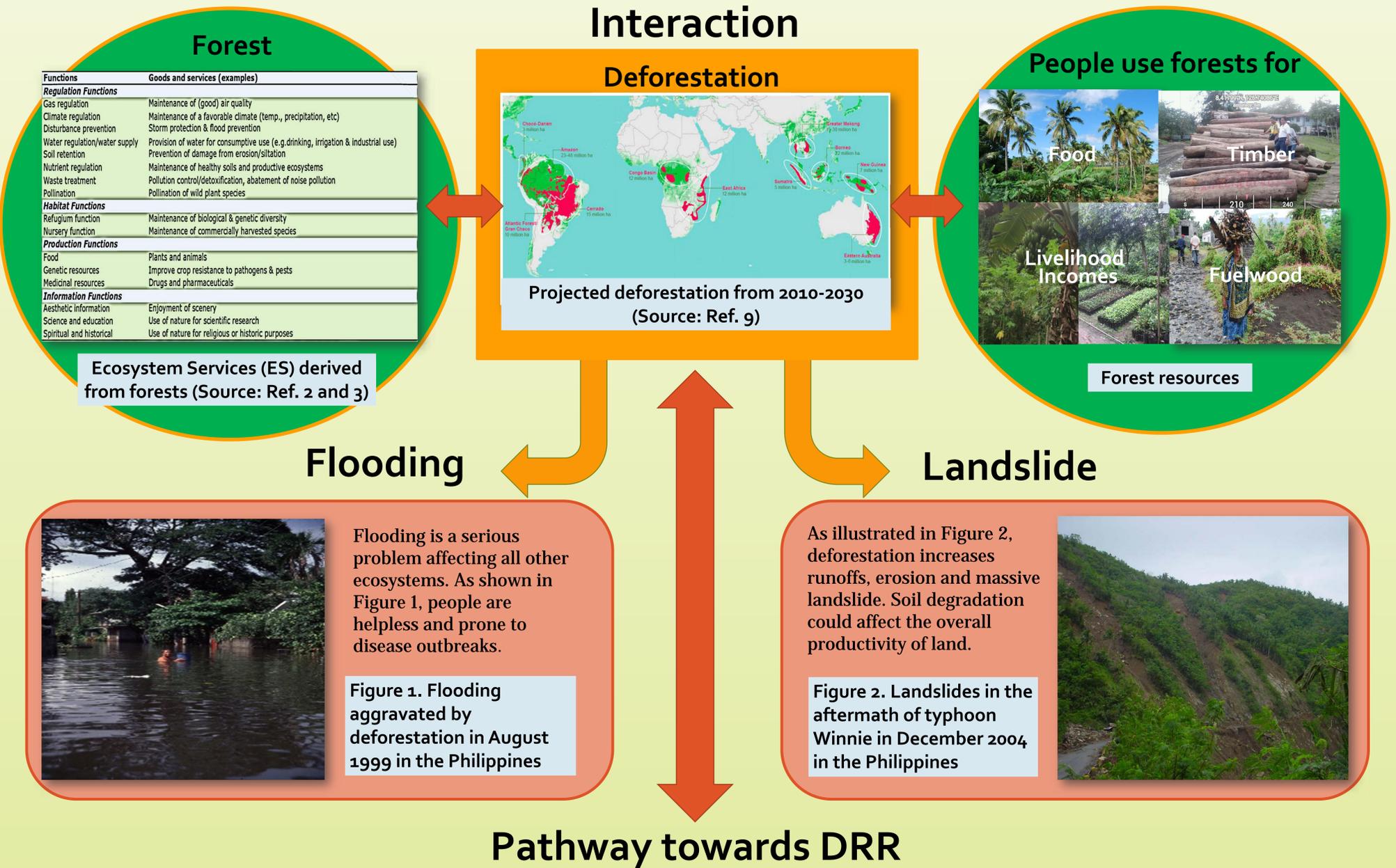


Overview

It has been recognised that sustainable relationship with the environment is necessary to build a sustainable future. Several studies aiming to contribute on this endeavour have been acknowledged (Botkin & Keller, 2011; Wright & Boorse, 2017). Yet, forest degradation is unabated and change in the ecosystems had influenced the occurrence of disasters. This is crucial because people rely on the ecosystem services (ES) and understanding the relationship of people and forest is vital in addressing deforestation and forest degradation. More importantly, preparedness and knowledge are necessary since disasters can jeopardized the environment and certainly affects lives of the people. The integration of these components is sensible to grasp the countless and profound ways of ES that sustain our everyday life. We carefully modify conservation actions with the purpose of creating and evaluating knowledge as means of adaptation and mitigation to disaster risk reduction (DRR) (Knight, Cowling, & Campbell, 2006). Henceforth, people's participation in forest conservation could be a pathway towards promoting DRR.



Flooding is a serious problem affecting all other ecosystems. As shown in Figure 1, people are helpless and prone to disease outbreaks.

Figure 1. Flooding aggravated by deforestation in August 1999 in the Philippines

As illustrated in Figure 2, deforestation increases runoffs, erosion and massive landslide. Soil degradation could affect the overall productivity of land.

Figure 2. Landslides in the aftermath of typhoon Winnie in December 2004 in the Philippines

Dominant forest protection initiatives				
Dominant forest conservation	Objectives	Benchmarks	Drawbacks	Issues
Biodiversity conservation	Protection of endangered species	Maintenance of intact forest ecosystems	Conservation of favourable species	Contentious effectiveness, exclusionary approach
Buffer zoning	Delineation of protected zone	Mapping of vegetation types and assessing land use activities	Lack of periodic tracking in monitoring activities	Restricted access, local participation required
Forest development programmes	Reforestation, afforestation, forest protection and rehabilitation	Integrated approach towards forest development programmes	Intermittent monitoring activities	Incentive-based participation, comprehensive training required
Multiple-use system	Optimisation of land use	Adopting land use specialization approach	Lack of guidelines for design requirements	Poverty alleviation
Proclamation of protected areas	Refugium/Nursery	Promoting sustainable forest conservation across different protected areas	Undetermined boundaries due to land disputes within local jurisdictions	Exclusionary approach issues (power relation, decision making, benefit distribution)

People's Participation in forest protection

Active people's participation in forest conservation is essential to improve the condition of the forests. It certainly mitigates the impacts of disasters since human well-being depends on healthy ecosystems. This two-way process demonstrated in Figure 3 is elusive but indeed critical to DRR.

Figure 3. Participatory forest management in the Philippines, 2011

Way forward

It is imperative to promote the switch from degradation to responsible forest protection and rehabilitation. Recognizing the importance of active people's participation in forest protection is an important component of DRR because it involved empowering the people through increasing control over the resources and lives (Kumar, 2002). Determining the nature and drivers of and obstacles to genuine people's participation is an opportunity to address deforestation as well as to foster DRR. However, different interests could affect the decision-making processes amongst stakeholders. Thus, deeper understanding of the processes involving people's participation in forest protection and rehabilitation can contribute in empowering the actors and perhaps achieving forest sustainability. Moreover, examining potential gaps, opportunities and challenges towards genuine people's participation is relevant to identify long-term solutions to deforestation and to DRR advancement. Necessarily, adaptation and mitigation towards DRR would effectively work along with forest sustainability.

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