

Dissemination of Sustainable Technical Innovations among Smallholder Farmers in the South of Kampong Thom, Cambodia

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4th AFSA International Conference on Food Safety and Food Security

10th – 12th August 2018
Siem Reap



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Introduction: Cambodian Context

- Agricultural technical innovations are seen as an effective way to improve production and widely promoted by dvlp actors
 - high potential for 80% of Cambodians living in rural areas & engaged in some agricultural activities. Mostly smallholder farmers relying on few ha & with low yields
- Sustainable innovations which include soil fertility preservation, water management, biodiversity conservation and social inclusiveness are considered as the way to move forward
 - highly relevant for Cambodia, considered with Laos, most vulnerable to climate changes in SE Asia
 - significant for Cambodian underprivileged smallholder farmers, particularly vulnerable to food shortages and climate changes shocks
- Understanding the dissemination processes of sustainable practices to smallholder farmers
 - relevant for planning supportive actions & their generalisation



Farmers' Agricultural Innovations

- A novelty in the way of doing production, organisation, selling, thinking, marketing, and principally with the resources of the production system. It can also be a new distribution or use of resources, it means a modification in the value chain (WB, 2006)
- 3 main sources of innovation (Bentz, 2002): I) Invention, II) Borrowing (research & imitation of novelties implemented or observed elsewhere), III) Transfer of research propositions
- No “simple” implementation: adaptation is always needed for the adoption of exogenous techniques
- Technical and organisational innovations are often closely linked
- The adoption of a new innovation comes with the adaptation of ideas, ways of seeing innovation and evaluating it (Darré, 1999)
- From initial information from facilitator to innovation implementation by farmers, there is a normative construction, achieved through interactions & dialogue which could be specific to each farmers groups



Research Questions & Hypothesis

- 1) How sustainable technical innovations are transferred to smallholder farmers in South of Kampong Thom Province?
 - Which factors come into play in the transmission of technical innovation? Which ones favor or slow down this transmission?
 - What types of support are most suitable for this transmission?
- 2) How social organization among farmers facilitates transmission?
 - What is the importance of social relations among farmers in the transmission of these innovations?
 - Which actors are involved in this transmission? What roles do these actors play in the transmission?

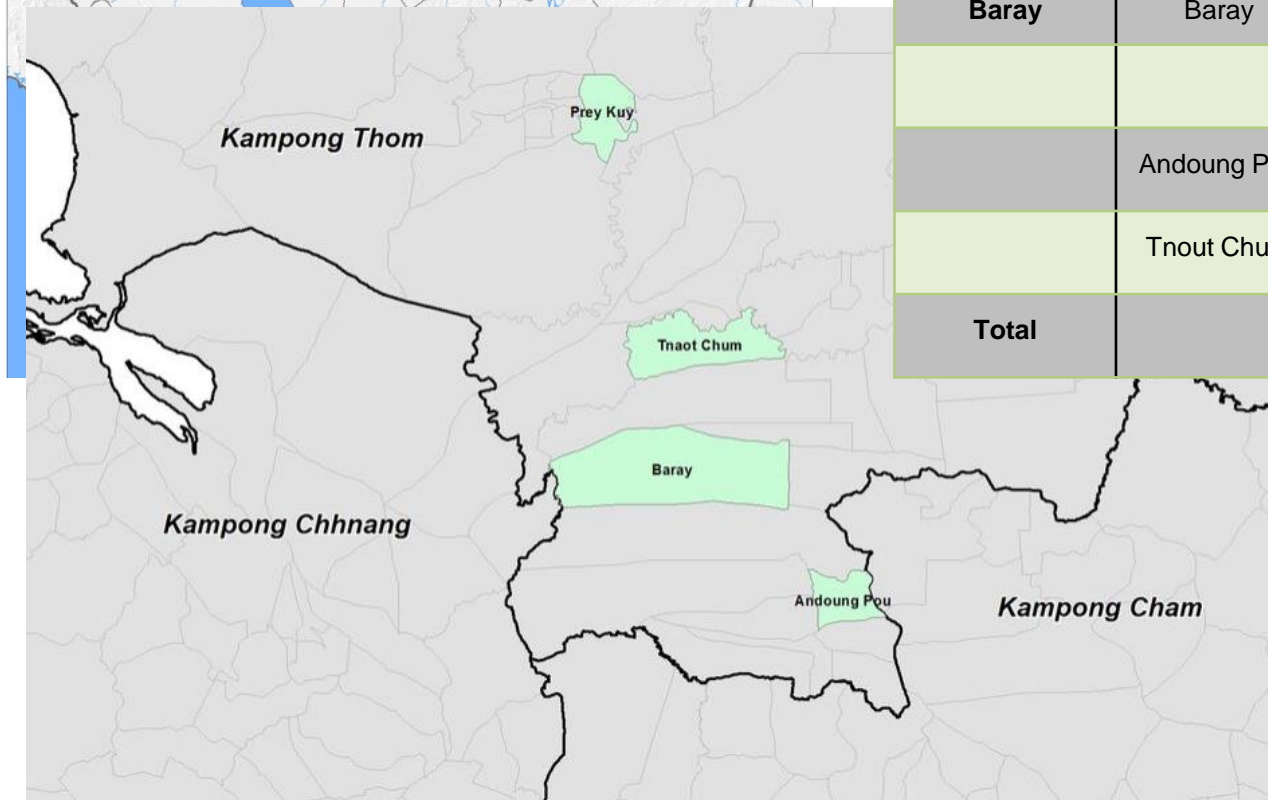
HYPOTHESIS:

