



University
of Basel

Master's Degree in Sustainable Development & Pathways to Sustainability: Insights into the study programs on sustainable development

online short presentation_Februar/March 2024

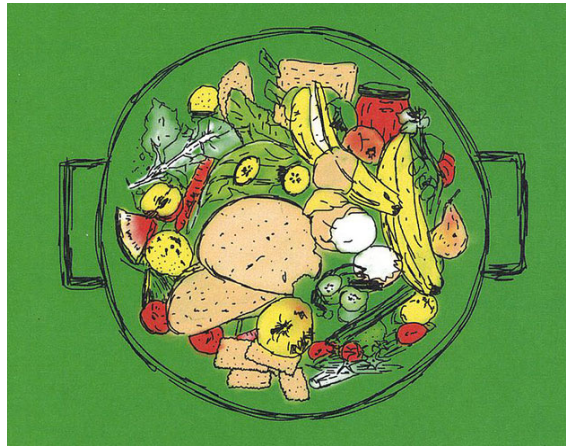


Sustainability at the University of Basel - the Oldest University of Switzerland

Wide range of courses in the field of sustainable development (SD) at the University of Basel, at almost all faculties and all academic levels.



Specific course program with four courses on disciplinary perspectives on SD: **Pathways to Sustainability** (formerly known as TQNE)



Sustainable Development

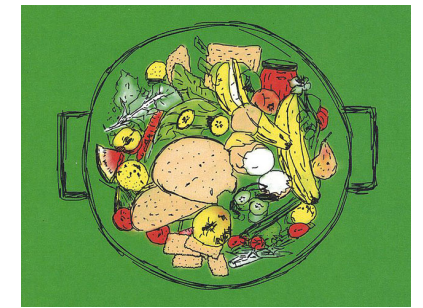
Excellence in Sustainability

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SUSTAINABILITY | GLOBAL - LOCAL | FUTURE
INTRA- AND INTERGENERATIONAL JUSTICE
INTERDISCIPLINARY | CLIMATE CHANGE
ENVIRONMENTAL | SOCIETAL | ECONOMIC
RESEARCH-BASED | GOVERNANCE | NORMS
PEOPLE - PLANET - PROFIT | RESOURCES
COMPLEX | TRANSFORMATION | KNOWLEDGE
ENERGY SYSTEMS | BIODIVERSITY | POLITICS
URBAN - RURAL | HUMAN NEEDS | WELLBEING
SUFFICIENCY | SOLIDARITY | WATER RESOURCES

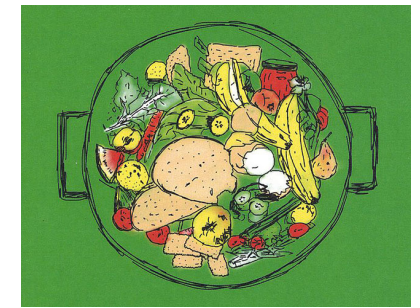
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Pathways to Sustainability: goals



- Raising awareness for the complexity of problems and concerns about sustainable development;
- Ability to describe and critically reflect selected topics considering
 - different aspects;
 - utilization and integration of existing knowledge;
- Acquisition of competence to communicate about sustainability topics in a differentiated manner.

Pathways to Sustainability: detailed learning objectives (1)



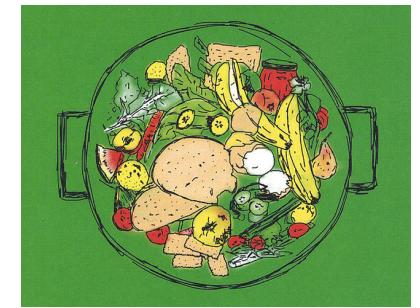
Aspects: Sustainable Development (SD)

- Knowledge of history, scientific and political significance;
- sensitized for difference of SD as a political idea and as a scientific subject ;
- sensitized for the complexity of the issues around SD;
- awareness that dealing with SD requires multiple perspectives.

