

**IT'S SCIENCE**



*Partnerships that  
make a difference*



# ***ZUKUNFTSREZEPT SDGs, WELCHE HERAUSFORDERUNGEN UND CHANCEN BRINGEN DIE SDGs DEN UNIVERSITÄTEN?***

***ANDREAS MELCHER***

***CDR - CENTRE FOR DEVELOPMENT RESEARCH  
BOKU - UNIVERSITÄT FÜR BODENKULTUR WIEN***

***WWW.CDR.BOKU.AC.AT***



**„We have to go out of the comfort zone“ M. Palmer NABS (SFS) 2011**



# Overview

- Introduction
- BOKU CDR sustainable and global perspective
- BOKU and SDGs
- Life Science Universities and SDGs
- Best practice example from Burkina Faso
- Take home message



Why are the SDGs so important for all of us?

A decent life for all!

A positive thinking narrative ... and especially the next generations ...

# SUSTAINABLE DEVELOPMENT GOALS



# What are the main challenges and chances for Universities and SDGs?



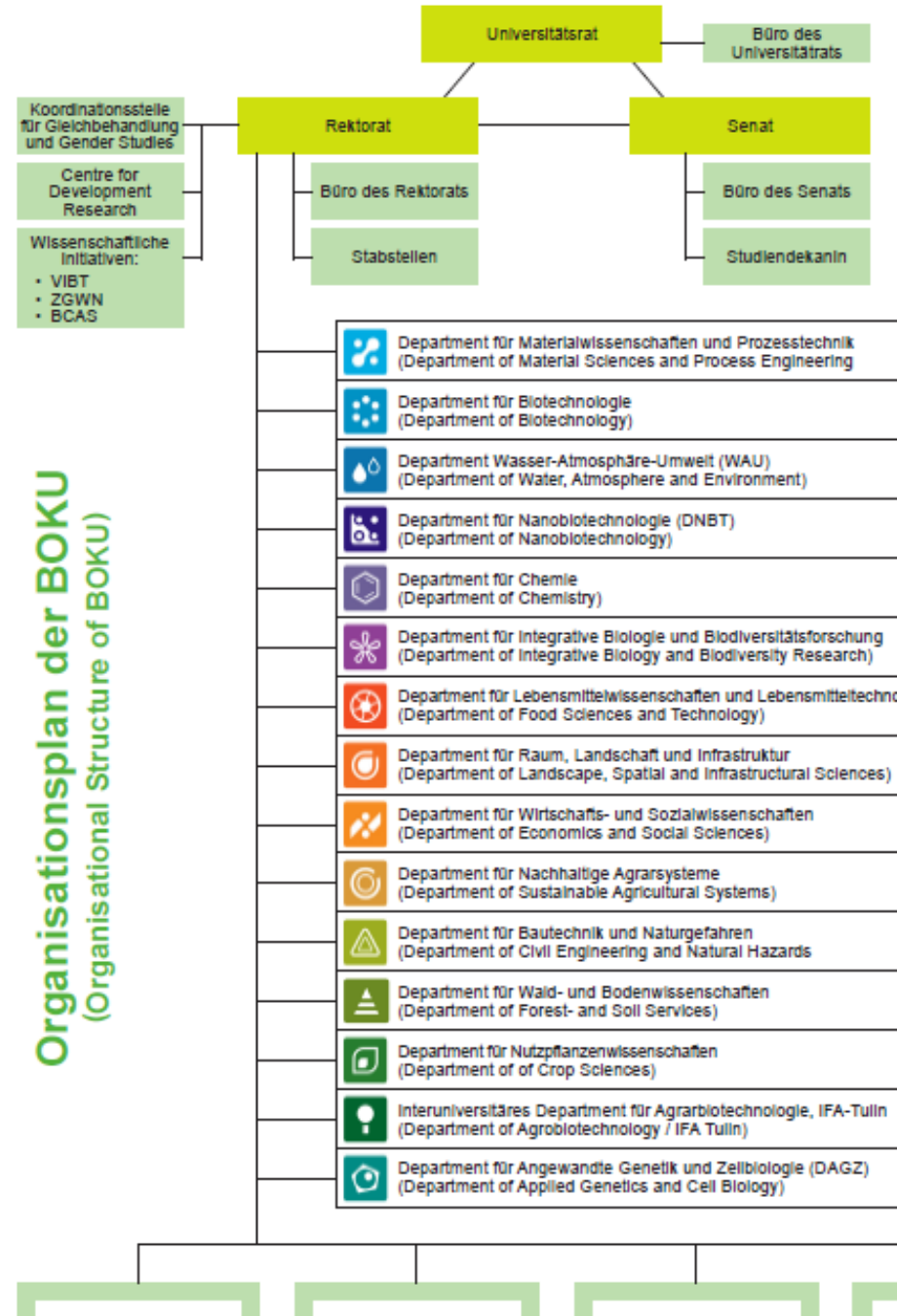
- *Times of **changing** development paradigms*
- ***Socio-ecological Transformation** in global North and South*
- ***Scarcity** of funds. national, EU, International*
  
- ***Coordination of interdisciplinary research calls:***
  - *Research and Development; Higher Education*
- ***Publishing** scientific and policy documents*
- ***Teaching** – development and transition management*
- ***3<sup>rd</sup> Mission, Facilitation** and Networking*
  
- ***This is a clear SDGs mandate for BOKU !!!***





# The Centre for Development Research

- is a **cross-cutting unit** within BOKU Vienna
- has a core team and more than **30 partner scientists** throughout BOKU, as well as **international collaborators**
- specializes in **development research** and higher **education (teaching)**
- works at the interface: **development cooperation to strengthen knowledge transfer** and facilitate mutual, evidence-based learning between experts in science and practice

