Name of the game: 'Who Got the Power?'

Authors: Jakob Thiam (1437917), Lucia Demicheli (), Louis Clairenbourg (), Mengsje Menkveld (1013598), Manon de Munck () & Maud Bosman (1018746)

Coach: Clark Halpern

Game Booklet

Contents

Game concept

The game W*ho got the power* is designed around the intervention of the following 5 main identified actors involved in the case of land use change in the Amazon region of Brazil: the Brazilian farmer, the Brazilian government, the rainforest, the beef export lobby and the international environmental policies. Developed to be used as a discussion tool based on the new scenarios of land use change, the game aims to highlight and present new pathways depending on the collective decisions and actions of the different influences the actors have during the game session on the common resources consisting of the rainforest, agricultural land and livelihood. The concept of the game focuses on the setting of medium-sized family farms engaged in agricultural production, including soy and livestock, in the vicinity of the Amazon rainforest. The main challenge for the players in the game is to figure out the impact of their decisions on the alteration of land use. As power relations are firstly randomly attributed and later redistributed throughout the game when certain thresholds are breached, depending on the resources, the actors will encounter different scenarios based on their influence in the decision making.

Who got the power is intended to be played by 5 players representing the 5 different actors mentioned above. The target audience isn't defined as such, as the players are engaged in role play. However, it aims to address the stakeholders involved in and around possible land use change issues in the Amazon rainforest of Brazil.

The preparation of the board game should take about 5-10 minutes for the setup. The game session itself should last about 30 minutes which equals a total number of 5-6 rounds. It should be note that theoretically the game is infinite as there is no end scenario to achieve. Ones the last round is over it should be followed by a debriefing session of about 15-20 minutes for the players to reflect on the different outcomes of the game.

On the set, one or two facilitators should be actively involved throughout the game, introducing the various decision and event cards. The facilitator's role is to guide and facilitate the game session, and to encourage discussion in case players get stuck regarding which decision to make. In addition, a note-taker should record key exchanges between the different players, e.g. by writing down quotes and taking pictures of each scenario after each round throughout the session, to contribute to the players' debriefing session, to highlight particular interactions worth mentioning, or for research purposes.

The main objective of the game is to explore power relations and the effect of shifting power distributions along different stakeholders.

Setup

The game consists of several components as displayed in figure 1.

- The gameboard
- The common resource puzzle pieces: 10 per resource (30 in total)
- Hour glass
- Dice
- 5 Stakeholder cards
- 15 Decision cards
- 12 Event cards
- 25 Power tokens
- The facilitators cheat sheet

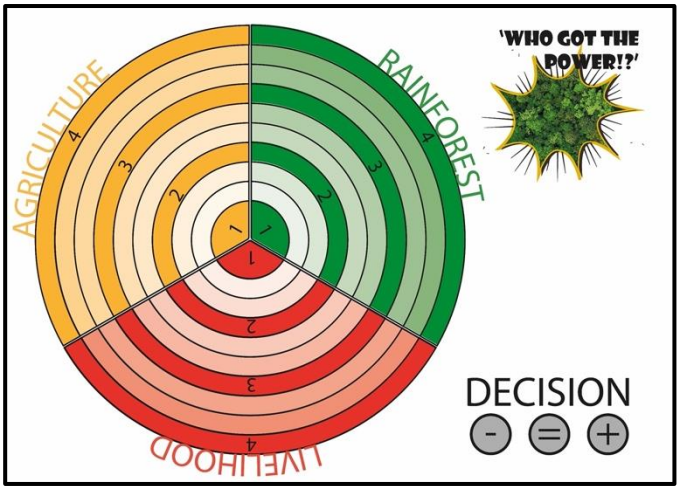


Figure 2: The frame of the gameboard

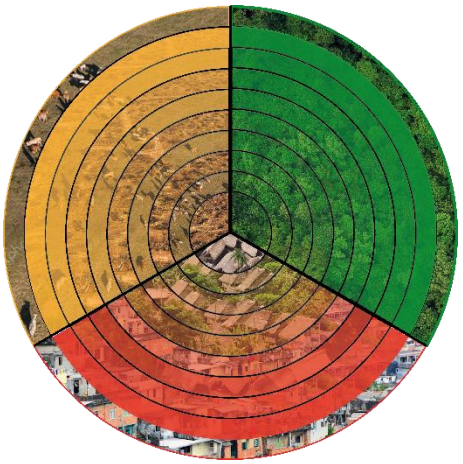


Figure 3: The puzzle pieces of the gameboard

The main components of the game are the game board (figure 2) and the puzzle pieces (figure 3). Both the game and the puzzle pieces are distinguished according to three common resources: the rainforest depicted in green, agriculture depicted in yellow and livelihood depicted in red. Every resource makes out one third of the game board and is broken up into 10 smaller 1/3 circles. These puzzle pieces represent the gradient of presence of absence of the common resource and will be placed on top of the gameboard. The gameboard also has decision circles on which the power tokens will be placed when voting on decisions. Every stakeholder has 3 choice options and 30 seconds from the hourglass to pitch their vision: in favour of ('+'), against ('–') or neutral ('=').

Power is represented by the coloured wooden tokens in the game (see figure 1). Every stakeholder has 5 power tokens in their own colour. This is to clarify what power comes from who when a decision is made. In the beginning of the game, a dice determines the power distribution along the stakeholders.

The game consists of 3 types of cards: stakeholder cards, decision cards and event cards. Stakeholder cards are blue and represent what stakeholder you are and explains your main role in land-use and objectives. There are 5 stakeholder cards (further explained in table 1):

1. The Brazilian Farmer
2. The Brazilian government
3. The lobby
4. International & Environmental policies
5. The Brazilian rainforest.