Aspects: interdisciplinary

- Understanding of the specificity, diversity and complementarity of the different disciplinary perspectives;
- own discipline only one of several possible and necessary accesses;
- experience working in interdisciplinary teams.

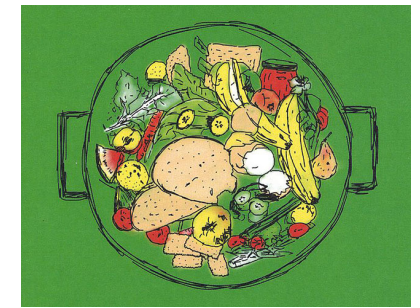
Pathways to Sustainability: detailed learning objectives (2)



Aspects: Food and Sustainability

- Knowledge of examples in the subject area;
- description from the different disciplinary perspectives;
- awareness of interfaces between perspectives;
- knowledge about interdependencies between ecological, economic and social systems in this subject area;
- formulating socially relevant, complex questions on the subject area;
- critically reflecting SD-related issues and positions in the subject area;
- distinguishing between scientific access and access as a citizen, consumer etc.

Pathways to Sustainability: course structure



Interdisciplinary and inclusive courses

A: 41828: Perspectives of Natural Sciences on Sustainability (lecture & exercise, fall term, 3 CP)

B: 41829: Perspectives of Social Sciences on Sustainability (lecture & exercise, fall term, 3 CP)

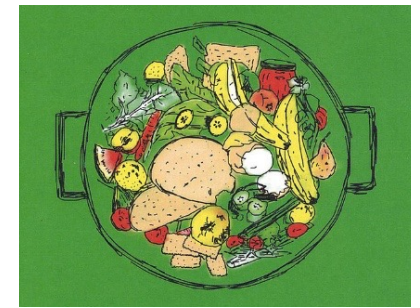
C: 43700: Perspectives of Economics on Sustainability (lecture & exercise, spring term, 3 CP)

D: 43701: Interdisciplinary Approach to Sustainability (seminar, spring term, 3 CP)

Pathways to Sustainability: four courses (A)

41828: Perspectives of Natural Sciences on Sustainability

Prof. Dr. Patricia Holm



Content

- Food and sustainability;
- food security from different perspectives, e.g.;
- background: ecology, water, soil, nutrients, plants, animal husbandry, energy etc.;
- selected topics: aquaculture, rare species, food security in Global South, palmoil, ecotoxicology, plant protection, etc.

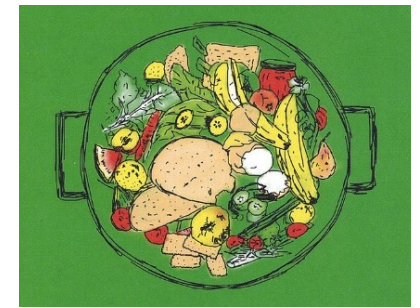
Learning objectives

- Knowledge of different disciplinary perspectives;
- awareness of interfaces between perspectives;
- knowledge about interdependencies between ecological, economic and social systems in this subject area.

Pathways to Sustainability: four courses (B)

41829: Perspectives of Social Sciences on Sustainability

PD Dr. Basil Bornemann



Content

- Individual behaviour and action: Food waste;
- social structures and dynamics: Food system transformations;
- discourses and framing: sustainable agriculture;
- social movements and activism: veganism;
- communities and networks: Local food; etc.

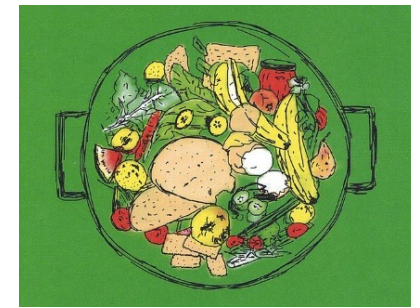
Learning objectives

- Familiarity with social science perspectives (concepts, approaches and theories) relevant to the analysis of the sustainability-food nexus;
- ability to research, organize, interpret and present empirical information on issues related to sustainability, food (food waste, sustainable diets, etc.);
- ability to organize and carry out group work; etc.

