



# Organic by default: Myth or Reality? Evidence from the Lao PDR

Isabelle Vagneron, CIRAD (UMR MOISA)  
Sylvaine Lemeilleur, CIRAD (UMR MOISA)  
Lytoua Chialue, NUOL (Faculty of Agriculture)

# Voluntary Sustainability Standards

- **Voluntary sustainability standards:**
  - Increasing number of VSSs
  - Presented as a means for farmers to access high-value markets and are often promoted as a development tool.
- **Organic agriculture**
- **OA in Laos**
  - Important donor support and NGO involvement
  - National Agricultural Development Strategy 2011-2020:
  - ADS 2025 and Vision to 2030.
  - 8<sup>th</sup> NESDP

# Organic agriculture

- In developing countries, traditional agricultural systems are often described as ***organic by default***.
- Idea: for ***organic by default*** farms, switching to **certified organic agriculture** should be easy.



- Question: what does certified organic agriculture change for smallholder farmers engaged in traditional farming?

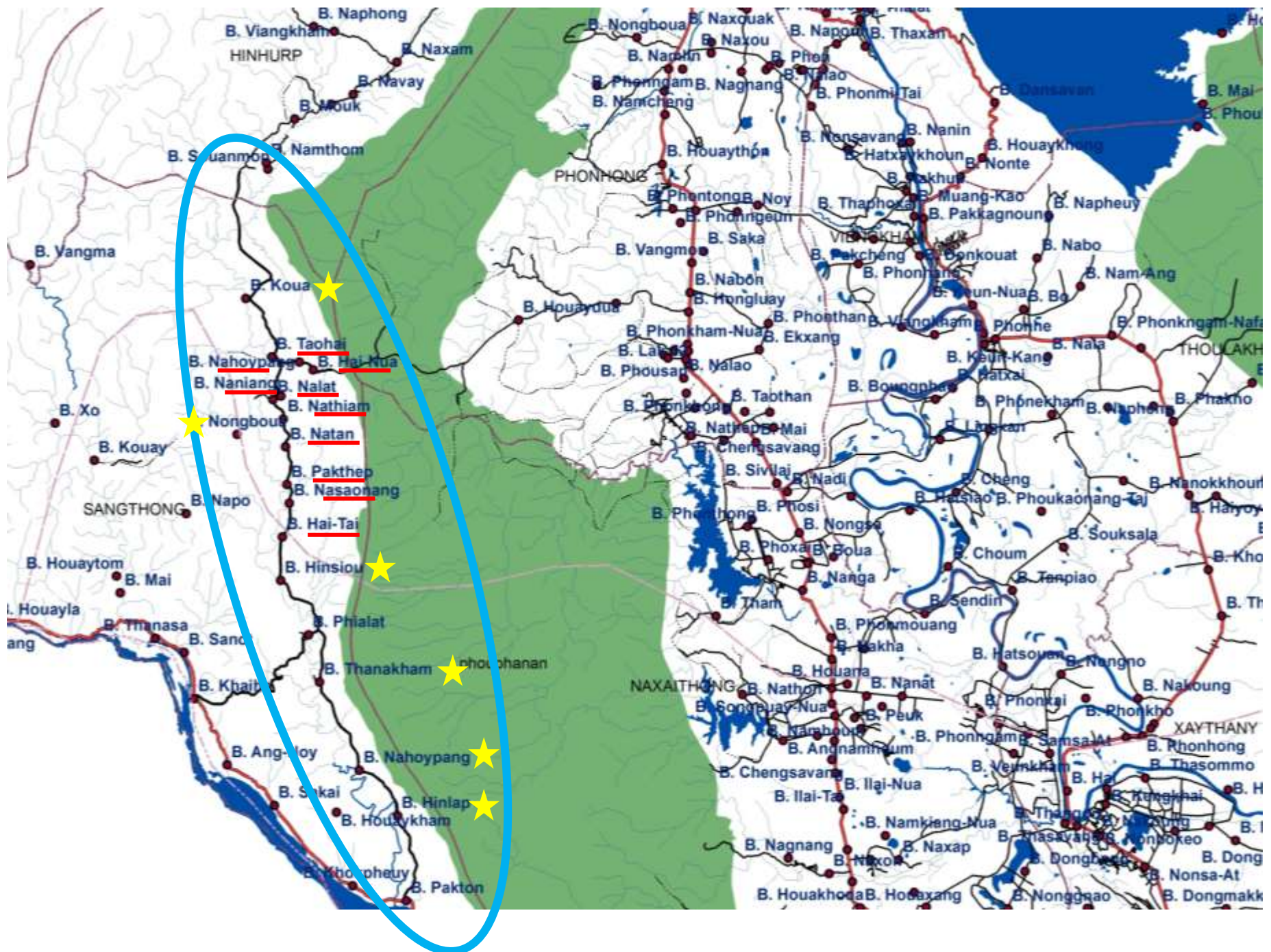
# Helvetas project

- **10 rice producer groups** created + certification against the Lao organic standard.
- **Village selection** process:
  - criteria: rice surplus, appropriate land, low use of chemical inputs, experience in rice production, availability of labor and equipment, interest in OA,
  - 15 villages pre-selected → 10 villages (voluntary basis)
  - Creation of Farmer Group and Farmer Group Committee
- ALL farmers willing to participate were accepted.
- Village selection + farmer self-selection.

# Sampling & Survey

	Organic in 2006 <i>(beginning of Helvetas Project)</i>	Organic in 2014 <i>(survey)</i>	No. of surveyed households		
			Target Villages (10)	Control Villages (6)	Total no. surveys
Treated	yes	yes	228	-	228
Control Group 1 <b>ORGANIC</b>	yes	no	98	-	98
Control Group 2 <b>EX-ORGANIC</b>	no	no	143	149	292
<b>NEVER ORGANIC</b> Total			469	149	618

- March-Apr. 2014, focus on the 2013-14 rice season.
- **Topics:** household characteristics & assets, production & marketing, farming practices, other sources of income, social networks, credit, recall questions (2005).



# Descriptive statistics

- Most households were engaged in **subsistence farming**;
- Average farm size was 2.9 ha;
- Five household members.
- Typical farming system: **mixed farming**
  - rice as the main crop;
  - small plots of vegetables and fruits;