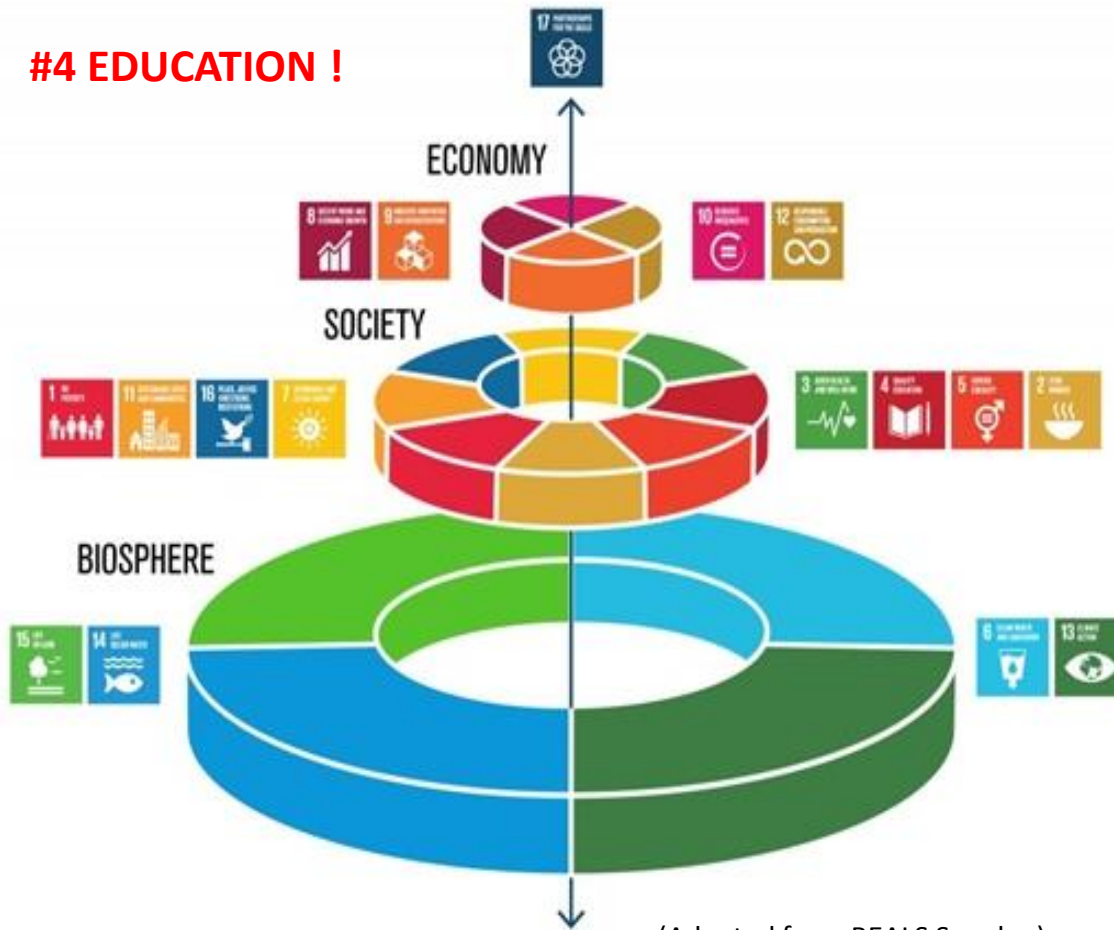


# Make SDGs and Agenda 2030 real

## Integration at BOKU CDR: 11 Departments, 17 Units



### #4 EDUCATION !



(Adapted from REALS Sweden)

- CDR
- Center for Global Change and Sustainability
- Center for International Relations (CIR)
- Quality Management Unit
- Economics and Social Sciences (WiSo)
  
- Sustainable Agricultural Systems
  - Agrobiotechnology, IFA-Tulln
  - Food Science and Technology (DLWT)
- Forest- and Soil Sciences
- Water - Atmosphere - Environment (WAU)
  
- Integrative Biology and Biodiversity Research (DIB)
- Landscape, Spatial and Infrastructure Sciences
- Civil Engineering and Natural Hazards



# Objectives of CDR's knowledge management mechanism

**researchers**  
partners, collaborators, ...

**NGOs**  
donors, experts, ...

**decision makers**  
politicians, ...

**public**  
lay public, students ...

**platform** for efficient and comprehensive scientific collaboration

increased **visibility** to outsiders

increased visibility to insiders

increased **network interactions**, possibilities for collaboration, better access to experts

increased impact

Spread **scientific information**



**knowledge gain**



**societal change**



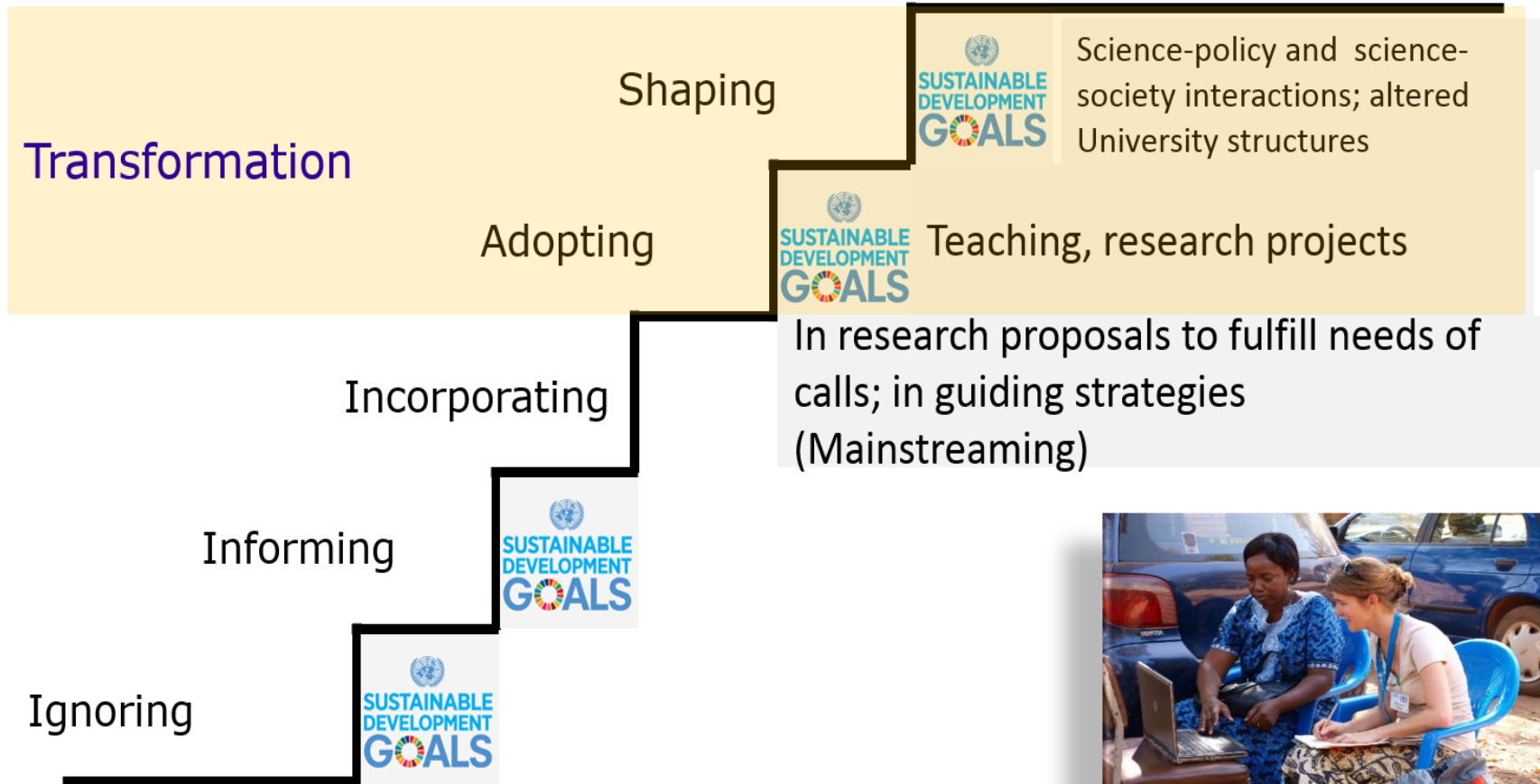


# BOKU and SDGs

# The ladder of SDG implementation for Universities (after Gratzner et al. in prep.)



See also “Entwicklungsplan und Leistungsvereinbarungen”



# BOKU Entwicklungsplan 2018

genehmigt vom Universitätsrat am 05. Dezember 2017

Zitat:



„Die Universität für Bodenkultur **bekannt sich** als „Universität des Lebens“ dazu, **zur Erreichung der SDGs** auf nationaler und internationaler Ebene beizutragen. Sie nimmt diese gesellschaftliche Verantwortung durch:

- (a) **Initiierung und Begleitung** von gesellschaftlichen Transformationsprozessen,
- (b) **Forschungsbeiträge** zu den SDGs und ihrer Umsetzung und
- (c) **forschungsbasierte Lehre** zu nachhaltiger Entwicklung wahr.

