



Eberswalde University
for Sustainable
Development

Governance, Administration and Management of Biosphere Reserves and Protected Areas

Prof. Dr. Erik Aschenbrand



1 Intro: Social animals / definition of key terms

Governance, Administration and Management of BR and Protected Areas

our Plan – what to expect

Lecture: Focus on Governance and Administration + practical examples

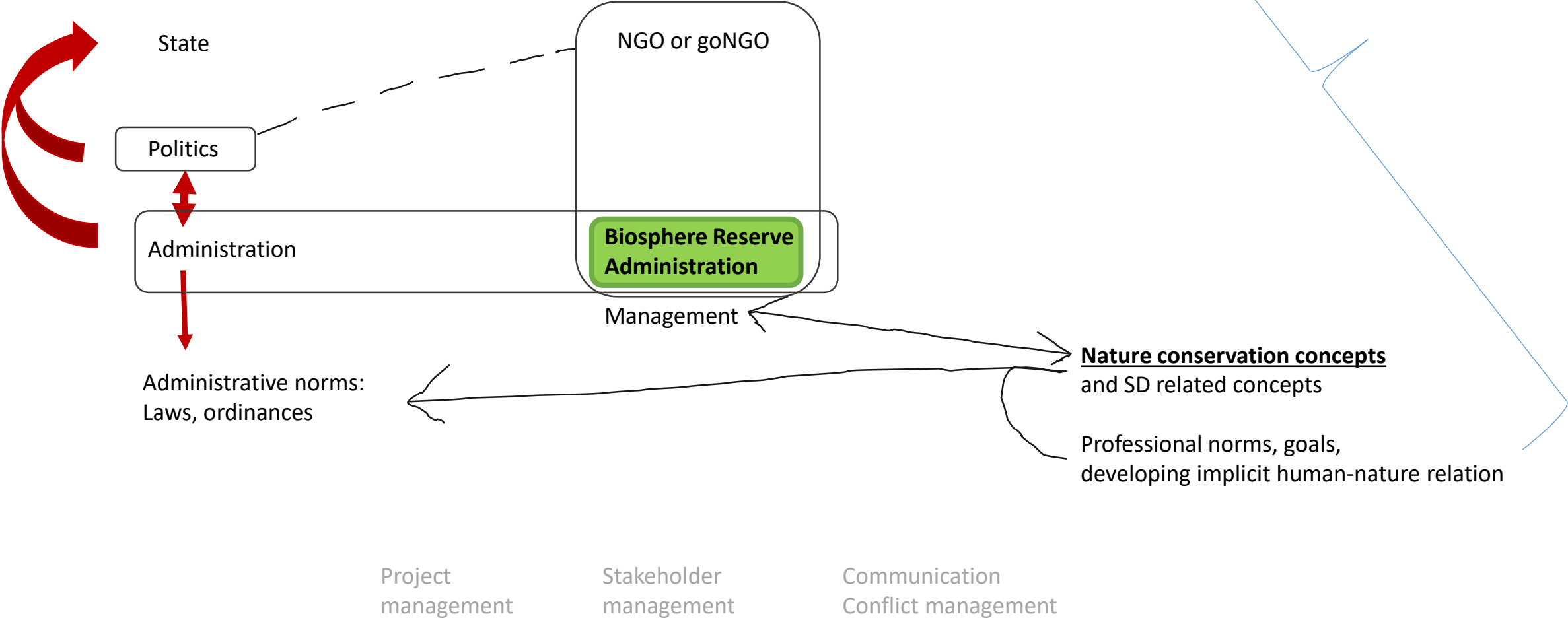
A lot of management related content in other modules: communication, stakeholder communication, project management will not be part of this lecture.

Developing „your own“ biosphere reserve reflecting the content from the lecture

Learning Objective: Understanding BRs as part of or in relation to state administration. Reflecting on their role in landscape governance

International context
Conservation law

Understanding
BR and PA in
landscape governance



Social animals

cooperation
institution
rules norms management
administration
group governance
structure
organization

→ How do people cooperate in groups?

→ Which institutions, structures, rules and norms facilitate cooperation?