  - small scale livestock rearing (pigs, chicken, and cattle).

# **FARMER CHARACTERISTICS**



	sample mean	Organic-certified	Ex-certified	Never-certified H village	Never-certified NH village
# obs	602	213	96	144	149
Age	44.473	45.136	45.833	41.687***	45.342
EDUCATION	5.689	6.399***	5.447	5.701	4.818***
Family size	5.797	5.859	5.770	5.458***	6.053**
Dratio	.220	.216	.212	.241	.212
MOArea_2005	4.020	3.998	4.367	4.126	3.713
Landtitle	.98	.981	.989	.972	.979
Rice area 2005	1.668	1.795**	1.515	1.497**	1.751
Rice Area 2013	1.865	2.010**	1.578***	1.720	1.984
Buff 2005	2.762	3.328**	3.083	2.743**	1.765***
Buff 2013	1.760	2.070	1.427	2.291**	1.020***
Pig 2005	.903	.661	.604	1.034	1.315
Pig2013	.674	.896	.822	.562	.369***
member of credit org 2005	.406	.375	.510***	.404	.400
Borrow money 2005	.605	.723***	.677	.510***	.483***
Borrow money 2013	.652	.713**	.635	.673	.557
Tiled roof 2005	.461	.591***	.364***	.316***	.476
Tiled roof 2013	.720	.798***	.708**	.604***	.731
Brick wall 2005	.436	.521***	.333**	.352***	.463
Brick wall 2013	.734	.774**	.645	.666**	.798***
mobile 2005	.23	.295***	.218	.263	.114***
mobile 2013	.931	.943	.885**	.958	.919
tv 2005	.521	.615***	.437**	.458**	.503
tv 2013	.958	.948	.947	.958	.979
motorbike 2005	.250	.300**	.229	.236	.208*
motorbike2013	.877	.901*	.822**	.861	.892
handtractor 2005	.400	.460***	.343**	.291**	.456
handtractor 2013	.813	.877**	.750**	.763**	.812**
Yield (white sticky rice)	3537.046	3726.973***	3641.27	3461.801	3303.892**
Black sticky rice area 2013	.193	.406***	.080**	.136*	.016***
Non-sticky rice area 2013	.072	.160***	.062	.024	.000***
White sticky rice area 2013	1.599	1.457***	1.465	1.542***	1.941***

# Farming & marketing practices

	Sample mean	Organic	Ex-Org	Never organic / H villages	Never organic NH villages
<i>Farming practices</i>					
Mean days/ha	84.087	94.892***	84.150	80.915	72.1***
Organic fertilizing	0.159	0.281***	0.145	0.083	0.067***
<i>Marketing practices</i>					
% sold to main buyer	40.335	45.882	36.937**	40.104	34.818
Highest price	3,055.203	3,167.476***	3,009.677	3,019.306	2,963.09***
Evolution of % sold	3.730	3.868***	3.604**	3.750	3.597***

# Where go next?

- Differences between organic and non-organic farmers in terms of education, endowments, farming and marketing practices and performances.
- **Question:** can these differences be attributed to the project or were the farmers different in the first place ?