	International environmental policies:	Amazon rainforest:	Brazilian Government:	Brazilian Farmers:	AIBEC: International lobby, export
Role in land-use change	Reducing land use change and deforestation	Holder of 4.1 million km2 of fertile land and thousands of species	Support livelihood	Deforest for cattle grazing & soy production	They promote the interest of meat industry.
Main objective	Reduce large scale deforestation through labelling and certification schemes (e.g EU regulations)	Provide appropriate environmental conditions for biodiversity to continue to thrive	Grow Brazil's economy and lower its high unemployment rate	Increasing productivity and profit / income + sustaining own family	Developing the economy and the meat sector through exportation.
Challenges / Trade-offs	Induce Brazil to shift their trading with countries with less environmental constraints like China. Fail to appreciate how the Amazon is seen within Brazil itself, causing them to engage in ways that exacerbate tensions and eviscerate goodwill and cooperation	Human activity extracting resources and damaging the environment. Offering biodiversity and climate values and opportunities for economic values as logging and ecotourism Risk of affecting global climate	Inconsistent national policies Stop deforestation by the end of the decade while improving economy and support livelihood	High market demands / pressures Climate change effecting yield	Sustainable constraints. A lot of greenwashing

Table 1: Stakeholder characteristics

Decision cards are pink and determine the choices and course/development of the game. The decision cards are relatively simple, they include a statement the stakeholders have to decide on which will result in land-use change. The game facilitator will lead the land-use change as a consequence of the stakeholders' choices with the help of the '**Cheat sheet**'. The game consists of a total of 15 decision cards.

For every common resource there are 4 event cards. These are numbered (1/2/3/4) and coloured according to the common resource thresholds of land-use change depicted on the gameboard: 4 events for rainforest, 4 for agriculture and 4 for livelihood. After playing these cards, either more land-use will happen or power distributions will change. Land-use change is depicted by the green, yellow and red diamonds on the cards that either say plus or minus a number of puzzle pieces. The change of power distribution is depicted by the fist on the card and explains what stakeholders should hand in or can grab an extra power token (+/ -). An example of an event card is depicted in figure 4.

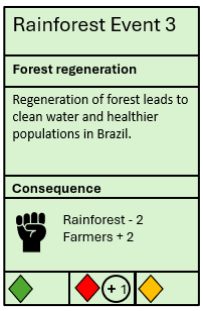


Figure 4: Examle event card Rainforest 3

How to play? (350-400 words) louis

Explain the rules of the game. Describe clearly and concisely how to play your game. This section very briefly summarizes each component, introducing (Entirely or in part) the dynamics of the game and explains what the player can do in relation to the different components each round. Depending on the type of game this section can mention the different round situations, turn-taking, planning schemes (i.e. scenarios), points system, etc.

At the start of the game, stakeholder cards must be distributed along the players and 5 puzzle pieces per resource should be placed on the game board (from the center of the circle outwards), representing the 'current situation'. The power tokens will be divided with the dice.

The game starts with a decision card. The card is read out loud and the stakeholders / players must think about the decision and according to their objectives they will formulate a vision. Each stakeholder will have 30 seconds (timed with the hour glass) to pitch their vision to the other stakeholders. After there will be a short discussion and then it is time to vote on the decision. Stakeholders place their power tokens on the decision circle either in favor of, against or neutral to the decision. The decision with most tokens / votes will be made. The facilitator of the game will then use the cheat sheet to carry out the decision and its consequences on the land-use on the board. A lot of the consequences have been based on literature from (Hänggli et al. 2023) , (Schmitz et al. 2015) and (Buainain et al., 2019) He will either eliminate or add certain puzzle pieces on the board. Along with this land-use change it is possible that the puzzle pieces will reach a threshold value. When this

happens, the facilitator should pick the event card that is linked (with a number and a color) to that specific threshold. He should read out the event card and carry out the new land-use changes on the board (also either eliminating or adding a puzzle piece) and/or change the power distribution between the stakeholders. Every event is different so not always changes both the land-use and the power tokens. When this is finished, a new round can start. A decision card is played again. Like this the game continues for 5 rounds. Throughout the game the main objective is to explore different scenarios with different power distributions and its effects on certain decisions and consequent land-use change in Brazil.

Example: Rehab game (Page et al. 2016)

"A virtual landscape is represented as a spatial grid of 20 cells (4x5), each cell containing a given number of Biomass units, from 0 to 3. Biomass represents a natural and renewable resource. Actors will either control a Household or act as a Ranger. Cells with either 2 or 3 units of Biomass represent a suitable breeding habitat for a protected species of Bird. The reproductive success of a Bird nesting in a suitable breeding habitat is expressed by a number of newborns (0, 1 or 2). The number of newborns is related to the disturbance caused by Harvesters in the cell where the Bird nested and in its neighborhood. There are 20 Harvesters in the model, each having the capacity to harvest Biomass units in a given cell each round. They are grouped into Households of up to 4 Harvesters. Each Household actor decides where to send its Harvesters. Harvesting is the only available activity and source of income (expressed in units of harvested Biomass), and each Harvester requires 1 Biomass unit/round to sustain itself. The Ranger actor, usually played in a 2 or 3-member team, is in charge of monitoring and protecting the Birds. The Ranger's objective is to maximize the number of newborn Birds. From Round 2 onwards, the Ranger may decide to delineate up to 3 cells on the grid as Protected Areas. The Ranger does not need Biomass to sustain him or herself." (Page et al. 2016)

Draft Ideas:

Board, pieces, cards, power

Debriefing

After playing the game it is important to reflect on certain events or situations that came to the fore during the game. In order to also get a general overview on how the players experienced the game, the following questions are of essence to ask.