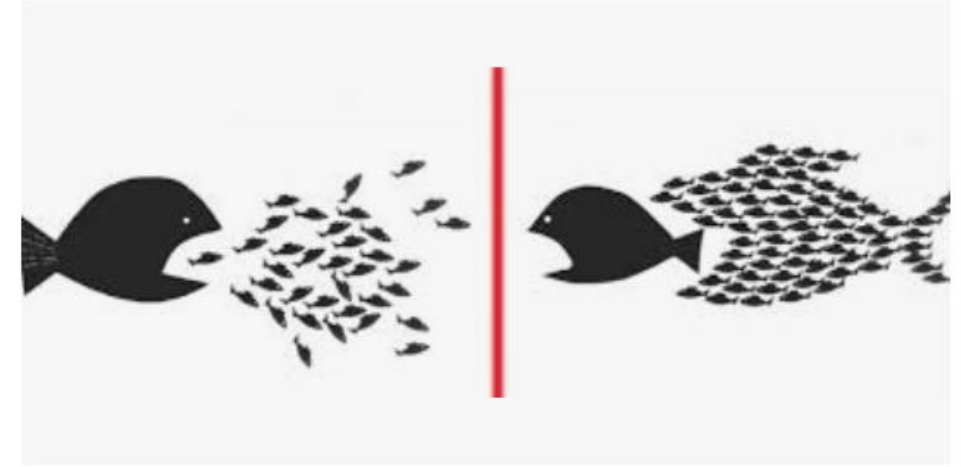
Google picture search: „cooperation“



South-South Cooperation
kathmandupost.com



6 Ways to Improve Employee Cooperation & Productivity
quickbase.com



Socama, a project on cooperation and mutual aid - Patchanka ...
panweb.eu

Humans cooperate



Die Mannschaft :: National Teams :: DFB - Deutsch...
dfb.de

but animals also



Opinion: Monogamy and Cooperation...
the-scientist.com

and plants?



State of the World's Forests 2020
fao.org

Living in groups

What is a group and why is it important?

- „Any set of **organisms, belonging to the same species**, that remain together **for a period of time interacting with one another to a distinctly greater degree than with other conspecifics**“ (Wilson 1975)
 - „when two or more animals live together they constitute a social unit“ (Lee 1994)
 - „**Division of animals into group-living and solitary ones is largely artificial**“ (Krause&Ruxton 2005)
 - „**Many (if not most) species are intermediates that will be found in association with con- or heterospecifics at certain times but not always**“ (Krause & Ruxton 2005, p.3)
- Classification in group-living and solitary is less helpful than trying to understand the interactions (why, how, where, when?) and the long- and short-term effects of these interactions.

Wilson, E. O. (1975): Sociobiology, the modern synthesis. Harvard University Press, Cambridge.

Lee, P.C. (1994): Social structure and evolution. In: Behaviour and Evolution (Eds.: P.J.B. Slater and T.R. Halliday), pp. 266-303. Cambridge University Press, Cambridge.

Krause, J./Ruxton, G.D. (2005): Living in groups. Oxford University Press.

Benefits of living in groups

Many-eyes theory



Lesser fronted geese feeding. <https://www.nabu-rhein-main.de/wir-%C3%BCber-uns/arbeitsgruppen/aktivit%C3%A4ten-ag-wildg%C3%A4nse/>



White-tailed sea-eagle. Yathin sk. [https://de.wikipedia.org/wiki/Seeadler_\(Art\)#/media/Datei:White-tailed-eagle.jpg](https://de.wikipedia.org/wiki/Seeadler_(Art)#/media/Datei:White-tailed-eagle.jpg)



Red fox, Malene. [https://de.wikipedia.org/wiki/Rotfuchs#/media/Datei:R%C3%B8d_r%C3%A6v_\(Vulpes_vulpes\).jpg](https://de.wikipedia.org/wiki/Rotfuchs#/media/Datei:R%C3%B8d_r%C3%A6v_(Vulpes_vulpes).jpg)

Trafalgar effect

→ I dont see the predator but I see **you** taking flight



Nicholas Pocock: Battle of Trafalgar (1805).
conception of the situation at 1300h
<https://commons.wikimedia.org/wiki/File:Trafalgar1.jpg>

