1FUTURE

Eberswalde University for Sustainable Development

jOiNEd For sUsTainability - bUilding climate REsilient communities in WB and EU

HNEE Study Visit – Day 2

Eberswalde University for Sustainable Development Eberswalde (HNEE)

Date: 11 October 2023
Place: Eberswalde

Co-funded by the European Union

Education for Sustainable Development

Sustainability at Brandenburg Universites

1FUTURE_JOINED FOR SUSTAINABILITY, 10./11. OCTOBER 2023

EBERSWALDE UNIVERSITY FOR SUSTAINABLE DEVELOPMENT

DR. J. M. KRAH

Hochschule für nachhaltige Entwicklung Eberswalde

NACHHALTIGKEIT AN BRANDENBURGER HOCHSCHULEN

Index

- Education for Sustainable Development (ESD)
  - Framework - Sustainability at Brandenburg Universites
  - Issues
  - Competencies
  - Methods
  - Curricular Integration of HESD

- Good practice

Education for Sustainable Development

Intro: Frameworks

- **BNE-Portal**: Information on all ESD activities in Germany

- **UNESCO Global Action Programme (GAP) on ESD** 2015-2019

- **German National Action Plan for GAP implementation** is structured in educational sectors

- **ESD for 2030** – The GAP-follow-up program 2020-2030

Source: *UNESCO 2021*

Education for Sustainable Development

State-specific SDG 4

4.1 Encourage, support and facilitate participation of students and graduates [in Higher Education] as central designers of sustainable development.	

Source: Ministerium für Ländliche Entwicklung, Umwelt und Landwirtschaft des Landes Brandenburg (2019): Nachhaltigkeitsstrategie für das Land Brandenburg. Fortschreibung 2019, p. 3. Translation: J. Krah, additions marked with [brackets].

Education for Sustainable Development

"The universities, under the leadership of HNEE, are forming a joint working group to identify opportunities for action and measures to strongly anchor education for sustainable development in the minds of all university members."

Contracts Science Ministry & Universities Brandenburg

„…All Universities in the state of Brandenburg shall develop specific pathways towards [integrating ESD] in Teaching, Outreach, Research and Governance. For example by

- Developing **university-specific approaches** towards ESD
- Supporting the further development of **mission statements** in the field of ESD
- Coaching / **Capacity building** of teaching staff
- Integrating ESD into (existing) **Curricula**."

FH;P

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Prof. Dr. M. Prytula

Technische Hochschule Brandenburg University of Applied Sciences

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Education for Sustainable Development

Coordinating Office „Sustainability at Brandenburg Universities" at Eberswalde University

Dr. J. Krah,
Head of
Coordinating Office

Prof. Dr. H. Molitor,
ESD-Chair at HNEE /
Professional Director
Coordinating Office

Antonia Bruns,
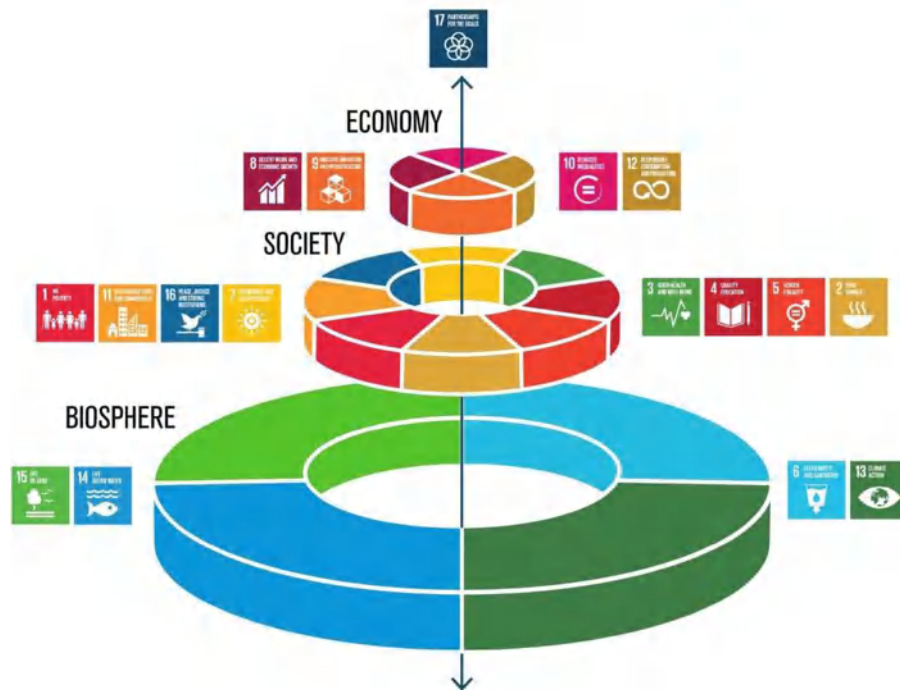Scientific staff

Selena Dami,
Student assistant

Fotos: U. Wessollek,
J. Reimann

Education for Sustainable Development

Issues

- Definition: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs"
Source: [Our Common Future, Chapter 2: Towards Sustainable Development](#)
  - Future-orientation
  - Intern- and intra-generational justice
  - Ecological, social and environmental dimensions

- The Sustainable Development Goals
https://www.un.org/sustainabledevelopment/

Education for Sustainable Development

Issues

Source: Azote for Stockholm Resilience Centre

Source: Principles of sustainable Developement at HNEE

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Education for Sustainable Development

Learning objectives

- Knowing: "The cognitive domain comprises knowledge and thinking skills necessary to better understand the SDG and the challenges in achieving it."

- Being: "The socio-emotional domain includes social skills that enable learners to collaborate, negotiate and communicate to promote the SDGs as well as self-reflection skills, values, attitudes and motivations that enable learners to develop themselves."

- Acting: "The behavioural domain describes action competencies"

Source: UNESCO (2017). Education for Sustainable Development Goals: learning objectives, p.11.

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Education for Sustainable Development

Key-Competencies

for Sustainable Development in academia

Which competencies can your students further developed during their studies?
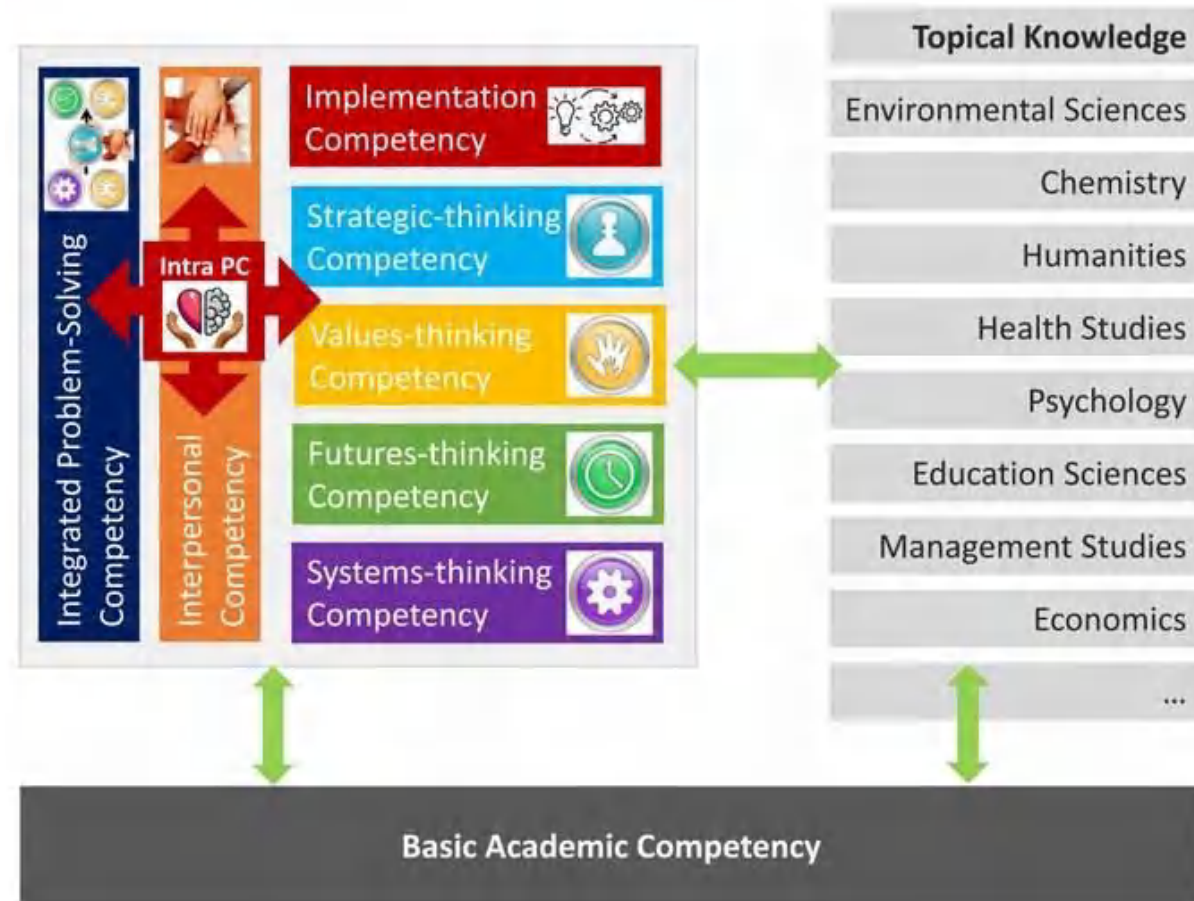
Source: Brundiers et al. 2021

Education for Sustainable Development

Didactical Principles

Lerner-centered approaches

Action-oriented learning

Transformative Learning

Education for Sustainable Development

Methods – Examples

Competency (examples)	Method
Anticipatory thinking	Interactive Back-Casting, Scenario methods
Systemic thinking	Fish Banks, inter-/ transdisciplinary approaches
Self-awareness competency	Six Thinking Hats
Integrated problem-solving	Problem Based Learning
Strategic competency	Project workshops
Values / Normative Thinking	Story telling
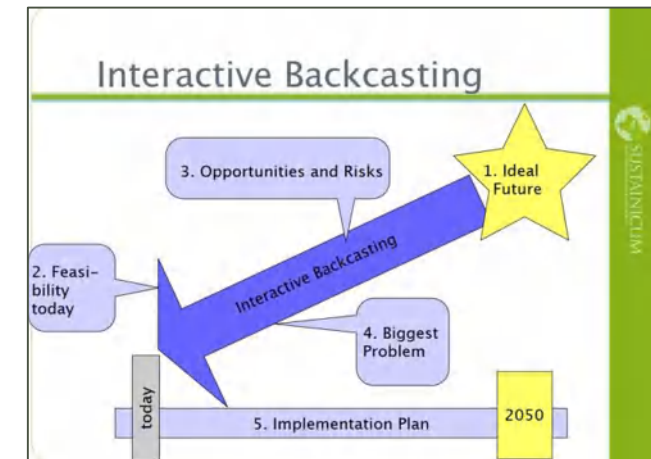
Source: Sustainicum Teaching materials and methods on the platform, Netzwerk N Methoden Sammlungen

Education for Sustainable Development

Methods

- Sustainicum Collection sustainicum.at/resources
- A Rounder Sense of Purpose aroundersenseofpurpose.eu/de/
- Sustainability Methods Wiki sustainabilitymethods.org
- Shape-ID shapeidtoolkit.eu/
- D.School of Stanford dschool.stanford.edu/resources
- SCNAT naturalsciences.ch/co-producing-knowledge-explained/methods/td-net_toolbox
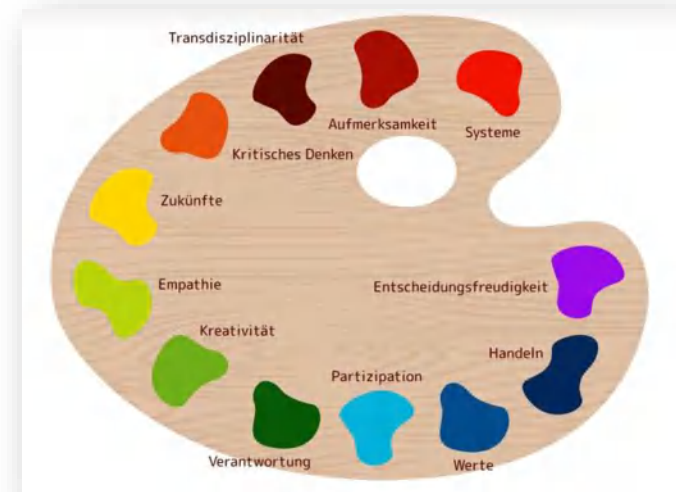
Quelle: www.aroundersenseofpurpose.eu

Education for Sustainable Development

Curricular integration of HESD requires

- sustainability contents (issues, topic, e.g. SDGs)

- key competencies for sustainability

- adequate didactic-methodical approaches

=> Practical guide for curricular integration of HESD in study programs (focus: module descriptions)

English version coming up soon!

Designing future-oriented curricula

A practical guide for the curricular integration of higher education for sustainable development

Molitor, H.; Krah, J.; Reimann, J.; Bellina, L.; Bruns, A. (2022): Zukunftsfähige Curricula gestalten – Eine Handreichung zur curricularen Verankerung von Hochschulbildung für nachhaltigen Entwicklung. Arbeitsgemeinschaft für Nachhaltigkeit an Brandenburger Hochschulen (Hrsg.), Eberswalde. https://doi.org/10.57741/opus4-388

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Education for Sustainable Development

Curricular integration of ESD

Competencies according to DQR / HQR

Key competencies for sustainability

Subject matter
expertise /
competence

Methodological
competency

Knowledge and understanding

Application, utilisation and generation of knowledge

Communication and cooperation

Scientific self-understanding/ professionalism

Social
competency

Self
competency
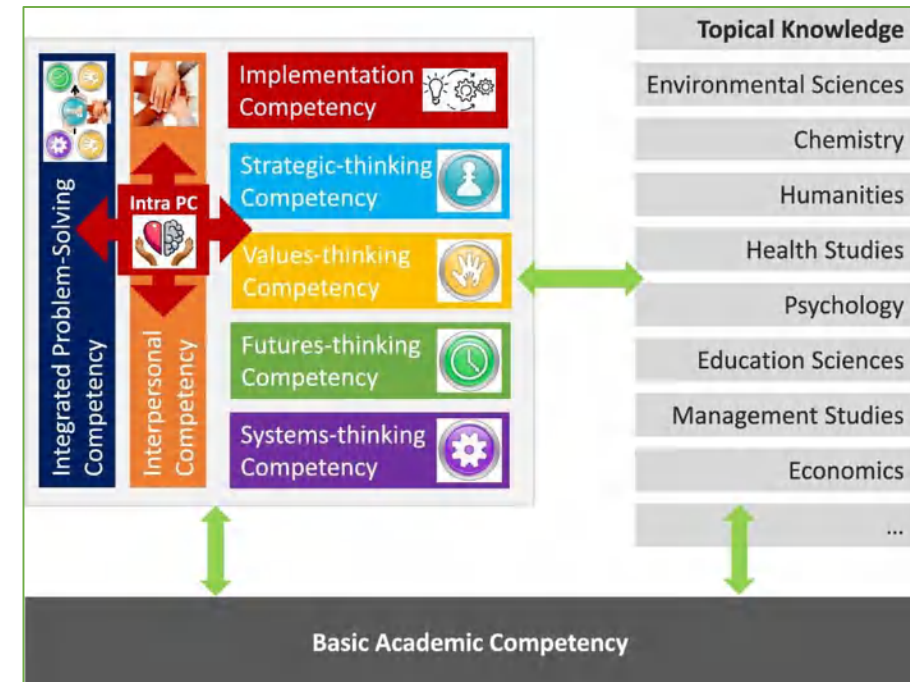
Source: adaption, based on HQR_Handbook_en.pdf (hrk.de)

Topical Knowledge

Environmental Sciences

Chemistry

Humanities

Health Studies

Psychology

Education Sciences

Management Studies

Economics

...

Implementation Competency

Strategic-thinking Competency

Values-thinking Competency

Futures-thinking Competency

Systems-thinking Competency

Integrated Problem-Solving Competency

Interpersonal Competency

Intra PC

Basic Academic Competency

	Systems-thinking Competency	Futures-thinking Competency	Values-thinking Competency	Strategic-thinking Competency	Implementation Competency	Integrated Problem-Solving Competency
Subject matter expertise (Knowledge and understanding)	The competence to analyze complex systems of different domains collaboratively (society, environment, economy, etc.) and to consider both local and global dimensions. The ability to consider systemic features and interactions with a view to challenges of sustainable development and solution-oriented frameworks.	The competence to create scenarios for the future - based analyses and evaluations - and to develop images of (strong) sustainable development and solution-oriented framework conditions to design them. The ability to continuously critically reflect and critically reflect and adapt them.	The competence to collectively describe, apply and negotiate sustainability-oriented values, principles and goals based on concepts such as justice and responsibility. The ability to contextualize individual and societal values (historical, cultural, etc.), to critically reflect, evaluate and compare.	The competence to jointly develop and test (innovative) to develop and test intervention, transition and transformation strategies towards sustainability (taking into account knock-on effects).	The competence to solve problems relevant to sustainability and to consciously implement interventions, i.e. to take concrete action and to action and design (ability to act).[2] The ability to design participatory, inclusive and equitable processes of implementation and their evaluation.	Metacompetence, other key competencies for the promotion of sustainable development in sustainability-relevant relevant problem-solving processes combine and taking into account relevant disciplinarity, interdisciplinarity and transdisciplinarity as well as other ways of knowledge. The ability to apply different problem solving approaches to complex sustainability problems and to develop viable and equitable solutions.
Methodological Competency[3] (Skills and generating knowledge)	Understand and apply e.g. qualitative systems analysis, network analysis, etc.	Understand and apply e.g. simulation models, vision methods, etc.	Understand and apply e.g. sustainability application and assessment methods, risk analysis, etc.	Understand and apply e.g. Transition and Organizational Change Management approaches, Reflexive Learning, etc.	Be able to implement action strategies to solve sustainability-relevant challenges, e.g. through project management, conflict management, moderation, etc.	

■ Key competencies for sustainability according to Brundiers et al. 2021   ■ Fields of competency according to DQR/HQR (Requirement für accreditation)

	Systems-thinking Competency	Futures-thinking Competency	Values-thinking Competency	Strategic-thinking Competency	Implementation Competency	Integrated Problem-Solving Competency
Social competency (Communication und cooperation)	The competence to enable an (emphatically) design/moderate cooperation and (serious) participation of different stakeholders as well as to be able to motivate those involved. The competence to initiate and enable different forms of cooperation/collaboration for a sustainable development (teamwork, involvement of interest groups) and to include the experience and expertise of others.[4]					Metacompetence, other key competencies for the promotion of sustainable development in sustainability-relevant relevant problem-solving processes combine and taking into account relevant disciplinarity, interdisciplinarity and transdisciplinarity as well as other ways of knowledge. The ability to apply different problem solving approaches to complex sustainability problems and to develop viable and equitable solutions.
Interpersonal Competency						
Self-competency (Professionalism and reflection)	The competence for self-awareness and self-reflection (own feelings, thoughts, behaviors), self-regulation and motivation with a view to shaping sustainable development.[5]					
Intrapersonal Competency (interpersonal competency)						

■ Key competencies for sustainability according to Brundiers et al. 2021   ■ Fields of competency according to DQR/HQR (Requirement für accreditation)

Good Practice

Regional Examples @ HNEE Eberswalde

- Studies, professional orientation, capacity building ([link](#))
  - Master Education – Sustainability – Transformation
  - Future Camp
  - Training for University Teachers in the state of Brandenburg ([link](#))

Good Practice

Students at HNE Eberswalde

Masters program an HNE

Education – Sustainability – Transformation

for multipliers and future sustainability experts

online (in German)

contact

Das Curriculum

Modul 1
Einführung in die Nachhaltige Entwicklung

Modul 2
Einführung in die Bildungswissenschaften

Modul 3
Umweltpsychologie

Modul 4
Einführung in die Bildung für Nachhaltige Entwicklung

Modul 5
Politische Bildung/Globales Lernen

Modul 6
Studienbegleitendes Projekt

Modul 7
Kommunikation und Profilierung mit Nachhaltiger Entwicklung in der Region

Modul 8
Nachhaltige Bildungslandschaften

Modul 9
Bildungsmarketing

Modul 10
Forschungsmethoden

Modul 11
Masterthesis+Wissenschaftliches Kolloquium

Thank you!

