

# CHINA EUROPE Water Platform



The impact of policy drivers in the quality of freshwater restoration projects in Europe and China



UNIVERSIDADE DE ÉVORA



# Restoration definition

**There is no internationally adopted legal definition of the word restoration**

But widely used word in several recent international environmental legislation



Implications in targets establishment, interpretation of legal obligations and in the practical implementation of projects

# Restoration definition

	Definition	Scope	Objective	Reference Model
<b>SER</b>	“any activity with the <u>goal of achieving substantial ecosystem recovery relative to an appropriate reference model</u> , regardless of the time required to achieve recovery”	process/ activity	<b>Substantial ecosystem recovery</b> as a goal	Healthy Ecosystem
<b>UNEP</b>	“the <u>process of halting and reversing degradation, resulting in improved ecosystem services and recovered biodiversity</u> ”	process/ practices	<b>Improved ecosystem services</b> <b>Recovered biodiversity</b>	Not specified
<b>IPBES</b>	“any <u>intentional activity that initiates or accelerates the recovery</u> of an ecosystem from a degraded state’c”	intentional activity	initiates/accelerates recovery	Degraded ecosystem Baseline

Source: Mendes A, Martínez Hernández L, Badoz L, Slobodian L, Rabaça JE. Towards a legal definition of ecological restoration: Reviewing international, European and Member States' case law. RECIEL. 2022;1-15. doi:[10.1111/reel.12476](https://doi.org/10.1111/reel.12476)

# Related terms - definition

## Oxford English Dictionary

## SER

## IPBES

	Oxford English Dictionary	SER	IPBES
Restoration	The act of <b>bringing back</b> a system, a law, etc. that existed previously.	The process of <b>assisting the recovery of an ecosystem</b> that has been degraded, damaged or destroyed.	Any intentional <b>activity</b> that <b>initiates or accelerates the recovery</b> of an ecosystem from a degraded state.
Remediation	The process of <b>improving</b> something or correcting something that is wrong, especially changing or stopping damage to the environment.	A management activity, such as the <b>removal or detoxification of contaminants</b> or excess nutrients from soil and water, that aims to remove sources of degradation.	Any action taken to <b>rehabilitate ecosystems</b> .
Rehabilitation	The process of <b>returning</b> a building, place or area of activity to its previous good condition.	Management actions that aim to <b>reinstate</b> a level of <b>ecosystem functioning</b> on degraded sites, ... <b>goal</b> is renewed and ongoing provision of <b>ecosystem services</b> rather than the biodiversity and integrity of a designated native reference ecosystem.	Restoration <b>activities that may fall short to fully restoring</b> the biotic community to its pre-degradation state.
Recovery	The action or process of <b>getting something back</b> that has been lost or stolen.	The process by which an ecosystem regains its <b>composition, structure and function</b> relative to the levels identified for the reference ecosystem.	