Dilution of risk

Risk of being detected: increases with group size but not necessarily linear

Risk of being attacked: decreases with group size when predators are limited in some way (when they cannot capture whole group at once) (Krause&Ruxton 2005)



Lesser fronted geese feeding. <https://www.nabu-rhein-main.de/wir-%C3%BCber-uns/arbeitsgruppen/aktivit%C3%A4ten-ag-wildg%C3%A4nse/>



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Predator confusion



Predator confusion



Communal defence – predator mobbing




Cooperative harassment

Predator Harassment | Uni...
unionoutside.wordpress.com

Foraging in groups




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Published online [12 January 2005](#) | Nature | doi:10.1038/news050110-12 

News

Dolphins fix their roles in hunts

Florida foraging packs consist of specialist operators.

Michael Hopkin

Bottlenose dolphins are clever, sociable beasts that feed in packs. But a study carried out off the coast of Florida has revealed another layer of complexity in their hunting: group members have specialized jobs that they stick to time and time again.

Cooperative hunting is fairly widespread among animals and is found, for example, in chimpanzees, colobus monkeys and Harris' hawks. But the phenomenon of specific jobs for individuals, like the different positions in a football team, is much rarer, say Stefanie Gazda and her



Like footballers, dolphins always take the same role.

© GettyImages

Some costs of group-living



DPDx. Trichinella spiralis




Increased parasite burdens?

Social living simultaneously increases infection risk and decreases the cost of infection

Vanessa O. Ezenwa^{1,2} and Katherine E. L. Worsley-Tonks^{1,3}

¹Odum School of Ecology, and ²Department of Infectious Diseases, College of Veterinary Medicine, University of Georgia, Athens, GA, USA

³Department of Veterinary Population Medicine, University of Minnesota, St Paul, MN, USA

 VOE, 0000-0002-8078-1913


Elevated parasite infection risk is considered to be a near-universal cost of social living. However, living in groups may also provide benefits that reduce the negative impacts of infection. These potential 'tolerance' benefits

Rudloff: African mole-rat.



Larger Group size →
Parasite burden not increased, even slightly lower

The Role of Host Traits, Season and Group Size on Parasite Burdens in a Cooperative Mammal

Hermien Viljoen, Nigel C. Bennett, Edward A. Ueckermann, Heike Lutermann 

Published: November 1, 2011 • <https://doi.org/10.1371/journal.pone.0027003> 

How do attack rates increase with group size?

„Natural predation events are challenging to study being generally hard to predict in space and time. [...] we must learn more about prey choice by predators“
(Krause&Ruxton 2005, p. 54).



Lesser fronted geese feeding. <https://www.nabu-rhein-main.de/wir-%C3%BCber-uns/arbeitsgruppen/aktivit%C3%A4ten-ag-wildg%C3%A4nse/>



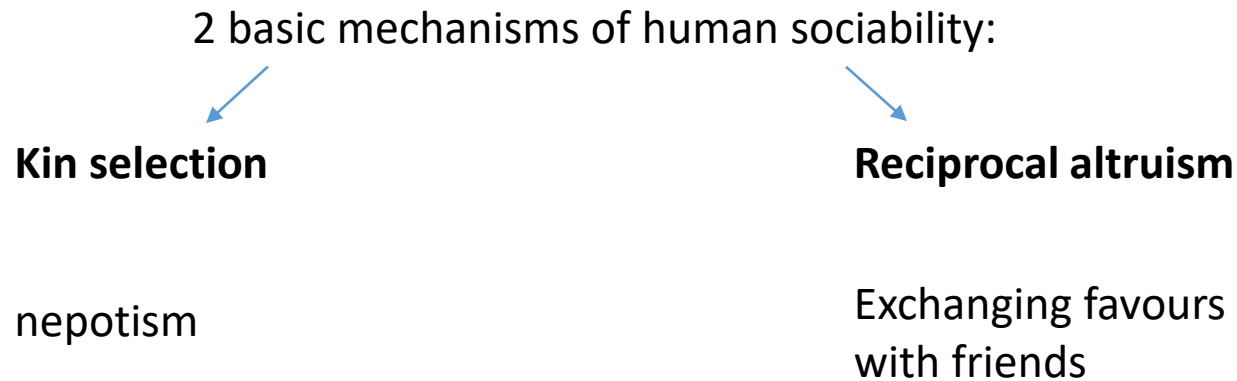
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Homo sapiens – a social animal