JENNIFER.KRAH@HNEE.DE

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Quality Management

from theoretical frameworks and concepts to practical implementation

University for Sustainable Development Eberswalde

Overview of responsibilities

Distributed Quality Management System

University for Sustainable Development Eberswalde

Overview of activities

Theoretical concepts & strategies

Data based quality management

Zentral Quality Management

Practical implementation & projects

Training, support & networking

Wessollek, 2018

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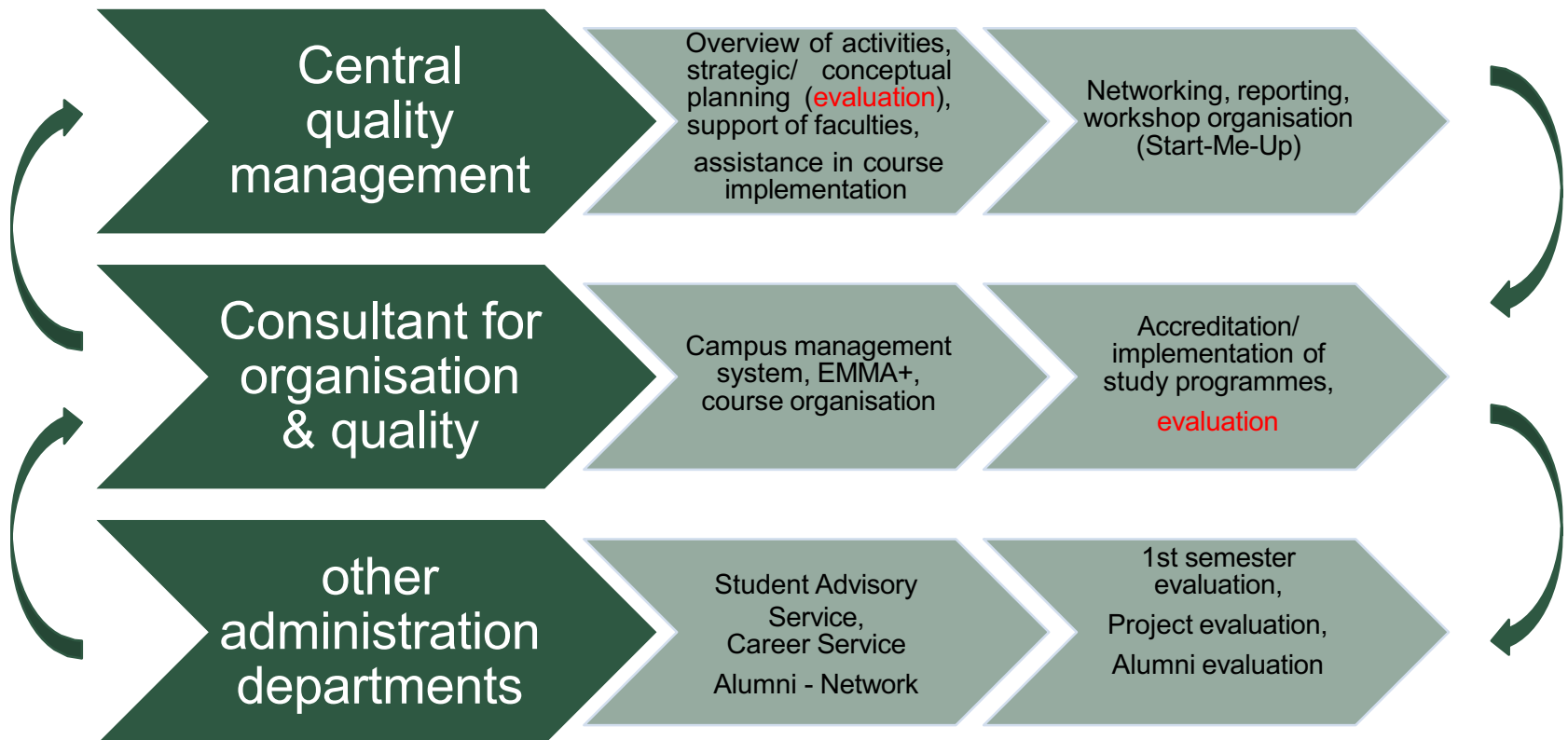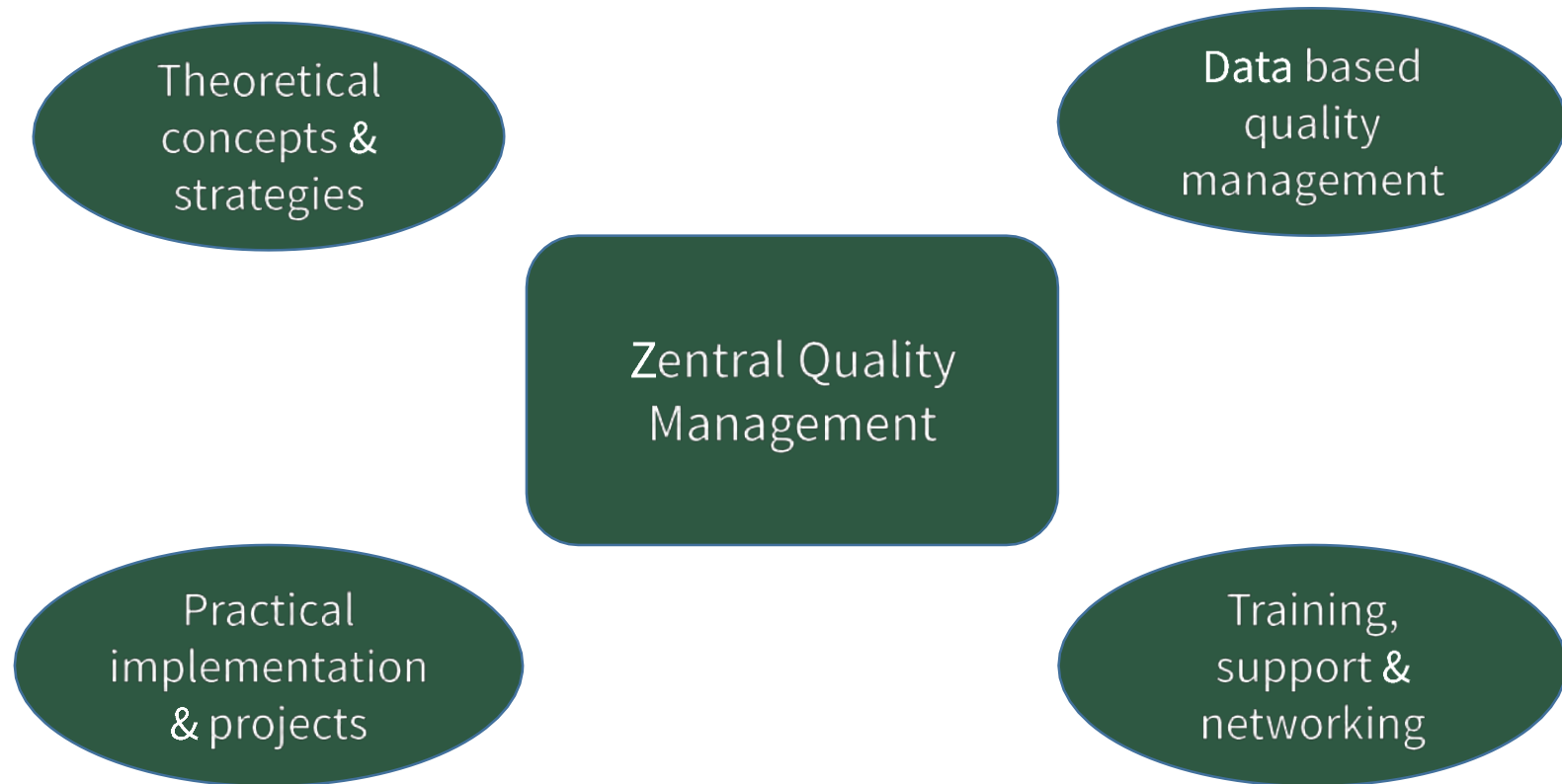
Mission statement of teaching

Recommendation Science Council

Contract between the ministry – HNEE

- mission statement for teaching that is developed in a joint process with all stakeholders and adopted by the responsible body

- university's self-image and also includes systematic approaches that pursue clearly formulated goals

University for Sustainable Development Eberswalde

Developing teaching constitutions & teaching profiles

Responsibility: university management
Implementation: together with the faculties

University-wide:
-> Self-conception as a teaching institution
-> interdisciplinary didactic guidelines
-> basic qualification goals

For study programmes:
-> educational goals of the study program
-> targeted competence profiles

no „one-size-fits-all"- concept
-> Self-reflection of higher education institutions
-> goals, strengths, challenges, student needs

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Mission statement process
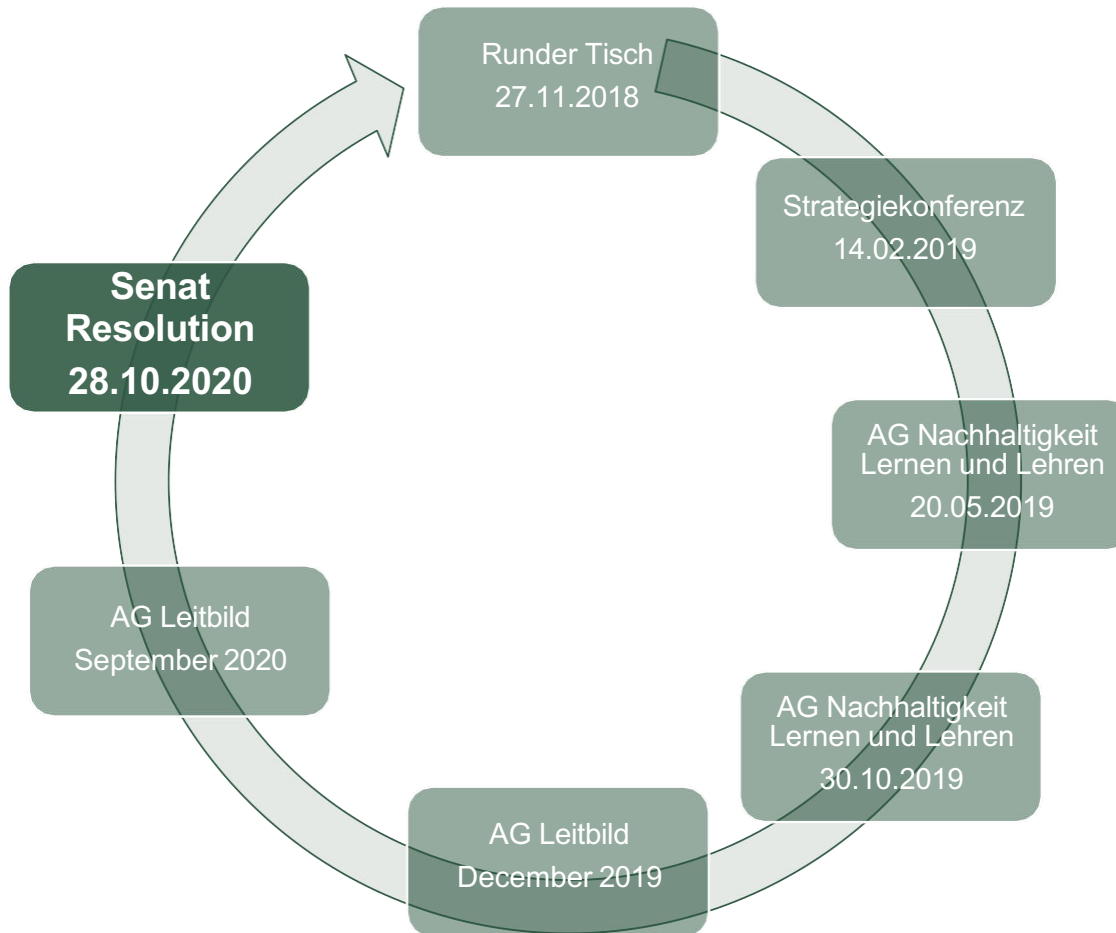
Mission statement – our guiding principles

Unser Leitbild
Lehre

- ❖ **We take responsibility**

- ❖ **We shape sustainable transformation**

- ❖ **We are networked and practice oriented**

- ❖ **We see digitization as an opportunity and an obligation**

- ❖ **We are international, diverse and equal**

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How to acquire Future Skills within student life cycles?

The necessity of curricular adjustments

– from mission statements to practical implementation on the basis of 'ESD key competences'

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Eberswalde Study/ Learning Model

❖ Our goal is to develop, foster and strenghten our USP. The mission statement serves as a basic guideline and reflect the theoretical framework.

❖ The Eberswalde model defines the necessary practical implementation:

structural features	process features
i) interdisciplinary first semester module ENE (ii) interdisciplinary elective modules (iii) transdisciplinary projekt work (iv) accompanied practical experiences	(i) Orientation towards competencies along the student life cycle (ii) intended learning outcomes: (1) knowledge, (2) key competencies for sustainable development, (3) Professional Skills (work related softskills) (iii) Assignments which are in line with the semester structure

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Implementation of Competence Models – Future Skills for Sustainable Development
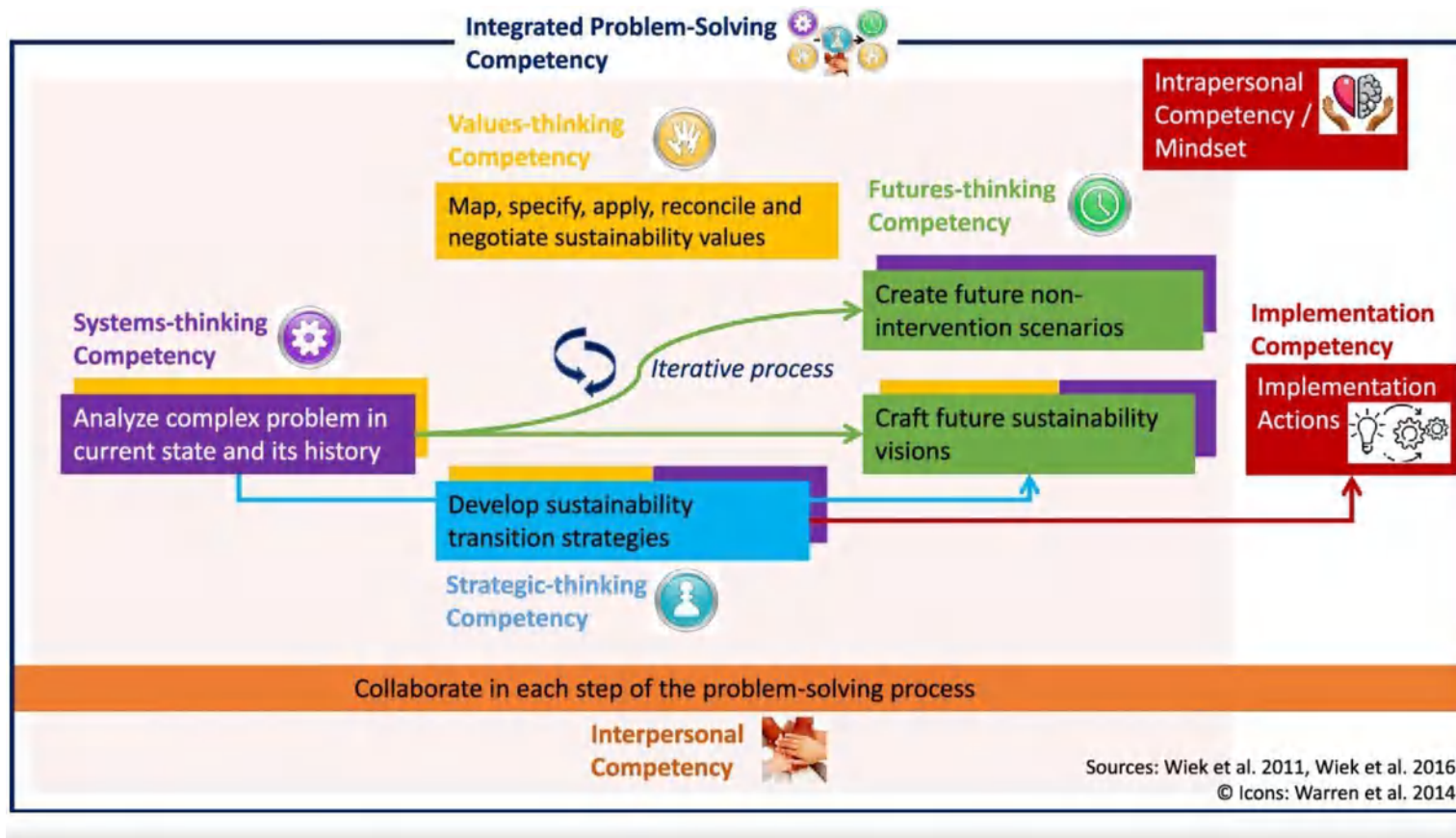
Fig. 3 Refined framework, building on the key competencies synthe- sized from the literature (Wiek et al. 2011; icons credit: Warren et al. 2014), visualizing in red boxes the additionally proposed competen- cies while… Expand

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Mission statement – practical implementation

❖ **interdisciplinary modules**

(Introduction to sustainable development – mandatory)

❖ **Student projects**

(project workshops: permaculture and gender & climate, innovative

learning & teaching projects - elective)

❖ **Practice- and project-oriented modules**

(the Climate Duel, service learning - elective)

Introduction to sustainable development
)

Impart key competencies

- Value-oriented normative competence
- Future-oriented thinking
- systemic thinking
- Strategic thinking
- Implementation competence
- Integrated problem-solving competence
- Interpersonal competence
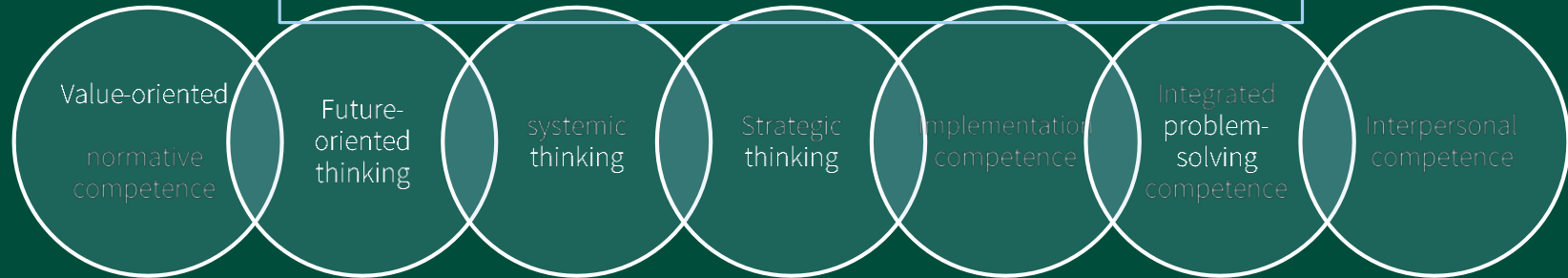
LECTURE
Lecturers of the HNEE

GROUP PROJECTS
Mentors and

EXAM

PRESENTATION OF GROUP WORK (80%)

GROUP PROCESS EVALUATION
TOGETHER WITH STUDENTS (20%)

Project workshops

Definition

- Peer-to-Peer (from students for students)

- University-wide, department-wide, cross-thematic

- Non-university network (NGOs, Civil Society)

- Consideration of ecological and sociological aspects

- Project development with social and methodological competence

Participation

- All students of the HNEE (from the 2nd semester)

- successful participation (incl. examination) = 6 ECTS (one-time)

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Our current project workshops

- Since 2016: Permaculture

- Since 2021: Gender & Climate

- Starting 2022: Common Good Economy

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Nachhaltigkeit ist unser Kern.

