



**Eberswalde University  
for Sustainable  
Development**

Biosphere Reserves Institute

# Land use in socio-ecological and socio-economic contexts



Week 1: April 08, 2025

## Recap of previous session

- HNEE structure
- Online lectures the whole of next week due to rail work
- Leiden University partnership and examination groups
- Definitions of land, land use, and land cover



# Finish reading

## PERSPECTIVE



## PERSPECTIVE

# Ten facts about land systems for sustainability

Show Video

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Land use is central to addressing sustainability issues, including biodiversity conservation, climate change, food security, poverty alleviation, and sustainable energy. In this paper, we synthesize knowledge accumulated in land system science, the integrated study of terrestrial social-ecological systems, into 10 hard truths that have strong, general, empirical support. These facts help to explain the challenges of achieving sustainability in land use and thus also point toward solutions. The 10 facts are as follows: 1) Meanings and values of land are socially constructed and contested; 2) land systems exhibit complex behaviors with abrupt, hard-to-predict changes; 3) irreversible changes and path dependence are common features of land systems; 4) some land uses have a small footprint but very large impacts; 5) drivers and impacts of land-use change are globally interconnected and spill over to distant locations; 6) humanity lives on a used planet where all land provides benefits to societies; 7) land-use change usually entails trade-offs between different benefits—"win-wins" are thus rare; 8) land tenure and land-use claims are often unclear, overlapping, and contested; 9) the benefits and burdens from land are unequally distributed; and 10) land uses have multiple, sometimes conflicting, ideas of what social and environmental justice entails. The facts have implications for governance, but do not provide fixed answers. Instead they constitute a set of core principles which can guide scientists, policy makers, and practitioners toward meeting sustainability challenges in land use.

land use | sustainability | social-ecological systems | governance

How human societies use, manage, and interact with land is key to addressing current sustainability issues including nature conservation, climate change, food security, poverty alleviation, and energy transitions, framed in high-level political agreements from the 2030 Agenda for Sustainable Development to the

Paris Climate Agreement or the Convention on Biological Diversity. Despite the centrality of land use to these debates, long-disproven misconceptions, partial framings, and ill-conceived ideas continue to permeate these discussions, such as the misconception that there is abundant land available globally

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## Categories of land use

### Collective

Residential, traditional,  
institutional, service-  
provision, recreational,  
environmental

### Productive

Commercial, industrial,  
agricultural

### Individual / private

Private property and  
residence, financial

Source: UNHCR 2015



## Exercise: What category of land use?



Wind turbines



## Exercise: What category of land use?







## Meaning and value of land

What is the value of  
land to you?



## Discuss shortly with your seatmate

What is the value of  
land to you?