- 1) Transmission of sustainable technical innovations results from interactions between farmers.
- 2) High social cohesion among farmers facilitates and favors the transmission of sustainable technical innovations
- 3) Higher organisational level of farmers play an important role to create greater social cohesion



Materials & Methodology

- In-depth interviews with revisits of 25 farmers in 6 villages in two districts (Baray & Kampong Svay) of Kampong Thom province



2 Districts	4 Communes	5 Villages	In-depth Interviews	Groups interviews
Kampong Svay	Prei Kuy	Prei Kuy	7	
Baray	Baray	Banok	6	1
		Duan Torm	3	
	Andoung Pou	Andoung Pou	7	1
	Tnout Chum	Preak Kroul	2	1
Total			25	3



Materials & Methodology

- Qualitative research:
 - Inductive and Sociological approach with fieldwork
 - Study of processes & social micro-phenomena using case studies, triangulation-iteration-saturation
- Different stages: preparatory stage, exploration & observations, sampling selection, in-depth + group interviews & triangulation - verification, transcription and analysis of collected information
- Study areas selection & Sampling strategy:
 - Villages context:
 - Active stakeholders & levels of supports & types of producers
 - Similar Communes characteristics reg. Nat Resources
 - Farmer characteristics & snowball sampling:
 - 2-3ha, 1.25\$<daily income<10\$, own consumption
- Focus on rice and vegetable production
- Building up on three previous studies in the same region - quantitative data based on semi-structured interviews



Materials & Methodology

- Vegetables usually produced on residential land
 - # varieties varies from one to more than a dozen
 - Different kinds of squash, cabbage, herbs, morning glory, eggplants, beans, salads, peppers, cucumbers, potatoes, tomatoes, garlic, ... and fruit trees
- Sustainable technical innovations selection:
 - simple, affordable, adaptable, positive impacts
 - crops association, trap and repellent crops, biopesticides, liquid and solid composts and crop rotations





Key Results on Transfer of Technical (I)

- Post-training full implementation is limited & could even stop after project/support phasing out
- Facing an issue, first solution for many farmers is to seek for chemical products: perceived as easier, local retailers importance
- Knowledge about innovations and being convinced about benefits seems to be not enough e.g. chemical pesticide preferred over biopesticide recipe using neem
- Farmers adapt technical innovations to their needs, their resources (financial, materielles, time) but also their beliefs and understanding

35% of farmers applied completely the trained innovations

31% applied both the new and the old practice (partial)

26% applied the old and the new mixed



Key Results on Transfer of Technical (II)

- Interactions between farmers are considered as the most efficient way to transfer technical innovations, esp. home & at markets

*44% of farmers expressed that the best way to learn a technical innovations is through Farmers to Farmers approach
68% of trained farmers have shared their new knowledge with other farmers around them*

- Perceived social & economical differences between farmers situation or status hinder opportunity to establish or to maintain a relation
 - Based on following criteria: wealth, farm size, labour force, age
 - Direct impacts on level of exchanges and mutual support mechanisms

Among the 44% of farmers who expressed that the best way to transfer is Farmers to Farmers, the reasons put forward was that they found themselves close to them and dare to ask experienced farmers even after a training.



Key Results on Social Organisation (I)

- Setting up formal farmers groups leads to an increased opportunities of meetings, exchanges and creates or strengthens social bonds between members
- Members are characterized by geographical proximity, close socio-economic characteristics
- Interactions and social cohesion created by these groups contribute to the establishment of mechanisms of mutual aid, reciprocity, cooperation and trust among members



Key Results on Social Organisation (II)

- These dimensions of high social value serve as a basis for setting up
 - Social innovations
e.g. mutual aid during collective sales of vegetables produced in Banok, for example. On the one hand, women farmers share and trade vegetables to have more diversity to increase sales. On the other hand, they sometimes take care of selling certain products for another one when a member is sick or is busy in its fields
e.g. similar case in Andoung Pou
 - Institutional innovations
e.g. establishment of Self-Help Group which requires enough trust between members
 - Agro-technical innovations
e.g. cooperation in certain activities (sales or transport) can lead to information sharing on other agricultural activities and particularly on technical innovations
- The different types of innovations also tend to reinforce each other
e.g. both social and institutional innovations are in some cases necessary for the implementation of agro-technical innovations (SHG & loans)



Conclusions

- Sustainable Agricultural Practices Dissemination:
 - Interactions between farmers both at markets & home are the most efficient
 - Adaptation (experimentation) & partial implementation
 - Importance of perception of socio-economical differences between farmers
 - Similar results between qualitative results by quantitative data
- Social Organisations:
 - Farmers Groups and the support from organisations increase opportunities of meeting and exchanges and strengthen existing relationships among members
 - Development of mechanisms of mutual aid, reciprocity, cooperation and trust among members
 - High social value reached → social, institutional & technical innovations which reinforce each other



Thank you for your attention



Photos Credit: Régis Binard

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