Just like our primate forbearers we were socially organized from the start (Fukuyama 2014)



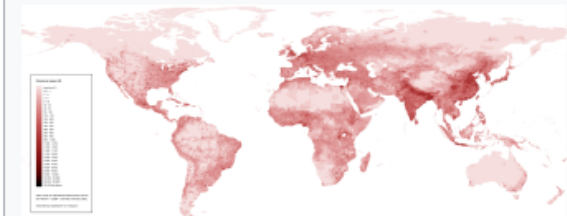
Scientific classification

Kingdom:	Animalia
Phylum:	Chordata
Class:	Mammalia
Order:	Primates
Suborder:	Haplorhini
Infraorder:	Simiiformes
Family:	Hominidae
Subfamily:	Homininae
Tribe:	Hominini
Genus:	<i>Homo</i>
Species:	<i>H. sapiens</i>

Binomial name

Homo sapiens

Linnaeus, 1758



Homo sapiens population density
(2005)

Screenshot from:

<https://en.wikipedia.org/wiki/Human>

Francis Fukuyamas model of political development

Small groups, mostly genetic relatives

Band-level society

Tribal society

Patrimonial state

Modern state

50.000 BP

10.000 BP?

8.000 BP

China, Early modern Europe



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Religion!

„early example of **ideas** playing a critical independent role in development“ (Fukuyama 2014: p. 9)



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Small groups, mostly genetic relatives

Characteristics

„caging“ of territories,
exercising power,
Hierarchical organizations
→ Inequalities!

State seen as: property of ruler+“family and friends“

Why and how developed?

primarily in fertile alluvial valleys: Egypt, Mesopotamia, China, Mexico.

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Why and how developed?

primarily in fertile alluvial valleys: Egypt, Mesopotamia, China, Mexico.

Characteristics

Shifting away from „family- and friends-based organizations“ to

impersonal ones.

Distinction of public and private interests.

Why and how developed?

Historian Charles Tilly: „War made the state and the state made war“

Band-level society

Tribal society

Patrimonial state

Modern state

50.000 BP

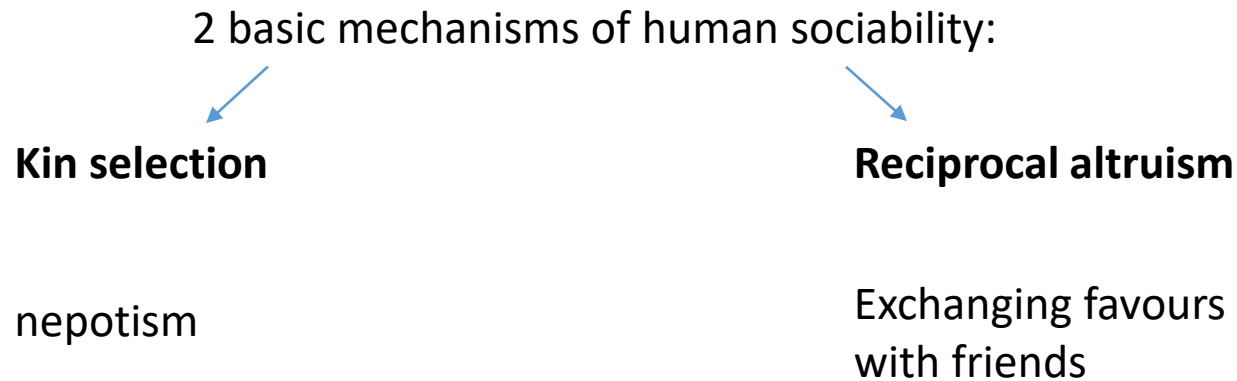
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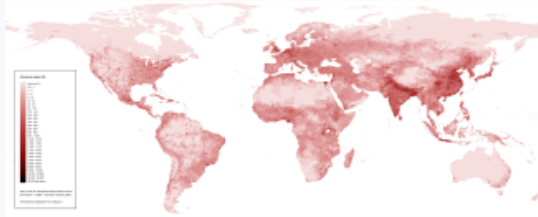
New institutions can override natural sociability
(example: **choosing a qualified stranger over a relative or friend**)

