

Peer Review

Review of: "A Simple Board Game for Modeling the System Dynamics of Deforestation"

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The article proposes a simple board game to model the system dynamics of deforestation. The game uses a Lotka-Volterra model to describe the dynamics between the harvesting of trees (prey) by loggers (predator) and its recovery. The game proposes two variants: the basic game and “Promoting Sustainable Forestry”. Although the basic game variant can be useful to show the “overshoot and collapse” scenario, I found the “Promoting Sustainable Forestry” variant more interesting, since part of the purpose of the game is to show essential forest management dynamics. This variant can also easily transmit to the public the trade-offs between the quick depletion of resources and investing in forest recovery. Thus, the board game achieves its main goal of transmitting the main trade-offs and decision-making required for sustainable forestry management.

From a general perspective, I found the board game interesting and well-planned. Although the initial tests show the expected outcome for both variants, it would be desirable to know the outcome of a more rigorous test (e.g., different numbers of players, different ages and backgrounds). Right now, we do not know if the results of these tests were made with real persons playing or just a computational simulation. Also, I suggest including the opinions of some new players, just to confirm that the “sustainable management forestry” idea is reaching the players through the game or what their first impressions are. Finally, I suggest submitting a further report about the use of the game in certain educational or workshop activities.

Obviously, the game is a simplification of reality, but it would be interesting if a further version of the game (or even expansions) could include other aspects not currently considered:

1. Although the game considers the regrowth of forests, usually a longer time is required for a new tree to reach the diameter and height of the tree felled in the previous round. Thus, it would be interesting to add a mechanism that represents this lag required for new trees to grow.
2. Other aspects of conserving old-growth forests could be included in the game, such as helping to maintain biodiversity. Thus, it would be interesting to include some sort of bonus for retaining parts of the forest untouched, which could represent this ecosystemic function.
3. More complex mechanisms could be included in the decision-making processes; for example, in reality, “loggers” might develop different activities in the forest (e.g., timber harvest or felling trees) and with different purposes (e.g., establishing agricultural or livestock activities), which have important consequences for forest management. Additionally, different incentives might be at play (e.g., conserving, deforesting, implementing other activities).

Finally, I consider that board games might be an excellent tool to transmit key ideas about forest management through a ludic approach. Thus, the main contribution of the article is proposing a tool that can help transmit these ideas.

Declarations

Potential competing interests: No potential competing interests to declare.