Die kontinuierliche Verfolgung der SDGs, **die alle BOKU Kompetenzfelder in hohem Maße betreffen**, soll dazu führen, dass **inter- und transdisziplinäre universitäre Aktivitäten und Vernetzungen** weiter gefördert und **spezifische Schwerpunktsetzung** zu ausgewählten Zielen der SDGs - auch mittel und langfristig - **vertieft werden.**“



# SDGs @ BOKU



gW/N SDGs  
**UniNetz BOKU**

CDR SDGs  
**International #2, 17**

## Koordination an BOKU

ÖH, BNE, DNAS, Ethikplattf.,  
Trafo, Energiecl., GCUA  
Allianz NH Univ., **CCCA #13**,  
UBA, Ministerien, NGOs etc.

**BOKU SDG  
Working Group**  
CDR, gW/N, Dep., ZIB  
und Partner\_innen\*

**Third Mission**  
Patenschaften, Scholars,  
Citizen Science, LLL,  
Ministerien-Arbeitsgruppen

**Events 2018**  
GCUA SDGs WS, CDR #2  
WS, Energiecl. #7, BMEIA  
Energie WS, CCCA-Events

**BOKU Integration**  
Forschung, Lehre  
und Administration

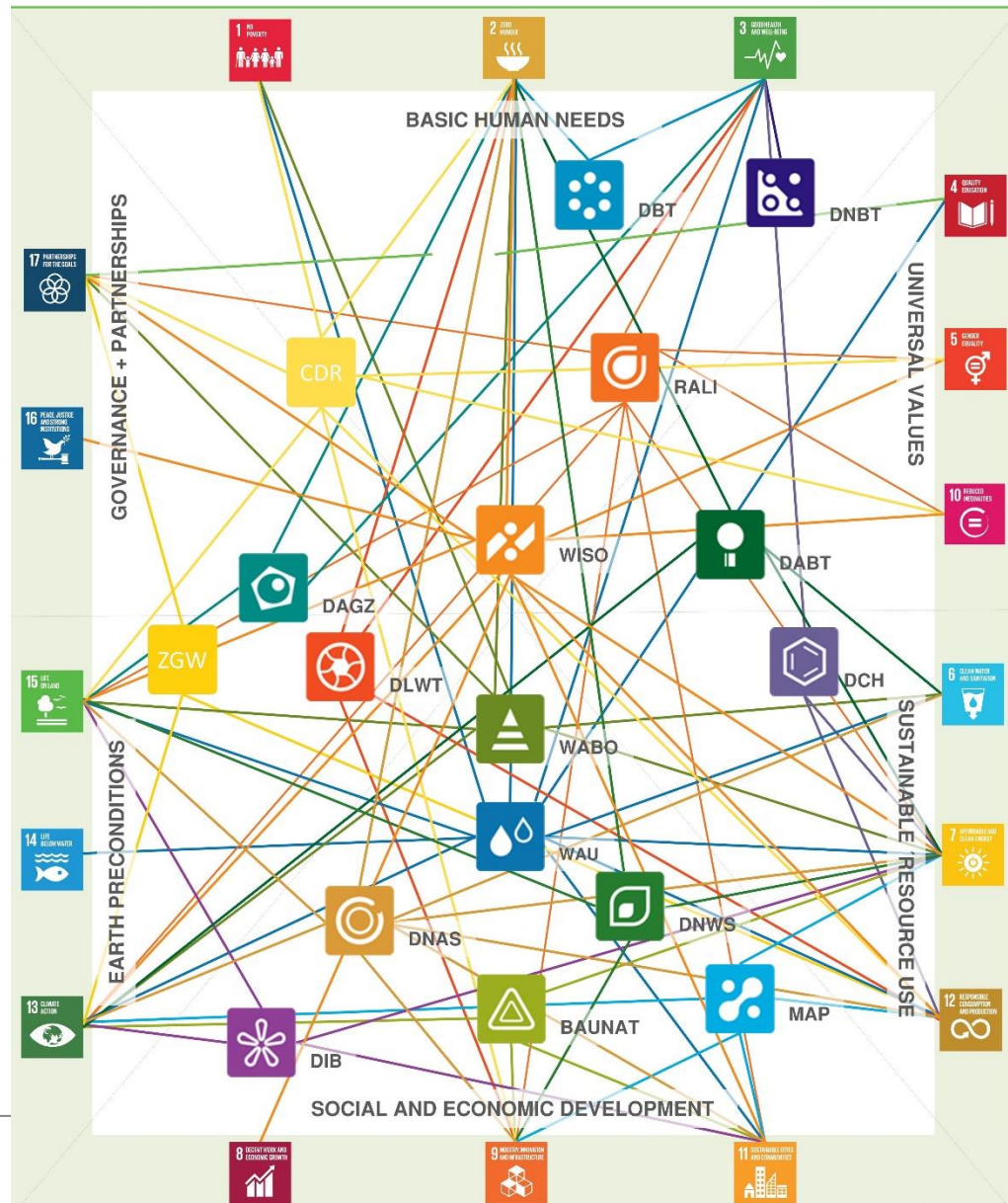
\* **BOKU AG/UniNetz**: Gratzer, Lindenthal, Melcher, A. Muhar, Kromp-Kolb, Becsi, Calderon-Peter, Fiebig, Glössl, Hinterstoisser, Linser, Langergraber, R. Mansberger, Pillei, Österreicher, Pletterbauer, Pülzl, Radinger-Peer, Resch, Scherb, Schmutz, Stöglehner, Vacik, Wurzinger, Zollitsch ...