Bildungsinnovation „Eberswalde DNA" für die Nachhaltigkeitstransformation
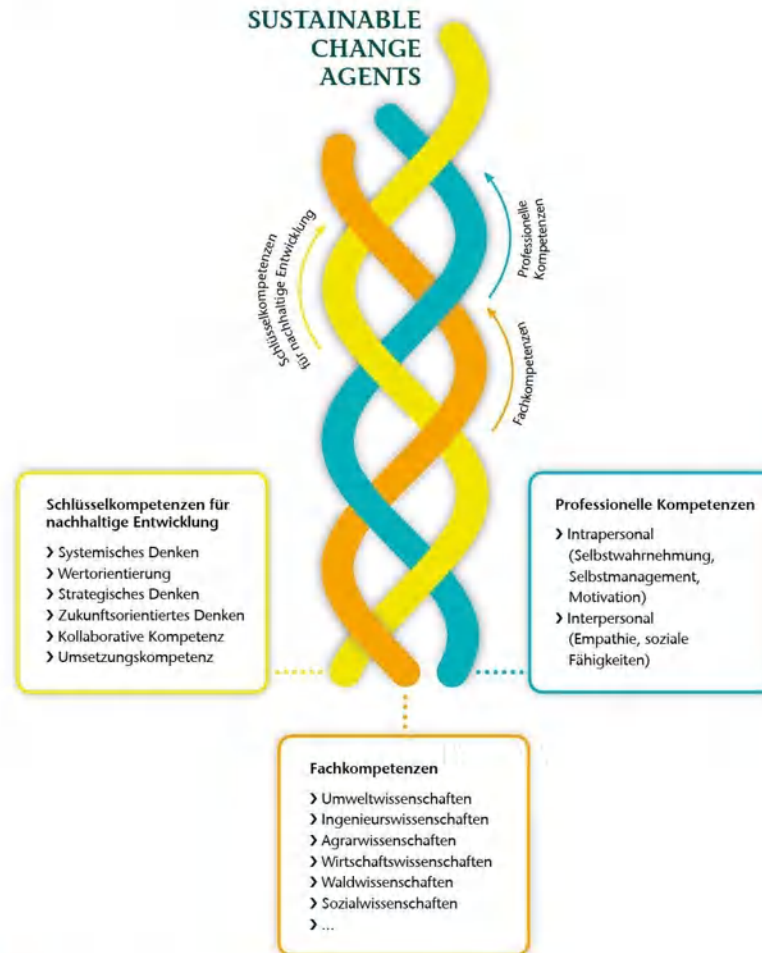
Transformation of evaluation and assessment in higher education

- Our goal/urgency is to evaluate **competencies**!
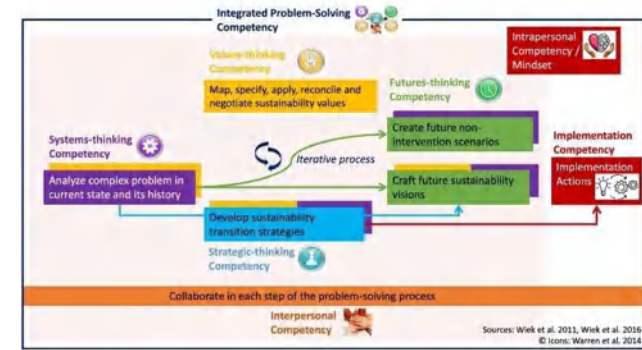
Fig. 3 Refined framework, building on the key competencies synthe- sized from the literature (Wiek et al. 2011; icons credit: Warren et al. 2014), visualizing in red boxes the additionally proposed competen- cies while... Expand

- **BUT** the characteristics of capabilities and competencies are very complex and diverse – difficult to measure

- Shift from quantitative to qualitative evaluation (peer-review, focus groups, interviews)

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Thank you for your time and interest!

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Statistics and data management - exemplary data

Study progress statistics (since 2020)

Studienanfänger je Kohorte Bachelor

Absolventenquote Bachelor RSZ +2

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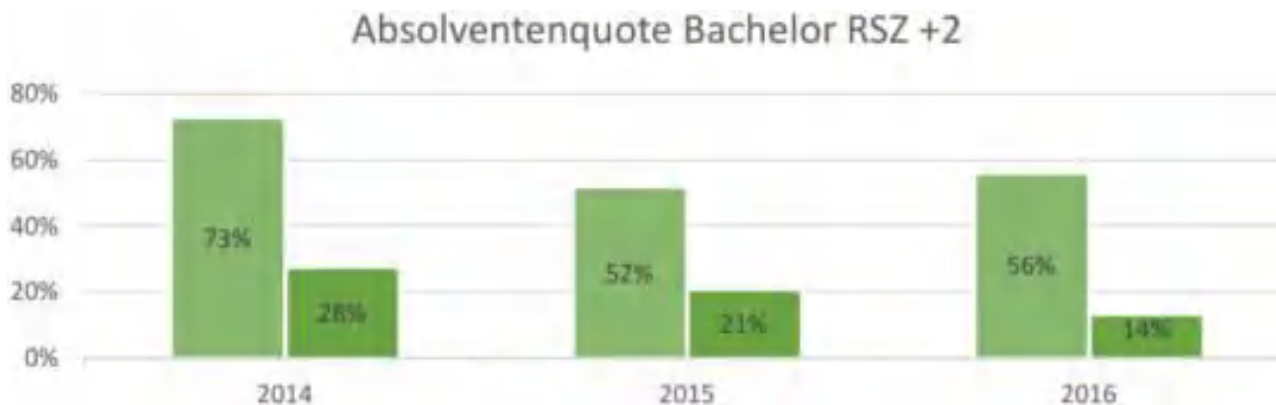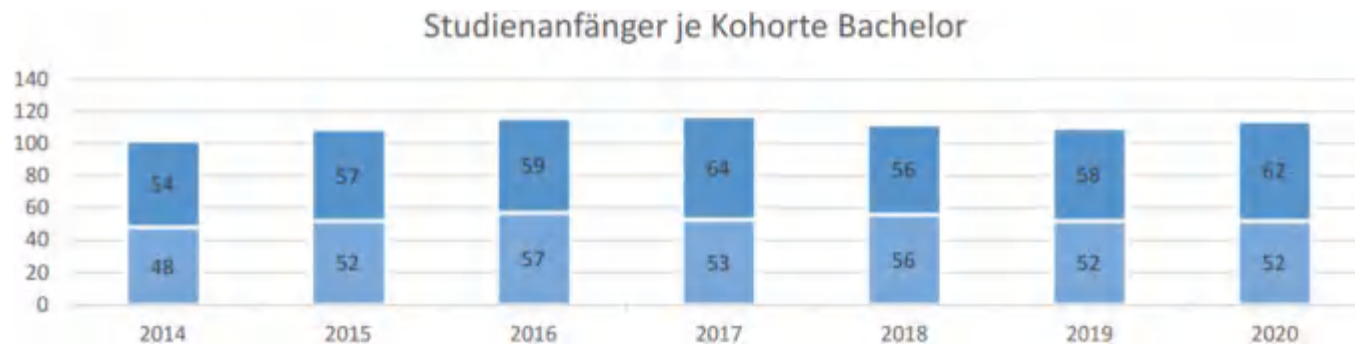
Aggregated data by cohort – exemplary data
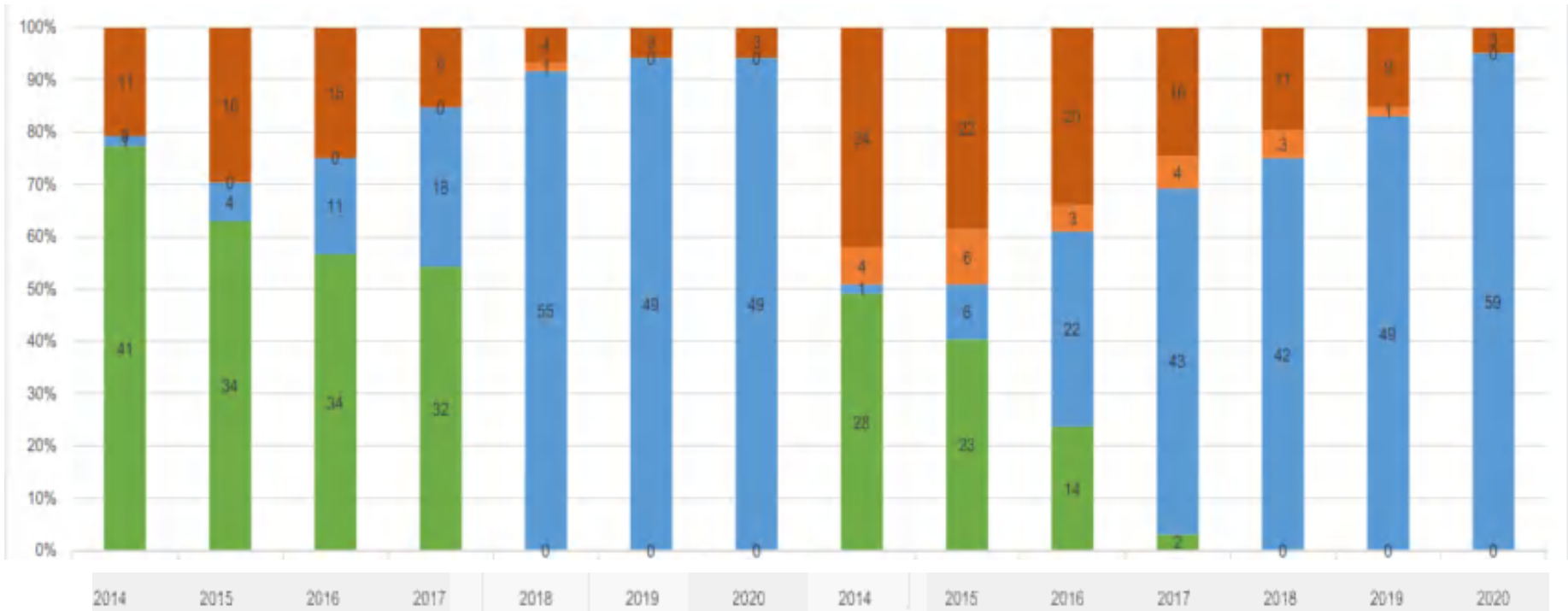
More important than statistical data = qualitative explanation of the data

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Semester structure & administration

Summer & winter term

- 16 weeks lecture period
- 4 weeks examination period (July to beginning of August/ February)
- automatic registration for all examinations depending on course selection
- no official comprehensive 2nd examination period – but all examinations take place in the summer and winter term

Module/ course selection

- for the winter term = July
- for the summer term = January

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Modules & course administration

- Generally 6 ECTS/ module

  - 1 ECTS = 25-30 h workload

- Modules can consist of different courses and types

  - Lecture + seminar/ Lecture + practical exercise/ seminar + practical exercise

- Modules can consist of different examinations

  - Oral exam, test, group presentation

Types of Modules	Administration
Obligatory/ mandatory	automatic registration via campus management system
Elective	students can choose between different modules within the selection period *winter term first week of July/ summer term last week of January*
Optional	students can choose between different modules which are not part of the curriculum and will not weight into the final mark

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Our course structure

Main course forms at the university

course forms	Evaluation questionnaire
lecture	✓
exercise	✓
seminare	✓
practical exercise	✓
project	✓
language course	✓
excursion	✓
e-Learning	x

Standard evaluation

Theme	Rotation	Responsible
first semester evaluation	Winter term	Press & Public Relation
course evaluation	Winter/ Summer term	QM & Faculties
qualitative semester feedback	Winter/ Summer term	QM & Faculties

Theme	Rotation	Responsible
alumni survey	Every 2 years	Alumnimanagement
Nicht-Annehmerbefragung	long term every year	Student Advisory Service

University for Sustainable Development Eberswalde

Lecture evaluation

Why do we evaluate?

Quality control requirements should be determined in conformance with government regulations or accreditation requirements

- Binding agreement for all universities to constantly evaluate the quality of lectures, seminars and study programmes (BbgHG, § 25)

- **The Goal:** to ensure, measure and monitore a certain quality (with regard to content and organisation)

- universities are required to manage the evaluation process with an internal statute → evaluation statute HNEE since 2011 **– new since Nov. 2017**

→ during our accreditation processes all study programmes are reviewed with regard to appropriate quality management tools and processes

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Evaluation: course selection & period

- selection of courses = Consultant for organisation & quality → Deans

- **Every course** should be evaluated **at least every 2 years**

- BUT every lecturer should have **one course every semester**

- No student should evaluate more than 5 courses/ semester

- Evaluation takes place during the winter and summer term before the last course of the module → at the latest **14 days before the examination period starts**

→ **Evaluation dialogue between lecturers and students is intended**

→ **Direct feedback dialogue to:**

  - adress certain issues with the whole group

  - discuss solutions <u>together</u>

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Evaluation: data privacy

- Reglementation according to:

  - EU Data Protection Act (March 2018)

  - Data Protection Act Brandenburg

  - Evaluation statute of HNEE (Nov. 2017)

- Reporting of results = only for the lecturers and the relevant Dean

- Lecturers are <u>obligated</u> to discuss the results during a feedback dialogue with the students

  „Theoretical reglementation and practical implementation"

- If necessary or desired the lecturers and the Deans can evaluate the performance and results as well e.g. to develop target agreement

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Lecture evaluation

Options for student Feedback – depends on the system you choose
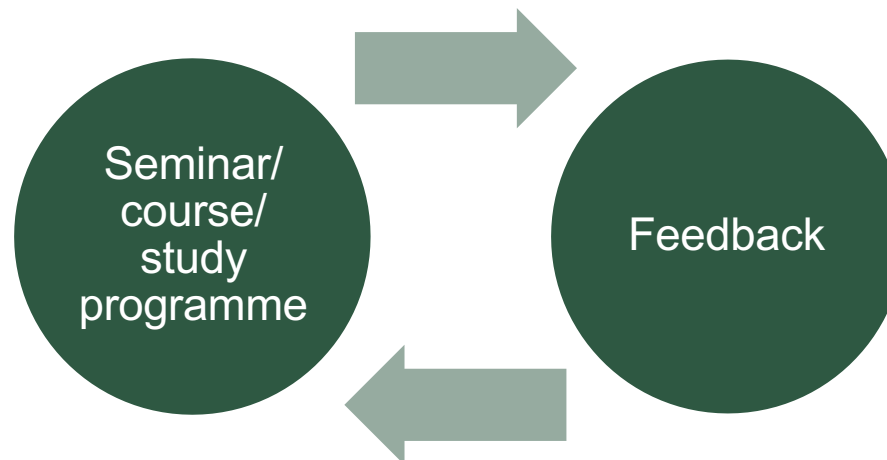
Feedback

- directly with professors/ administrators
- via a third party, e.g. Dean of faculty, Students' Union
- via an online evaluation software

Implementation of the evaluation tool

Beginning in 2016 (Pilot project at the faculty 2)

- From online evaluation (during free time) to Paper & Pencil evaluation (in the course)

- Higher return rate (Rücklaufquote)

Rücklaufquoten der Lehrevaluierungen an der HNE Eberswalde je Fachbereich und HNEE-Gesamt

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Return rates

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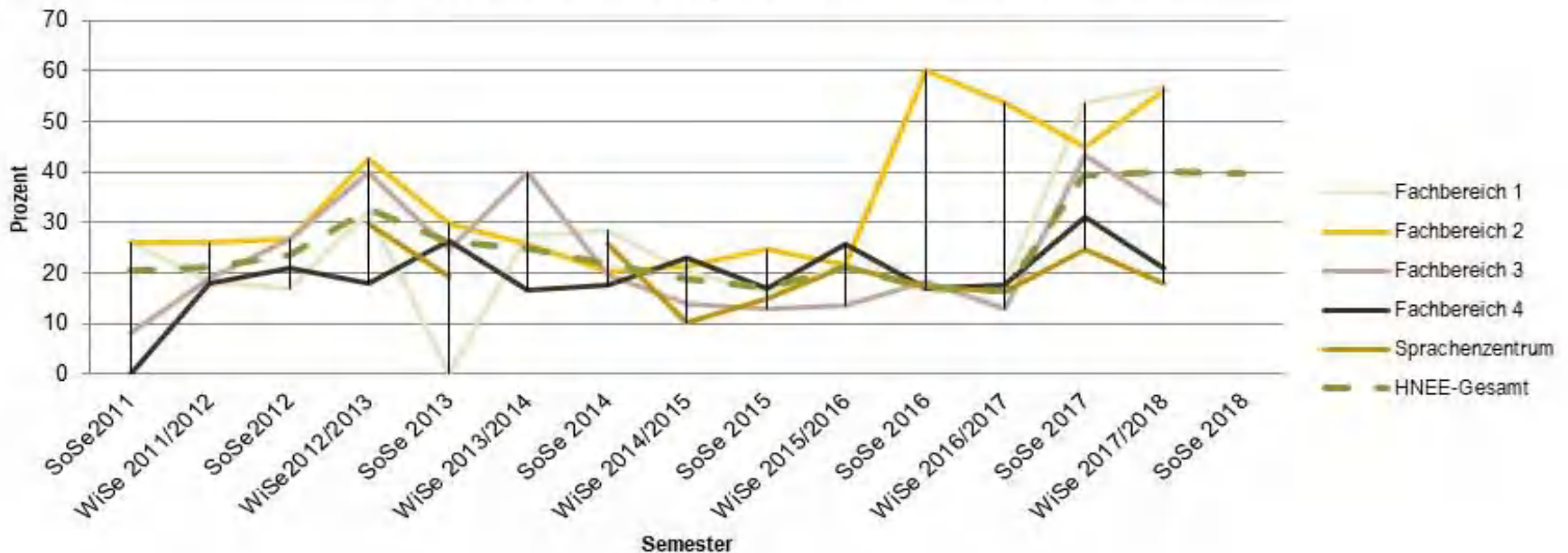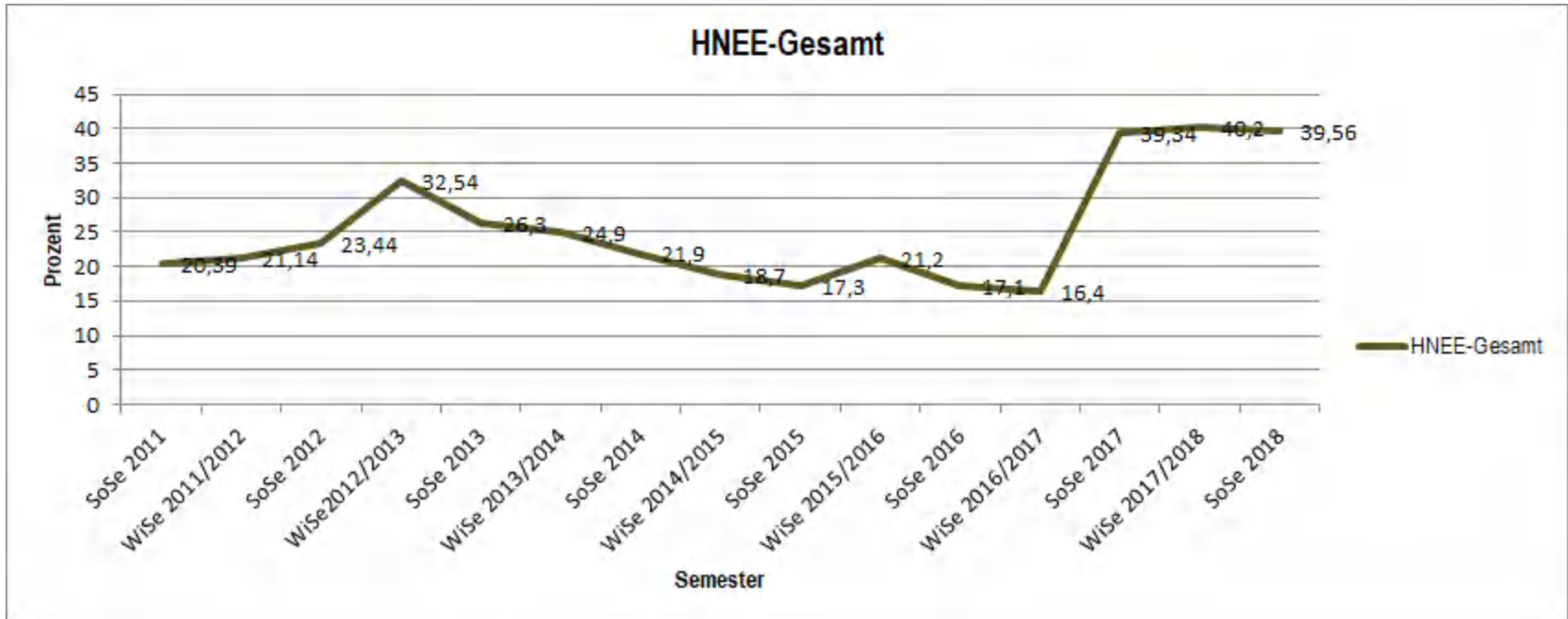
Questionnaires for quantitative evaluation