- How did you experience the game in general? Were there things that you liked/disliked?
- What were events that challenged you during the game?
    - Design board: tokens & thresholds in between pieces instead of on the pieces now
- Were there any surprises during the game that challenged you to change your mindset?
- Did you achieve what you wanted to achieve? Did the power you had help you?
- What did you think of the interactions with the other players? Did you experience successful negotiations or where there many difficulties?
- What did you like or dislike about the game?
- What do you think could be improved?

Together, these questions will lead to an evaluation and eventually also a discussion about what happened during the game. It is important to reflect well on the emotions during the game, but also on how the game functioned and also maybe on things that could be improved for the future.

Appendix: Game design process

1. Challenge definition

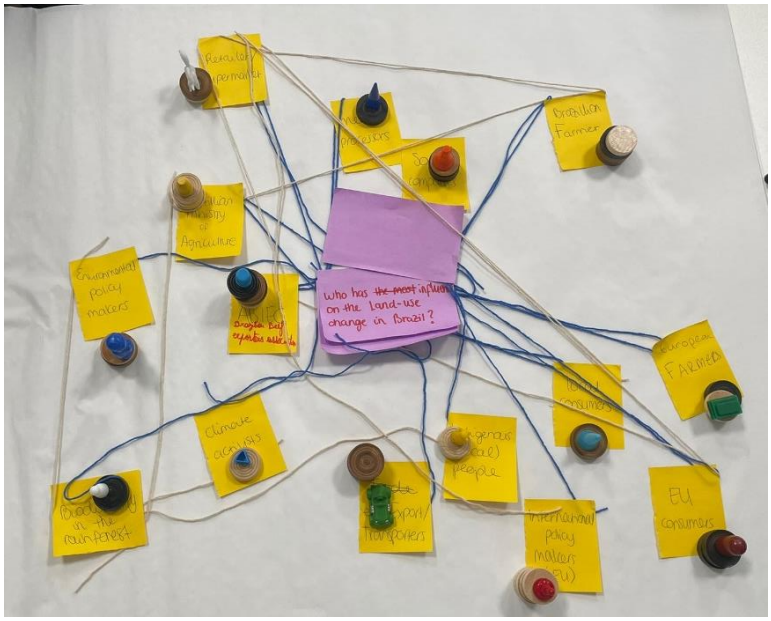
In many countries around the world there is a growing discussion on how to balance food production and environmental issues. One of the places where this discussion has a lot of attention is in Brazil. Around half of the world's largest rainforest is in this country, being called the "lungs of the world". In this territory, the forest and its biodiversity coexist with indigenous communities, family farmers and industrial farmers, all of which are influenced by governmental policies. The deforestation of the rainforest to enable soy and cattle production is at the very least a controversial issue. Internationally, it has been criticized and condemned by environmentalist movements and policy makers, putting pressure on the Brazilian Government to commit to international agreements on conservation. At the same time, the Government has their own interest and priorities on the development and wellbeing of their population, and agriculture exports are one of their main incomes. Big farmers and exporters have a lot of lobbying power because of this.

Each of the actors present on this territory has their own interests and drives, as well as a certain level of power over the decisions made. Policies can determine whether an activity is allowed and promoted or not and it can have different consequences for the different actors. Understanding the complexity of this territory and those who live in it is key to understanding the system and how the proposed solutions may impact the different aspects.