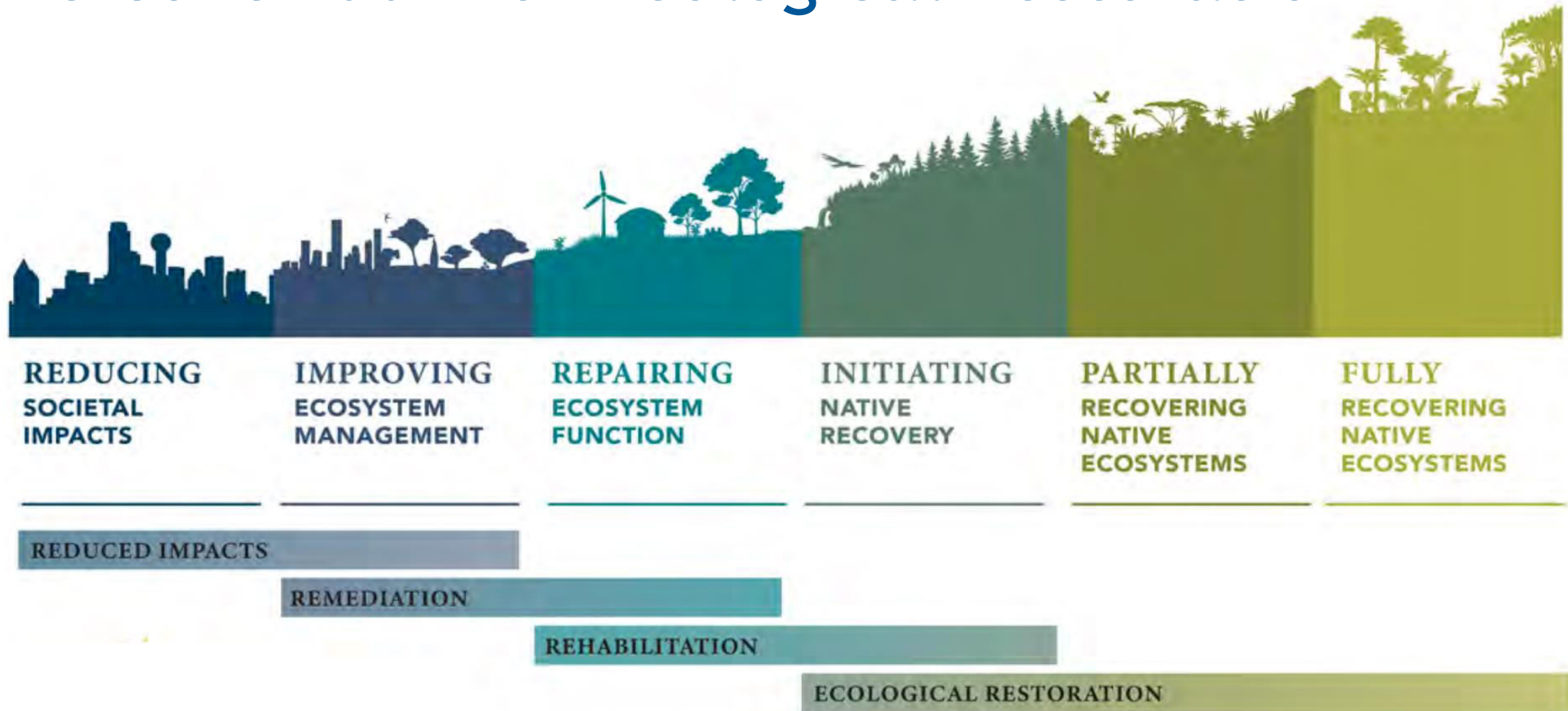
# Restoration definitions

- SER's definition is stricter than others given the level of recovery that must be achieved: it requires **substantial recovery**.
- It integrates also two important aspects:
  - Recovery must be relative to a **suitable reference model**;
  - Recovery **can take a long time**, which does not affect the restorative nature of the activity.



Source: Gann and others (2016). 'Principles for Ecosystem Restoration to Guide the United Nations Decade 2021-2030' 21.