**Rektorat**: Fehr, H. Mayr, Baumgartner, Obinger (angefragt)

*SDGs@BOKU\_Skizze03.1-140218*

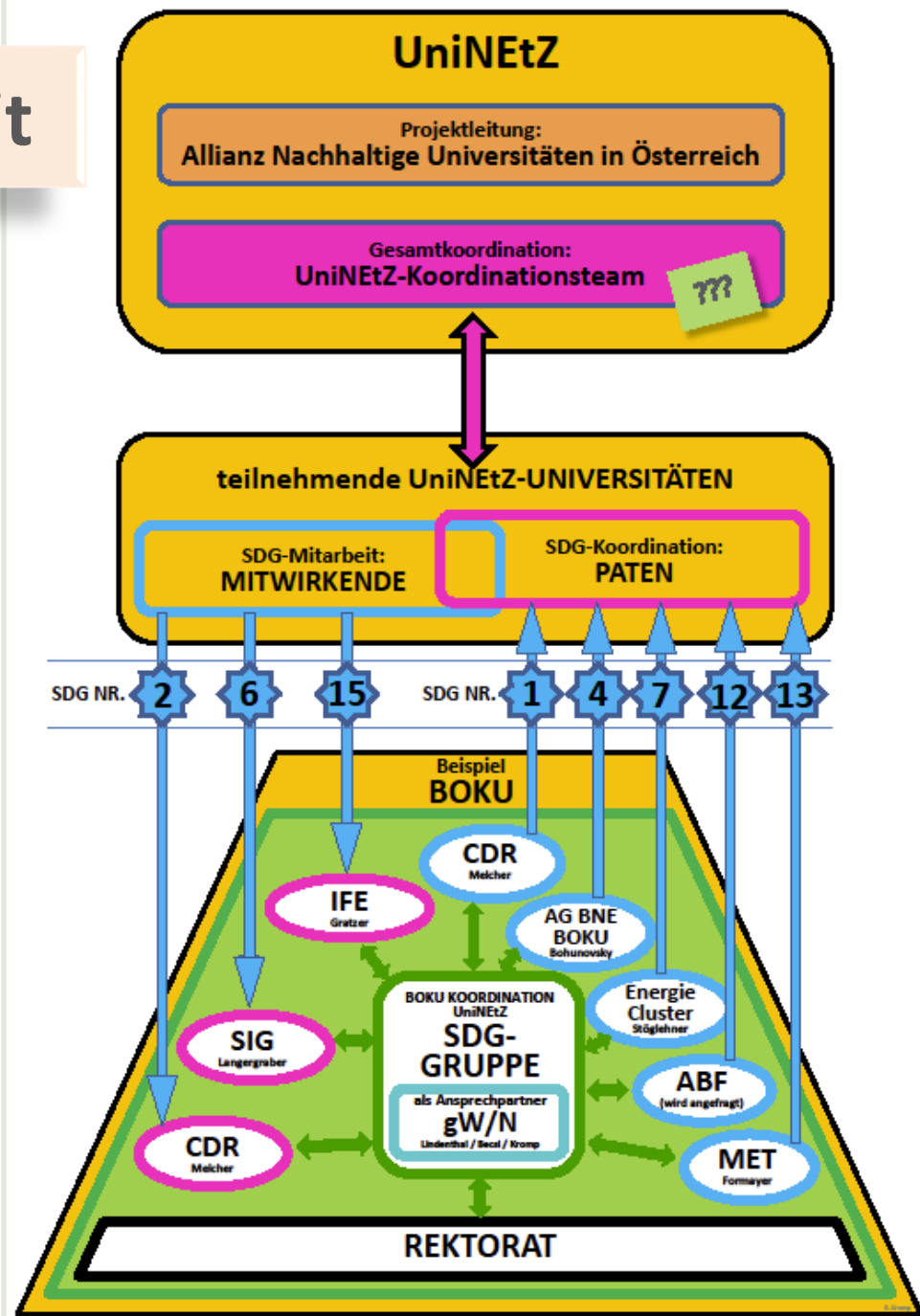
# BOKU SDGs MAPPING 2 2017

by  
BOKU SDGs AG



# Projekt UniNEtZ in Arbeit

- ein von gegenwärtigen **15 österr. Universitäten** gemeinsam erarbeitetes Projekt zu den SDGs
- in **Wahrnehmung der gesellschaftlichen Verantwortung** der Universitäten
- soll in den „**Leistungsvereinbarungen**“ verankert und über diese finanziert werden





# The role of Science for Implementing the SDGs

**To encourage interdisciplinary science**  
to increase the knowledge base needed for efficient and coherent sustainable development pathways.

**To prepare problem- and solution oriented synopses** in order to better understand, analyse and cope with different types of potential conflicts concerning the SDG implementation process.

**To establish platforms for free and open data sharing with transparent metadata** that are available to all stakeholders, and can also be used as basis for creating flexible indicator frameworks.

**To foster increased international collaboration and exchange of knowledge** and scientific capacity on the global level by intensifying such projects as Future Earth.

**To reinforce the science-policy process** by building on good examples such as the UN-SAB (United Nation Secretary-General’s Scientific Advisory Board) national science advisors and the committees that have been set up to ensure that the best scientific knowledge is available to decision-makers.

**To develop more partnerships** between academia, business, civil society and governments in order to find innovative sustainable development solutions through networks such as SDSN.

**To understand the implementation of the SDGs as a continuous learning process** that needs close and regular scientifically based revision.