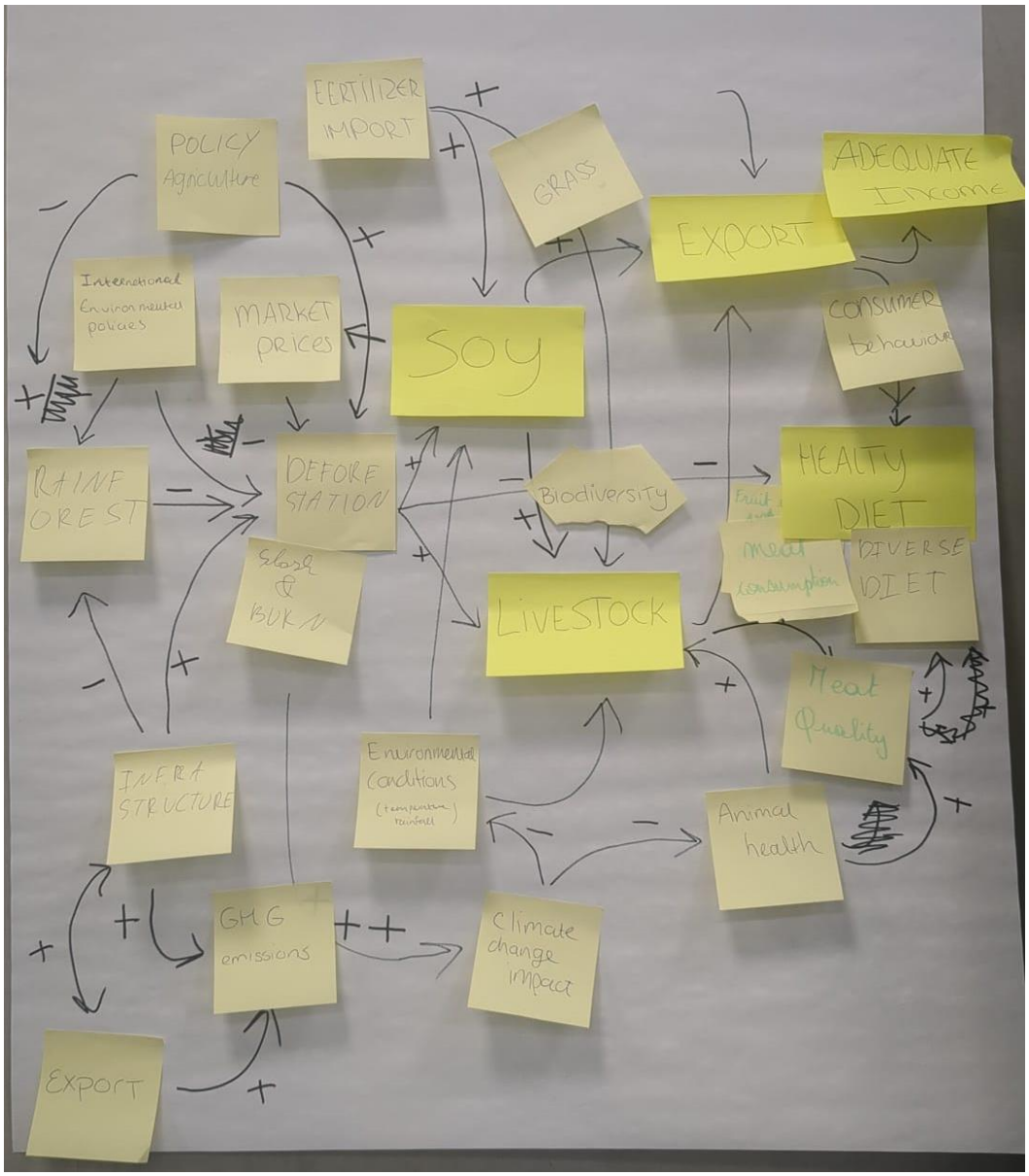
2. Actors and Resources

In the complex reality we are addressing there are many actors. We started exploring the situation in a net map, based on a literature review and general understanding of the case, and we identified 15 different actors, from different scales of farmers, local and international policy makers and different stakeholders in the value chain (Appendix A). Later we decided to focus on a smaller scale and keep only 5 actors, that are representative of the different stakeholders and hold different interests. The 5 actors that will take part of the game are **Farmers, Government, Beef exports lobbyist, International environmental policy makers** and the **Rainforest.** The **Farmer** represents family famers that may or may not own the land, but work and farm on areas of the rainforest converting them to agricultural land for primarily soy or livestock production. **Beef exports lobbyist** represent different companies and bigger scale farmers that export internationally the agricultural products, they hold a very important level of power as lobby for policies that will benefit their business. The **Government,** in this case represents the national government of a sovereign country, it has the responsibility of making and enforcing the laws, regulate the economy and at the same time provide essential services for the citizens. It also has to represent the interests of its citizens nationally and internationally. **International environmental policy makers** on the other hand, have as a priority to develop policies that will protect the natural environment, through different strategies like conservation or sustainable development. In the case of the rainforest, biodiversity preservation and avoiding deforestation is key for climatic issues. Lastly, the **Rainforest** is also an actor in the game. We thought it would be interesting to include a more-than-human actor, to give voice and power to the main protagonist of this story. It represents itself and everything that is contained within it, all biodiversity and also abiotic components, as well as indigenous groups (the interpretation on what this more-than-human represents can also vary for different players).

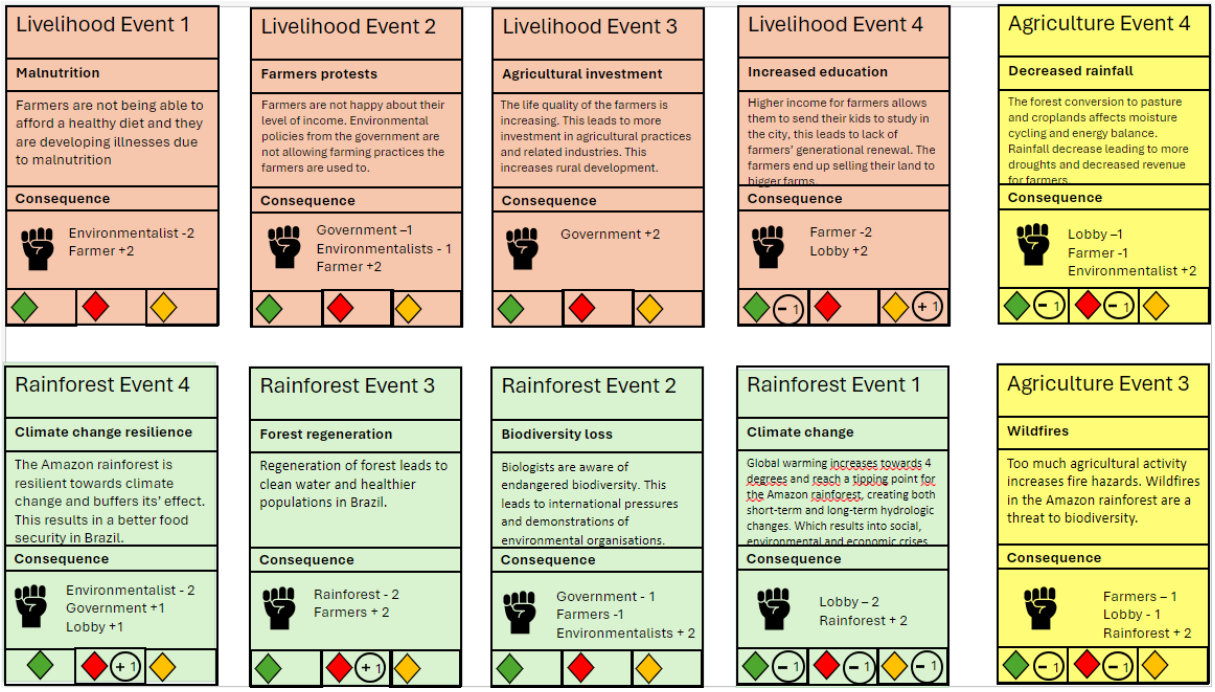
The game will present 3 common resources: **Rainforest, Agriculture** and **Livelihood,** and an individual resource: decision making **Power**. The **rainforest** as a resource, represents the health of the ecosystem, the thrive of biodiversity and abiotic components like water or soil. **Agriculture** resource represents the advancement of agricultural activities in the area, increasing production of either soy or livestock. The **livelihood** resource represents the farmers access to life necessities, includes that they have a decent income as well as health, education and access to food, clothing and housing conditions. Finally, the decision making **power** represents who has more weight on a decision, and it is a key element in the game. Through its randomization in the beginning, and the changes that the Event Cards will have produce, the players will be able to explore how the decisions and the board changes when the different actors have more or less power.