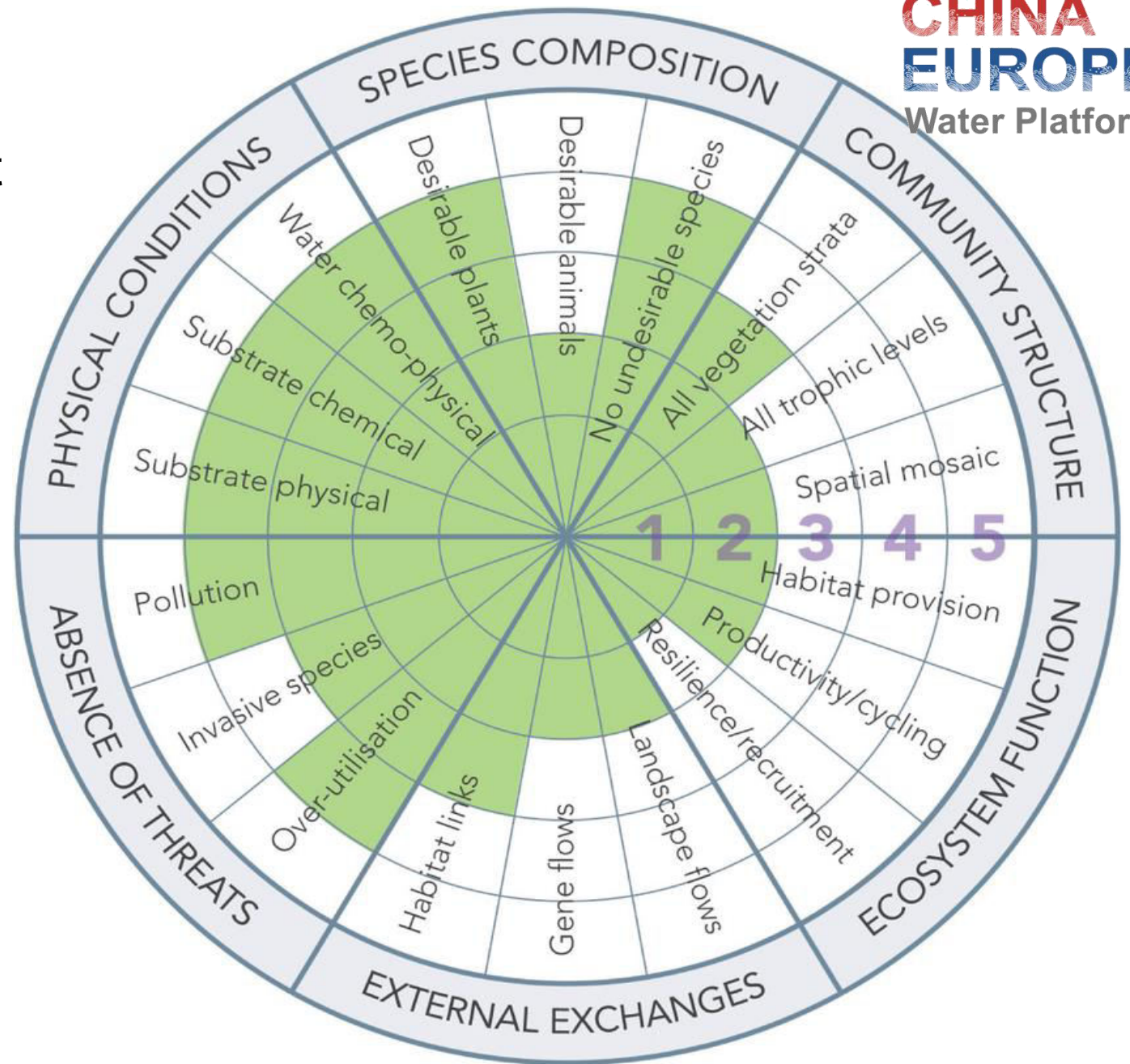
# The continuum of Ecological Restoration



Source: George D Gann and others, International Principles and Standards for the Practice of Ecological Restoration (2nd., SER 2019).

5 star classification system:  
- to track progress towards project goals over time til full restoration

- Absence of threats
- Physical conditions
- Species composition
- Community structure - diversity
- Ecosystem function
- External exchanges



# Restoration evaluation

## Method

Questionnaire focused on the evaluation of past restoration projects



- Replied by 41 experts
- Chinese experts (n= 30) work for a university or a research institution
- China and 11 European countries: Austria, Finland, France, Greece, Italy, Macedonia, Portugal, Romenia, Spain, Turkey, United Kingdom.
- Average experience on freshwater restoration of the experts was 15.7 years.
- Chinese experts had a 13-year average freshwater restoration experience and the European 16.4 years.