Quantitative analysis

- unitary questionnaires for all faculties
- Online and Paper & Pencil

Questionnaires for:

- Lecture
- Seminar
- Practical exercise
- Project
- Excursions
- (Project/ company) internships
- Language courses

Languages: German and English

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Innovative teaching and learning – project workshops

University for Sustainable Development Eberswalde

Central support mechanism

Goal: support of new learning and teaching methods

Funding period: Term of the university contract (until 2023)

"Innovative teaching and learning formats" include:

- Project/ problem based learning

- Research learning

- Media-based learning (e.g. E-Learning, MOOCs, OER)

- **NEW:** focus of interdisciplinary work

Networks and activities – political level

Working group: Quality of teaching

Ministry <–> Vice presidents
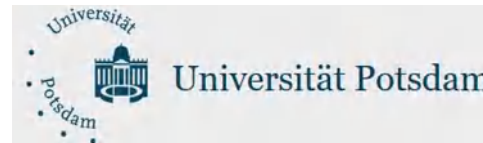
- **Strategic development**

- **Study progress statistics**

- **Online examination opportunities**

Networks and activities – operational level

Network of all universities in Brandenburg
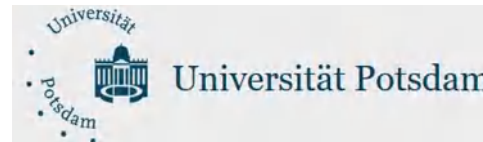
Start-Me-UP-Programme for all new appointed professors

Workshop programme for all teaching staff

University for Sustainable Development Eberswalde

Networks and activities – operational level

Network of all universities in

Brandenburg
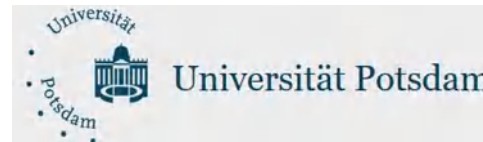
Workshop Programme

- Teaching and learning methods
- Individual development
- Coaching of students
- Examination management and grading
- E-learning

Agenda for 2022 +n

- Further **practical implementation** of the mission statement in the faculties and study programmes – **Eberswalde study model**

- **Development of data based quality management** (linkages between evaluation and study progress statistics, early warning system)

- Introduction of further qualitative methods

Global Change Management (M.Sc.)

Fostering sustainability transformation through postgraduate programmes

Christoph Nowicki
Coordination & Development
Centre for Econics and
Ecosystem Management
Faculty of Forest & Environment

Centre for Econics and Ecosystem Management

Learning from nature: bionics

Bionics

the process of learning from nature *in the field of engineering and construction*

(Werner Nachtigall)

Lotus in Shanghai Botanical Garden, China (Photo: P. Ibisch)

Centre for Econics and Ecosystem Management

Econics promotes the mimicking of ecological system dynamics and functioning for an improved ecosystem management and functioning of socio-economic systems as a gateway towards sustainable development

Eberswalde University for Sustainable Development

Conceptual framework: MARISCO
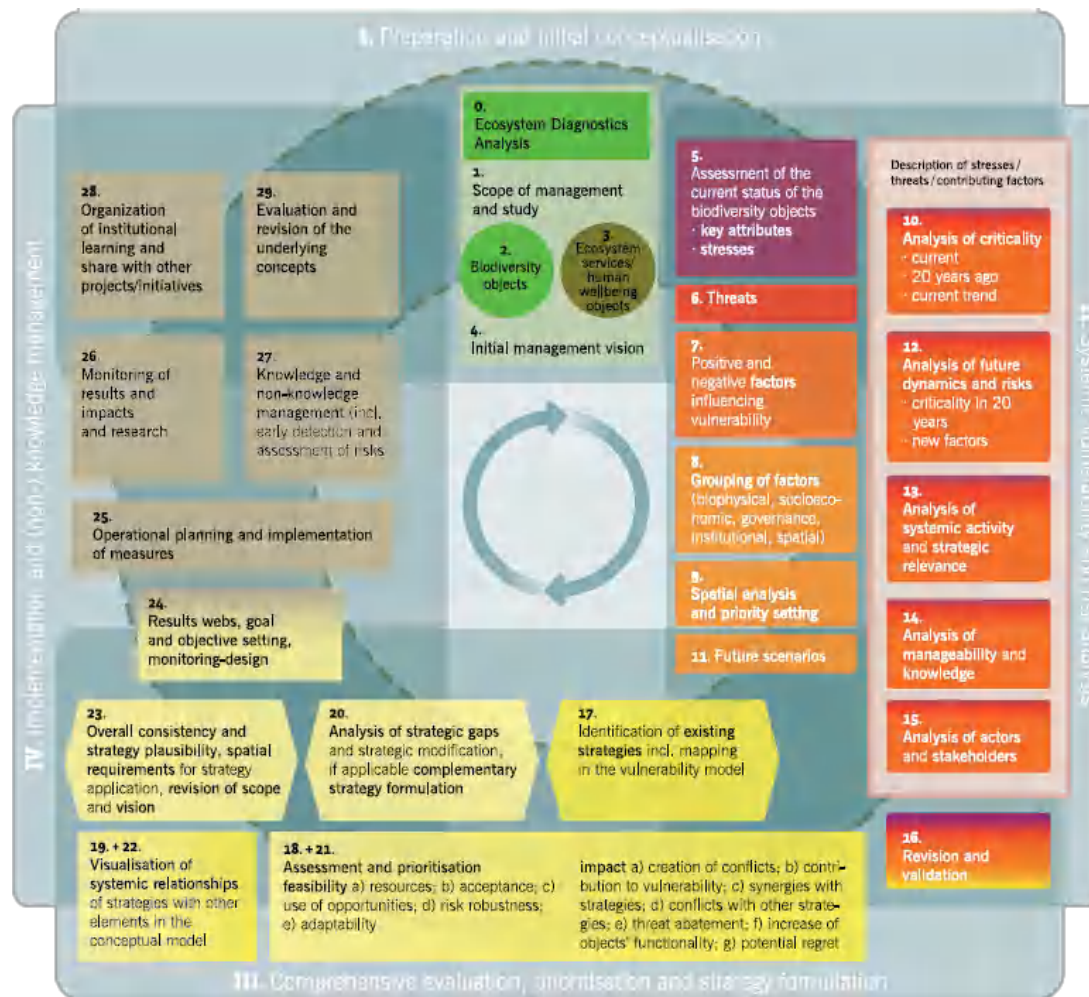
Adaptive MAnagement of vulnerability and RISk at COnservation sites

An ecosystem-based approach for risk-robust and adaptive conservation of biodiversity

www.centreforeconics.org /
www.marisco.training

Fostering sustainability transformation through postgraduate programmes
Christoph Nowicki (christoph.nowicki@hnee.de)   I   Faculty of Forest and Environment   I   October 11, 2023

China

Russia

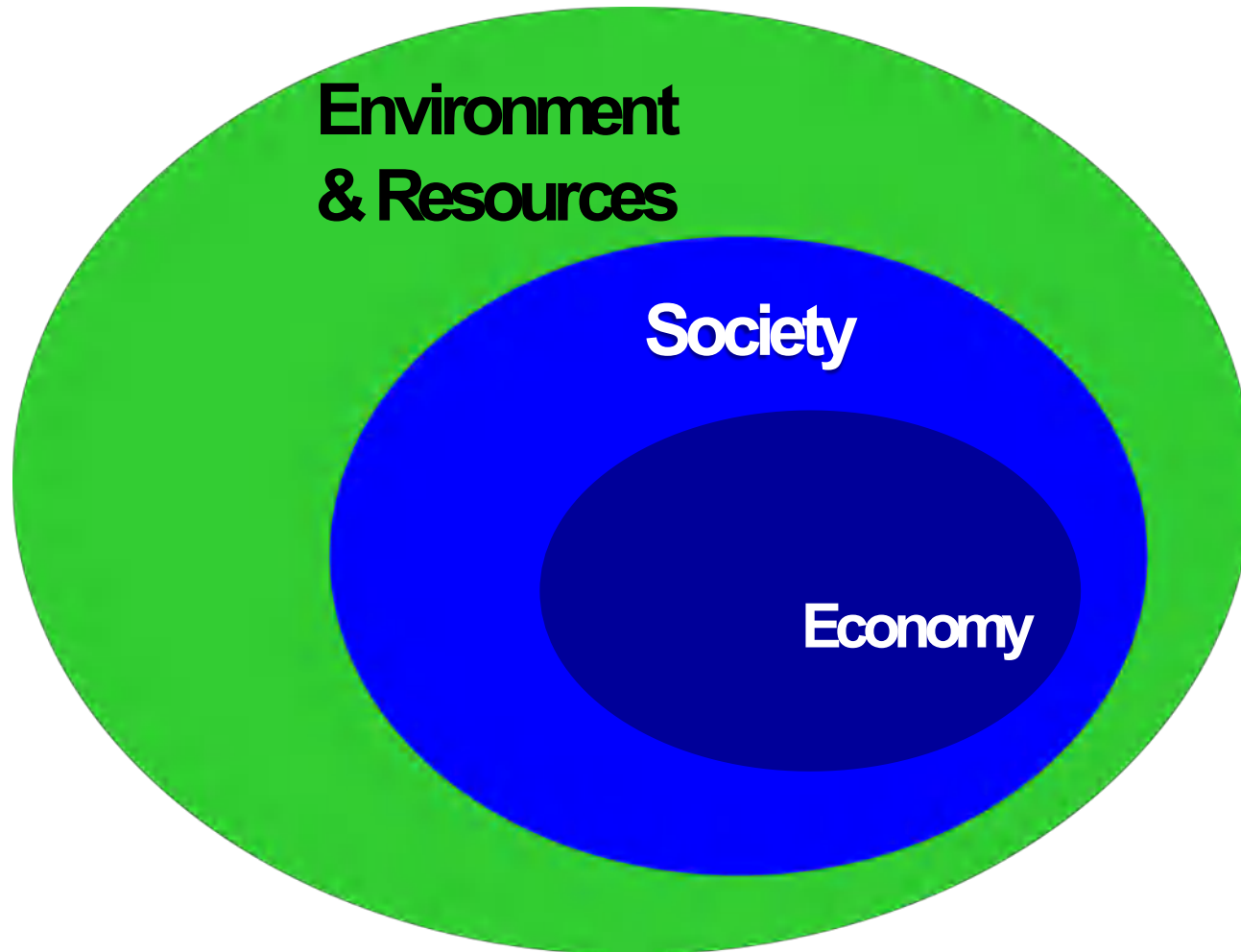Guatemala

Albania

England

Peru

Costa Rica

Ukraine

MARISCO
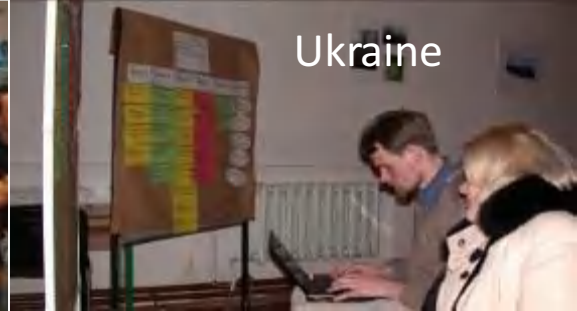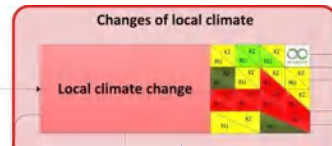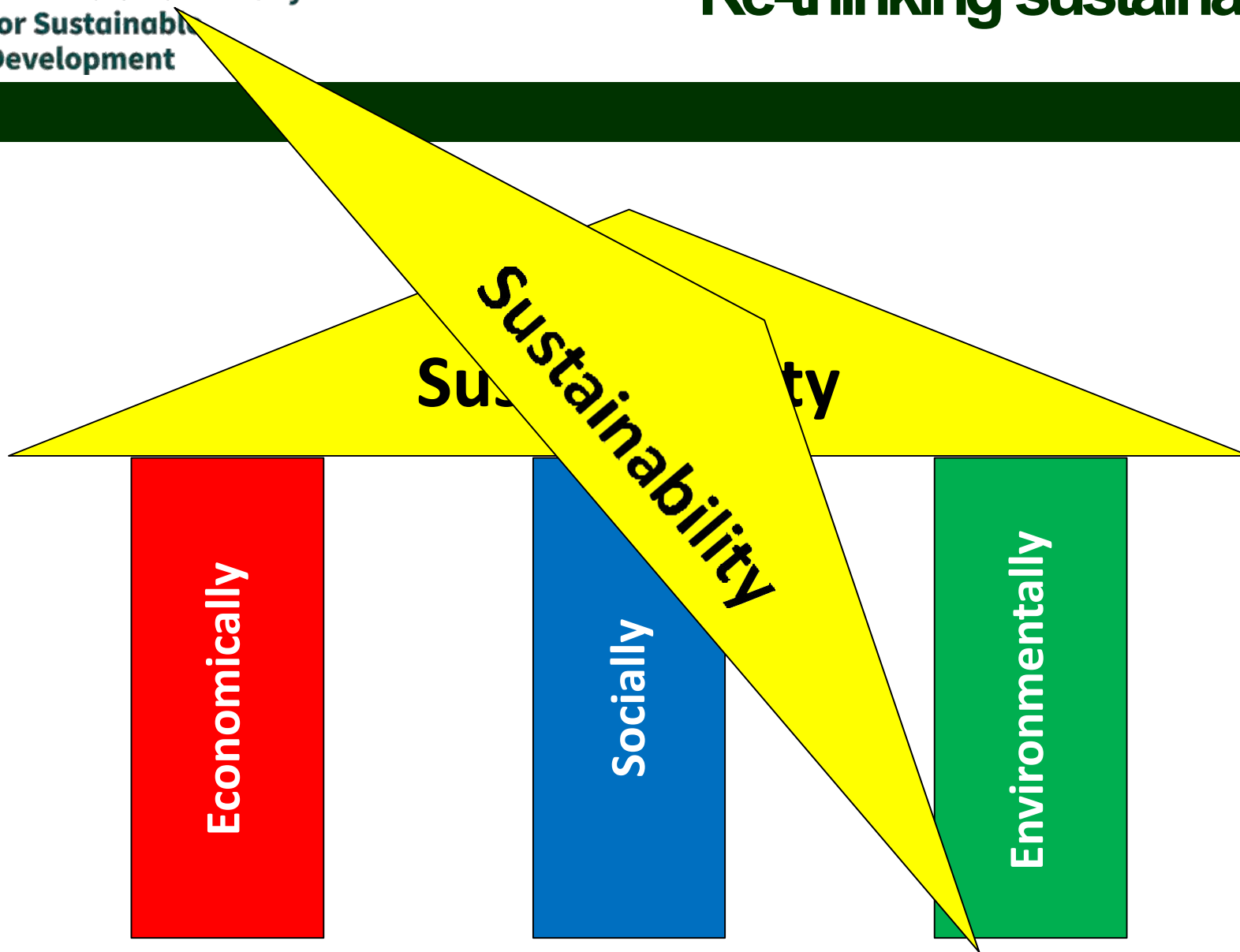
Sustainability as an overarching topic of the university and all study programmes

Environment & Resources

Society

Economy

Global ecosystem

Atmosphere
Biosphere
Hydrosphere
Pedosphere

Environment
& Resources

Society

Economy

Global ecosystem

Atmosphere
Biosphere
Hydrosphere
Pedosphere

Anthroposystem

Culture

Human wellbeing

Individual   Social

Economy

Governance

Drivers of stresses

Stresses

(Key attributes of) Global ecosystem functionality

Ecosystem services

Learning from ecosystems (econics)
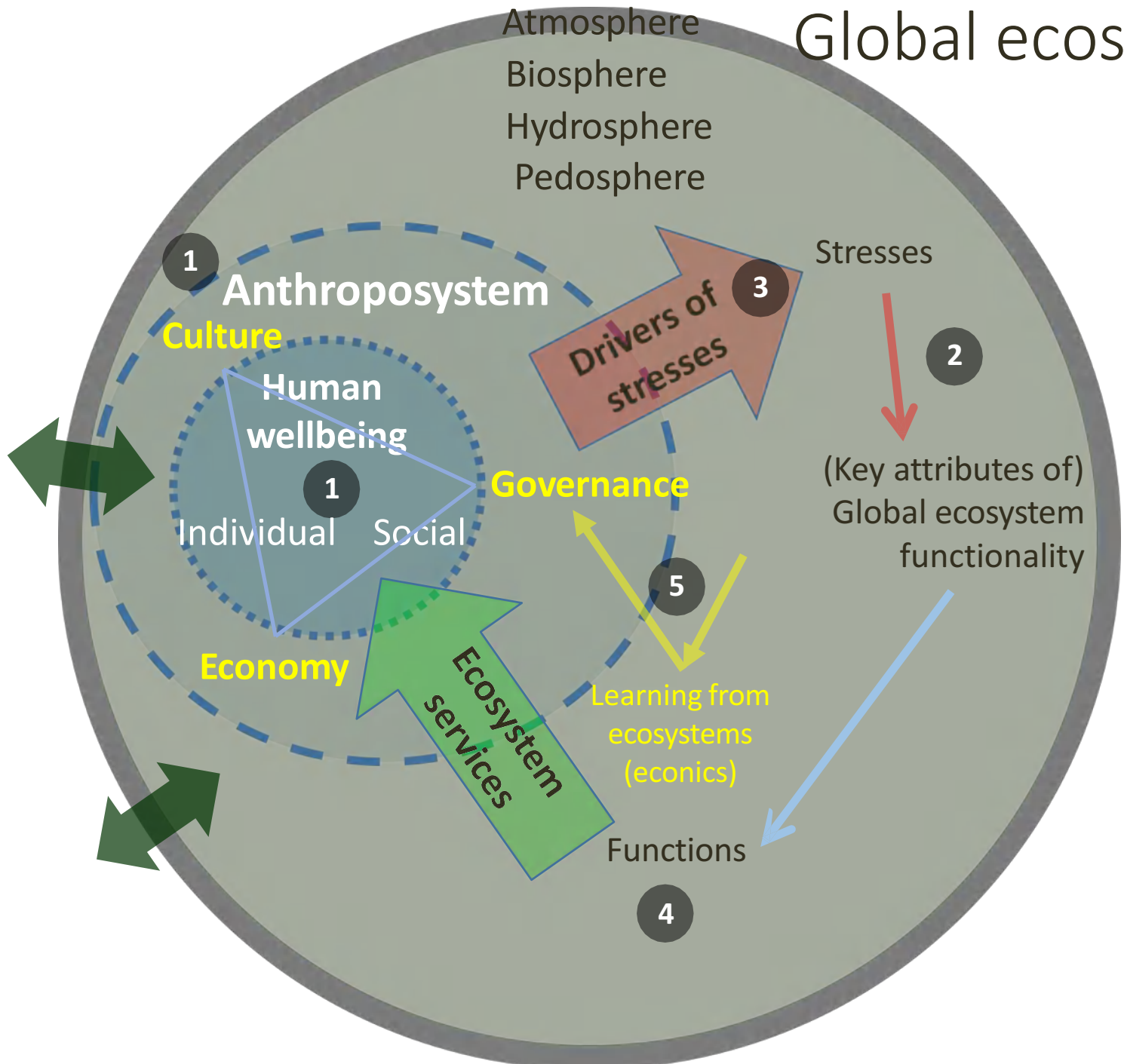
Functions

Curriculum

1. Semester

1. • **Human and nature wellbeing**

2. • **Fundamentals of systems functionality & change**

3. • **Drivers of stress to systems functionality and root causes**

2. Semester

4. • **Strategies for change and transformation**

5. • **Implementation of change management**

3. Semester

• **Research project**

• **Internet Based Research Colloquium**

4. Semester

• **Master thesis colloquium**

• **Master thesis & defence**

Broad range of elective modules:
- Global Change and Development (in cooperation with GIZ)
- Natural Resource Management in Transformation Countries
- Systems leadership and societal transformations
- Carbon sequestration and accounting
- Fundamentals of measurements and modelling
- Earth System Analysis and Stewardship (in cooperation with PIK)
- Transformation Pioneers
- Academic writing and presenting
- etc.
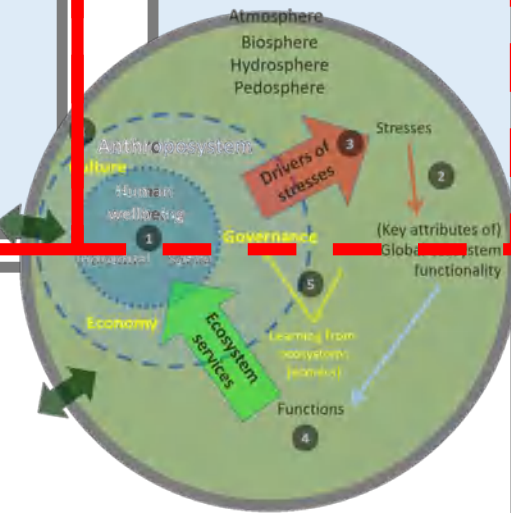
Teaching, co-teaching, experiencing, partnering, learning

Partnering: increasing resilience through networks

Resilience Studies Consortium Partners
Diese Karte wurde mit Google My Maps erstellt. Das kannst du auch.

