

# Gender, land use and role-play games

Grace B Villamor

In land use role-playing games (RPGs), players assume roles or characters and take control of their real-life roles/characters in a fictional setting. The RPG approach was used to observe and document the behaviour of men and women toward land use decision-making in rubber agroforest landscapes in Sumatra, Indonesia. Behaviour patterns toward alternative land use options and new investment opportunities such as oil palm or rubber monoculture plantations were explored.

The game, which can be played by women-only, male-only, or mixed group, was used to answer the following key questions:

- How do men and women differ in land use perspectives?
- How do men and women differ in their land use decisions where competing agents are promoting either conversion or conservation?
- How are land use decisions made?

Moreover, the RPG method can be used to validate the results generated by the Agent-Based Model discussed in the next paper.

## Materials

- A land use game board with a 5 cm x 5 cm grid
- Colour-coded cards
- Score sheets
- Play money (with local currency)
- Stickers
- Pins
- Marker pens
- Video recorder



## Players

The game requires a maximum of 30 persons separated into four groups. Three of the groups represent villagers and the fourth group represents external agents.



## Steps

The steps outlined below were based on the RPGs conducted in Indonesia.

### Before the game

1. Set up three land use game boards with 5 cm x 5 cm grids marked with at least three land cover types.<sup>1</sup> Each game board represents a watershed or landscape comprised of a village (V), a unit of rice field (R), 9 units of rubber agroforest (RAF) and 14 units of forest (F). Each of these land units provides the following annual incomes (F\$<sup>2</sup>):

- Rice fields = F\$10/year
- RAF = F\$4/year
- Forest = F\$1/year
- Logged forest = negotiable payment, F\$0/year thereafter
- Village settlement = F\$15/year
- Oil plantation = F\$8/year (after an initial 1-year period)
- Green rubber = F\$2/plot /year

2. Assign 5-7 members for each game board or group (male group, female group, and mixed group) who will act as villagers. The rest of the players will act as external agents.<sup>3</sup> Once the groups are formed, hold separate briefings with the villagers group and external agents group. Provide instructions on the mechanics of the RPG and explain the roles that the villagers and external agents have to play. Make sure that the villagers' group will not hear the instructions given to external agents.

<sup>1</sup> Key land use types depend on elevation, soil type, and other factors. Adjust your study site accordingly.

<sup>2</sup> Fictional currency.

<sup>3</sup> The number and types of external agents depends on contexts of the study area.

### 3. Briefing the players.

It is important for players to understand their roles, and to perform such roles seriously even in a fictional setting. In Vietnam, since the study site was new for the research team, an introductory guide was prepared that allowed a discussion about previous experiences of players in real-life land use decision-making. This was deemed important to prepare the players psychologically for the game.

Discuss the roles of external agents and villagers separately.

#### **A. Village groups**

A group of 5-7 members originating from the same commune or watershed (per elevation level) is a good group size for the study.

- Allocate 2-5 minutes to explain to villagers the following: number of plots of each land use, the value of each land use per year, and their target to increase the income as much as possible.
- Explain the game board structure (5x5 cm grid) and assume that the board is an image of their village's land uses. Ask them to freely arrange their plots in any position in the game board.
- Keep reminding the villagers that everyone in the village owns all the lands, therefore they should discuss and make decisions together.
- Tell them that with current land uses, their income can only feed the family, while they also need more income for their children's education. They have the opportunity to change or maintain their current land uses. Their decision will affect their future income.
- The score sheets are given prior to the game with the initial plots of land uses. For each year, they are required to record any change for each land use. It can be maintained, decreased or increased. All land uses have their own values per plot. If they convert annual crops to production forests, the total value of annual crops will decrease and the total value of production forests will increase. Also, they may get some money for the conversion decision. These changes should be recorded in the score sheets.
- After the first round (1 year), give the group 5 minutes to calculate their income in that particular year. Let them observe the result of the other groups, so they can improve their strategies in subsequent years.

#### **B. External agents**

At least two competing external agents of land use change (i.e. those promoting conservation and those promoting conversion) should be portrayed. Ask the players to portray familiar roles. If they are acquainted with real-life agents, so much the better. Provide a one-time budget to the external agents. In the real world, external agents promoting conservation do not have sufficient budget to keep the villagers from changing their land use. They usually hand out stickers to recognize villagers who retain their land conservation. Provide colour-coded stickers for each external agent or add symbols to each sticker for easy recognition.