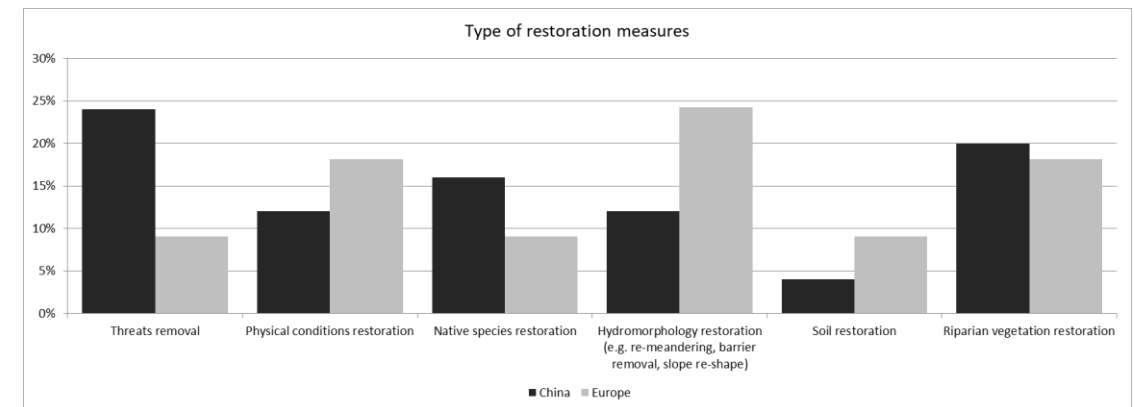
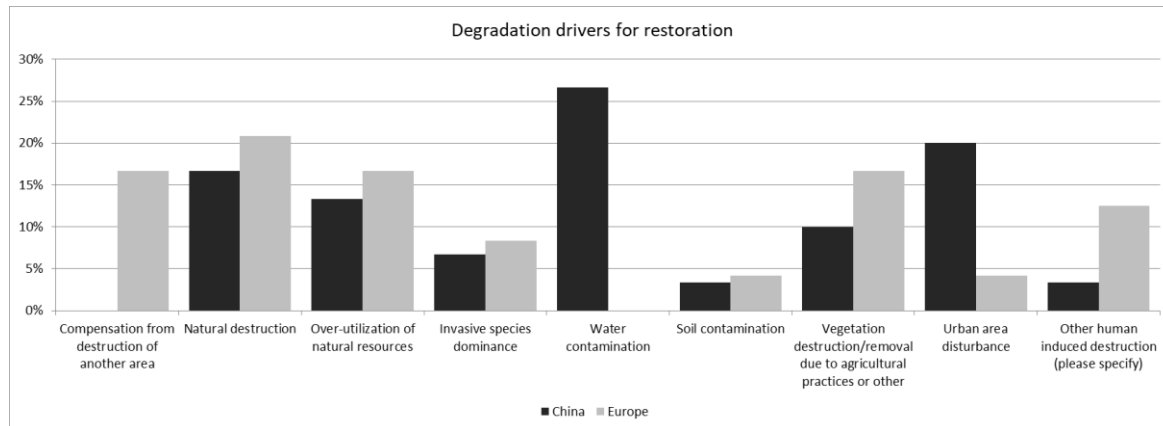