Future Earth 2016, from Gratzner 2017



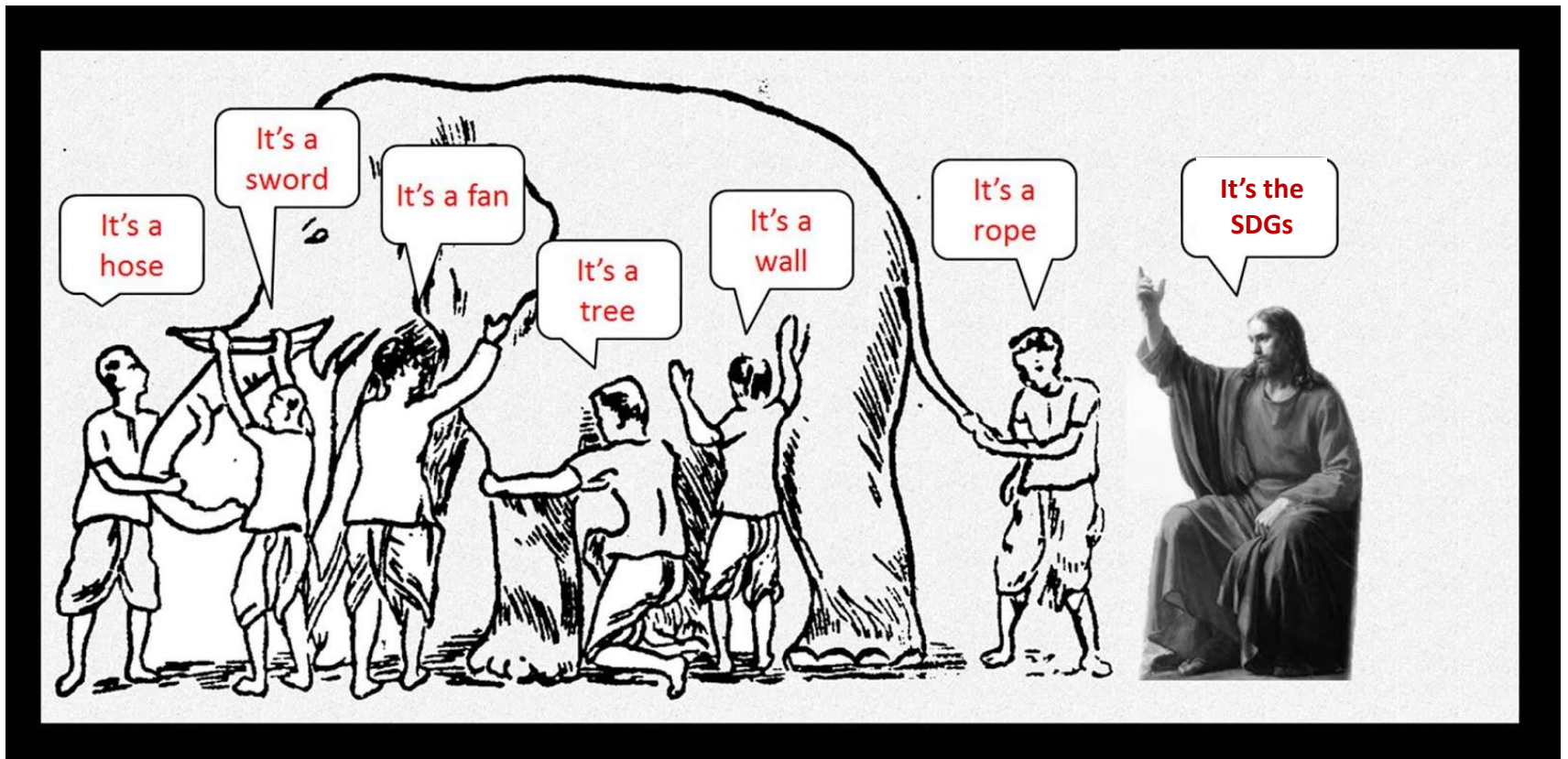
# SDGs in Teaching and Research

# Interdisciplinary BOKU Lectures:



- **Applied development** research I and II
- **Negotiating change:** Simulating an international conference for sustainable development
- **Participatory methods** in development research and practice (in Eng.)
- Facilitation ....
- **Sustainability transitions** in agro-food systems
- Interdisziplinäres Projekt: Development research - **field applications** (Summerschool)
- **Security training** for studying and field research abroad – raising awareness for critical and **emergency situations**
- and ... more to come

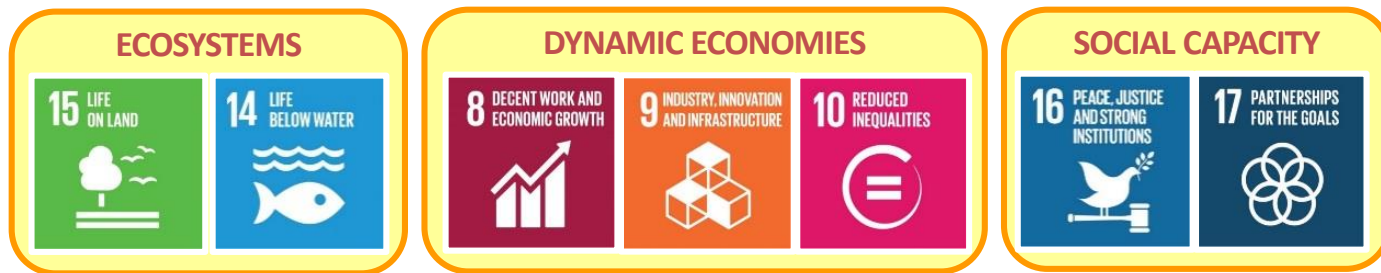
# Conceptualizing the SDGs, after Obersteiner 2017



# four great transitions



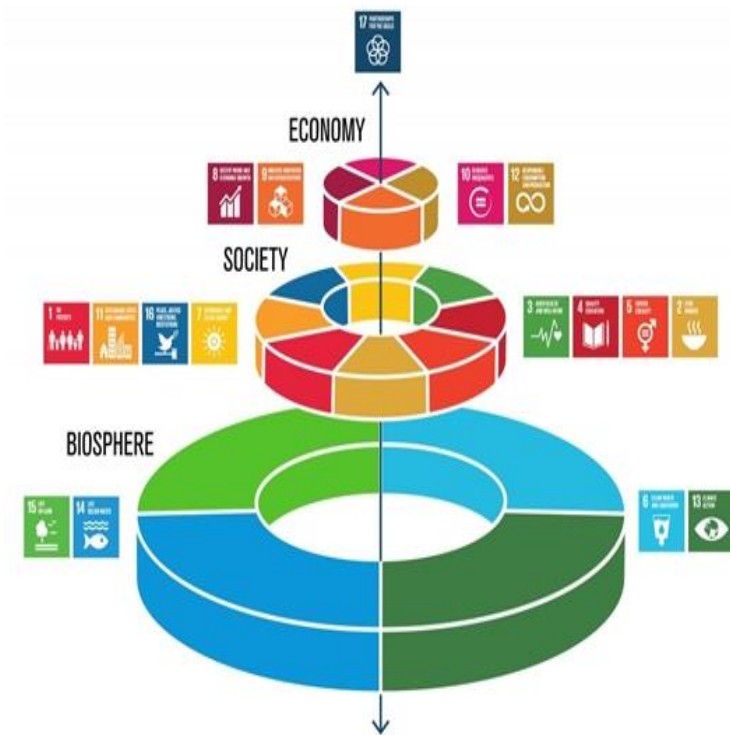
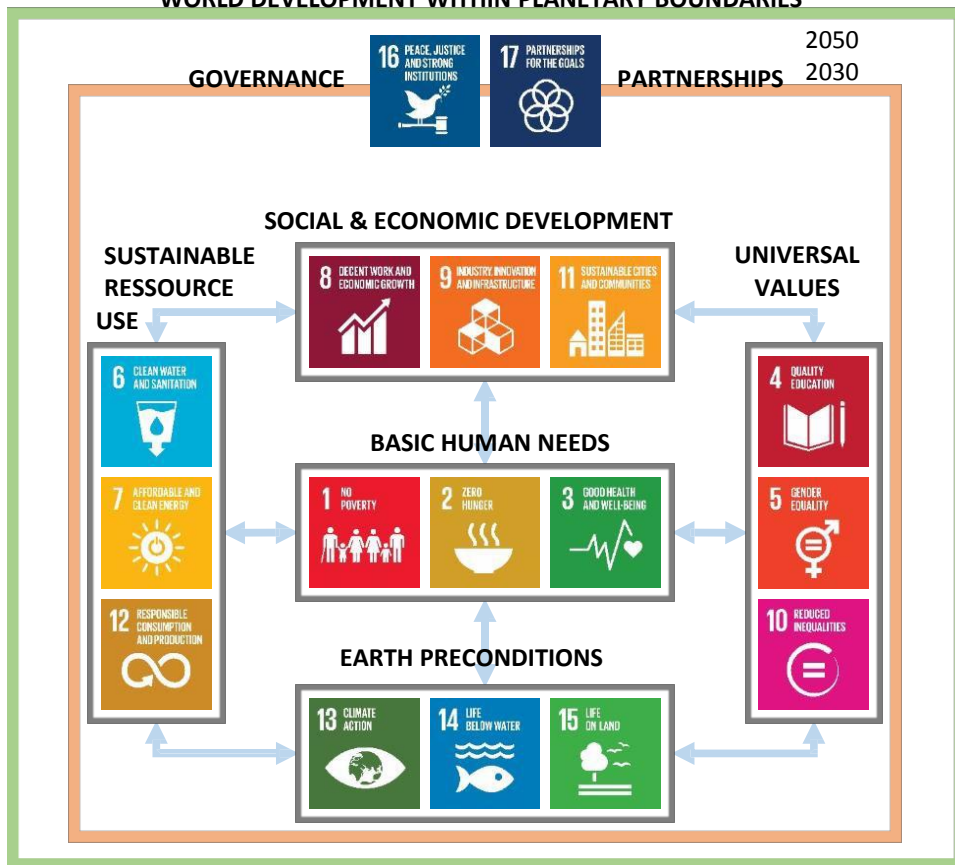
## three enabling elements



Obersteiner 2017 IIASA



WORLD DEVELOPMENT WITHIN PLANETARY BOUNDARIES



IIASA Figure 2. **The World in 2050 [TWI2050]** framework for Sustainable Development Pathways (SDP) of attaining the SDGs within Planetary Boundaries by 2050. The SDGs are universal, holistic and inter- dependent, thereby indivisible. The indicative clustering of the SDGs proposed here, has the sole purpose of emphasizing the inter-dependence between human wellbeing, world development and Earth system stability (Nakicenovic et al. in prep).

