UNFCCC COP24 Japan Pavilion Side Event
"Implementation of REDD+ by ecosystem-friendly approach"

Land sparing or land sharing: Carbon stock and biodiversity conservation in forest landscape

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JAPAN PAVILION

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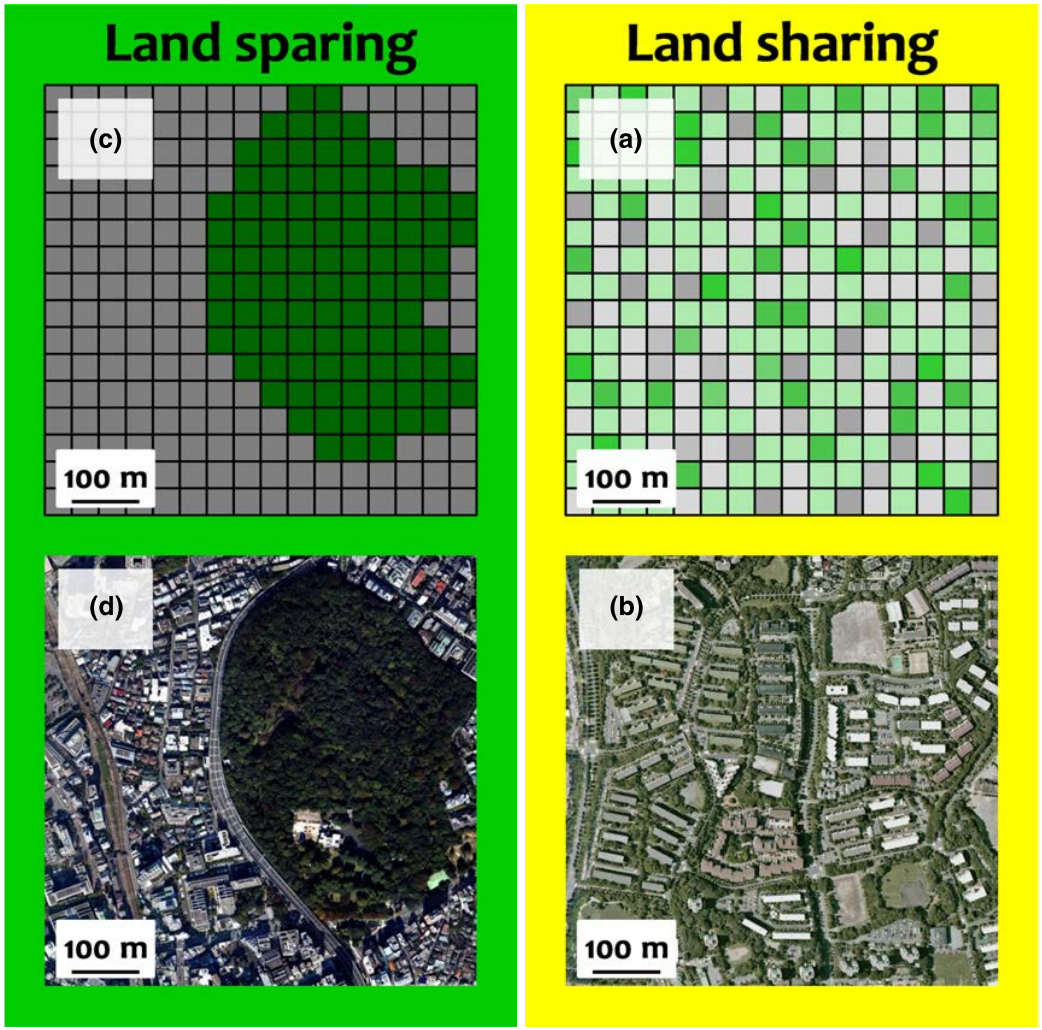
Introduction

- Since mid-1990's, many scientists have discussed how to harmonize biodiversity conservation and human land use applying the most recent framing of two alternative strategies: land sparing versus land sharing.

- Land sparing is the intensification of production to maximize agricultural yield within a fixed area and dedicating other land to biodiversity conservation (Renwick & Schellhorn 2016).