# Results - Types of projects

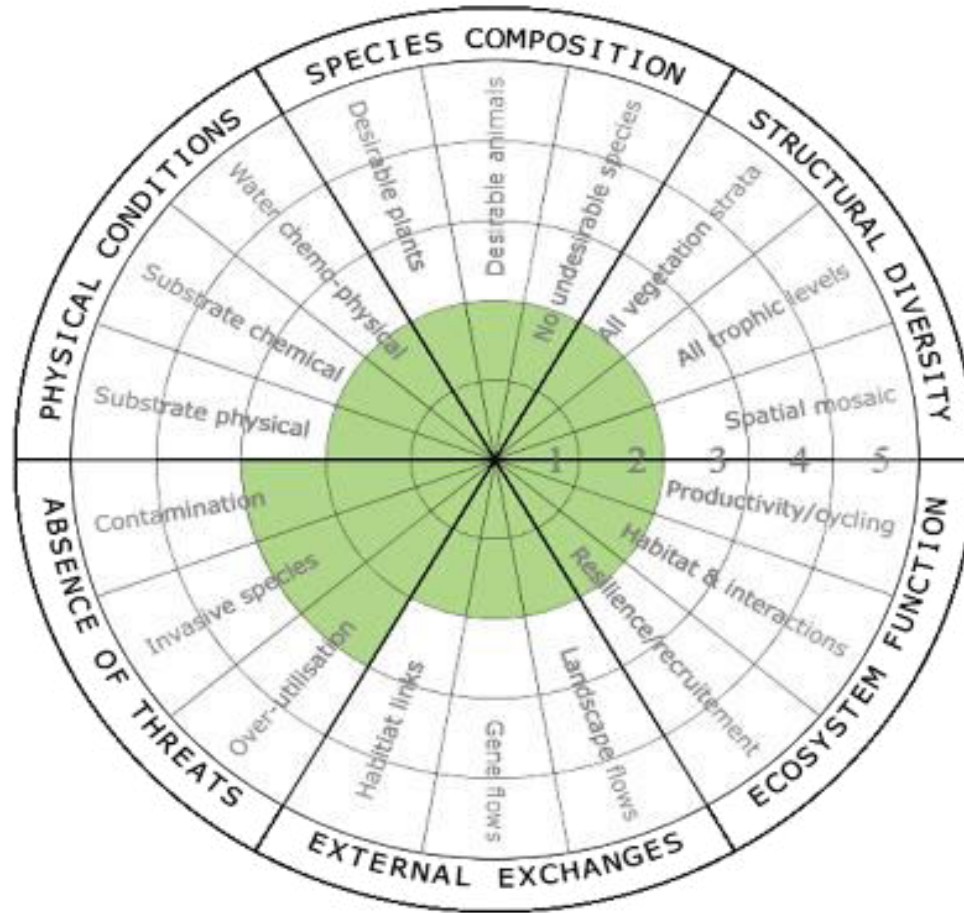
- Regarding the types of ecosystem subject to restoration:
  - European - focused mainly on wetland restoration (57%),
  - Chinese - targeted mainly lotic systems (60%).
- The average implementation period of the restoration projects surveyed is longer in Europe (48 months) than in China (12 or 24 months).
- The design phase of the projects typically takes 6 months in Europe and 12 months in China.
- The stakeholder community participated in the projects from an early stage more in Europe (71.4%) than in China (40.0%).
- There was no stakeholder participation in 20% of the surveyed Chinese restoration projects.