Check out the R.S.C Network

- **Eberswalde University for Sustainable Development**
- **Kansas Weslyan University**
- **Principia College**
- **Roosevelt University**
- **The Evergreen State College (Tacoma Campus)**
- **Paul Quinn College**
- **Western Colorado University**
- **Northern New Mexico College**
- **Paul Smith College**
- **Tuskegee University**

Eberswalde University for Sustainable Development

GCM-Alumni – our indicators…

NGOs

- Germanwatch, NABU, WWF, Climate-Alliance Germany, Bosch-Foundation, Munich Climate Insurance Initiative, …
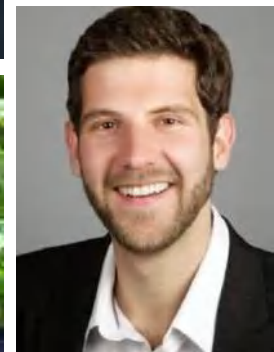
Public agencies

- Federal Environment Agency (UBA), Magistrate of the University City of Marburg (for climate change), Regional Agency for Enviroment and Geology, …

Business

- GIZ (Development Advisor for GIS), Patagonia (Social and Environmental Responsibility Regional Manager), Expert Agency Wind on Land (renewable energies), Arepo Consult, …

Universities/Research institutions

- PIK (IPCC WG2 Chapter Scientist), HNEE (scientist at HNEE), Centre for Econics & Ecosystem Management, University of Bremen, …

Eberswalde University for Sustainable Development

GCM-Alumni – our indicators…

Awarded by the UN Climate Change secretariat (UNFCCC)

Eberswalde University for Sustainable Development

Connecting with Nature for the Benefit of Mankind – since more than 190 years

Global Change Management (M.Sc.)

Fostering sustainability transformation through postgraduate programmes

Thank you for your attention!

M.A. Education-Sustainability-Transformation (part-time study)
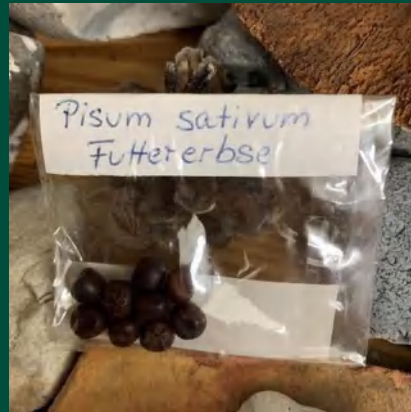
by Prof. Dr. Heike Molitor

Hochschule für nachhaltige Entwicklung Eberswalde

Foto: BMBF:

Agricultural
technical
assistant

https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=1674&menu=1515

https://www.bne-portal.de/bne/shareddocs/downloads/files/nationaler_aktionsplan_bildung-er_nachhaltige_entwicklung_neu.pdf;jsessionid=E401727511B29A1712FC9DC0A750BE19.live091?__blob=publicationFile&v=1

2030

2020

2019

2015

2014

2005

2002

1992

ESD for 2030
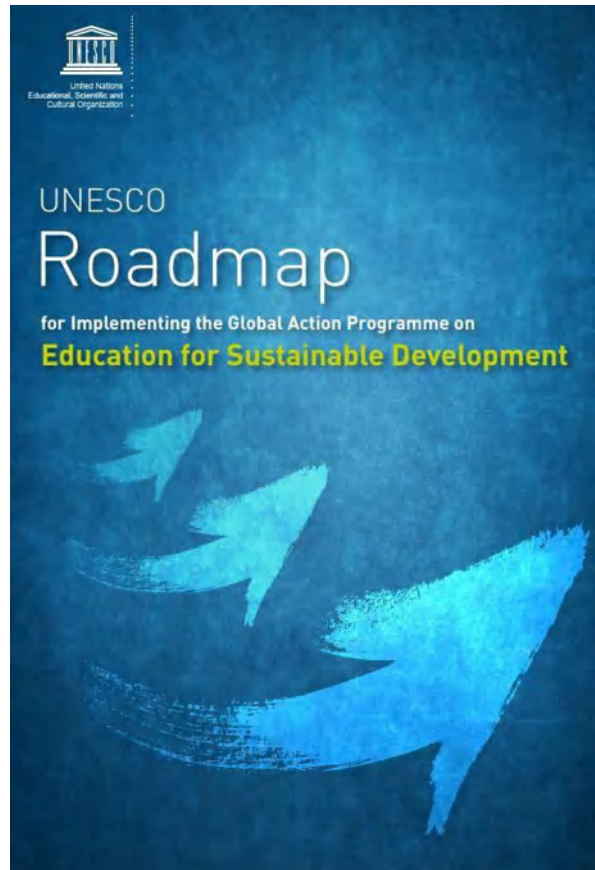Education for Sustainable Development: Towards achieving the SDGs

Global Action Program on
Education for Sustainable Development (GAP)

UN-Decade of Education for Sustainable Development

UN-Conference on Environment and Development in Johannesburg

UN-Conference on Environment and Development in Rio

Agenda 2030 – 17 Sustainable development goals

UNESCO Roadmap „ESD for 2030"

Priority Action Areas

Priority action area 1
Advancing policy

Priority action area 2
Transforming learning environments

Priority action area 3
Building capacities of educators

Priority action area 4
Empowering and mobilizing youth

Priority action area 5
Accelerating local level actions

https://en.unesco.org/themes/education-sustainable-development/toolbox
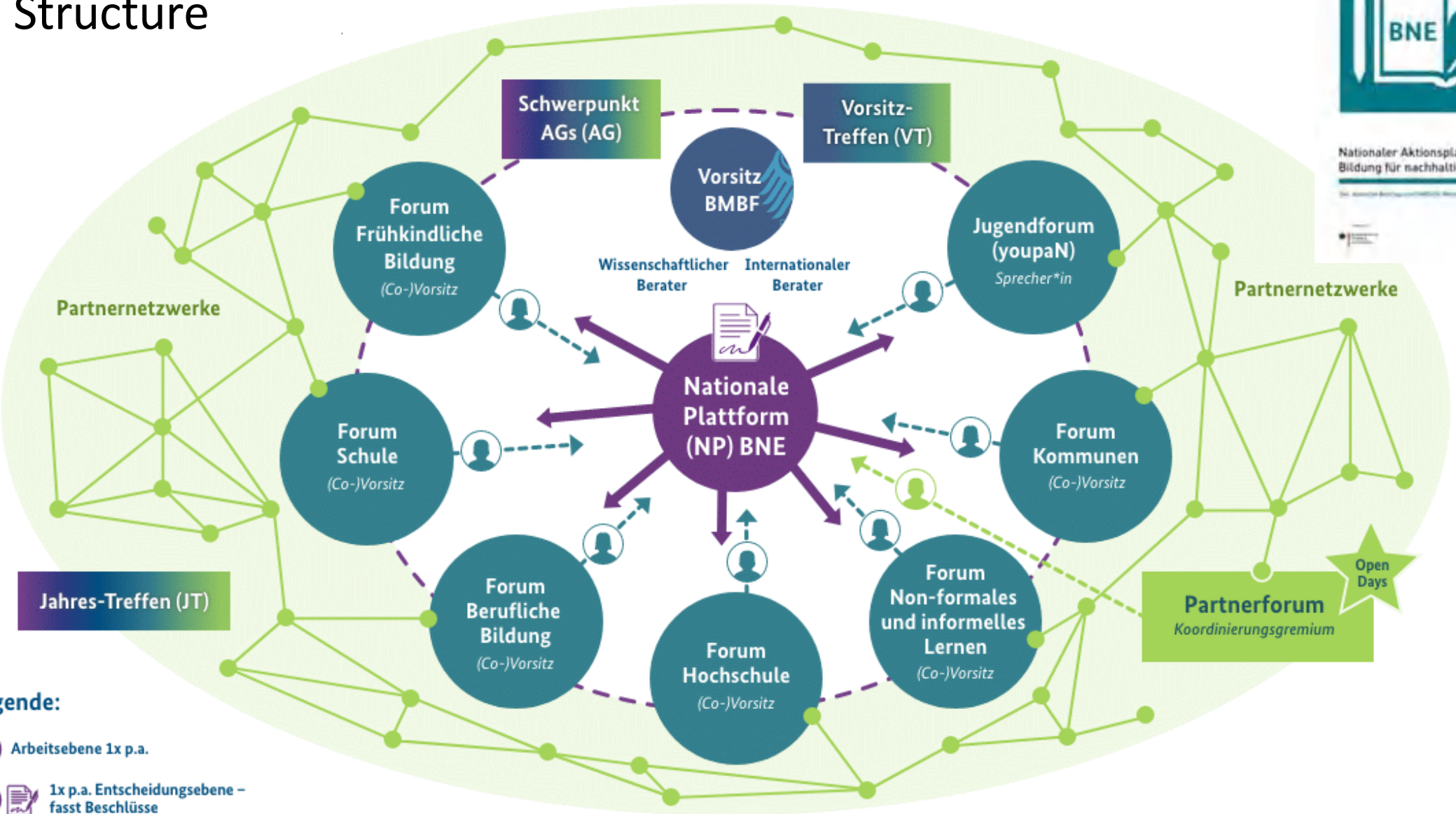
UNESCO Road map – ESD for 2030

- To **encourage learners** to become **change agents**
- who have the knowledge, means, willingness and courage to take transformative action for sustainable development,
- **learning institutions need, themselves, to be transformed**.

Structure

Agenda

- Introduction
- **Education-Sustainability-Transformation**
- Methods of ESD and Reflection

Education-Sustainability-Transformation, M.A.

90 ETCS – 5 Semester

**Distance and online learning –
one weekend per module**

**Starting point:
September 2020**

Master of Arts
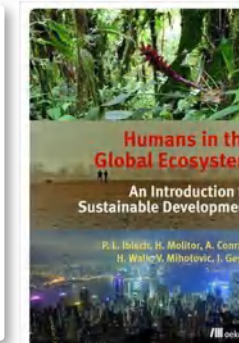
Fotos: T. Stapel

fees

1. - 4. Semester
2225 EUR= 8900 EUR

5. Semester
1750 EUR

Fotos: T. Stapel

Our students

- NGOs
- Schools
- Universities
- Foundation
- Administration
- Museum
- Library
- …

Fotos: T. Stapel

Hochschule für nachhaltige Entwicklung Eberswalde

1	**Modul 1:** Introduction Sus	**Modul 2:** Introduction educational science	**Modul 3:** Environmental Psychology
2	**Modul 4:** ESD	**Modul 5:** Global Learning	**Modul 6:** ESD-project Planning Implementing Reflection/ Evaluation
3	**Modul 7:** Communication	**Modul 8:** ESD in the community - networks	
4	**Modul 9:** Education marketing	**Modul 10:** Research methods	
5	**Modul 11:** Master thesis		

Foto:
Heike Molitor

Method diversity

- Scenario methods
- Nature experience
- Explorations
- Experiments
- Dialog
- Role play
- Service Learning
- Design thinking
- …

oriented towards the competences and resources of the participants

Fotos: T. Stapel

Method

,more' natur   ,less' natur

Results

Thank you for your attention !!!

Prof. Dr. Heike Molitor
hmolitor@hnee.de
www.hnee.de/molitor

Hochschule für nachhaltige Entwicklung Eberswalde

Outline

The Biosphere Reserves Institute

UNESCO Biosphere

Master's course Biosphere

Management

Graduate School

Research and Transfer

The Biosphere Reserves Institute

- Established in 2019 as a scientific institution of the Eberswalde University for Sustainable

- Joint effort of professors from 2 HNEE

  - Landscape Management and Nature Conservation
  - Forest and Environment

BRI headquarters, Eberswalde

Eberswalde University for Sustainable Development (HNEE)

Mission

Our mission is to support **UNESCO Biosphere Reserves** in their transition towards being **model regions for sustainable**

UNESCO Biosphere Reserves

© UNESCO / delhambre

- Designated (and evaluated) by the UNESCO Man and the Biosphere (MAB) Programme

- Multifunctional landscapes

- Zoning scheme and functions
  - Core areas(s) – biodiversity conservation
    Buffer zone(s) – research, education, etc.
  - Transition area – socio-cultural and economic development

Eberswalde University for Sustainable Development (HNEE)

The World Network of Biosphere Reserves

- There are currently **748 designated sites, in 134 countries**. They occupy a surface of almost the size of Australia

- About **275 million people** live in biosphere reserves worldwide

- Covers all major representative natural and semi-natural ecosystems

- Contributing to the realization of the **sustainable development goals**

Eberswalde University for Sustainable Development (HNEE)

UNESCO Biosphere Reserves

Co-management and participatory

multiple stakeholders

Learning laboratories for

development

Conservation of cultural values

Sustainable use of natural resources

UNESCO Biosphere Reserves

Carpathians Biosphere Reserve

- Thinking the landscape in an integrated and collective way

- Conciliating human development with the conservation of biodiversity in a regional scale

- Providing local solutions to global problems

Eberswalde University for Sustainable Development (HNEE)

Mission of the Biosphere Reserves Institute

Our mission is to support **UNESCO Biosphere Reserves** in their transition towards being **model regions for sustainable**

How do we support biosphere reserves?

International Master's course

Biosphere Reserves Management (BIOM)

Graduate School

Research in, for and with biosphere reserves

Research Group

Biosphere reserves' research and transfer

M.Sc Biosphere Reserves Managament (BIOM)

„Learning to manage people and nature for a sustainable

worldwide!"

M.Sc Biosphere Reserves Management

___

- Starting in 2020, it is the only existing English speaking

- Combines lectures and seminars with excursions and **practical experience in biosphere reserves**

- Highly **international**: 59 students from 5 continents and 24

Biosphere Park Wienerwald, Austria
Macin Mountains, Romania

Eberswalde University for Sustainable Development (HNEE)

BIOM - Curriculum

1ˢᵗ Semester

- Communication and teamwork for sustainable

- Political, legal and international context of UNESCO biosphere reserves

- Fundamentals of systems functionality and change

- Project management and innovation

- Approaches and tools for research and monitoring with

- Approaches and tools for research and monitoring with

2ⁿᵈ Semester

- Land use systems in the socio-ecological and socio-economic context

- Governance, administration and management for biosphere

- Transformation and education for sustainable development

- Ecological effectiveness of biosphere reserves

- Nature tourism and cultural identity

- Stakeholder communication in biosphere reserves

Eberswalde University for Sustainable Development (HNEE)

BIOM - Curriculum

3rd Semester

- Research Project in UNESCO Biosphere Reserves (or

- Research Colloquium

4th Semester

- Master Thesis Colloquium

- Master Thesis & Defence

A total of **4 students** have already defended their master thesis on the topics of:
tourism (Tetiana Rudenko, Ukraine)
education for sustainable development (Prince Bonsu, Ghana)
Camili BR (Baris Öztürk, Turkey)
-Chorin BR (Irina Kirsanova, Russia)

Eberswalde University for Sustainable Development (HNEE)

Synergies BIOM & Biosphere Reserves Institute

- BRI coordinates BIOM, most BIOM professors are members of BRI (strong connection research – practice – education)

- BRI offers training opportunities to BIOM students via projects (e.g. TILLs) or inviting partners to the lectures

- BRI is an employer of BIOM students

- Student representatives are members of the BRI governance (Joint Commission) (integration of youth

Visit of Dr. Benno Böer, UNESCO New Delhi Cluster Office © AFFerreira

Graduate School

„Research in, for and with UNESCO Biosphere Reserves"

© Janine Jargow

Hochschule für nachhaltige Entwicklung Eberswalde (HNEE)

Graduate School

- Promotes research in,for and with biosphere

- Qualify PhD-students for a career in academia

- Contributes to create the framework conditions for high-level research in the HNEE and awarding of doctorates

Leuphana University Lüneburg

Biosphere Reserves

HNEE

Biosphere Reserves
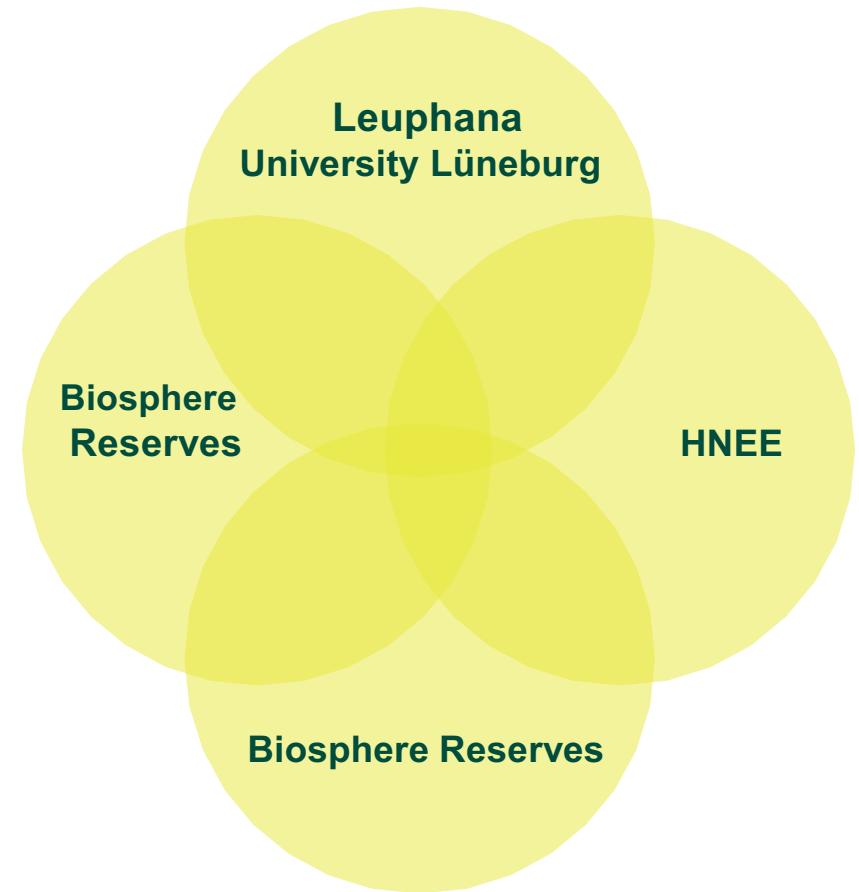
Graduate School - Research

- About 8 PhD students funded (via BRI)

- 10 papers published in peer -reviewed journals

- Participation in many conferences, research

Sustainability Science (2023) 18:1085–1098
https://doi.org/10.1007/s11625-022-01241-9

ORIGINAL ARTICLE

Sustainability innovations: a proposal for an analytical framework and its empirical application in the Schorfheide-Chorin Biosphere Reserve

Caroline Hélène Dabard[1,2] · Carsten Mann[1]

Ecological Informatics
Volume 66, December 2021, 101442

Quantifying the mitigation of temperature extremes by forests and wetlands in a temperate landscape

Charlotte Gohr [a b], Jeanette S. Blumröder [a b], Douglas Sheil [c d], Pierre L. Ibisch [a b]

Tourism Management Perspectives
Volume 43, July 2022, 101004

Characterising and identifying gaps in sustainability assessments of tourism – a review

Martin Balas [a b], David J. Abson [b]

Insect Conservation and Diversity

Royal Entomological Society

SHORT COMMUNICATION   Open Access

Random year intercepts in mixed models help to assess uncertainties in insect population trends

Fabio Weiss, Henrik von Wehrden, Andreas Linde

First published: 18 April 2023 | https://doi.org/10.1111/icad.12644

Editor/associate editor: Raphael K. Didham

Graduate School - Professional Development

PhD Colloquium

Writing Retreats

Courses

Coaching

Eberswalde University for Sustainable Development (HNEE)

Research Circle

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„Coordinating research that responds to the pressing

biosphere reserves and facilitating the transfer of

International Conference © Lucas Petersen

Hochschule für nachhaltige Entwicklung Eberswalde (HNEE)

Collaborative Research

- Joint paper on "Biosphere Reserves as model regions for transdisciplinarity?