Pathways to Sustainability: four courses (C)

C: 43700: Perspectives of Economics on Sustainability

Dr. Vera Calenbuhr



Content

- Economic basics and relation to sustainable development (SD);
- agriculture and food production in industrialized countries as well as in countries of the Global South and in emerging countries;
- political initiatives and approaches;
- water, etc.

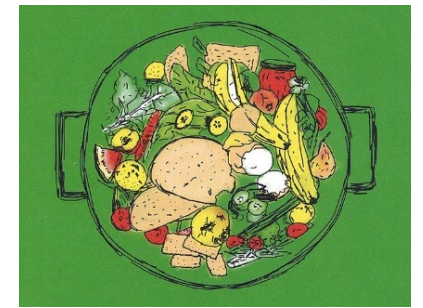
Learning objectives

- Understand basic economic concepts and their relevance for food security;
- knowledge of the challenges of SD;
- presentation of these challenges from an economic point of view;
- basic knowledge regarding how different perspectives shape the understanding of SD; Questions from the context of economic perspectives; and their input to analyze concerns related to SD.

Pathways to Sustainability: four courses (D)

43701: Interdisciplinary Approach to Sustainability

Prof. Dr. Jasmin Godemann, Univ. Giessen



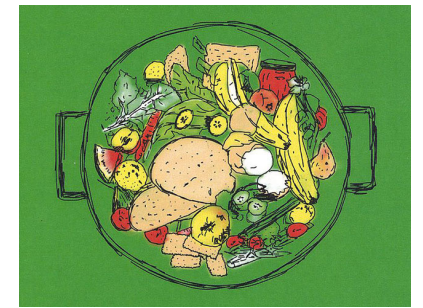
Content

- What are the different relationships between communication and food and how these relationships negotiate our identities, cultures and environments?
- What do the concepts of inter- and transdisciplinarity entail? How do they help to understand sustainable food culture and its complexity?
- What is the role of mediated communication in relation to sustainable food?

Learning objectives

- Understand the symbolic importance of food in the communicative practices of our society;
- awareness of the complexity of the relationships between food and sustainability and be familiar with the research principles inter- and transdisciplinary.

Pathways to Sustainability: formal information (1)



Recognition of credit points

- In addition to the credit points (KP) that must be earned for the enrolled subjects, students are allowed to earn additional credit points that can be freely chosen and applied to the different modules;
- the enrolled programs decide upon the recognition and module allocation.

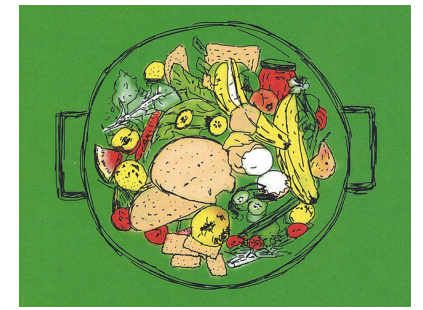
Teaching

- Language in English: a good command is required (level B2 or higher);
- Formats: lectures, practical courses (exercises), seminar, site visits, high degree of interactive teaching.

Participation to the courses

- All students from 3rd bachelor's semester on, incl. master & PhD students.

Pathways to Sustainability: formal information (2)