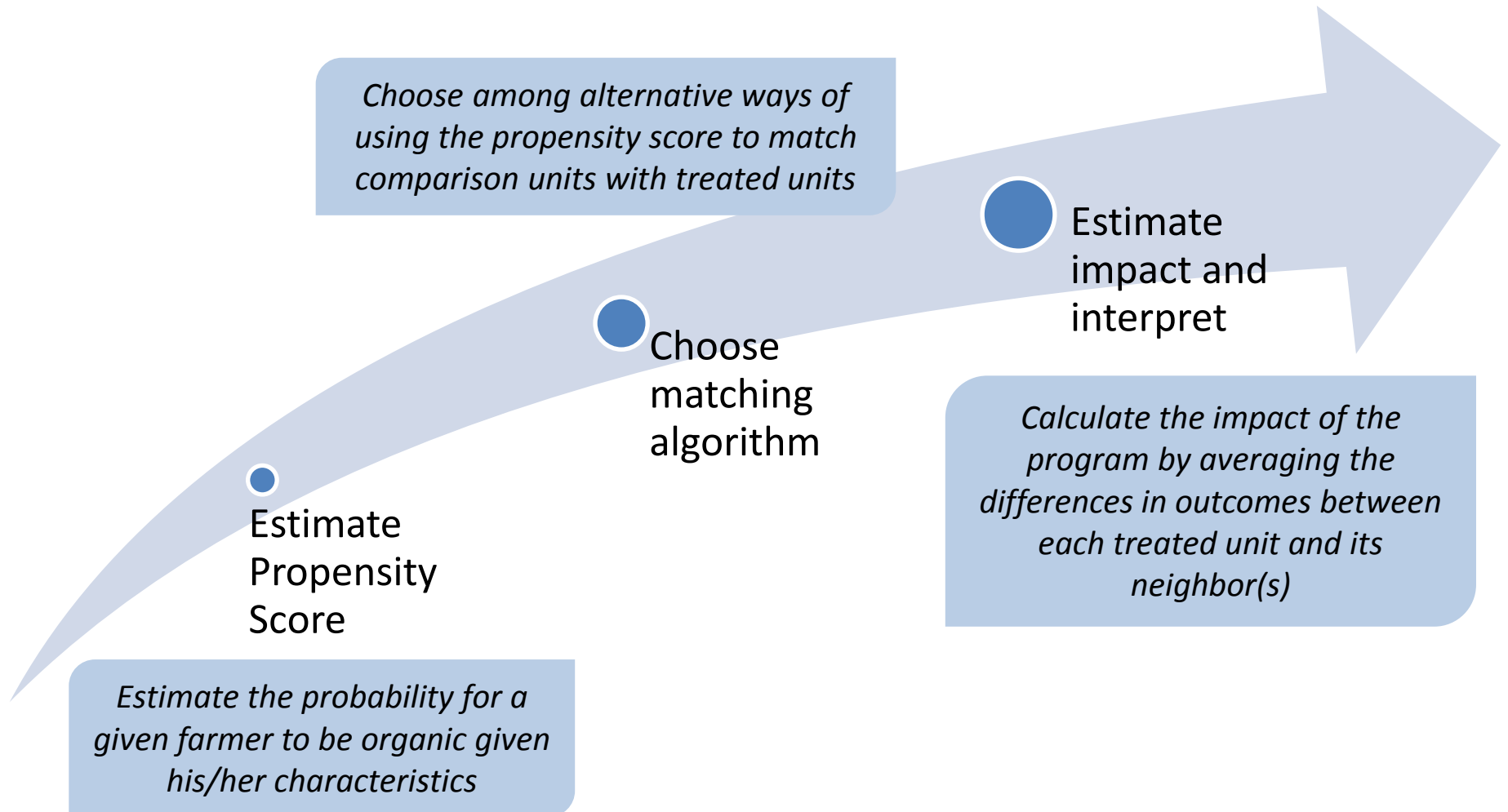
Farmer Characteristics



Participation into the project

- Difficult to answer as the project selection process was not random (villages selection + farmer self-selection).
- **Selection bias?** It is possible that farmers with specific profiles engaged in organic farming, so their higher performance could stem from initial differences rather than from organic farming.