Transdisciplinary Projects

TILL, Schorfheide-Chorin Biosphere Reserve © N.M. Mnyamno

- TRANSECTS – Transdisciplinary Education Collaboration for Transformations in Sustainability

- International community of practice joining a diversity of partners and biosphere reserves

  Africa

Eberswalde University for Sustainable Development (HNEE)

International Conference © Florian Reischauer

Organisation of conferences

- **International Conference Science and Research in, for and with UNESCO Biosphere Reserves** (Eberswalde, 16-20 May 2022)

- More than 100 early career researchers, BR managers and experts from 46 countries have participated

- Recommendations summarised in the **Eberswalde Declaration**, endorsed by the MAB Programme on the 20th of May 2022

Biosphere Reserves Institute
- Governance

- Scientific and Managing Directors

- Associated Professors

- Programme Coordinators

- ProjectManagers and Assistants

- Management, Communication and Research

BRI Strategic Participatory Planning Workshop, © Janine Jargow

Eberswalde University for Sustainable Development (HNEE)

Biosphere Reserves Institute - Governance

___

- **Joint Commission** – internal supervisory

  staff representation)

- **Advisory body** – external (*international*) BR'

- **Partners** (*transdisciplinarity*)
  - Michael Succow Foundation
  -
    Biosphere Reserves

Protocol with BRI Privilege Partners © Johanna Köhle

Eberswalde University for Sustainable Development (HNEE)

The Biosphere Reserves Institute – Sustainable Operations

- **We follow HNEE guidelines on sustainable operations**
  - Compensation of CO_2 emissions due to travelling
  -
    options and organic food
  -
  - Organic, fair-trade trade coffee from local coffee roaster

Vegetable Box © Stefanie Albrecht

Electric vehicle © Michael Handelmann

Hochschule für nachhaltige Entwicklung Eberswalde (HNEE)

In the Agenda

- Transects Program Institute (Oct. 2023)

- Designation as a UNESCO Category 2 Institute? (Nov. 2023)

- Celebrations of the 2nd International Day of Biosphere Reserves (Nov. 2023)

- International Workshop Research in European UNESCO Biosphere Reserves (Feb. 2024)

Hochschule für nachhaltige Entwicklung Eberswalde (HNEE)

The Biosphere Reserves Institute and Sustainability - Summary

The Biosphere Reserves Institute contributes to sustainability in higher education through education, research and training on **model regions for sustainable development**

We foster **inter and transdisciplinary research**, contributing to resolve pressing social-environmental challenges by combining different knowledge systems and involving key stakeholders

We **reach beyond the university** by involving students, partners and biosphere reserves from all over the world, facilitating the dissemination of sustainability education throughout different countries and

Eberswalde University for Sustainable Development (HNEE)

Thank you!

© Florian Reischauer

filipa.ferreira@hnee.de

Eberswalde University for Sustainable Development (HNEE)

Sustainable Tourism Management and Climate Change

Prof. Dr. Wolfgang Strasdas

ZENAT
Zentrum für Nachhaltigen Tourismus

1FUTURE meeting
11 October, 2023

Hochschule
für nachhaltige Entwicklung
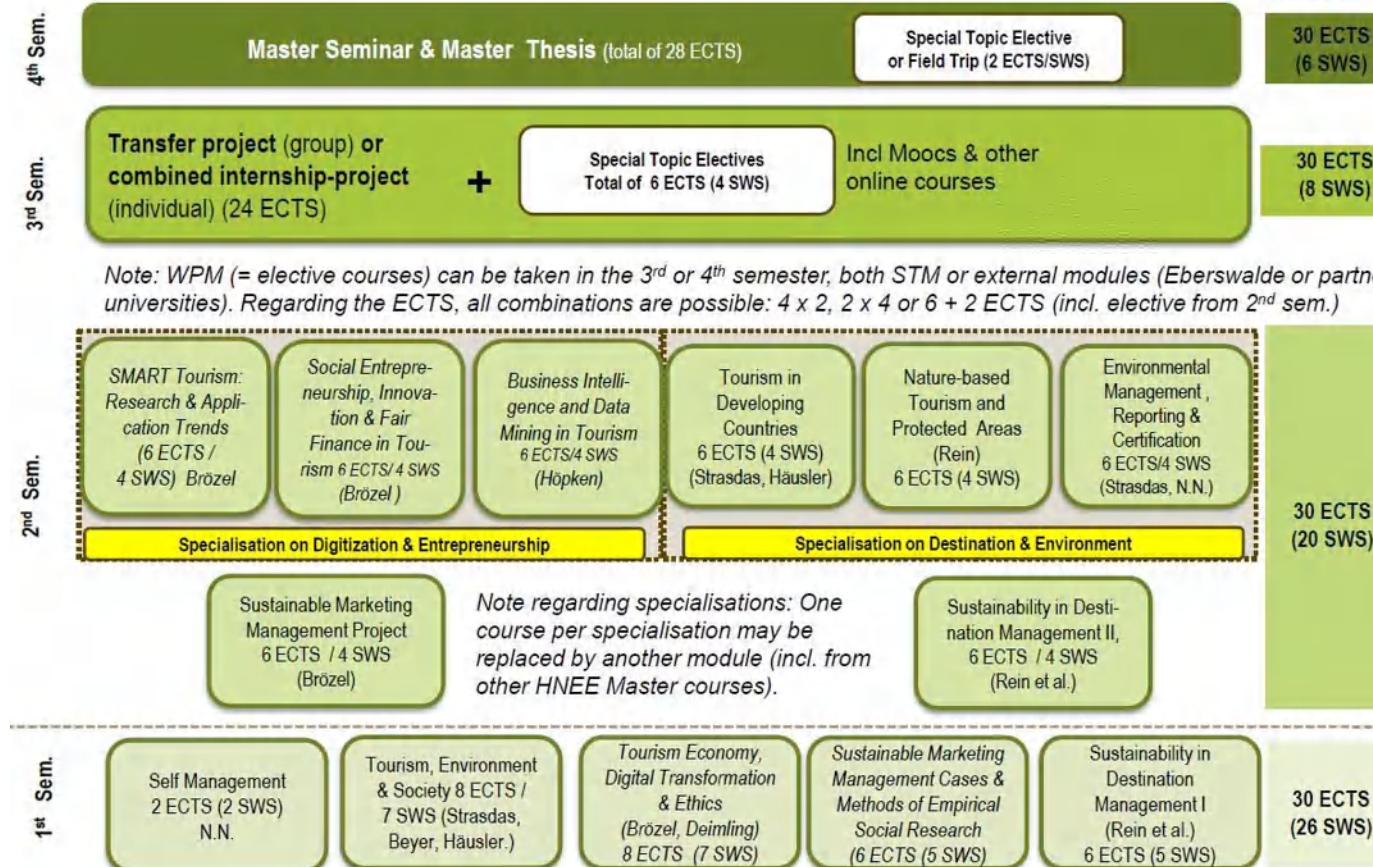Eberswalde

Master of Sustainable Tourism Management

Master of Sustainable Tourism Management

Curriculum SustainableTourism Management (M.A.)

Total: 120 ECTS (60 SWS)

4th Sem.
Master Seminar & Master Thesis (total of 28 ECTS) — Special Topic Elective or Field Trip (2 ECTS/SWS) — 30 ECTS (6 SWS)

3rd Sem.
Transfer project (group) or combined internship-project (individual) (24 ECTS) + Special Topic Electives Total of 6 ECTS (4 SWS) — Incl Moocs & other online courses — 30 ECTS (8 SWS)

Note: WPM (= elective courses) can be taken in the 3rd or 4th semester, both STM or external modules (Eberswalde or partne... universities). Regarding the ECTS, all combinations are possible: 4 x 2, 2 x 4 or 6 + 2 ECTS (incl. elective from 2nd sem.)

2nd Sem. — 30 ECTS (20 SWS)

| SMART Tourism: Research & Application Trends (6 ECTS / 4 SWS) Brözel | Social Entrepreneurship, Innovation & Fair Finance in Tourism 6 ECTS/ 4 SWS (Brözel) | Business Intelligence and Data Mining in Tourism 6 ECTS/4 SWS (Höpken) | Tourism in Developing Countries 6 ECTS (4 SWS) (Strasdas, Häusler) | Nature-based Tourism and Protected Areas (Rein) 6 ECTS (4 SWS) | Environmental Management, Reporting & Certification 6 ECTS/4 SWS (Strasdas, N.N.) |

Specialisation on Digitization & Entrepreneurship | **Specialisation on Destination & Environment**

Sustainable Marketing Management Project 6 ECTS / 4 SWS (Brözel)

Note regarding specialisations: One course per specialisation may be replaced by another module (incl. from other HNEE Master courses).

Sustainability in Destination Management II, 6 ECTS / 4 SWS (Rein et al.)

1st Sem. — 30 ECTS (26 SWS)

| Self Management 2 ECTS (2 SWS) N.N. | Tourism, Environment & Society 8 ECTS / 7 SWS (Strasdas, Beyer, Häusler.) | Tourism Economy, Digital Transformation & Ethics (Brözel, Deimling) 8 ECTS (7 SWS) | Sustainable Marketing Management Cases & Methods of Empirical Social Research (6 ECTS (5 SWS) | Sustainability in Destination Management I (Rein et al.) 6 ECTS (5 SWS) |

Admission requirements: B.A. or B.S. in Tourismus Management, Tourism Economics or Tourism Geography; plus other degrees with a minimum of 30 ECTS of tourism or 6 months of tourism internship or practical experience (subject to individual assessment) ⇒ voluntary online course and tourism tutorium in 1st Semester

Centre for Sustainable Tourism

ZENAT research, development & training projects (selection)

EU-funded projects

➢ **Unbalanced tourism development in European destinations** („overtourism")

➢ **ICT for Sustainable Tourism Development** (Erasmus+ in 4 countries)

➢ **European Going Green 2030** (EISMEA: SME training in 6 countries)

Projects related to climate change

➢ **Climate Change Adaptation Innovation Network Brandenburg – Berlin** and follow-up projects (2009 – 2017)

➢ **Tourism Sustainability Satellite Account – Developing a national indicator system for sustainability in tourism** (Federal Ministry of Environment, UNWTO)

➢ **Sustainable mobility for medium distances in Europe** (Fed. Ministry of Economy & Climate Action: Tourism Competence Centre)

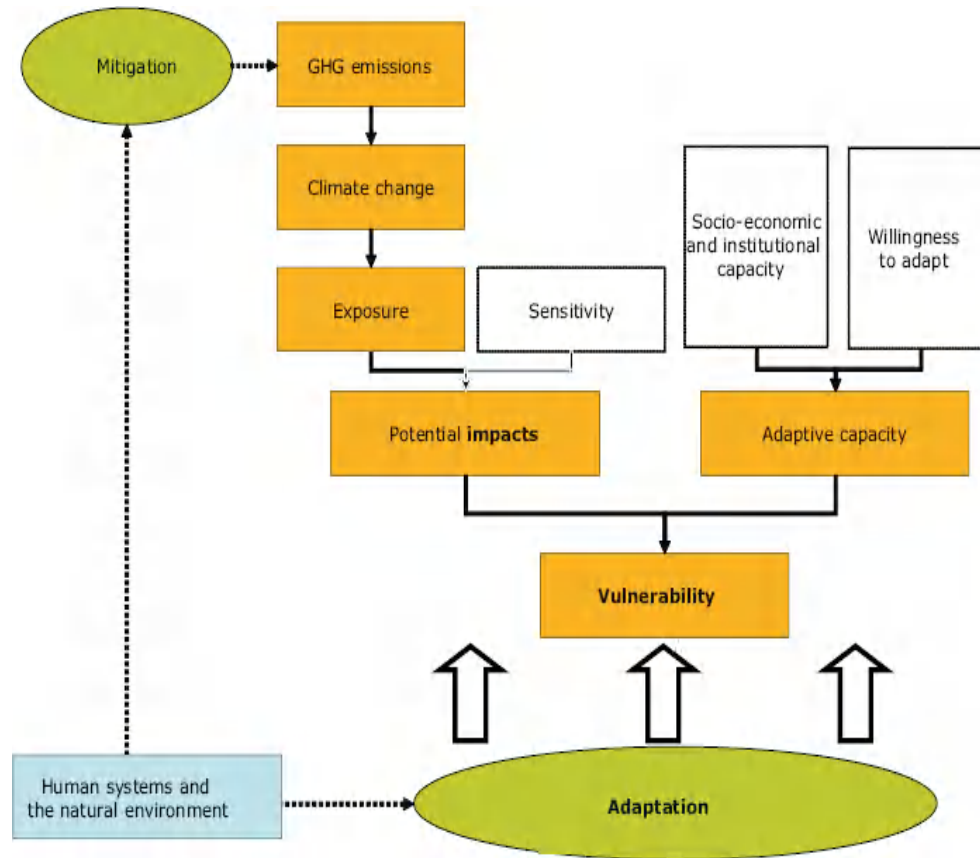# Interrelationship between climate change and tourism

1. **Tourism is heavily impacted by climate change.**

   ➔ **Adaptation strategies**

2. **Tourism significantly contributes to climate change.**

   ➔ **Climate action** (mitigation)

Interrelationship between adaptation and mitigation

Source: Isoard et al. 2008

Climate is a tourism resource!

40º in the shade ??

Extreme weather events

Bahamas, September 2019

Climate change influences tourism through …

- **Direct impacts**
  (Temperatures, precipitation, extreme weather events)

- **Indirect impacts**
  (Effects on landscape, biodiversity, bodies of water …)

Physical

Indirect climate impacts

Climate change influences tourism through ...

- **Direct impacts**
  (Temperatures, precipitation, extreme weather events)

- **Indirect impacts**
 (Effects on landscape, biodiversity, bodies of water ...)

Physical

- **Adaptation measures of other sectors**
  (Agriculture, forestry, water management ...)

- **Mitigation measures** (e.g. energy taxes, cost of transport)

- **Changed image/attractiveness of destinations**
  (e.g. domestic holidays versus long-haul travel)

- **Shift of tourism flows** (spatial, seasonal)

- **Overall socio-economic & political risks** (e.g. less disposable income, political unrest, climate refugees ...)
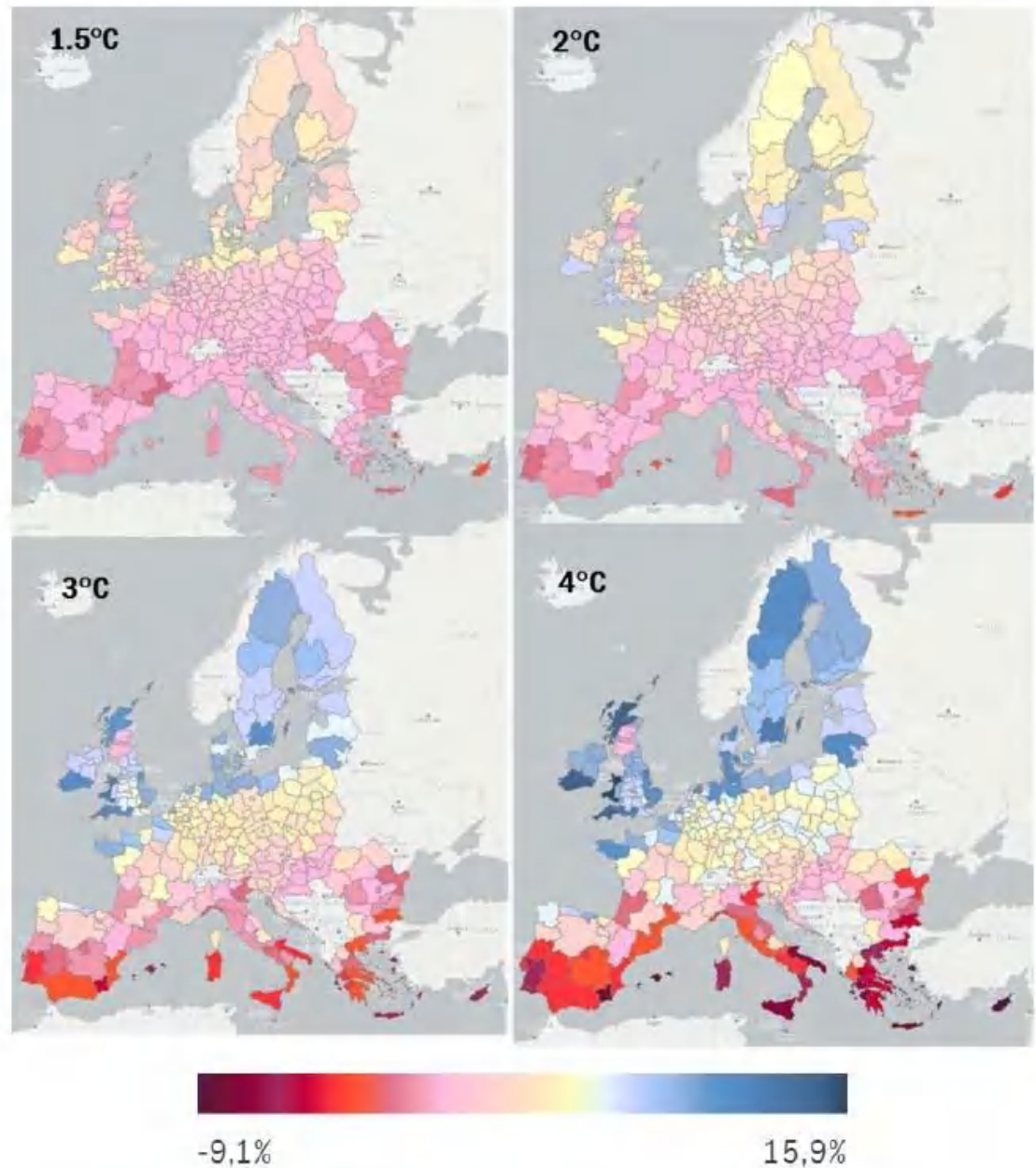
Social systems