Certificate

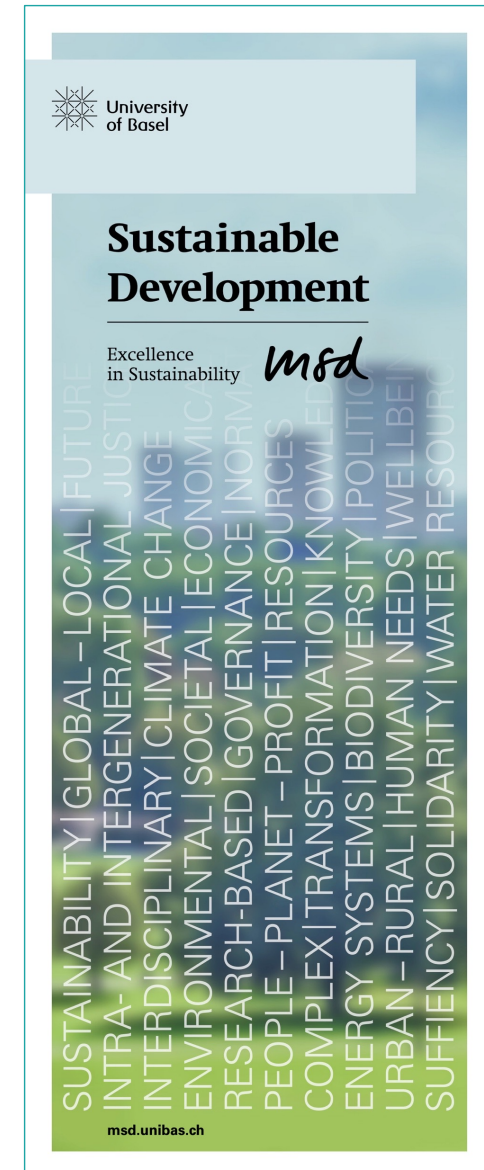
Students who have

- successfully passed all four courses AND
 - completed their enrolled degree program (bachelor, master or PhD)
-
- can apply for a certificate for the achievement of the program «Pathways to Sustainability» (only as a supplement to the final degree documents);
 - send an email to coordination-msd@unibas.ch asking for the certificate and attach the official final degree transcript (Zeugnis).

Master's Degree in Sustainable Development Facts Important to Know

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- **academic title**
 - Master of Science in Sustainable Development (MSc)
- **start of study program**
 - possible in fall (recommended)
 - spring semester
- **credit points:** 120 CP
- **duration**
 - full-time study in 4 semesters; or
 - part-time study > 4 semester
- **language of instruction**
 - English (level B2 or higher, no certificate required)
- **tuition fees**
 - 850.-/per semester (Swiss & international students)



Sustainable Development?



Three challenges/risk fields are motivating the global discourse on Sustainable Development:

- **Finiteness of resources:** “Limits of Growth”
 - water, soil, biodiversity etc.;
 - materials.
- **Fragility of ecosystems:** environmental degradation/protection
 - water, soil, biodiversity etc.;
 - pollution, CO₂-emissions etc.
- **Human development:**
 - Poverty;
 - global inequality.

Grand Challenges



- Climate change;
- biodiversity loss;
- energy supply;
- water resources;
- ageing societies;
- healthcare;
- sustainable prosperity; etc.

Sustainable Development



= A global role model/guiding idea how to develop societies to cope with risks/grand challenges:

*Sustainable development meets the **needs of the present** without compromising the **ability of future generations** to meet their own needs.*

UN Sustainable Development Goals 2015:



03.10.16, 19:47

<https://sustainabledevelopment.un.org/?menu=1300>

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The challenge for science in meeting the Grand Challenges