# Key findings

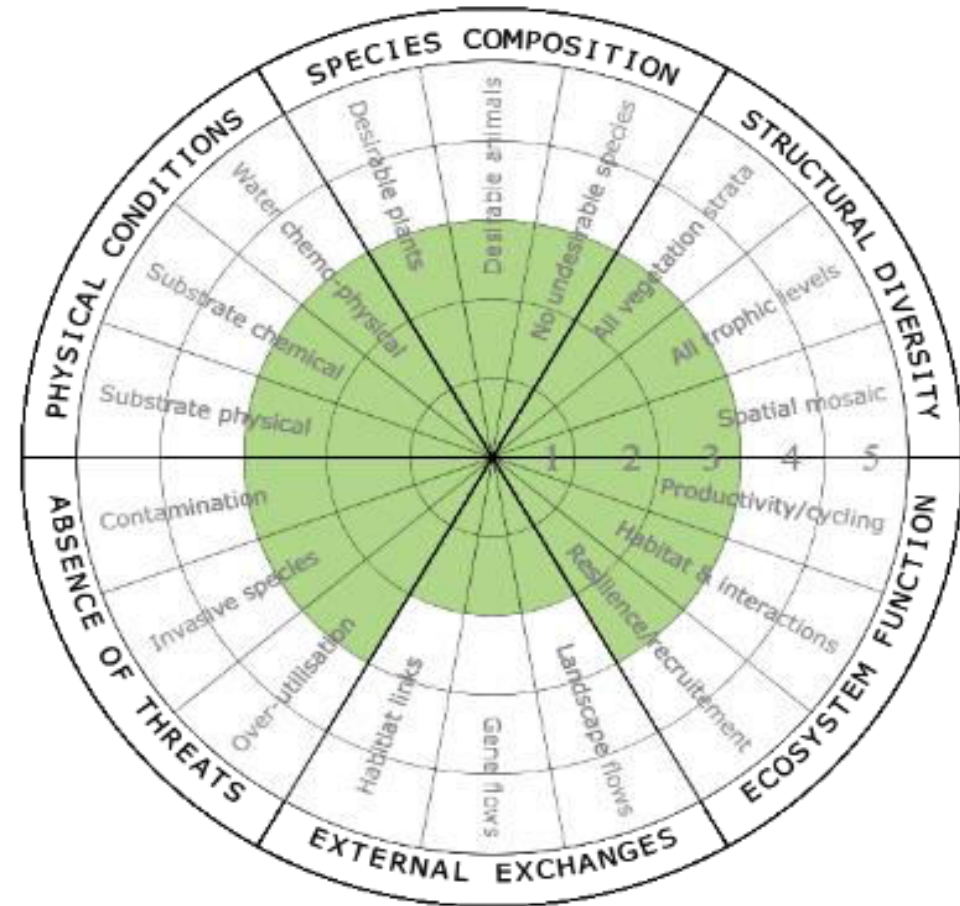
- Main degradation drivers for restoration in Europe were: over-utilization of water resources (21.0%), natural destruction (17%), vegetation destruction/removal due to agricultural practices or other (17%) and compensation (17%).
- In China the main restoration drivers were water pollution (27%), urban area disturbance (20%) and natural destruction (17%).
- Hydro-morphology restoration (24%) is the main restoration measure applied in the European projects, as opposed to threats removal in China (24%).