Infrastructural adaptation measures

Coastal protection on the island Sylt

Vulnerability assessment
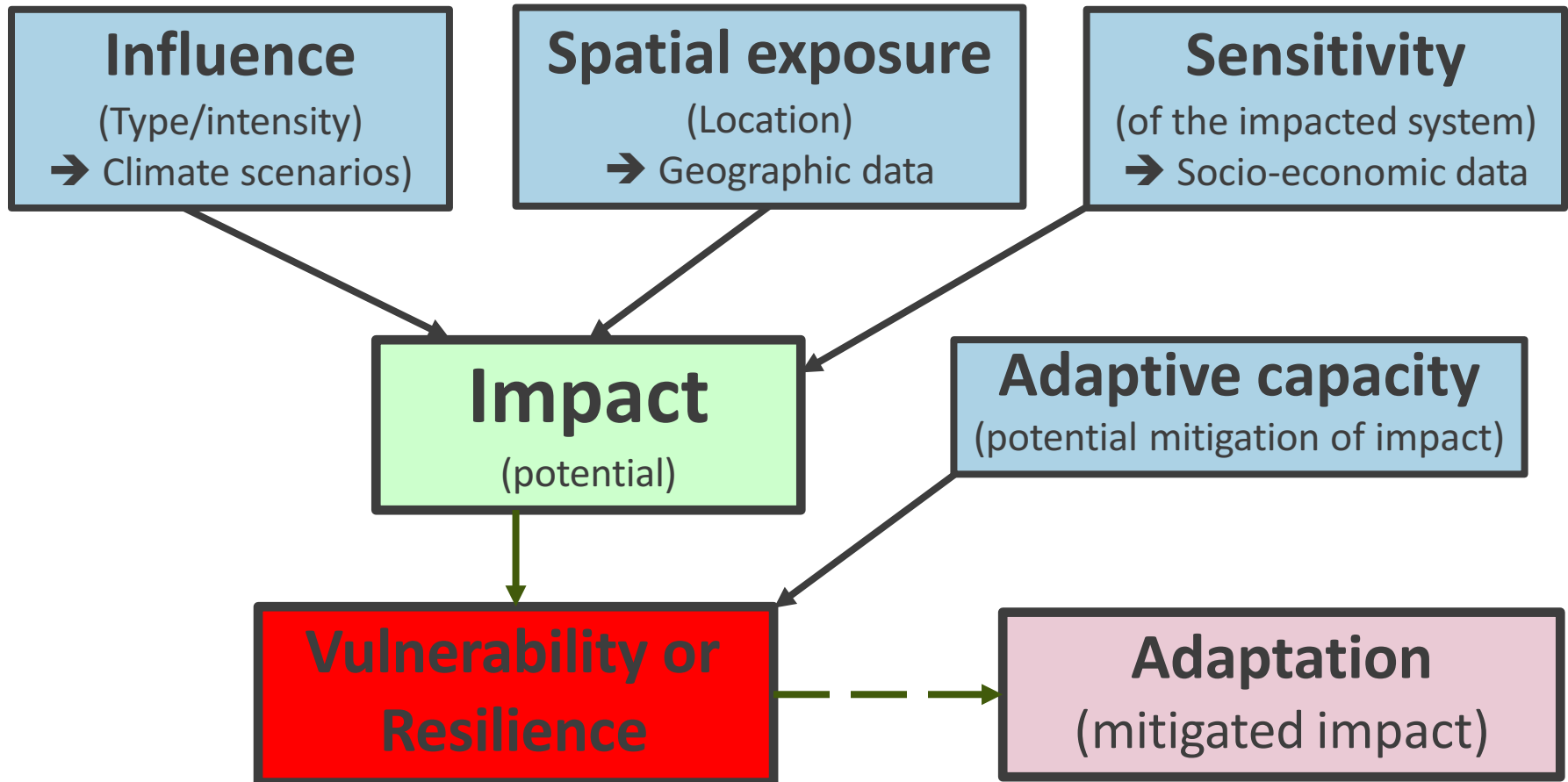
Tourism Climate Index: Spatial shifts of tourism flows

-9,1%   15,9%

Source: JRC analysis. The values shown refer to the RCP8.5 emission scenario.

Source: Joint Research Centre 2023

Tourism Climate Index: Seasonal shifts

European Union

● +1.5°C ● +2°C ● +3°C ● +4°C
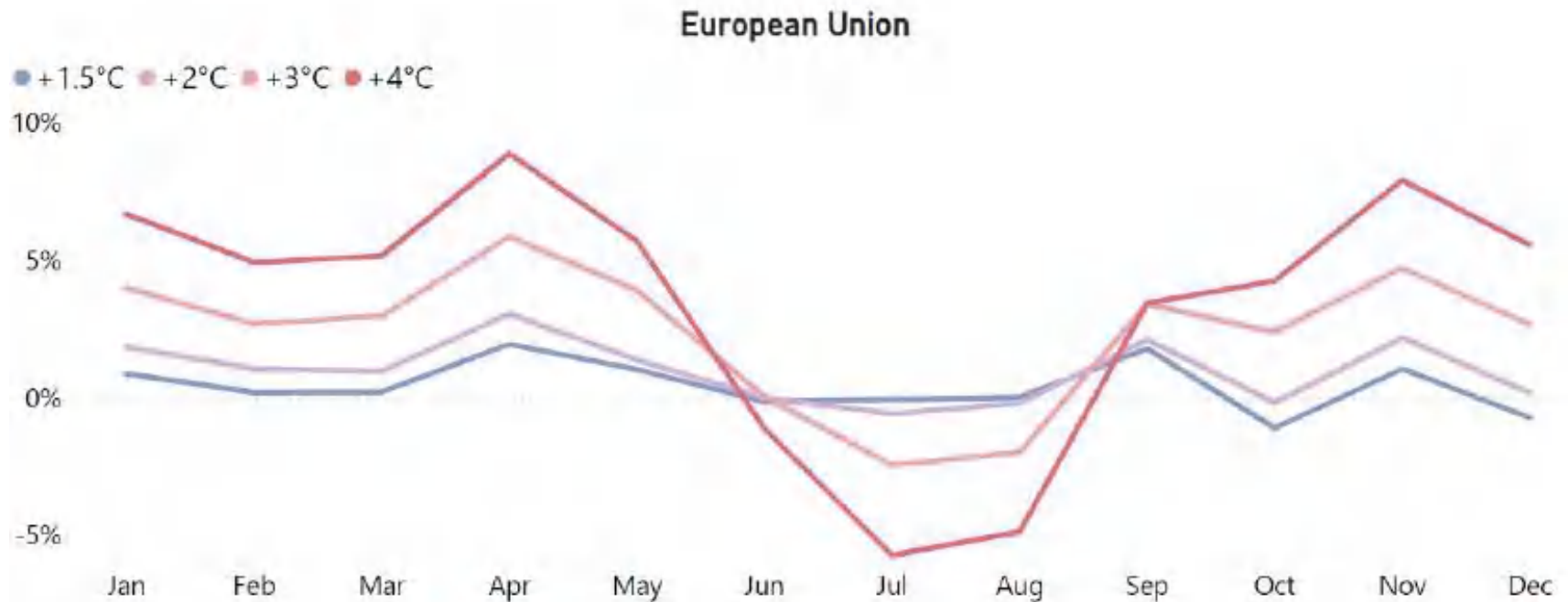
Source: JRC analysis. The projected European monthly tourism demand was obtained by summing up across the regions and countries the projected evolution of the regional tourism demand, in a given month. The values shown refer to the RCP8.5 emissions scenario.

Source: Joint Research Centre 2023

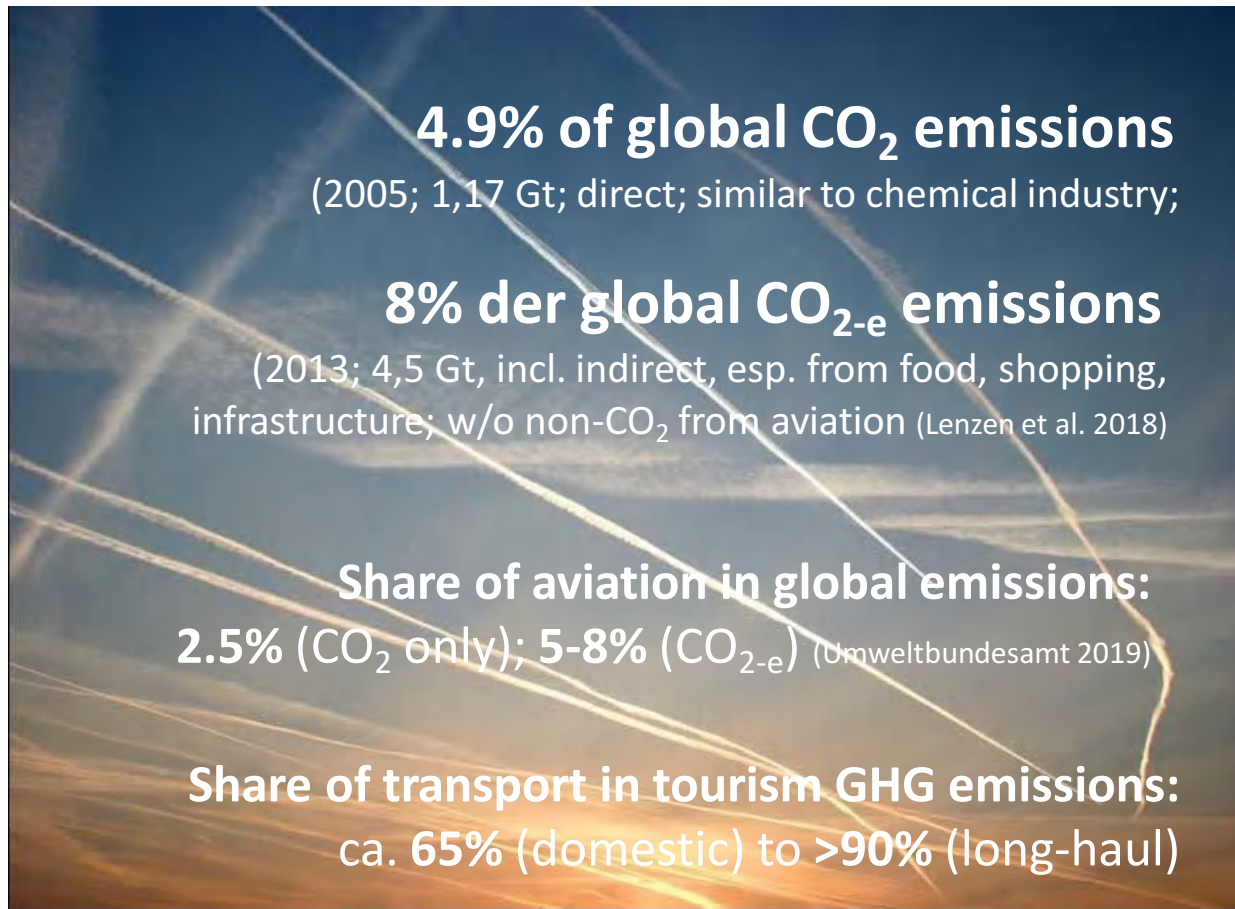# Interrelationship between climate change and tourism

1. **Tourism is heavily impacted by climate change.**

   ➔ **Adaptation**

2. **Tourism significantly contributes to climate change.**

   ➔ **Climate action** (mitigation)

Tourism's contribution to climate change

4.9% of global CO_2 emissions
(2005; 1,17 Gt; direct; similar to chemical industry;

8% der global CO_{2-e} emissions
(2013: 4,5 Gt, incl. indirect, esp. from food, shopping, infrastructure; w/o non-CO_2 from aviation (Lenzen et al. 2018)

Share of aviation in global emissions:
2.5% (CO_2 only); **5-8%** (CO_{2-e}) (Umweltbundesamt 2019)

Share of transport in tourism GHG emissions:
ca. **65%** (domestic) to **>90%** (long-haul)

Tourism's contribution to climate change

Ca. 50% of passenger traffic volume and associated emissions in Germany are leisure- and tourism-related!

Source: DLR et al. 2020

Examples of ZENAT research projects

1. **Measuring tourism sustainability on national level: The Tourism Sustainability Satellite Account for Germany**

2. **Climate-friendly travel on medium distances in Europe**

Methodology

National (economic) accounts (NA)
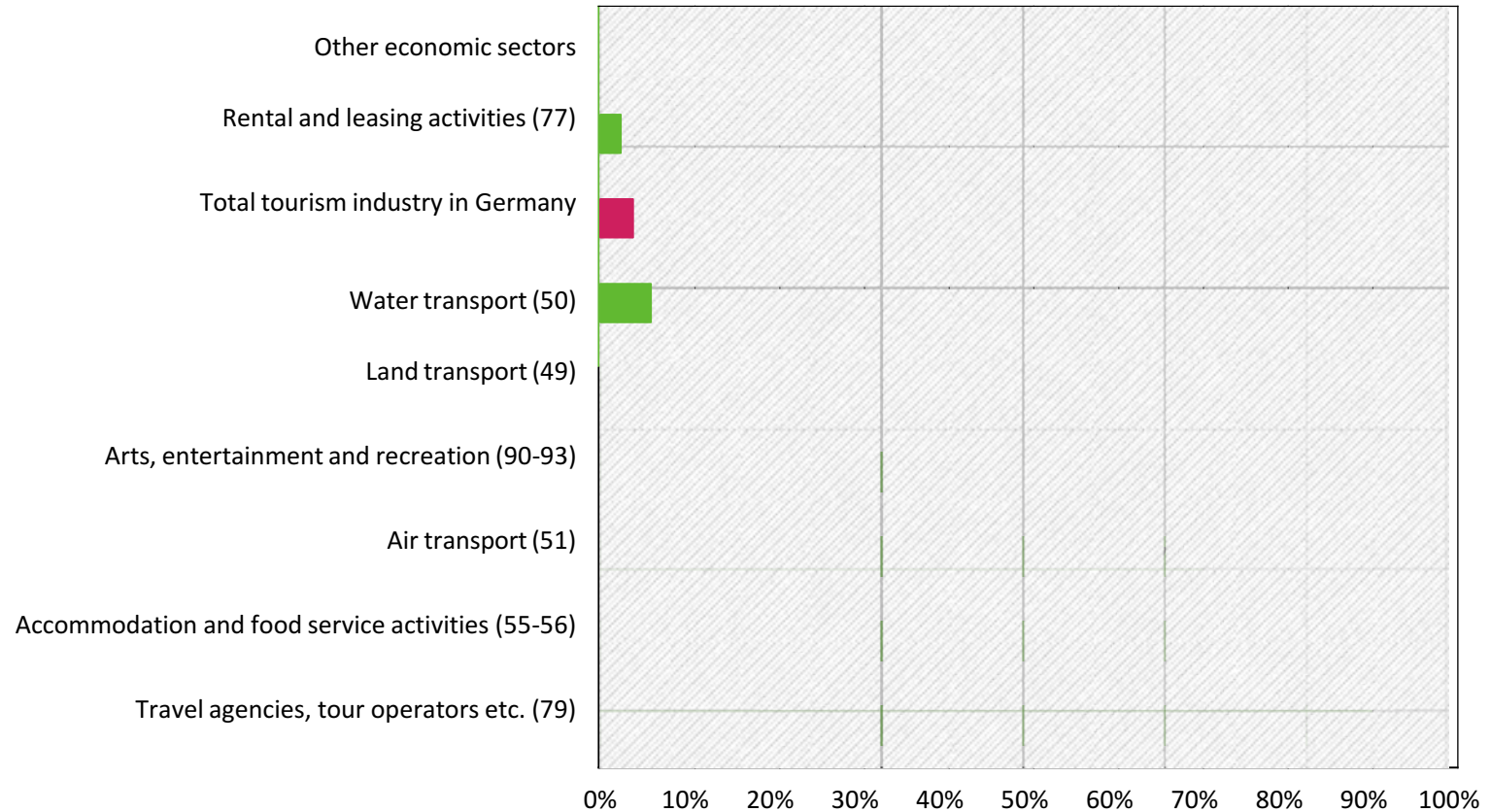
⬇

Tourism Satellite Accounts (TSA)

+

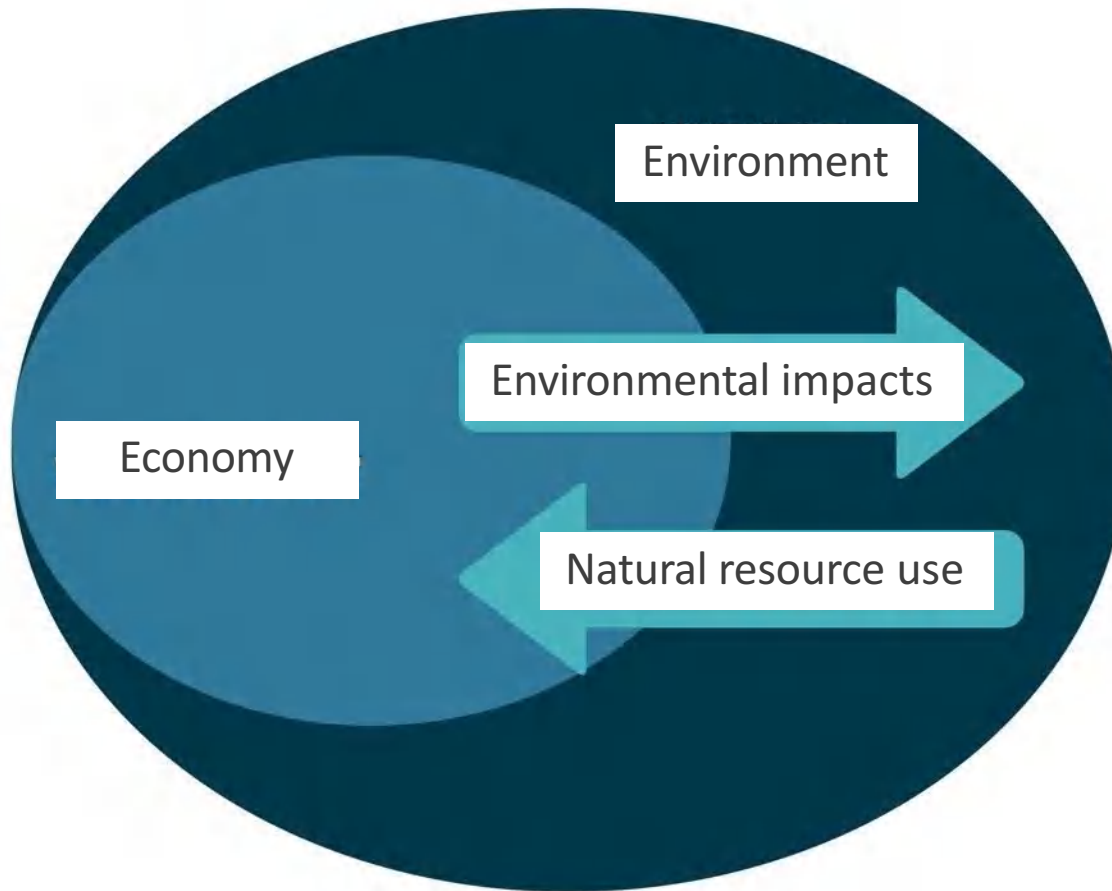Environmental-Economic Accounts (EEA)