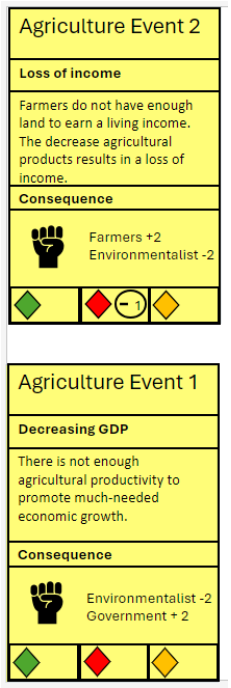


Appendix A: Developing stakeholder map



Appendix B: Fuzzy cognitive mapping the studied scenario





Appendix C events cards 1

Decision card	Decision card	Decision card	Decision card	Decision card
Brazil's forest code I	*Brazil's forest code II*	*Ecocide bill*	*Paris Agreement*	*Price controls*
Proposal to modify the Brazil's Forest Code: Increase 20% of the land farmers can farm on their property in the forest.	Proposal to modify the Brazil's Forest Code: Decrease 20% the land farmers can farm on their property in the forest.	Lobbyist propose to change the law which is against illegal deforestation and make the deforestation permits more flexible.	The Brazilian government signs the Paris Agreement, committing to achieve zero deforestation by 2030.	The Brazilian government set a minimum price for the sale of meat / soy for the farmers.
1	2	3	4	5

Decision card	Decision card	Decision card	Decision card	Decision card
Infrastructure	*Subsidies*	*Mercosur-EU trade*	*Soy Momentum*	*Price of tropical wood*
The Brazilian government increases construction of roads, dams, and other infrastructure to access more Amazon areas.	New subsidies for farmers are going to more sustainable farming practices.	The main goals of the agreement are to increase bilateral trade and investment, lower tariff and non-tariff barriers, and promote shared values such as sustainable development, workers' rights, climate change action, and environmental protection.	Policy makers are enforcing the Soy Moratorium which prevents farmers from selling soy from deforested areas.	Tropical wood is hitting high prices on the global market and the Brazilian government is allowing certain numbers of trees to be cut.
6	7	8	9	10

Decision card	Decision card	Decision card	Decision card	Decision card
Agricultural intensification	*Private Property*	*Indigenous Knowledge*	*Education*	*Fines & embargos*
Investment in machinery and research in order to increase efficiency. The use of fertilizer and other inputs will increase.	A national institution, will implement property titles for the landholders. Whoever is on the land receives the land.	A center about indigenous (farming) knowledge will be created and measures to protect indigenous culture will be taken.	Education receives substantial investments, granting more people access to higher levels of education.	There is a federal enforcement of environmental policies through fines, embargos and blacklisting in the Brazilian Amazon.
11	12	13	14	15