(Adapted from REALS Sweden)

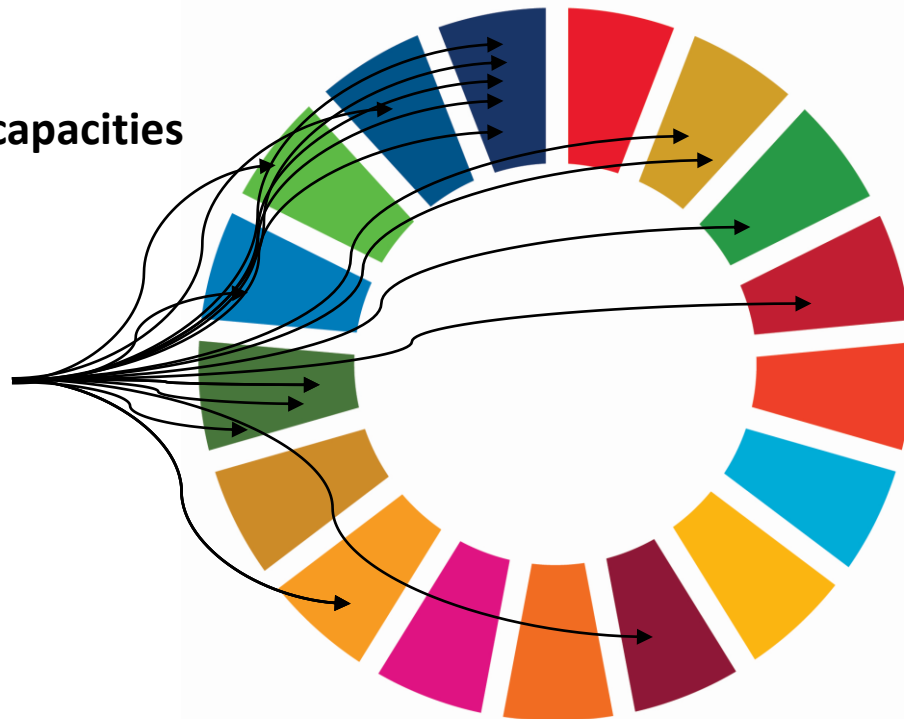


## Agenda 2030 – major claims and challenges

### Cross cutting goals and targets, e.g. SDG 4

2.4, 2.a, 3.d, 4b, 6a, 8.10, 11.3, 12.a, 13.1, 13.3, 13b, 14a, 15c, 16a, 17.1, 17.8, **17.9**, 17.18, 17.19

**Strengthen human capacities**



# Lesson learnt from students

## RELATIONS BETWEEN SELECTED SDGs



## Implementation of the United Nations Sustainable Development Goals at Life Sciences University (BOKU)



Vaca S., Schwarzinger D., and Sanon V.-P.

<sup>1</sup> MSc NARMEE <sup>2</sup>Bsc, Environmental and Bioresource management; <sup>3</sup>MSc, Center for Development Research (CDR)

### Introduction:

In 2015, the United Nations Assembly adopted an ambitious and transformational agenda, with 17 goals and 169, targets to free the world from poverty, hunger, disease and ensure a well-being for all people within planetary boundaries. This agenda, built on the Millennium Development Goals aim at improving their achievements and continuing their incomplete results. All the Stakeholders have been consulted to elaborate an integrated and indivisible and balanced agenda. Thus, the achievement of these goals depends on the implementation by all the partners. In this poster we focus on University's role. Based on qualitative interviews with Boku scientists and students, our seminar work aims at (i) how SDGs are reflected at BOKU; (ii) their meaning for scientists and students; their impact in terms of policy change or paradigm shifts.

### Methodology:

This study is based on a qualitative approach. Data have been collected through interviews with six professors and 10 students who already know the SDGs, from different institutes. The interviews have been recorded as videos. Then we used software like F4 and MaxQDA for the transcription, the coding and the analysis of the data.

### Results:

From the total professors contacted we received 70% negative answers on our request to do interviews about SDGs. On the other hand we got just 10% negative answers from students.

The general perceptions on the SDGs communication channels was that lectures had a predominant role (Fig. 1).

Additionally we evaluated the role of awareness, behavior change, workshop/events and research which has the less reflection.

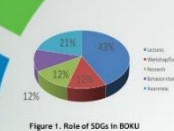


Figure 1: Role of SDGs in BOKU

We linked the thematic focus of research/studies from students and staff members with the SDG's. Out of the 17 goals, just 10 were recognized as related to Boku from the criteria of students and Professors. At the figure on the left, we show that SDG-Number 15 (life on land), followed by Number 2 (zero hunger) were the most mentioned one's.



Figure 2: SDGs in BOKU

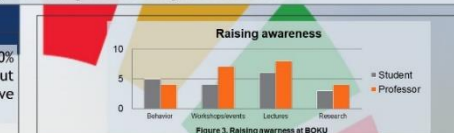


Figure 3: Raising awareness at BOKU

In order to raise awareness for the SDGs students and professors refer to the importance of lectures as the main tool. They also think that a behavior change is needed to include in daily life to achieve the Sustainable Development Goals, as the graph above shows. Several actors were named by interviewees as the main actors on SDGs at BOKU like CDR, Centre of Global change and individual professors. However, the interviews show the necessity of the cooperation of all the stakeholders in the implementation of the SDGs at BOKU: "I think there is already a network of people who raised the awareness of the SDGs"

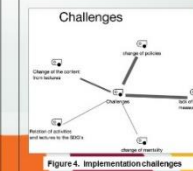


Figure 4: Implementation challenges

Even it was not the intention to identify challenges to reach the SDG's, we came along some interesting and critical thoughts about obstacles to reach the goals. For instance the interviewees are missing practical measures to implement the SDG's which are considered too big and complex to understand and manage.

### Discussion & Conclusion:

At the beginning the professors showed less willingness to talk about the SDGs than students did. This also reflects that the research at Boku is not connected enough with the SDGs, although all research topics fit with at least one of the Sustainable development goals. Analyzing 16 interviews with students and staff members linked to different departments at Boku, we conclude that lectures are seen as the main communication channels for SDGs. There is potential to improve the acknowledgement of the importance of SDGs in research. Therefore a good way to make the SDGs more visible could be to connect the departments/research to their related SDGs and intensify cooperation between departments. In order to increase the depth of knowledge on SDGs, the university could organize workshops, events which include rollups, posters, keynotes.

### Acknowledgements

The authors are thank full to the CDR for the support, Dr. Axel Mentler for his time and dedication to do the interviews possible and to the media center for the equipment and technical development.."