## Meaning and value of land (UNCCD 2017)

(1) Land as a bountiful asset

(2) The multi-dimensional character of land

(3) Land as private property

(4) Land as a public good

(5) Land as a sense of place



## (1) Land as a bountiful asset

### Global scale

Mitigating climate  
change

### Landscape scale

Regulating water  
supply

### Local scale

Supporting food  
production



## How to protect this bountiful asset of land? 4Rs

- **Recognize as pillars of sustainable land management:**

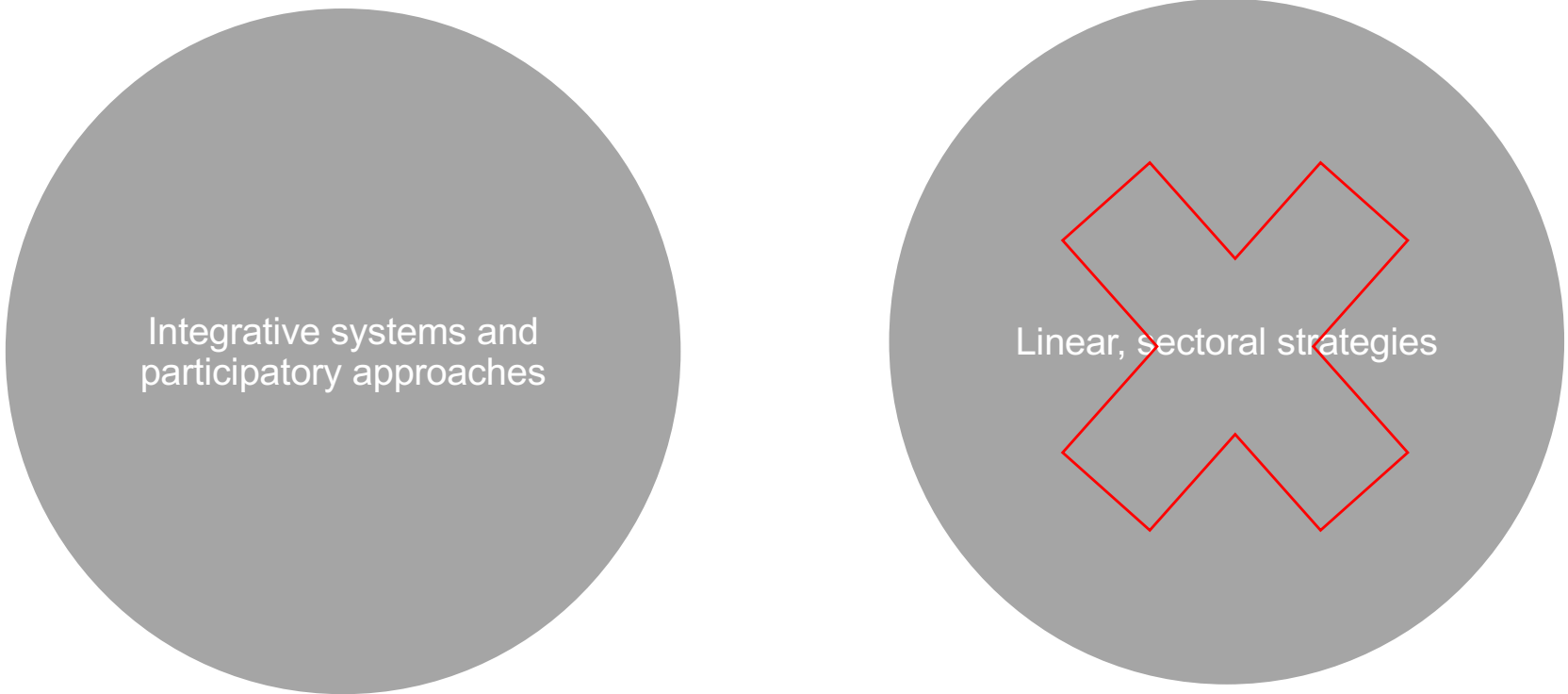
1. **Rights**

2. **Rewards**

3. **Responsibilities**



## (2) The multi-dimensional character of land



Integrative systems and  
participatory approaches

Linear, sectoral strategies



## Indicative perspectives on the meaning of land



### **Conservationists and environmental activists**

tend to appreciate the value of land as a habitat for species or as a wilderness to be protected.

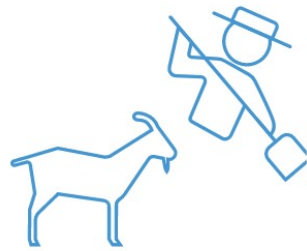


### **Indigenous and local communities**

often consider land to be a communal or sacred asset, to be protected for current and future generations. Many faith groups regard certain landscapes or land forms as imbued with particular spiritual significance or power.



## Indicative perspectives on the meaning of land (cont'd)



### **Subsistence farmers and pastoralists**

view it as source of food and livelihood;  
an intergenerational transfer of wealth,  
and a sense of place and belonging.



### **Scientists and researchers**

see land as a composite of soil, water,  
biodiversity and minerals, interacting  
to provide goods and services that  
benefit humans and sustain ecosystem  
functions.



## Indicative perspectives on the meaning of land (cont'd)



**Governments and politicians,**  
in some instances, safeguard land  
for the public good, while in other  
instances, they employ it as an  
instrument of power and control.

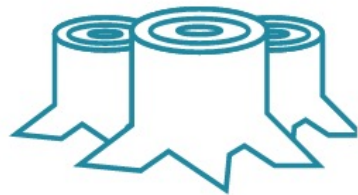


**Artists, philosophers and tourists**  
see land as a respite or refuge, a source  
of spirituality, inspiration and beauty.