Scientific classification 

Kingdom:	Animalia
Phylum:	Chordata
Class:	Mammalia
Order:	Primates
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Linnaeus, 1758



Homo sapiens population density (2005)

Screenshot from:
<https://en.wikipedia.org/wiki/Human>

Let us now define some important terms

Politics

Politisk

Politique Politiek

Politik Poliitika

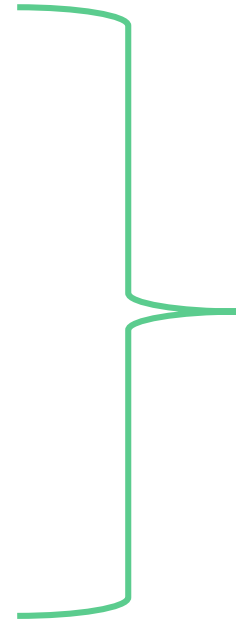
Політика Polityka

السياسة

政治 Política

- Latin *politica, politicus*
- Ancient Greek πολιτικά (*politiká*)
'affairs of the cities'
- *polis* = Greek city state

Policy – Polity - Politics



Politisk
Politique Politiek
Politik Poliitika
Політика Polityka
السياسة
政治 Política

Policy – Polity - Politics

The realisation of policy
with the help of politics
on the basis of polity.



Policy – Polity - Politics

The realisation of policy
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- Politisk
- Politique Politiek
- Politik Poliitika
- Політика Polityka
- السياسة
- 政治 Política

Policy

content

- measures
- programmes
- instruments

„The authorian policy wasn't proved to be a success.“

Polity



frame and structures

- constitution
- political organs
- institutions

„The electoral system forms an important part of a stable polity.“

Politics

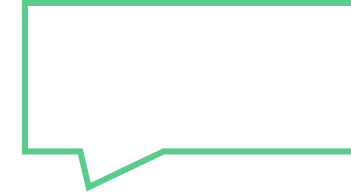


process

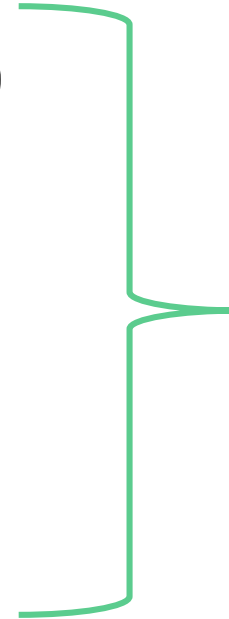
- parliamentary sessions
- coalition negotiations
- passing a law

„She actively participates in local politics.“

Policy – Polity - Politics



The realisation of policy (content)
with the help of politics (process)
on the basis of polity (frame).



Politisk
Politique Politiek
Politik Poliitika
Політика Polityka
السياسة
政治 Política

2 more terms to define

Organisation

Institution

Organisations and institutions

Douglas C. North (1990, p. 1-5):

- „**Institutions** are the rules of the game in a society or, more formally, are the **humanly devised constraints that shape human interaction**“
- „Institutions reduce uncertainty by providing a structure to everyday life“

Organisations and institutions

Douglas C. North (1990, p. 1-5):

- „**Institutions** are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction“
- „Institutions reduce uncertainty by providing a structure to everyday life“
- „Institutions may be created, as was the United States Constitution; or they may simply evolve over time, as does the common law“

→ What are examples for created and evolved institutions in a BR?

→ **Norms** and **traditions** as well as **structures** and **organizations**

Organisations and institutions

Douglas C. North (1990, p. 1-5):

- „Like **institutions, organisations** provide a structure to human interaction“

„**Organisations** include:

political bodies (political parties, the Senate, a city council, a regulatory agency),

social bodies (churches, clubs, athletic associations), **and**

educational bodies (schools, universities, vocational training centers).

They are **groups of individuals bound by some common purpose to achieve objectives“**

→ „Both, what organisations come into existence and how they evolve are fundamentally influenced by the institutional framework. In turn they influence how the institutional framework evolves“

Organisations and institutions

Institutions include: Norms and traditions as well as structures and organizations

Protected areas are

Organisations

That rely on a
variety of

Institutions



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Thank you for your attention