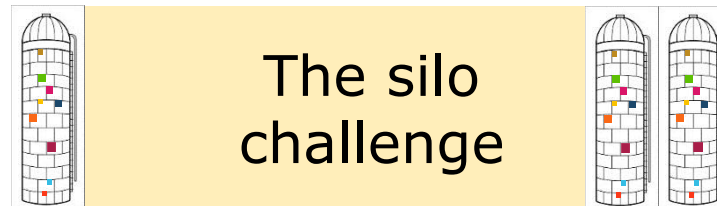
## Agenda 2030 – major claims and challenges

The SDGs are

Encompassing and  
indivisible



Intertwined and cross  
cutting



# NEW and Upcoming Research Calls Examples:



- Horizon 2020
- StartClim
- ÖAD „Earth System Sciences (ESS)“:

“NEUE AUSSCHREIBUNG FÖRdert INTERDISZIPLINÄRE FORSCHUNG ZU WASSER IN GEBIRGSRÄUMEN:

*... Die diesjährige Ausschreibung stellt das Thema Wasser in Gebirgsräumen in den Mittelpunkt. Das Thema soll in **interdisziplinärer Zusammenarbeit vor dem Hintergrund der UN Sustainable Development Goals (SDGs)** behandelt werden. Der Bogen spannt sich dabei von ... !“*



## 3rd Mission SDGs and Cooperation





# Students and other Activities



- **Projekt ÖH:** Die Welt verändern
- # I choose action, **Youth Speaker Forum AIESEC**
- **Evangelisches Realgymnasium** Maculanstrasse, Wien
- **BOKU Nachhaltigkeitstag**
- **#SDG2 Zero Hunger.** Die Rolle an der BOKU. Wer wenn nicht wir!?
- **Horizont 3000:** SDGs Scholarships, ab Herbst2018
- Young Scientists' **SDGs & Energy Forum 3. 10. 2018**
- **Position Paper:** *The Agenda 2030 as challenge to Life Sciences Universities*
- **GCUA SDG Workshop** April 2018





University of Natural Resources  
and Life Sciences, Vienna



Global Challenges University

Alliance (GCUA) Workshop:

**“Life Science Universities and the UN Sustainable Development Goals (SDGs)”**

16 - 18 April 2018, BOKU - University of Natural Resources and Life Sciences, Vienna

Venue: **Exnerhaus, Peter Jordan Strasse 82, 1190 Vienna Austria**

15:00 <b>Opening</b> Prof. Ylva Hilbur (GCUA, SLU) and Dr. Andreas Melcher (BOKU)	12:00 <b>Students Session:</b> Presentations about their SDGs ideas and perspectives	13:00 <b>Lunch</b>
15:15 <b>Keynote 1</b> – Video message from H.E. Ms. Amina J. Mohammed, Deputy Secretary-General (DSG) of the United Nations	12:30 <b>Lunch</b>	14:30 <b>Excursion:</b> Biosphere reserve Viennese Woods Wiener Wald
15:30 <b>Keynote 2</b> – “The SDGs and the role of interactions of goals and targets for implementing the Agenda” – Prof. Måns Nilsson, Deputy Director and Research director at the Stockholm Environment Institute; Adjunct Professor in Environmental Strategies Research at the KTH Royal Institute of Technology	14:00 <b>Session 1</b> “The SDGs as challenge to Life Sciences Universities - <b>Teaching</b> ”	<b>Landgut Cobenzl:</b> Introduction to the Biosphere reserve by Mag. Christian Diry, Director Guided tour through the vineyards, quarry, educational organic farm
	15:00 <b>Session 2</b> “The SDGs as challenge to Life Sciences Universities - <b>Science</b> ”	
16:30 <b>Coffee Break</b> (Aula Schwackhoeferbuilding)	16:00 <b>Coffee Break</b>	Discussion with Mag. Diry and DI Bernhard Haas (municipal councillor of Gablitz) (tbc) on the management of a biosphere park, conservation and social innovation and the potential of the Agenda 2030 for local development
17:15 <b>Welcome Address</b> – BOKU Vice Rector for Teaching Prof. Sabine Baumgartner <b>Panel + Public Discussion *</b> : “Life Science Universities and the SDGs”	16:30 – 17:30 <b>Session 3</b> “The SDGs as challenge to Life Sciences Universities - <b>3rd Mission</b> ”	
19:00 <b>Buffet</b>	18:30 <b>Dinner</b> (Heuriger Friseurmüller, Neustift, Hameaustraße 30 )	

## Case study APPEAR – SUSFISH

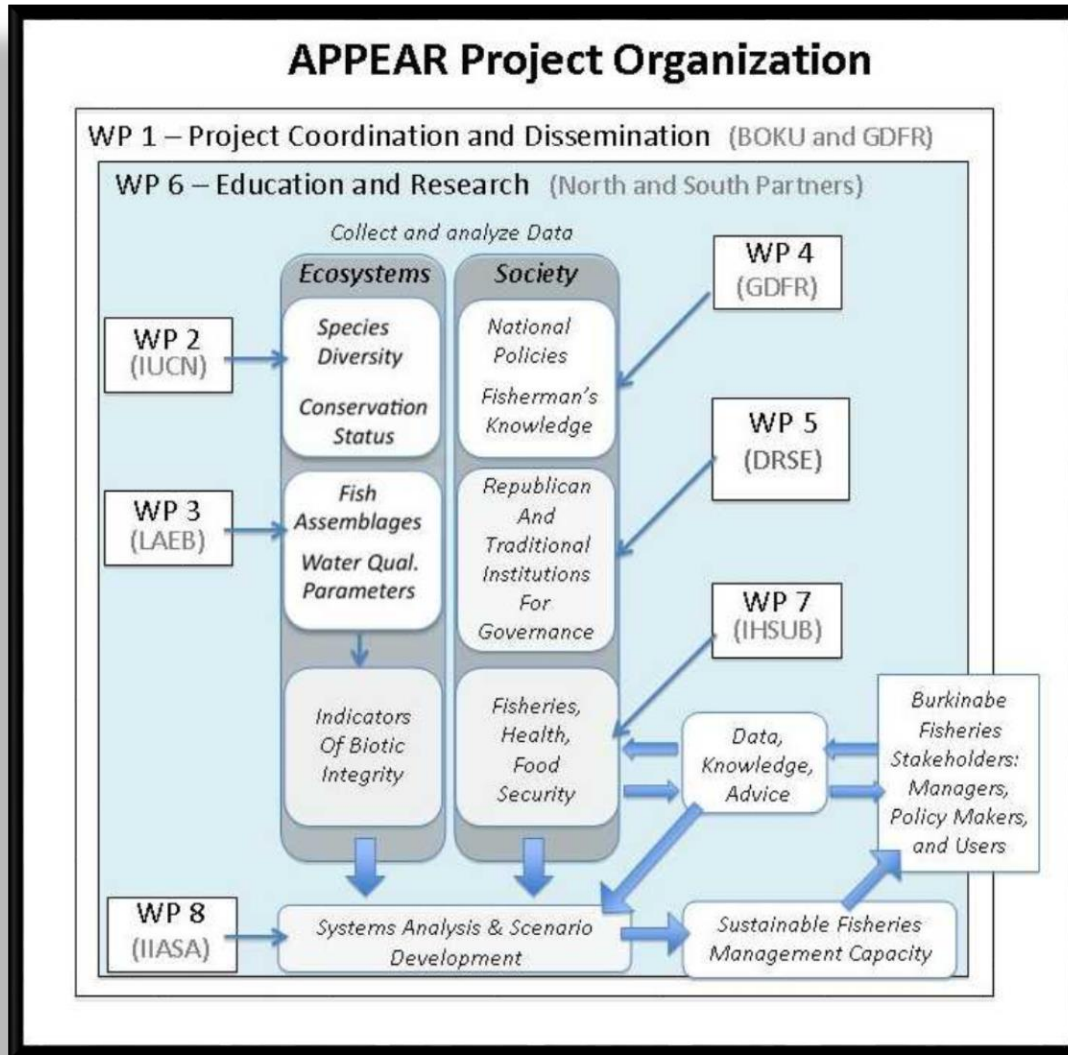
### SUSFISH - SUSTAINABLE MANAGEMENT OF WATER AND FISH RESOURCES IN BURKINA FASO