Appendix D decision cards 1

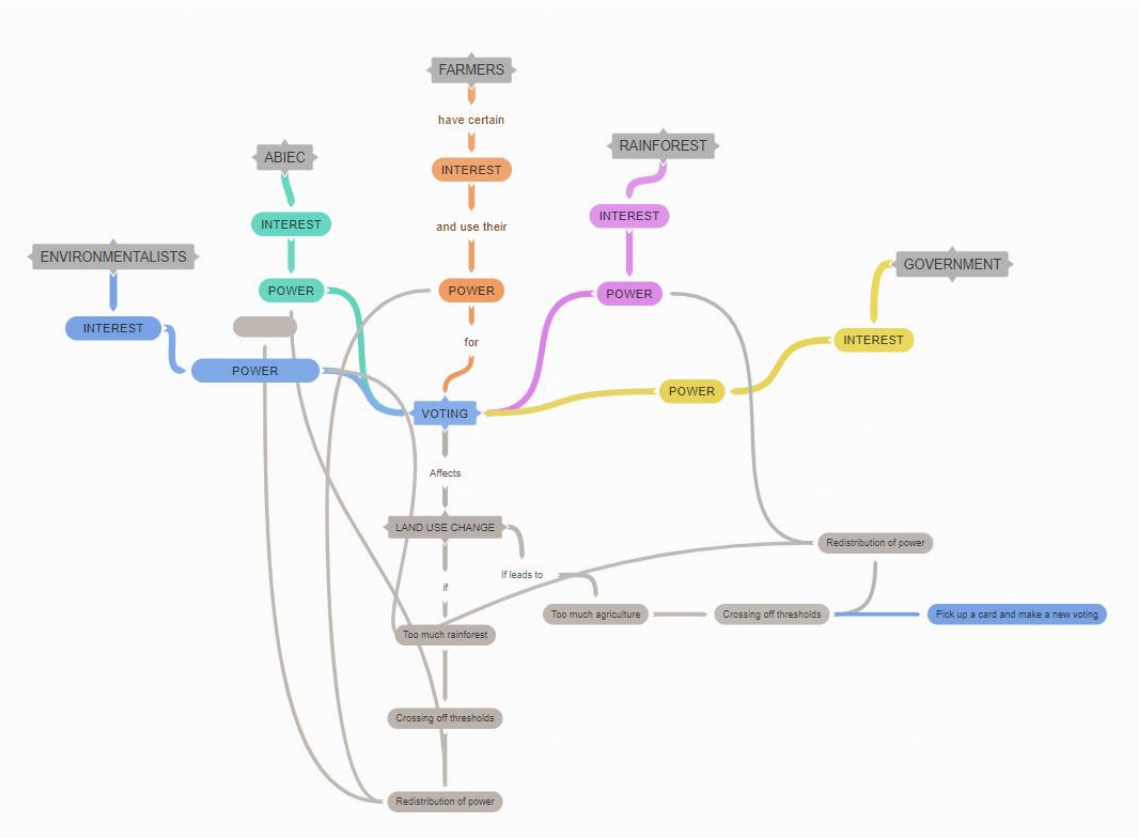
3. Dynamics and Interactions

3.1 Dynamics- the rules of the game

As the actors interact with each other and the resources, various dynamics come at play. The dynamics were chosen to encapsulate the complex web of influences and interests involved in the case of land use change in the Amazon region of Brazil. The selection of these dynamics was driven by the aim to simulate realistic scenarios and foster discussion among players about the implications of their collective decisions. Appendix C shows the dynamics between the actors and the actions after in the game.

The chosen dynamics encompass a blend of ecological, economic, social, and political elements The following dynamics are most important: The **social dynamic** collaboration is central, represented by power dynamics and discussing preferences of voting. Second, the **ecological dynamics,** are in the hands of the game master. After voting, the land-use changes as the decision influences the landscape. This is represented with game pieces on a board: agriculture, rainforest and livelihood. These dynamics were constructed through a combination of real models, and literature references related to land use change in the Amazon region in Brazil. Other dynamics considered are economic dynamics, as we were thinking of adding income instead of livelihood. However, this can place the focus of the game on earning money and leads away from our objective.

Time and space in this game are compressed as in the game design framework - Com-pleC-Su. By making decisons and visualising their consequences on the board, players can learn and reflect on their actions and future pathways (Mochizuki et al., 2021).The ecological cycle is simplified by the board, as for example rainforest takes years to regrow and a long time to get clean water again. However, large areas deforestation and agricultural expansion can happen in a few years. That is why we take on the soci0-political cycle, a round can represent 5 years. Before they are implemented and you see a result in land use, it can take decades. Different decisions can both immediate and long-term impacts This means that the game explores pathways over a time span of 25 years, however, this can be an infinite game.



Appendix C: map representing the actors in the studied scenarios, its relationships and the level of power

3.2 Interactions

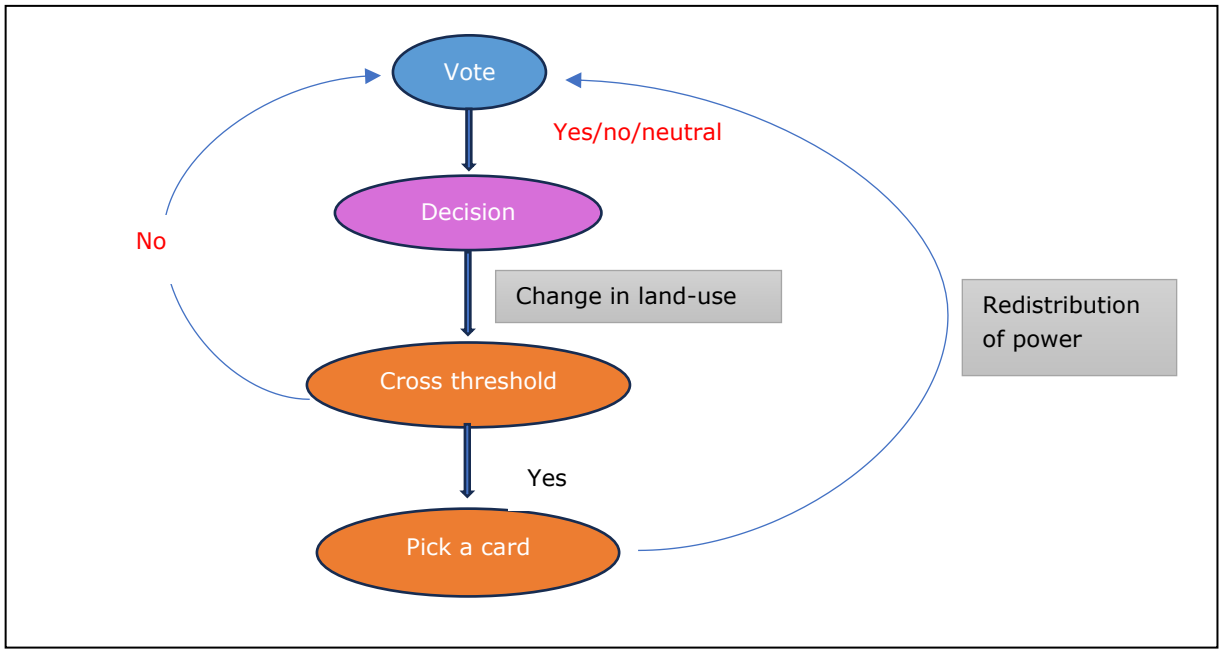
The increase and decrease of common resources results in trade-offs and synergies. As after voting one land use increase, another land-use can possibly decrease, the following trade-offs occur:

- Economic growth vs. Environmental Preservation: Players representing the Brazilian farmer and ABIEC may prioritize economic interests, such as increased agricultural production and profits, which could lead to deforestation and habitat loss in the rainforest.
- Short-term vs. Long-term Gains: Decisions made by the Brazilian government, Brazilian farmer and the rainforest itself may involve trade-offs between short-term economic benefits and long-term ecological sustainability.
- Local Livelihoods vs. Global Conservation: Environmentalists may advocate for conservation measures to protect the rainforest, potentially at the expense of livelihoods dependent on agricultural activities.

However, there is also possibility of synergies of actions which reinforce each other:

- Sustainable Development: Collaboration between the Brazilian government, the rainforest, and environmentalists may lead to synergistic approaches that balance livelihood improvement with environmental conservation.
- Stakeholder Engagement: Involving all actors in decision-making processes can foster synergies by ensuring that diverse perspectives are considered, potentially leading to more inclusive and effective outcomes.
- Innovation and Technology: Synergies between the Brazilian farmer and environmentalists may emerge through the adoption of sustainable agricultural practices and technologies that promote both productivity and conservation.

The interactions in the game were constructed through a combination of trends, scenarios, models, and references related to land use change dynamics in the Amazon region (Carvalho et al., 2020; Buainain et al., 2019). Research on historical trends and projections for future scenarios of land use change provided insights into potential outcomes and consequences of different decisions.
Appendix D will visually depict the interconnectedness of the actors and the trade-offs and synergies inherent in their interactions, providing a valuable reference for players during gameplay and debriefing sessions.



Appendix D: Visual representation of the interactions of the game

4. Further research

In reflecting on our game, it becomes apparent that while it effectively captures the essence of land use change dynamics in the Amazon, it does so amidst certain limitations. The foremost constraint is the inherent simplification of complex issues inherent in the game's design. The game unavoidably oversimplifies the intricate interactions among stakeholders, ecosystems, and policies due to constraints as a short time and limited resources to execute full study, and the inherent difficulty of the system itself. Moreover, there exists a risk of representation bias within the game, whereby certain perspectives or biases may inadvertently be reinforced based on the portrayal of roles and underlying assumptions. This realization underscores the need for continuous improvement and refinement. Collaboration with interdisciplinary experts and the stakeholders itself can ensure the accuracy and effectiveness of the game, aligning it more closely with inner beliefs and identity of the game actors. This can be done in various stages of designing. Interviews with these experts and stakeholders can be done in participatory mapping. There is an opportunity to refine and enhance the game through the iterative design process, involving feedback from players, experts, and stakeholders. Another opportunity is to use this game in research by repeating the same version of the game, and collect the communication of the participants, as used in the RESORTES board game (Andreotti et al., 2020). The potentials in this game are facilitating dialogues and discussions. It offers potentials to explore various pathways, as the game can be adapted by diversifying the decision cards, events and stakeholders.

Similar games?

References (5-10 references)

Andreotti, F., Speelman, E. N., Van den Meersche, K., & Allinne, C. (2020). Combining participatory games and backcasting to support collective scenario evaluation: an action research approach for sustainable agroforestry landscape management. Sustainability Science, 15(5), 1383-1399.

BUAINAIN, A. M., Lanna, R., & Navarro, Z. (Eds.). (2019). Agricultural development in Brazil: The Rise of a global agro-food power. Routledge Taylor & Francis Group.

Carvalho, S., Oliveira, A., Pedersen, J. S., Manhice, H., Lisboa, F., Norguet, J., ... & Santos, F. D. (2020). A changing Amazon rainforest: Historical trends and future projections under post-Paris climate scenarios. Global and planetary change, 195, 103328.

Etienne, M., Du Toit, D. R., & Pollard, S. (2011). ARDI: a co-construction for participatory modeling in natural resources management. Ecology and society, 16(1).

Hänggli, Aline, Samuel A. Levy, Dolors Armenteras, C. Isabella Bovolo, Joyce Brandão, Ximena Rueda, and Rachael D. Garrett. 2023. 'A Systematic Comparison of Deforestation Drivers and Policy Effectiveness across the Amazon Biome'. Environmental Research Letters 18(7):073001. doi: 10.1088/1748-9326/acd408.

Mochizuki, J., Magnuszewski, P., Pajak, M., Krolikowska, K., Jarzabek, L., & Kulakowska, M. (2021). Simulation games as a catalyst for social learning: The case of the water-food-energy nexus game. Global Environmental Change, 66, 102204.

Page, C. L., Dray, A., Perez, P., & Garcia, C. (2016). Exploring how knowledge and communication influence natural resources management with ReHab. Simulation & Gaming, 47(2), 257-284.

Schmitz, Christoph, Ulrich Kreidenweis, Hermann Lotze-Campen, Alexander Popp, Michael Krause, Jan P. Dietrich, and Christoph Müller. 2015. 'Agricultural Trade and Tropical Deforestation: Interactions and Related Policy Options'. Regional Environmental Change 15(8):1757–72. doi: 10.1007/s10113-014-0700-2.