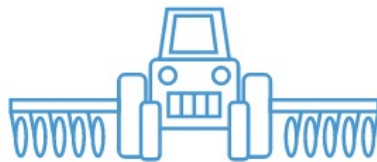


## Indicative perspectives on the meaning of land (cont'd)



### **Timber, paper and pulp companies**

focus on the trees, while the mining and energy sectors are primarily concerned with what lies below the surface of land.



### **Agri-business and industrial farmers/ranchers**

consider it as a business opportunity and profit-making asset.



## Indicative perspectives on the meaning of land (cont'd)



### **Urban developers and frontier settlers**

are constantly searching for land to expand the human domain and create economic wealth. Gardeners and architects enjoy the prospect of modifying or transforming landscapes in pursuit of the aesthetic enhancement of our cultural environment.



## **(3) Land as private property**

### **Control of land**

Government  
Private individuals  
Corporations  
Communities

### **Developed countries**

Ownership clearly  
identified, mapped and  
protected by legal title  
& supported by  
institutions

### **Developing countries**

Shared rights to natural  
resources among users  
within local  
communities



## (4) Land as a public good

Landscapes are a  
mosaic of ecosystems  
and **human  
communities are  
embedded** within  
them.

## Example: Nigeria floodplains (Thomas 1996)

Rainy season: fisherfolk

Dry season: farmers

Post-harvest: livestock herders



## **(5) Land as a sense of place**



**What connection to land  
do you feel?**



## **(5) Land as a sense of place**

Legal titling of land

Community and  
customary entitlement

**Simple sense of  
belonging**





## a) Legal titling

Judicial Form No. 109-D  
(Revised 2009)

20120365340

REPUBLIC OF THE PHILIPPINES  
DEPARTMENT OF JUSTICE  
Land Registration Authority  
QUEZON CITY  
Registry of Deeds for Province of Laguna, Calamba Branch

**Transfer Certificate of Title**  
OWNERS DUPLICATE OWNERS DUPLICATE OWNERS DUPLICATE OWNERS DUPLICATE

No. **060-2012**

IT IS HEREBY CERTIFIED that certain land situated in BO. OF STO. DOMINGO, MUN. OF BIÑAN, PROV. OF LAGUNA, bounded and described as follows:  
A PARCEL OF LAND (LOT OF BIÑAN ESTATE, LRC REC. NO. ), SITUATED IN THE BO. OF STO. DOMINGO, MUN. OF BIÑAN, PROV. OF LAGUNA, BOUNDED ON THE E., ALONG LINE 1-2 BY ST., ON THE S., ALONG LINE 2-3 BY LOT BIÑAN ESTATE, ON THE W., ALONG LINE 3-4 BY IRRIGATION CANAL AND LOT AND ON THE N., ALONG LINE 4-1 BY LOT BOTH OF THE BIÑAN, ESTATE. BEGINNING AT A POINT MARKED "1" ON PLAN, BEING N. 21 DEG. 58'E., 457.00 M. FROM MON. NO. 15, BIÑAN ESTATE; THENCE S. 9 DEG. 40'E., 23.8 M. TO POINT 2; S. 78 DEG. 57'W., 26.1 M. TO POINT 3, N. (Continued on next page)

is registered in accordance with the provision of the Property Registration Decree in the name of  
**Owner:** STATE OF BIÑAN, PROVINCE OF LAGUNA, MINOR OF LEGAL AGE - 17058 THE



**Address:** (Continued on next page)

as owner thereof in fee simple, subject to such of the encumbrances mentioned in Section 44 of said Decree as may be subsisting.