- Explain the overall purpose of the game. Let the players select the role they want to play from the list and roles described below. Distribute their play money and score sheets. Tell them that their mission is to meet their target (described below) with a limited budget.
- Tell the agents that they must visit the village one at a time during the first three rounds of the game. They can visit the villages several times within the allocated negotiation time or round (around 15 minutes). For the 4th to 6th rounds, 2 or more external agents may visit one village at the same time. The agents will haggle for the villagers’ acceptance of their offer. The game master will manage the time.

### External agents, their roles and targets

- **Logging company agent.** This player represents a pulp wood and paper company that wants to make a deal with the villagers to convert natural to logged forest and s/he offers an attractive price.
- **Oil palm company agent.** This player promises to convert any type of land to oil palm and gives a negotiable net benefit in the third time period after conversion. The target is to convert at least 30 units of land in the catchment—otherwise the company could go bankrupt.
- **‘Save-the-tiger’ NGO representative.** This player offers negotiable rewards to villages that still own at least 10 plots of continuous forest cover. A minimum of 30 units of intact forest must be maintained at all times within the watershed to prevent local extinction of the tiger.
- **Watershed protection board representative.** This player offers recognition for intact forest. The target is that all villages in the valley make a clear commitment to protect their water resources.
- **‘Green’ rubber company representative.** This player wants sustainable rubber production. The goal is to support the village with rubber agroforest farms with a watershed protection program. This player supports the tiger conservation efforts.

Once the role descriptions are clearly understood, explain the score sheet for each agent (see tables).

**Table 1: Sample ‘Save the Tiger’ agent score sheet**

Number of forests or agroforests protected <sup>a</sup>	Year						
	0	1	2	3	4	5	6
Forest Protected							
Rubber agroforestry							
Total							

<sup>a</sup> Target: 10 units of forest protected per village, or 8 units of forest and 6 units of RAF per village

**Table 2: Sample oil palm company score sheet**

Number of plots converted <sup>a</sup>	Year						
	0	1	2	3	4	5	6
Number of plots							
F\$/plot							

<sup>a</sup> Target: 40 plots

**Table 3: Sample villagers' score sheet**

Land use type	Annual income	Number of plots						Income					
		Y0	Y1	Y2	Y3	Y4	Y5	Y0	Y1	Y2	Y3	Y4	Y5
Forest	1	14	14	14	14	12	12	14	14	14	14	12	12
Logged forest	0	0	0	0	0	0	0	0	0	0	0	0	0
Agroforest	4	9	9	9	9	9	9	36	36	36	36	43	21
Rice field	10	1	1	1	1	1	1	10	10	10	10	10	10
Village	15	1	1	1	1	1	1	15	15	15	15	15	15
Burnt area	-	-	-	-	-	2	2	-	-	-	-	0	0
<b>Total</b>		<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>75</b>	<b>75</b>	<b>85</b>	<b>85</b>	<b>90</b>	<b>58</b>
Required income	-	-	-	-	-	-	-	75	75	75	90	90	90
No. of stickers	-	-	-	-	-	-	-	-	-	-	-	-	-
Sticker value	-	-	-	-	-	-	-	-	-	-	-	-	-

## During the game

### Documentation and facilitation

- Assign at least one observer per group to observe, assist the group in filling in the score sheet, and photograph the land use game board at each round.
- Facilitator/observer in a group takes note of the group's conversation during the negotiations and takes a photo of the game board after each round. Count the number of stickers negotiated per round.
- Place the video recorder in a strategic location to capture the movement of the groups. Provide an audio recorder for each group, if possible.
- Assign one game master to oversee the whole game. Announce the start and end of each round, and emphasize the key stresses at years 3, 4 and 5. The game master should make sure that all agents correctly calculate their targets. If possible, choose a game master who has good facilitation skills and knows the local language.
- If budget allows, assign another facilitator to assist the game master in checking how the external agents meet their goals or whether they have to adjust the roles to meet targets of each agent. The co-facilitator should also serve as a banker.
- Provide colour-coded land use type cards to easily refer to land uses on the game board.

### **Guide questions when observing an RPG**

- How is the land use game board designed? Where is the village or settlement area located? What land use type surrounds the village?
- When the villagers decide to change land use, which land use is most targeted for change?
- Who dominates the discussion with external agents?
- Do you observe a pattern of fragmentation? Clustering? How is land allocated?
- Who are active and responsive to external agents? Who generates the highest income? Who has the tendency to breach contracts with external agents?