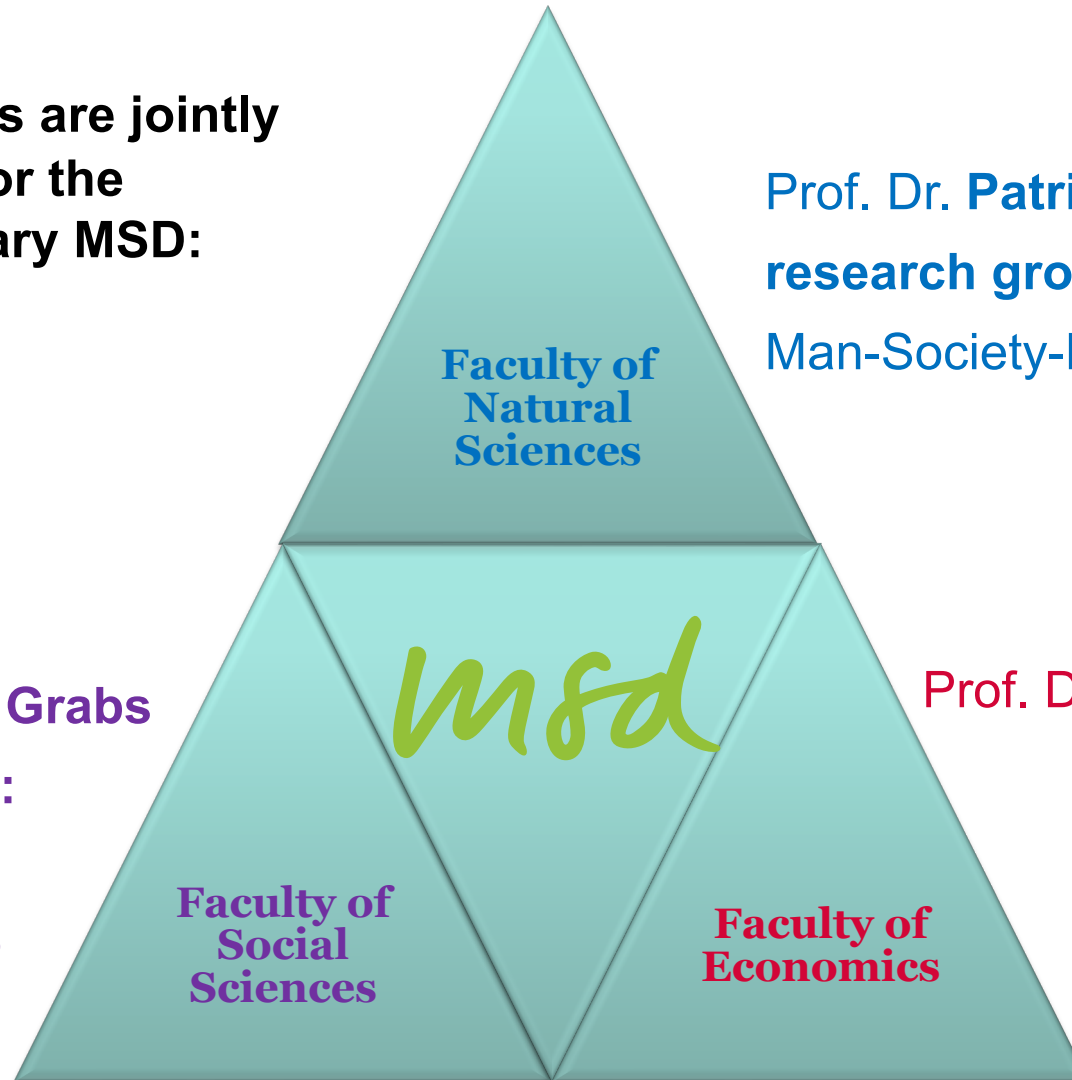


- Improve the usefulness of **forecasts** of future environmental conditions and their consequences for people.
- Develop, enhance, and integrate **observation systems** to manage global and regional environmental change.
- Determine how to anticipate, avoid, and manage disruptive **global environmental change**.
- Determine institutional, economic, and behavioral changes to **enable** effective steps toward global sustainability.
- To **encourage innovation** (and mechanisms for evaluation) in technological, policy, and social responses to achieve global sustainability.

Involved Faculties, Professorships and Research Groups

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Three faculties are jointly responsible for the interdisciplinary MSD:



Prof. Dr. **Patricia Holm**
research group:
Man-Society-Environment

Prof. Dr. **Janina Grabs**
research group:
Sustainability
Research Group
(as of June 24)

Prof. Dr. **Frank Krysiak**
research group:
Environmental
Economics

Quote of Prof. Dr. P. Holm,
Man-Society-Environment Program, head,
Department of Environmental Sciences,
Faculty of Science

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**Studying the Master's Degree
in Sustainable development
means to learn how to develop
concepts, find solutions and
prepare the ground for a more
sustainable world.**

Natural Science

Man-Society-Environment



Main Research Topics

- Fish and its environment:
 - Invasive fish;
 - Anthropogenic pollution of the aquatic ecosystems.
- Microplastics:
 - Occurrence in the environment;
 - impacts on organisms.
- Whales and dolphins:
 - Anthropogenic impacts on cetaceans.