=

TSSA

Tourism quotas per economic sector

(by NACE categories; % of GVA)

Source: DIW Econ/ZENAT 2022

# System of Environmental-Economic Accounting (SEEA)

also possible for **socio-economic output & analyses** (e.g. salaries, working hours)

System boundaries

- Germany as a **tourism destination** and location/headquarter of tourism companies
  - ⇨ **Production-oriented approach** / **Residence concept**

- Tourism impacts **within German** borders (**Territorial concept**)

- *Exception:*
  Flight emissions are accounted for until 1st landing abroad

- *what is missing:*
  Private automobile emissions
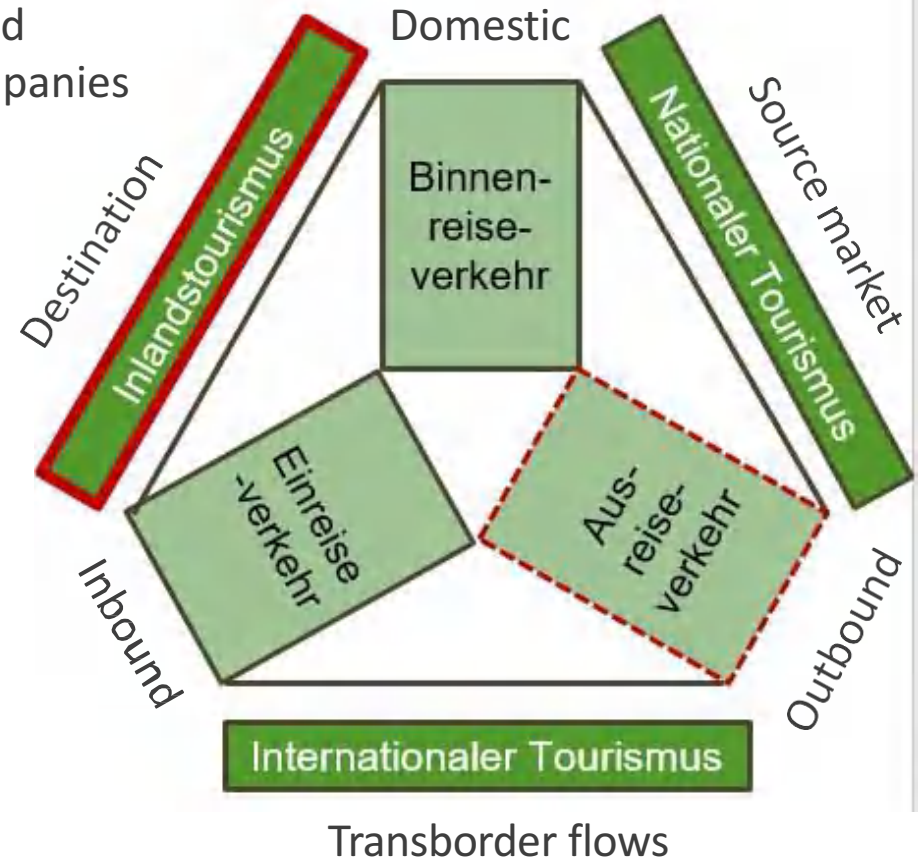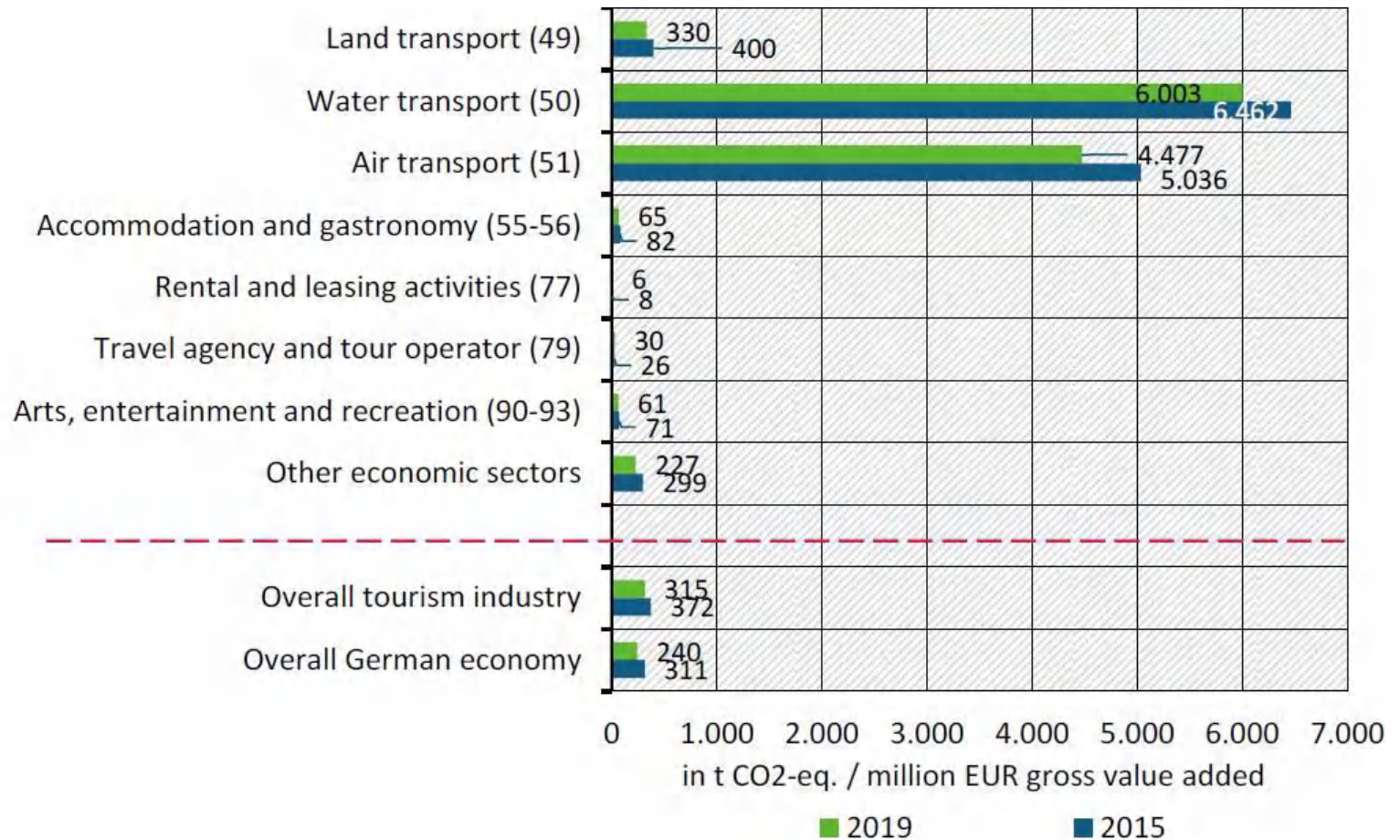
Tourism-induced greenhouse gas emissions
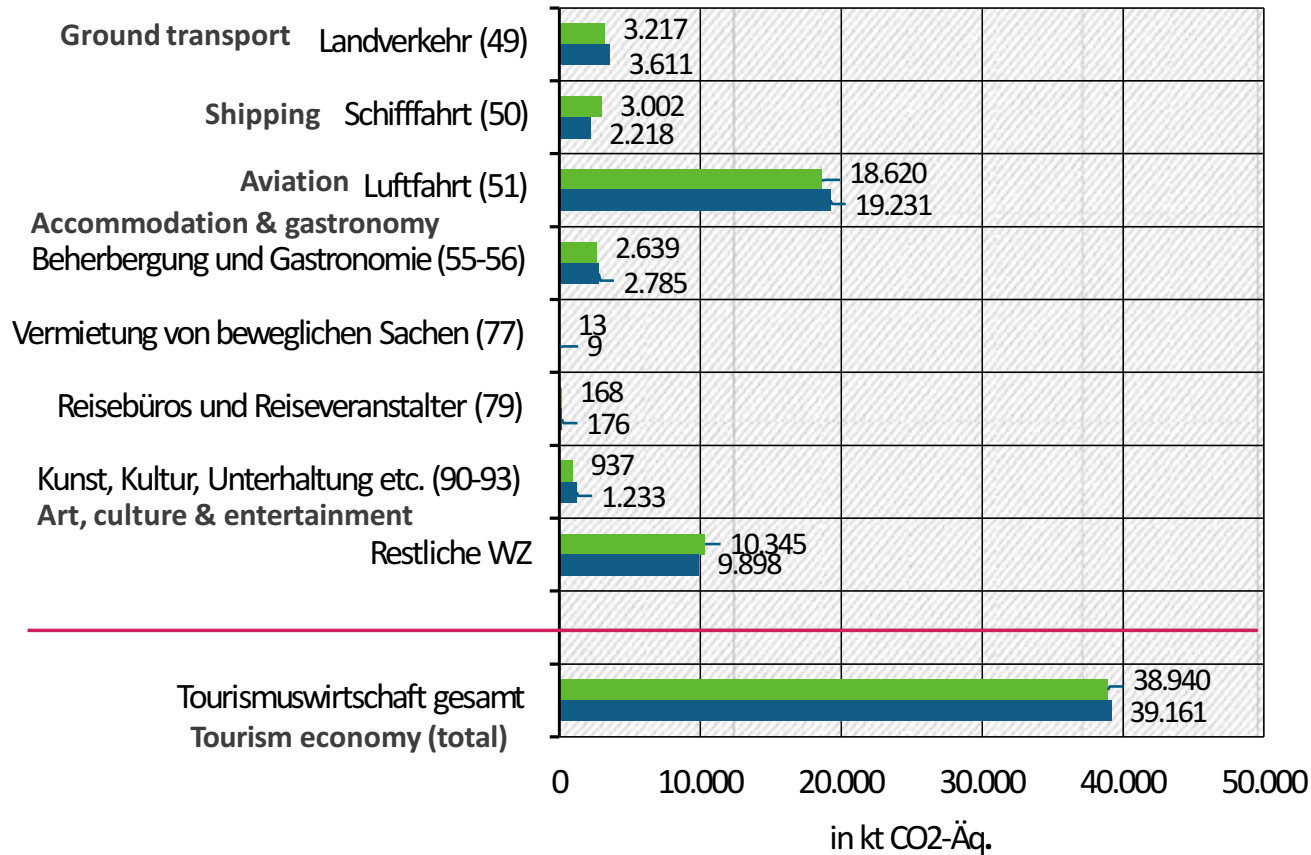
5.2% of GHG emissions caused by the German economy overall

Source: DIW Econ/ZENAT 2022
(incl. energy-related upstream emissions)

GHG emissions intensity of tourism

Source: Own calculations and illustration based on Statistisches Bundesamt (2021a, c).

Usefulness

Monitoring of the sustainability performance of the German tourism industry over time	**Provision of benchmarks for tourism companies and destinations** (e.g. for certification systems)
Verification whether political goals (emissions reductions) have been attained	**Enables comparisons with other economic sectors & subsectors** (carbon intensity)

Examples of ZENAT research projects

1. **Measuring tourism sustainability on national level:**
   The Tourism Sustainability Satellite Account for Germany

2. **Climate-friendly travel on medium distances in Europe**
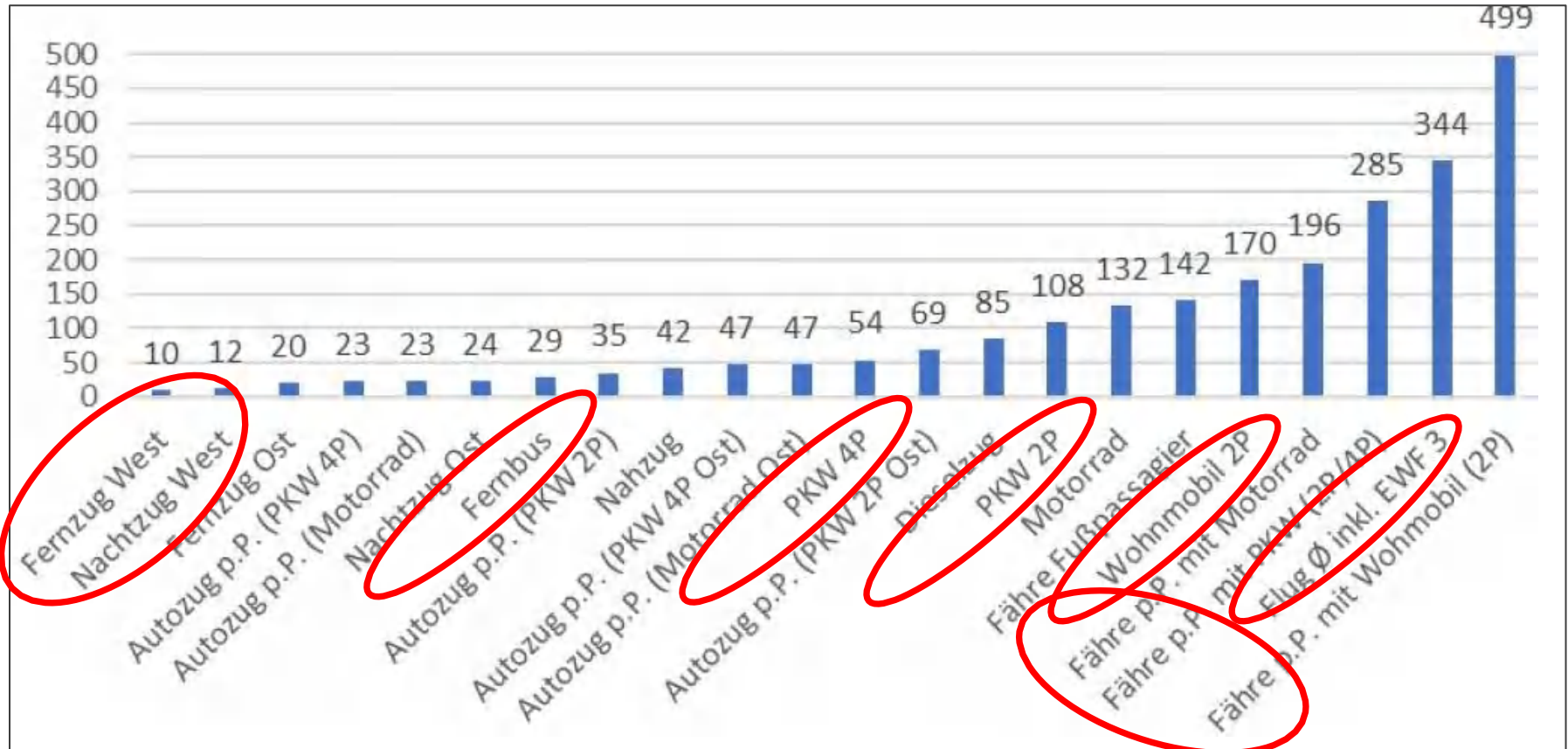
Modal shift

LIFT Klima project

Climate protection on medium distances: Plane- and car-free travel in Europe – 22 destinations

Modal shift: Example of Croatia

GHG emissions/pkm per means of transport

Source: ZENAT et al. 2023

Comparison of travel times by means of transport

	Reisezeit in h				Entf.
	Rail	Car	Bus	Plane	km
London	8,4	16,5	18,6	5,3	742
Aquitaine	9,6	24,2	20,1	7,9	1070
Slowenien	10,8	11,4	14,8	6,7	668
Toskana	11,6	18,5	16,5	5,8	826
Ermland-Masuren	12,5	19,4	17,5	7,0	786
Rom	13,3	23,7	20,3	6,0	1048
Katalonien	13,9	29,1	23,2	5,9	1246
Schottland	14,0	31,0	29,8	6,6	1050
Region Stockholm	15,6	25,2	23,5	5,5	1058
Provence/Côte d'Azur	17,3	21,4	19,3	6,1	864
Kampanien	19,5	25,7	27,2	6,4	1192
Oslo	21,7	25,2	21,6	5,7	998
Dalmatien	22,8	23,9	21,4	6,6	982

Modal shift: Example of the Bulgarian Black Sea Coast

Requirements for long-distance rail travel in Europe

PRIORITIES

PRIORITY 1
Launch new direct international services, day and night, on existing infrastructure

PRIORITY 2
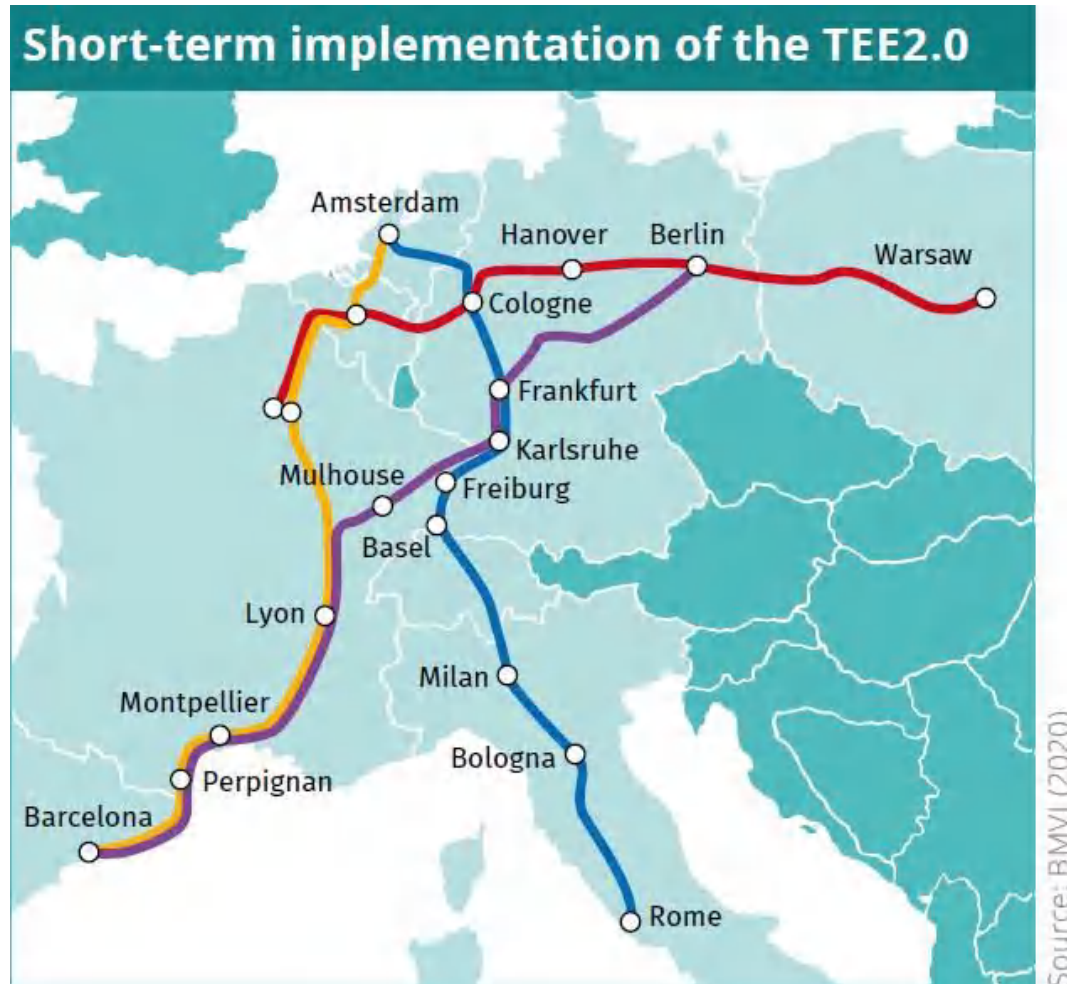Make booking of international services attractive and convenient

PRIORITY 3
Invest in cross-border infrastructure connections and key corridors

Proposals for medium-distance cross-border rail traffic

Short-term implementation of the TEE2.0

Source: BMVI (2020)

Proposals for medium-distance cross-border rail traffic (extended)

Source: BMVI 2021

Thank for your attention!