# Propensity score matching



**ORGANIC FARMERS ARE YOUNGER,  
MORE EDUCATED AND BETTER  
ENDOWED**

# Determinants of organic farming

Organic	dF/dx	Sdt	P> z
MOArea_2005	0,003	0,030	
Age	-0,004	0,019	
Age2	0,062	0,065	
<b>EDUCATION</b>	<b>0,126</b>	<b>0,033</b>	<b>***</b>
DependencyR	0,438	0,595	
MOBILE2005	0,361	0,225	
<b>TILEDROOF2005</b>	<b>0,579</b>	<b>0,195</b>	<b>***</b>
<b>Borrow_money_2005</b>	<b>0,747</b>	<b>0,198</b>	<b>***</b>
BUFFALO2005	0,015	0,018	
PIG2005	-0,034	0,025	
Rice_Area_2005	0,011	0,109	
HANDTRACTOR2005	-0,008	0,202	
MOTORBIKE2005	0,027	0,223	
TV2005	0,266	0,208	0,200
nb obs	574		
Log Likelihood	-347,146		
LR chi2(14)	59,61		
Prob > chi2	0,000		
Pseudo R <sup>2</sup>	0,08		
% correctly predicted	40,50%		

**ORGANIC FARMING CHANGES THE WAY  
FARMERS DO FARMING & CONNECT TO  
MARKETS**

# Matching results

*ORGANIC VS. NEVER ORGANIC (ALL VILLAGES)*

dependent variables	Regression on covariates	Regression on PS	Common no replacement caliper (0.01)	NN(10) common	NN(5) caliper (0.05)	Kernel common
<b>Mean days/ha</b>	19.336***	19.351***	19.695***	18.567***	18.703***	18.702***
<b>Organic fertilizer</b>	0.203***	0.203***	0.248***	0.203***	0.209***	0.195***
<b>% sold to main buyer</b>	6.925***	6.921***	7.300***	8.364***	8.298***	7.789***
<b>Highest price</b>	141.601***	141.606***	126.447***	169.570***	145.653***	159.853***
<b>Evolution of % sold</b>	0.174**	0.174**	0.124**	0.192**	0.198**	0.187**



**ORGANIC FARMING IS NOT FOR  
EVERYONE**

# Who are those who quit?

EXORGANIC	Coef.	Sdt	P> z
<b>Agec1</b>	<b>0.544</b>	<b>0.220</b>	<b>***</b>
<b>Agec3</b>	<b>0.424</b>	<b>0.211</b>	<b>**</b>
Sex	-0.203	0.178	
Education	-0.044	0.290	
<b>Rice planted area in 2005</b>	<b>-0.171</b>	<b>0.075</b>	<b>**</b>
<b>Food insecurity</b>	<b>0.361</b>	<b>0.139</b>	<b>***</b>
DependencyR	-0.336	0.489	
<b>Member of a credit organization</b>	<b>-0.381</b>	<b>0.158</b>	<b>***</b>
<b>_cons</b>	<b>-0.051</b>	<b>0.287</b>	
Nb obs	308		
Log likelihood	-173.434		
Pseudo R2	0.09		

# Conclusions

- Organic farming seems to have brought important and positive changes to the farming & marketing practices of smallholder rice farmers.
- However...
  - the number of certified organic rice farmers **is dropping**,

INCENTIVES?  
CONSUMPTION PATTERNS/HABITS IN THE LAO PDR?

- organic farming **is not for everyone**: it was unsustainable for the most vulnerable farmers who dropped out.

CERTIFICATION IS NOT FOR EVERYONE





**THANK YOU VERY MUCH**



**Organic agriculture** (OA) is part of the 'new agriculture' and is emerging as a promising agricultural development strategy particularly in economically lagging areas away from the Mekong corridor, where agro-chemicals have rarely ever been applied and which therefore have a distinct advantage in ease of certification. Supporting the development of certified organic agriculture offers an alternative set of trading standards to mainstream commodity markets that can improve the environmental and social performance of agriculture. Certified organic agriculture is value-added agriculture accessible to resource poor farmers who have extensive local production knowledge and capacity for innovation. Based on recent studies,<sup>37</sup> OA has been found to be pro-poor, contributing both directly and indirectly to achievement of the Millennium Development Goals (MDGs).

The nation's comparative advantages are actually lying in its availability of land and its potential to produce high added value products for niche markets: organic products, indigenous species (tea and wild tea, etc) geographical indications products and fair trade products (see above).