II	Column III	Column IV	Column V
	β_1	β_1	β_2	β_2
hhplantree	14.722(9.997)*	0.348(0.104)***	2.268(0.907)***	0.348(0.104)***
ISFPolBFPT	32.72(9.623)***	0.602(0.071)***	2.870(1.020)***	0.602(0.071)**
hhfarmsize	1.794(0.978)*	0.062(0.017)***	0.220(0.126)*	0.062(0.017)***
HHEOFA	30.41(8.361)***	0.044(0.122)***	-1.340(0.893)	0.044(0.122)
PTrPlatng	-6.76(2.882)***	-0.013(0.030)***	0.119(0.155)	0.013(0.030)
hhwooderg	51.289 (135.19)	0.901(0.272)	-0.452(2.398)	0.901(0.272)
PwoodEBus	-16.92(7.714)**	-0.078(0.110)**	-0.819(0.620)	-(0.078(0.110)
HHsize	-13.236(12.338)	-0.425(0.205)	-1.863(1.09)*	-0.425(0.205)**
HHsizesq	0.692(1.135)	0.033(0.186)	0.138(0.109)	0.033(0.018)
LhhgrslNC	3.002(11.174)	0.080(0.133)	-0.456(0.734)	0.080(0.133)
LwoodergINC	-8.648 (22.482)	-0.250(0.215)	0.181(0.394)	-0.250(0.215)
hhedu	-0.284(0.129)	-0.076(0.033)	-0.284(0.224)	-0.076 (0.033)
hhedusq	0.026(0.009)	0.08 (0.003)	0.026(0.019)	0.008(0.003)
HHorMPM			4.771(1.152)***	0.906(0.062)***
intercept	36.751(160.712)		7.896(10.871)	
	-0.908(0.457)**			
	3.507(0.066)***			

Findings cont...

- The overall results indicates that Hhs' perceptions of tree planting in all the models are positively and significantly associated with ;
 - the right/freedom,
 - the household's awareness,
 - tree planting for trade tends to plant
 - farm size, and education

Conclusion

- Therefore the factors including
 - rights/freed
 - Perceived tree planting for trade tends to plant
 - the perceived business environment for wood energy and,
 - household's awareness of tree planting for energy

Conclusion

- This paper sheds light on the factors that influence household's perceptions and policy related factors
- Thus, policy maker need to take into account these factors that determined as potential drivers of tree planting
- The simple framework developed may serve as guideline for the development of more effective interventions to promote +ve perception of Hh towards tree planting



TACK SÅ MYCKET