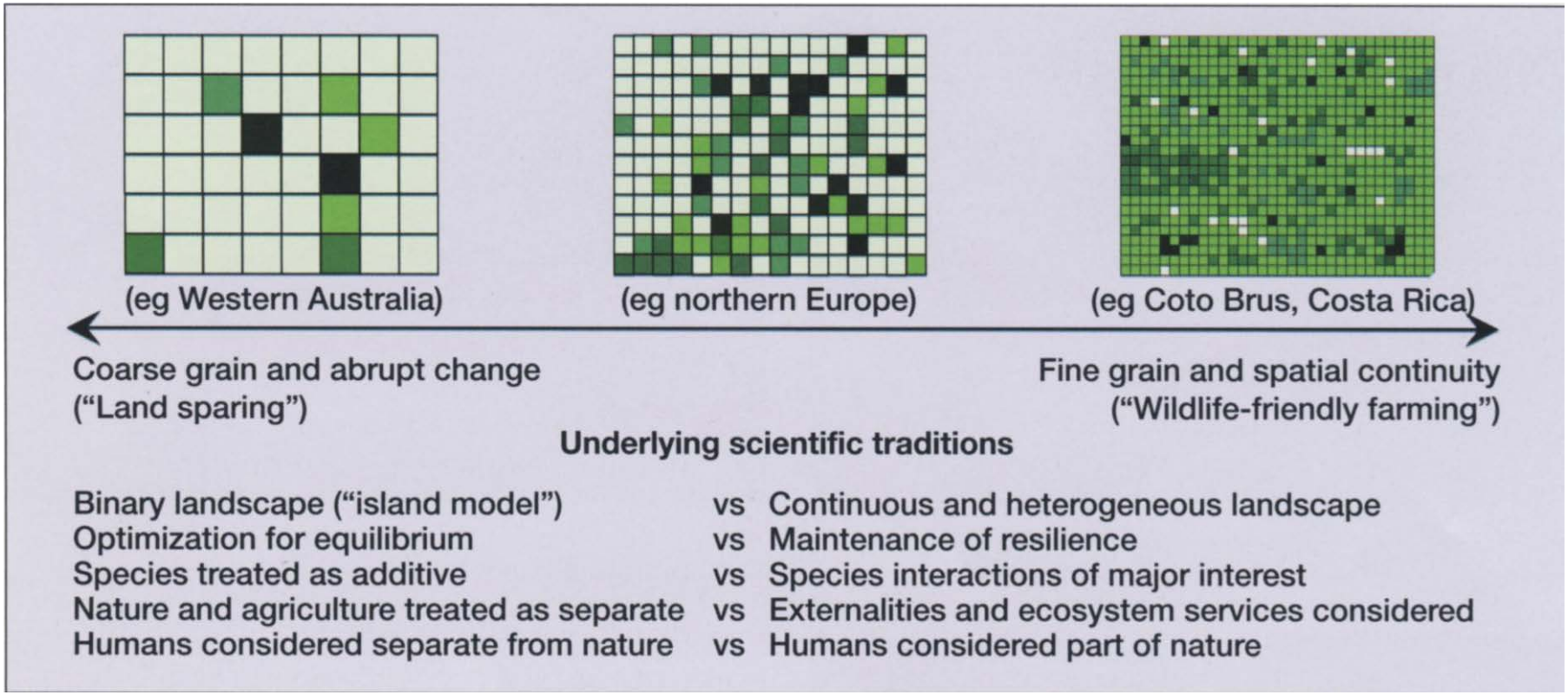
- Does High-yield agriculture potentially reduce pressure on forests by requiring less land to increase production?

Basic Idea of Land Sparing



Soga et al. (2014)

Basic idea of land sparing



The shade of green grid cell for biodiversity conservation, with darker shades representing greater value.

Source: Fisher et al. (2008)

Land sparing saves forests?

From 2000 to 2010, 72% of new plantations expanded to forested areas.

"Higher productivity in new agricultural areas can increase efficiency in the use of land, but incentives for expanding cultivations outside of the forest are essential to achieve simultaneous goals of agricultural production and forest conservation. "

Referred from Gutiérrez-Vélez et al. (2011)

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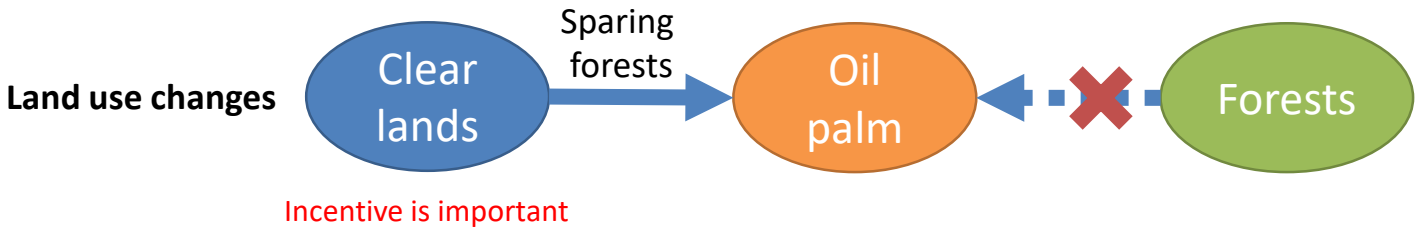
Land sparing saves forests?

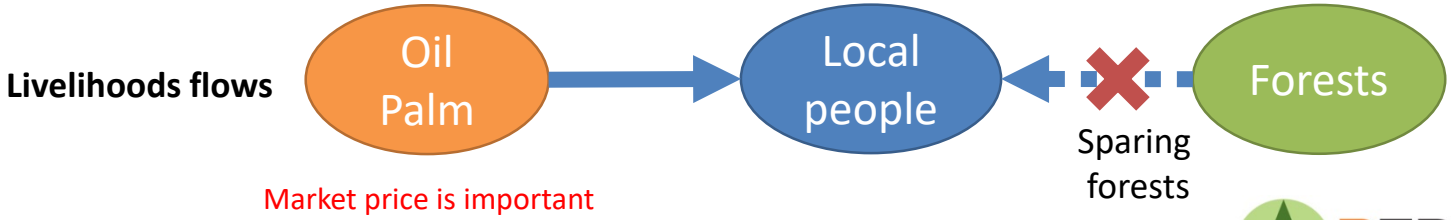
Peruvian Case Referred from Gutiérrez-Vélez et al. 2011

"The results show that high-yield agriculture is an important but insufficient strategy to reduce pressure on forests. We suggest that high-yield agriculture can be effective in sparing forests only if coupled with incentives for agricultural expansion into already cleared lands. "



Indonesian Case Ota et al. 2017

In the process of oil palm expansion, livelihoods of local peoples were changed from forest logging to yield from oil palm plantations. In this case, oil palm plantations can contribute to reduce illegal logging and conserve remaining forest resources.



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Conclusions

- Some scientific papers concluded that intensification of agricultural production have the potential to save forest area and biodiversity.

- Both social and biophysical factors influence which approach is feasible or appropriate in a given landscape (Fisher et al. 2008).

- Strategies for biodiversity conservation in ecosystems form a continuum between land sparing and land sharing (Renwick & Schellhorn 2016).