# Recovery Wheel - average



China



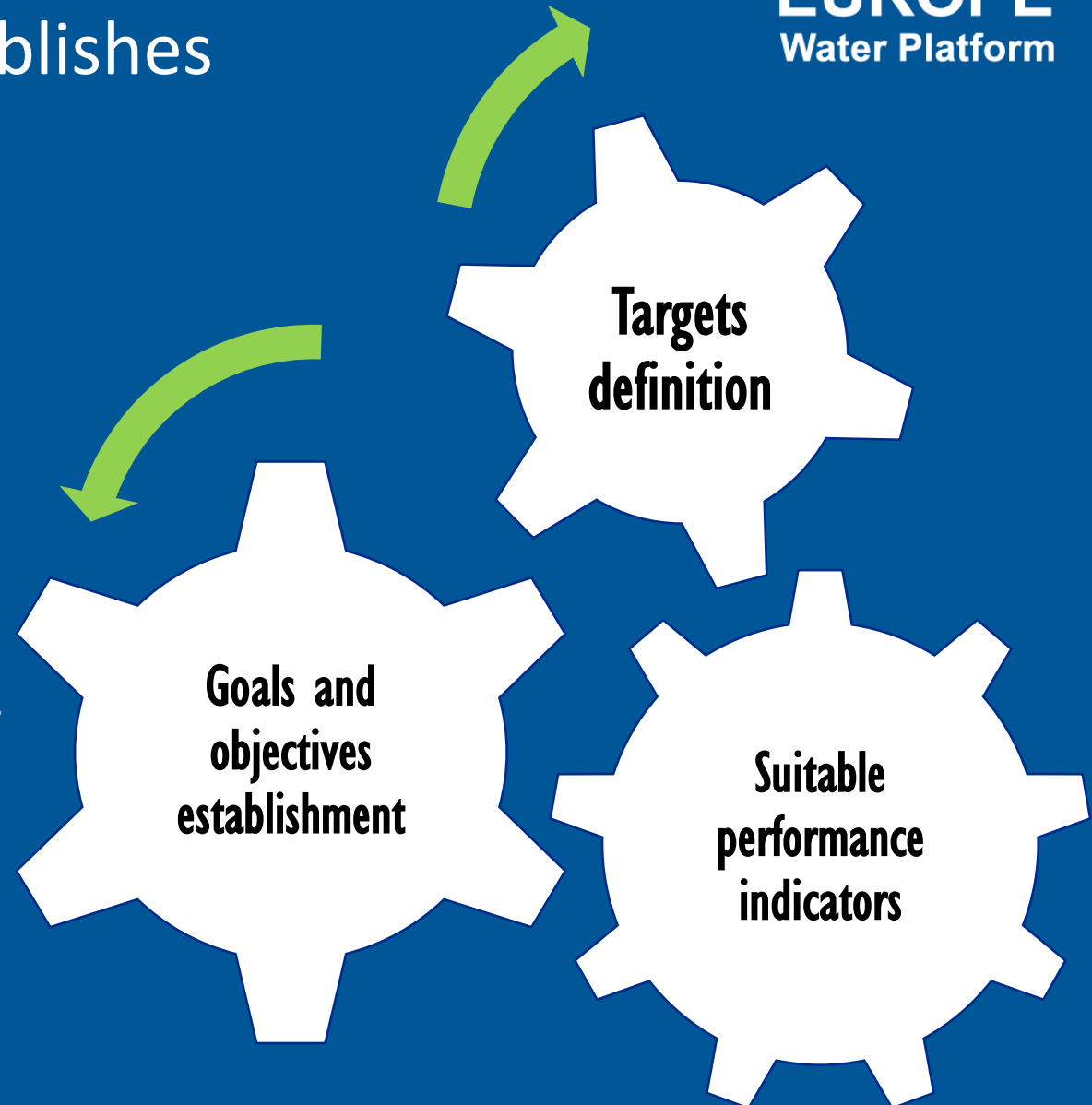
Europe

# PROMOTING FRESHWATER RESTORATION

**CHINA  
EUROPE**  
Water Platform

A common settled definitions establishes  
the quality standards

- create a global shared understanding of ecological restoration
- develop restoration standards, norms, certification schemes and guidelines
- implement large-extent and long-term monitoring programs to monitor success of restorative practice
- improve technical guidelines for implementing biological monitoring programs and river restoration



# PROMOTING FRESHWATER RESTORATION

**CHINA  
EUROPE**  
Water Platform

The China Europe Water Platform is a reliable mechanism for cooperation and joint sharing of knowledge that can also reinforce the achievement of International Treaties and Conventions such as UNECE Water Convention, as well as promoting internal catalytic processes that may overcome current failures of the European and Chinese legal framework.

# Next steps

- Water4All partnership (<https://www.water4all-partnership.eu/>) has launched a commitment in UN Water Conference – **Freshwater Restoration commitment** that will be setting different regional groups to analyze law and case-law related to freshwater restoration needs so that UN Water Convention can in the future adopt an amendment where a legal definition of restoration is accepted.
- If you are interested contributing to make an analyze of case law related to restoration in different environmental contexts, please contact me through my e-mail:

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<https://pt.surveymonkey.com/r/8XYGB36>



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Thank you very  
much!

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# Climate-smart restoration

The process of enhancing ecological function of degraded or destroyed areas in a manner that makes them more resilient to the consequences of climate change