4. The game master explains the initial condition of the villages to all players.

The assumption is that due to the physical constraints of their land, the villagers could not expand its rice fields or village area. The population at year zero is 75. If they want to live comfortably, they have to increase their income. Allow the village players to design their land use game boards according to their perceived landscape using the prepared land use type cards. Now the land use game board is ready. Do a pretest by allowing the external agents to randomly visit the village groups and negotiate. Let the negotiations last for 15 minutes per round. Depending on the negotiations with the group, an external agent can visit as much as s/he wants to convince the villagers within the given time. When the game mechanics are clearly understood by all the players, start the 'real' game.

5. Let the villagers and external agents update their targets using the score sheets and game boards after each round. Preferably play up to 6 rounds. At year 3, announce a natural population increase of 20%, and an income target of F\$90. At year 4, a natural forest fire occurs during which two blocks of forest are burnt and no income (F\$0) is produced. At year 5, the rubber price drops by 50%.

### **After the game**

6. At the end of the game, evaluate (e.g. through questionnaire) or discuss the experiences of the players.

7. Provide a reflection/evaluation sheet to obtain feedback on what they liked and what influenced their decisions.

### **Example of results from RPG application in Jambi Province, Sumatra, Indonesia**

Women from both the upland and lowland villages who played the RPG approached land use change in a more dynamic way than men from the same villages, reacting more positively to external investors proposing logging or oil palm conversion. Contrary to expectations and gender stereotypes, the increased involvement of women in landscape-level decision-making may serve to increase

emissions from deforestation and forest degradation in the area, thus posing further challenges to emission reduction efforts.

## Advantages

- RPG overcomes the main obstacle of data collection in traditional household surveys: the lack of trust between the interviewer and the interviewee that often results in imprecise and inaccurate information.
- The method helps capture behaviour patterns when natural calamities or population growth affect conditions in the target villages or landscapes.

## Limitations

- Since RPG is a participatory process, the question of power relations remains to be considered.
- We do not know whether the players are acting to please the researcher in the area. To address this issue, do replications.

## Key considerations

### Study site/game settings

- Familiarize yourself with the following context-specific study site information
  - land use pattern (preferably for the last 10 years)
  - basic and major land use composition, including land value or income
  - key drivers and actors of land use change (e.g. demographic, economic and natural causes)
- Identify at least two major land use types with active land transition (i.e. forest, agroforest)
  - conduct informant interviews in the study site to identify the key actors of active land transition
- Identify emerging issues and challenges in the area
  - proposed policy/market instruments (e.g. payment for ecosystem services schemes, development plans)
  - management strategies and associated challenges (e.g. forest protection zoning)
- Villagers within the group must be familiar with one another and with the watershed or commune. The group will jointly design a land use game board that accurately represents their landscape or household farm, and then jointly decide how to respond to external agents. In some African contexts, a village may represent a plot or homestead. However, in the game it doesn't matter if some land uses such as forests are individually owned or shared property. The

game emphasizes the decision-making process in a group setting.

- In introducing the game, inform the players about the main purpose of conducting the game. Preparation of a list of questions on how decision-making is made in relation to land use is recommended.
- Village groups must be oriented with their roles in separate locations away from the group of external agents.

## Do's and don'ts

- Do a women-only against men-only game or a mixed male-female game.
- To observe the behaviour of the different players thoroughly, the researcher may assume the role of an observer.
- Do adjust the game mechanics according to the context of the study site.
- Do not treat women-only or men-only groups as homogenous entities; rather consider different ages, villages, marital status and education level.
- For the facilitators and observers, do not interfere when external agents are negotiating with the villagers unless to answer questions related to the mechanics of the game.

## Recommended readings

Villamor GB, Desrianti F, Akiefnawati R, Amaruzaman S, van Noordwijk M. 2013. 'Gender influences decisions to change land use practices in the tropical forest margins of Jambi, Indonesia'. *Mitigation and adaptation strategies for global change*, DOI 10.1007/s11027-013-9478-7.

Villamor GB and van Noordwijk M. 2011. 'Social role-play games vs individual perceptions of conservation and PES agreements for maintaining rubber agroforests in Jambi (Sumatra), Indonesia.' *Ecology and Society* 16:27.