Individual mini-reflection (300 words) on specific learning goals: Conceptual model, design, facilitation.

Mengsje

My first specific learning goal of this project was to gain insight into the complexity of the dynamics and interactions of serious gaming. These are two essential parts of serious gaming design, as they show the mechanisms of the game. And I think they are therefore crucial for effectiveness of a game and gameplay. Yet it's difficult to see this abstract concepts becoming visual, when you are designing a game. That's why I was keen to take on this task in the booklet, to delve into it. Using Page et al, 2016 and Mochizuki et al, 2021, I got a better idea of how to use different dynamics (in our case, social and collaborative) and how this affects the game. In addition, visualizing the interactions (Appendix D) also helped create clarity for our serious game. After all, I think it was also a very fun process. This because of the fine cooperation with our group and thanks to our coach Clark. I really enjoyed seeing our ideas coming 'alive' and making something that actually works afterwards. While playing the game during the event, the players were very enthusiastic and wanted to continue playing. This positively surprised me!

Maud

My learning goal for this project was to reflect and understand a complex and interrelated system issue and turning it into a simplistic easy-to-understand issue. Buainain et al. (2019) helped me a lot to gain insights into the Brazilian developmental land-use changes and its consequences. With the help of scaling down to 3 main principles: rainforest, agriculture and livelihood, we managed to simplify the problem and to turn it into a game which is easily understandable and educational at the same time. Accordingly, my main tasks were the game design and set-up of the game. I really enjoyed being occupied with this because I love to join my creative qualities with my academic ones. While starting with gathering information on stakeholder objectives, land-use change consequences and political decisions we zoomed in more and more to end up with our main game objectives: power relations. For the gameboard we achieved a clear design through trial-and-error of different game set-ups to try to integrate as many dynamics as possible while keeping it realistic, simple and understandable. I think the task division in our team was perfect and efficient. We had many interesting discussions and managed to complement each other's ideas and use the best of our qualities into finalizing the game. My main role in this was visualizing. My group members had ideas and I tried to simplify and translate it into a vision and playable game.

Lucía

Designing this game was a very enjoyable process. At first I had no idea what type of game we would make, and I was even a bit unsure if it would be possible to create a game in such short time, without much previous knowledge, but I was very positively surprised. The process of brainstorming, making the mind maps and discussions between the team, led to a very nice dynamic, that both achieves the challenge we had set, as well as provides a fun and enjoyable game session. I think the team was a good match, we complemented each other quite well, everyone was committed and keen to collaborate with the process. Personally, I chose this topic because I wanted to explore the world of policy making, and the complexity it has for different actors, and I think in that sense this game turned out to be perfect for that.

Jakob

Who got the power and the whole process of developing a game in a group within this course setting was very satisfying. It was the first time I had been exposed to the topic of "serious games" and I actually chose the course because I was interested in tools to promote stakeholder discussions in a scientific but more tangible way, away from scientific papers and academic formats. This approach did not disappoint! Going through the whole process has inspired me to eventually implement serious games for my own master's thesis project. Personally, I really enjoyed the group dynamics and the different discussions we had, not only about the design aspects of the game, which were definitely fun, but also about the dynamics to be implemented in the game, linked to literature and real events within our case study context, which allowed us to really

dive deep into our case study. Finally, gaining insight into the theory of serious game development with the various background literature provided gave me a solid foundation to grasp the complexity and value of serious games.

Manon

My learning goal for this course was to explore different pathways in sustainability transformations and to see how they can be used in various way. I had never done or made a serious game before, and honestly it was quite a step out of the comfort zone for me. However, during the literature research I started to enjoy thinking of the ways in which we could make a fun game with a solid foundation created by scientific articles. While being quite skeptical about serious game before I started the course, I started to understand the dynamics and importance of them more and more during the course. The process of designing the conceptual framework was smooth and the dynamics within the team were nice. While trying to design the game, everyone was very enthusiastic, which meant that a lot of ideas were proposed. We had so many ideas that sometimes the overall structure became a bit fuzzy, and I felt sometimes a bit lost in knowing which direction we were heading. However, discussing this helped and we structured the game in such a way that the plan and outcome was clear for everyone. The interactions, dynamics and the interconnectedness of the final game really enabled the players to have discussions about implementations and outcomes. This made playing the game fun and interesting. I very much enjoyed making the game and going through the designing processes together with our group.

Louis

Reflecting on my journey through the course on redesigning the food system, I've chosen to delve into the facilitation and debriefing process, a pivotal aspect of our serious game design. My initial goal was to understand the intricacies of guiding discussions and fostering collaboration effectively. I soon realized that facilitation goes beyond mere moderation; it entails creating a safe environment where all voices are heard and valued. Throughout the process, I learned the significance of active listening. By attentively tuning in to participants' feedback and reactions, I could tailor my approach to better suit their needs, ensuring a more fruitful discussion. Additionally, structured debriefing sessions emerged as indispensable in synthesizing key insights and charting actionable pathways forward. It became evident that debriefing wasn't merely a recapitulation of events but a platform for deeper reflection and application of learnings. My key takeaway from this experience is the importance of empathy in facilitation. Understanding the perspectives and concerns of participants not only enhances the facilitation process but also fosters trust and rapport within the group. Moving forward, I aim to refine my facilitation skills by further honing my empathy, actively listening, and adapting to diverse group dynamics.

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Dr. Federico Andreotti, Lecturer and Researcher at Farming Systems Ecology, Wageningen University & Research

Contact: federico.andreotti@wur.nl

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