IT IS FURTHER CERTIFIED that said land was originally registered as follows:  
**Case No.:** **Record No.:**  
**Orig. Reg. Date:** **Decree No.:**  
**Original RD:** STA. CRUZ, LAGUNA **OCT No.:**  
**Volume No.:** **Page No.:**  
**Original Owner:**

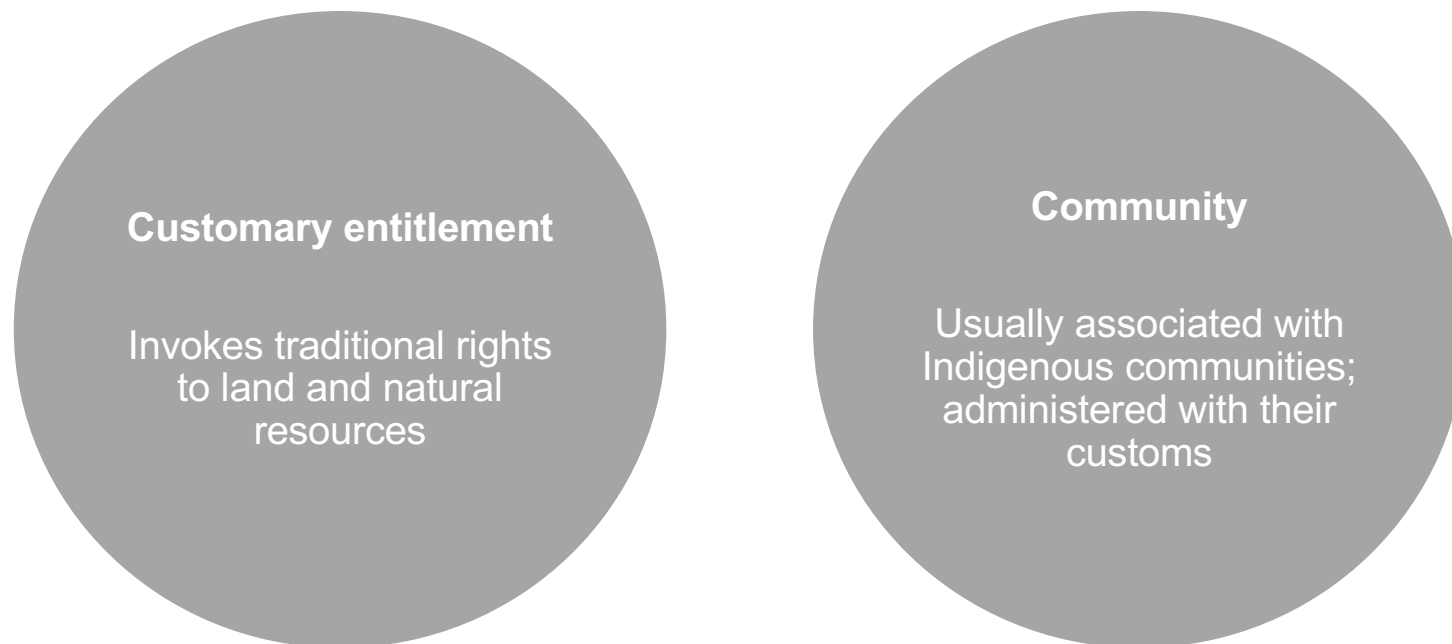
This certificate is a transfer from TRANSFER CERTIFICATE OF TITLE T- (TOTALLY CANCELLED) by virtue hereof in so far as the above-described land is concerned.  
Entered at Province of Laguna, Calamba Branch, Philippines on the 1<sup>st</sup> day of APRIL 2012.

Atty. Casiano C. Arcillas  
Register of Deeds





## b) Community and customary entitlement



Source: FAO 2002



## *Ancestral domains*





## *ICCA - Indigenous Community Conserved Area*

The diagram consists of two large, light-gray circles arranged horizontally. The left circle contains the text "territories of life". The right circle contains the text "territories and areas conserved by indigenous peoples and local communities".

"territories of life"

"territories and areas  
conserved by indigenous  
peoples and local  
communities"

Source: ICCA Consortium 2022



## *Three defining characteristics of ICCA*

**Close and deep  
connection** between a  
territory or area and an  
indigenous people or  
local community.

**Functioning  
governance  
institution** through  
custodian people or  
community who makes  
and enforces decisions  
and rules

Governance and  
management contribute  
to **conservation of  
nature and  
community wellbeing**

Source: ICCA Consortium 2022





## c) Simple sense of belonging



Being in **direct contact with the land** can lead to both mental and physical health benefits; it can also reinforce who and where we are, giving us a sense of self and place (UNCCD 2017)



## Forest bathing

- <https://www.youtube.com/watch?v=MtiWqKLLPmA>





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