Natural Science Man-Society-Environment

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Topics of Ongoing Research Activities

- Anthropogenic impacts on native fish in our rivers;
- external alterations in whales and dolphins in the Strait of Gibraltar;
- microplastics in the Rhine River: Shore line and water column;
- microplastics in all compartments of the Antarctic Ocean.



Quote of Prof. Dr. J. Grabs,
Sustainability Research Group, head,
Department of Social Sciences,
Faculty of Humanities and Social Sciences

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Sustainability challenges such as climate change, inequality, and poverty are amongst the most pressing issues of our time.

We desperately need change makers in politics, business and civil society who can lead sustainability transformations.

Social Science Sustainability Research Group



Main Topics and Ongoing Research Activities

- The governance of sustainability transformations in two key issue areas:
- Sustainable agri-food value chains
 - Private regulation (certifications, standards, company commitments)
 - Public regulation (import restrictions, due diligence legislation)
 - Focus on policy implementation, effectiveness, equity
- Energy Transition
 - Change of behavior
 - Sufficiency in daily life – e.g. changing mobility and food patterns
 - “Positive Energy Districts”

Social Science Sustainability Research Group



Topics of Ongoing Research Activities

Sustainable agri-food value chains (J. Grabs)

- Zero-deforestation commitment implementation in the palm oil sector
- Climate change mitigation and adaptation actions in the coffee value chain
- Implementation of the EU Deforestation Regulation

Energy transition (A. Sohre, I. Schubert, A. Hearn)

- Citizens' participation in energy markets
- Consumer attitudes and demand intention (acceptance) for sustainable fuels

Quote of Prof. Dr. F. Krysiak, Environmental Economics, head Faculty of Business and Economics

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Sustainability is the challenge to balance risks and chances. We can change the world for better by developing new technologies and better institutions. But every change includes a risk that we (unintentionally) harm our descendants.

Economics

Environmental Economics



Main Research Topics

- Design of energy and climate policy:
 - How to support the energy transition?
 - How to mitigate climate change?
- Green technological change:
 - How to speed-up innovation and diffusion of green technologies?
- Economic concepts of sustainability:
 - How can we measure sustainability?

Economics

Environmental Economics



Topics of Ongoing Research Activities

- Designing electricity markets for a high share of renewables;
- climate policy: Who pays for net-zero?
- policy for green technology transitions
- scenarios that matter: How to include individuals and society in energy and climate scenarios.

Admission Requirements (1/3)



The MSD is a **specialized** master's degree with special admission criteria:

a) Swiss university bachelor's degree in selected branches of study according to study regulations (§ 3):

Business administration, Economics, Geography, Communication and Media Studies, Philosophy, Political Science, Social and Cultural Anthropology, Social Work and Politics, Sociology, Applied Biosciences, Biology, Earth Sciences, Forestry, Environmental Sciences, or Environmental and Geomatics Engineering.

Admission subject to additional requirements of max. 30 credit points may follow if submitted degree is only partially equivalent (details see guidelines).

Admission Requirements (2/3)



b) minimal average grade in your bachelor's degree:

5.0 (Swiss scale) or higher;

c) proof of evidence of basic knowledge in mathematics and in statistics (or methods of empirical social research) at university level of at least 10 CP:

- at least **3 CP** in **mathematics**;
- at least **3 CP** in **statistics** or in **methods of empirical social research**;
- the remaining **4 CP** provide evidence of basic knowledge in mathematics, or in statistics or methods of empirical social research.

Details concerning content see guidelines.

