

Facilitating effective learning on agroecology

A participatory farmer-to-farmer learning process in Cambodia

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Introduction

Agroecology is acknowledged as an important approach to ensure food security in the future; however, few studies explore ways of facilitating learning approaches in agroecology (Kerr et al. 2022).

Objectives

- Understand discouraging and encouraging factors to learning agroecology
- Develop alternative learning approaches that encourage adoption
- Insights on the long-term learning effects of these approaches

Research question

How to facilitate learning on agroecology by increasing encouraging factors and mitigating discouraging reasons for adoption?



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Research Approach Action research with indigenous small-scale farmers in Ratanakiri, Cambodia, based on an inductive research approach

Methods Data triangulation from participatory video, semi-structured interviews, group discussions, and participant observation



Figure A: Farmer participants learning from successful farmer hands-on how to produce organic fertilizer.



Figure B: Participant in his cashew farm which he cultivates organic since the project's start five years ago.

Results

- Encouraging and discouraging factors were identified to be co-related to the mode of facilitating learning.
- Collaborative learning with farmers as teachers showed to be more likely encouraging for farmers in comparison to extension actors as teachers for the following reasons:

Extension actor as teacher

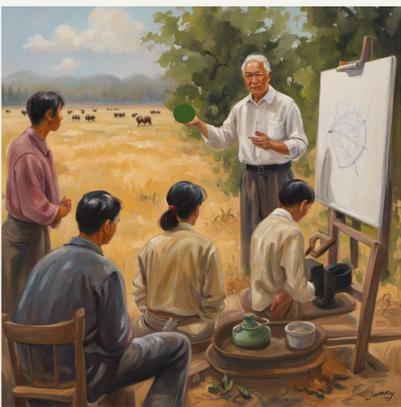


Figure C: Participants are learning with an extension actor who explains mainly by theory

Discouraging factors inherent to the learning approach:

If extension actors are in the role of teachers:

- Unfamiliarity with local socio-ecological system lowers trust by farmers
- Not matching with farmers' mental models



Figure D: Participant is discouraged to apply

Farmers' worldviews influence the rationale for the application.

Case example:

In Ratanakiri, farming is intertwined with social and religious concepts.

Collaborative learning process



Figure E: Collaborative learning process
Step 1: Farmer participants learn from a successful farmer with hands-on practice about a practice relevant to them

Encouraging factors inherent to the learning approach:

If successful farmers are in the role of teachers:

- Experience and socio-ecological familiarity increase trust by other farmers
- Matches with farmers' mental models



Step 2: Participants are experimenting on their own field with practice



Step 3: Participants are sharing their experiences in peer-to-peer learning



Step 4: Participants apply agroecology on their farms

- Most of the participants in a collaborative learning process using participatory video and radio, hands-on practice, excursions, and farmer initiatives, e.g., business groups and farmer-to-farmer teaching, still applied agroecological practices five years later.
- Participants were able to apply agroecology adapted to their local socio-ecological conditions.

Discussion

Contributing to the discourse on barriers to adoption

- Discouraging factors to adoption can be inherent to learning approaches.
- It is important to consider that farmers are evaluating agricultural approaches within their worldviews.

Contributing to the discourse on facilitating learning on agroecology

- Farmer-to-farmer teaching favors many encouraging factors (e.g., framing locally within worldviews).
- Facilitating tools can be participatory video combined with hands-on practice.
- Organizing learning as a collaborative process is encouraging.



Figure F: A woman farmer teaching another village after she learned during the learning process about organic fertilizer.



Figure G: Farmer interviewing successful farmer as part of a participatory video

Conclusion

Facilitating a combination of collaborative learning, action learning, and farmer-to-farmer teaching is encouraging the innovative long-term application of agroecology among farmers.



Figure H: An indigenous farmer drew this image to show the change within five years in his commune.

Background of the case example:

- Indigenous communities in Ratanakiri, Cambodia, are forest-dependent communities
- ⇒ Deforestation and land pressure
- ⇒ Undermining of traditional sustainable land management
- ⇒ Soil erosion
- ⇒ Extension programs on soil improvement but low adoption