# SUSFISH, Sustainable Fisheries

it was funded, because it was not a pure technical and natural science project, but ... integrates Ecological and Social Sciences





## LEARNING Motivation - North – South Awards

University of Natural Resources and Life Sciences, Vienna  
Universität für Bodenkultur Wien



Department of Water, Atmosphere and Environment  
Department Wasser-Atmosphäre-Umwelt



Institute of Hydrobiology and Aquatic Ecosystem Management  
Institut für Hydrobiologie und Gewässermanagement



### Fish Assemblages and Habitat Use in the Upper Nakambe Catchment, Burkina Faso

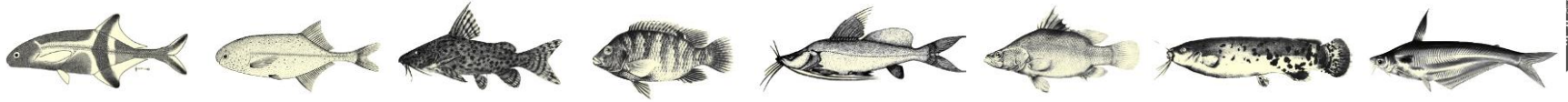
A thesis submitted to the University of Natural Resources and Life Sciences, Vienna, Austria  
for the award of „Master of Science“(„MSc“)  
composed by

Paul Meulenbroek



## 3rd Mission – shared knowlege





# Method – Limitation for Doum Doum





# 3rd Mission Transformation: Society, Governance and Policy





# The Agenda 2030 as challenge to Universities

Challenges for implementation, which can be summarised in:

- (1) the **complexity challenge**,
- (2) the **“silo-challenge”** and
- (3) the **transformation challenge**

Action of implementing the concept of “University Social Responsibility”:

- drive and support **political and societal transformation**
- realise their **mission through education**
- support the **implementation** and promote SDGs **through research**
- **transform their own institutions** in order to comply with SDGs

# Thank you. Merci. Danke für die Aufmerksamkeit



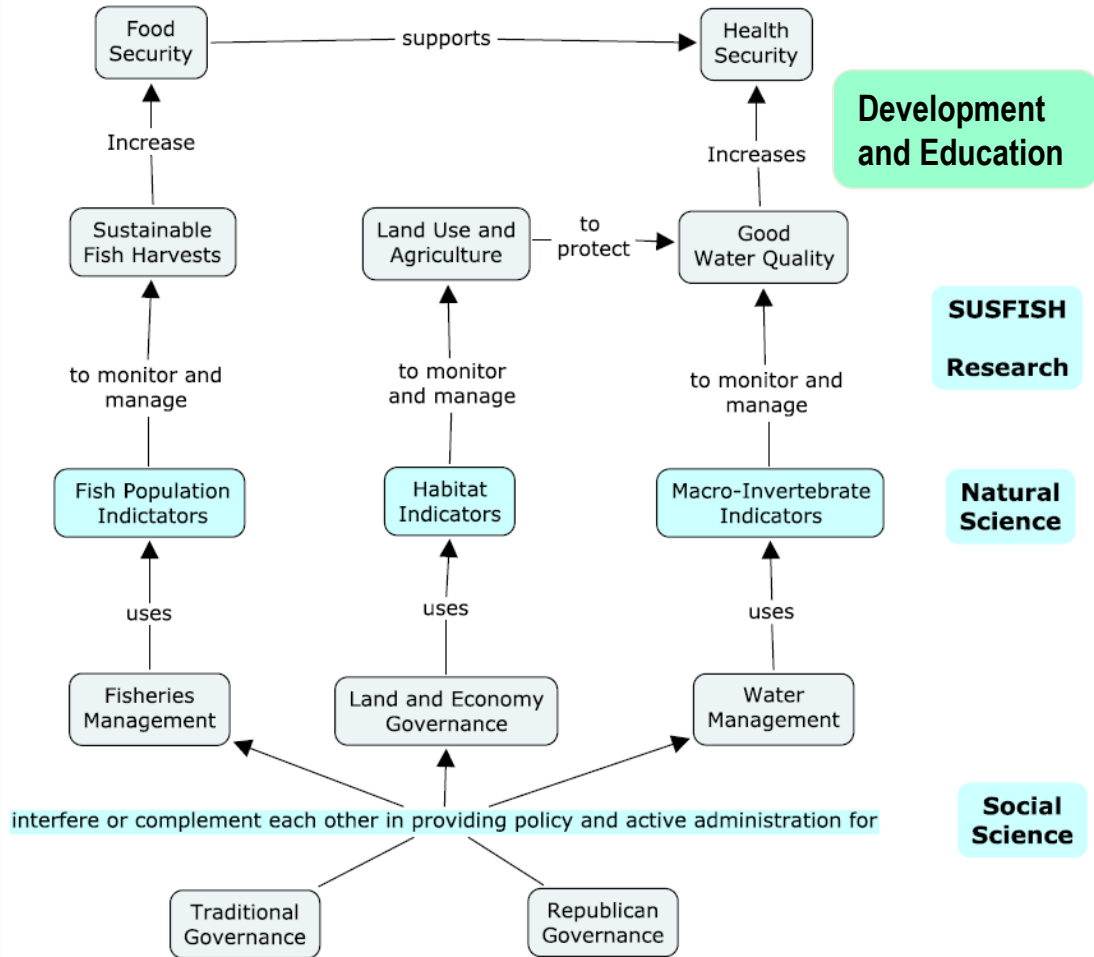
***IT'S SCIENCE***

*Learning that  
makes a difference*



**DI Dr. Andreas Melcher**  
Head of Department  
*BOKU Universität für Bodenkultur*  
*CDR*  
*Centre for Development Research*  
**[www.cdr.boku.ac.at](http://www.cdr.boku.ac.at)**  
*[andreas.melcher@boku.ac.at](mailto:andreas.melcher@boku.ac.at)*

# SDGs – SUSFISH a transdisciplinary approach from applied science to resilience and education



Facing the SDG's:

- #1 No Poverty
- #2 Zero Hunger
- #3 Good Health
- #4 Quality Education
- #5 Gender Equality
- #6 Clean Water ...
- ... #14 Life on Land ...
- ... # 17. Partnerships for the Goals

