Exploring pathways of agroecology transition through gaming approach in the northwestern uplands of Cambodia

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Background
- Dramatic land use and land cover changes (LUCC)
- Rapid transition of farming
- Different feedbacks on innovative techniques e.g. conservation agriculture (CA)

Methodology: Gaming approach with “Resilient Agriculture through co-Design of Agroecology pathways” (RADA game)

Integrating knowledge (LUCC, farming system, CA intervention project) to conceptualize game model

Co-designing RADA game (Prototyping and testing)

Using RADA game (3 CA and 3 non-CA villages)

Results

Changes of land uses
Changing from diversified to homogenous landscape:
Soybean/Peanut -> Maize -> Cassava -> Mango

Impact indicators
Capital accumulation (Million KHR)
1 7 75 127 183 246 246
Total cattle (head)
16 24 43 68 69 73 73
Return on investment (%)
328 229 144 153 140 112 111
Pesticides use (l-kg/ha)
0.0 3.3 5.5 4.6 4.3 11.5 12.3
Land degradation accumulation (%)
-1 -16 -30 -27 -43 -42 -41
Rain and market vulnerability
0.03 0.10 0.23 0.19 0.15 0.21 0.21

Innovation
CA villagers are more knowledgeable about soil conservation

Conclusions:
- Game supports collective learning and messages transfer
- Farmers remain in logic of boom crops, but having more cattle and off-farm
- Farmers are more willing to adopt innovations (more window opportunities for intervention)
- It is needed co-designing process for agroecological practices; improvement of social organization; and engagement of all other actors e.g. private sectors

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After maize, cassava
Mango, next boom crop?