Admission Requirements (3/3)



Alternative admission criteria with GRE General Test possible

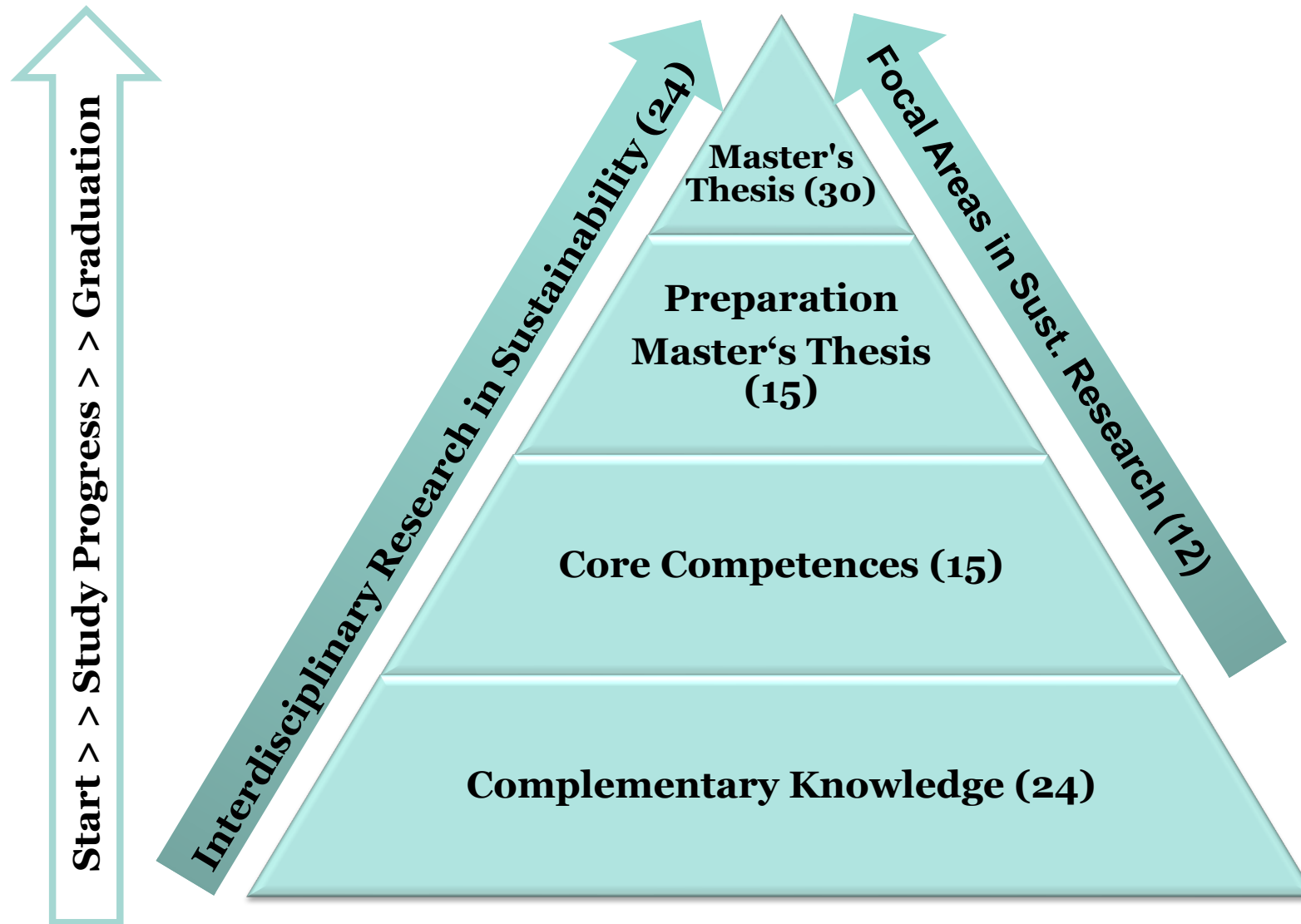
- if the evidence of the bachelor in one of the accepted branches of study is given (criteria a) (with/without additional requirements),
- but the further admission requirements (criteria b/c) are not or only partially met a GRE General Test can replace these criteria:

Required GRE General Test: areas & results
quantitative reasoning: among the top 30 %
analytical writing: among the top 20%

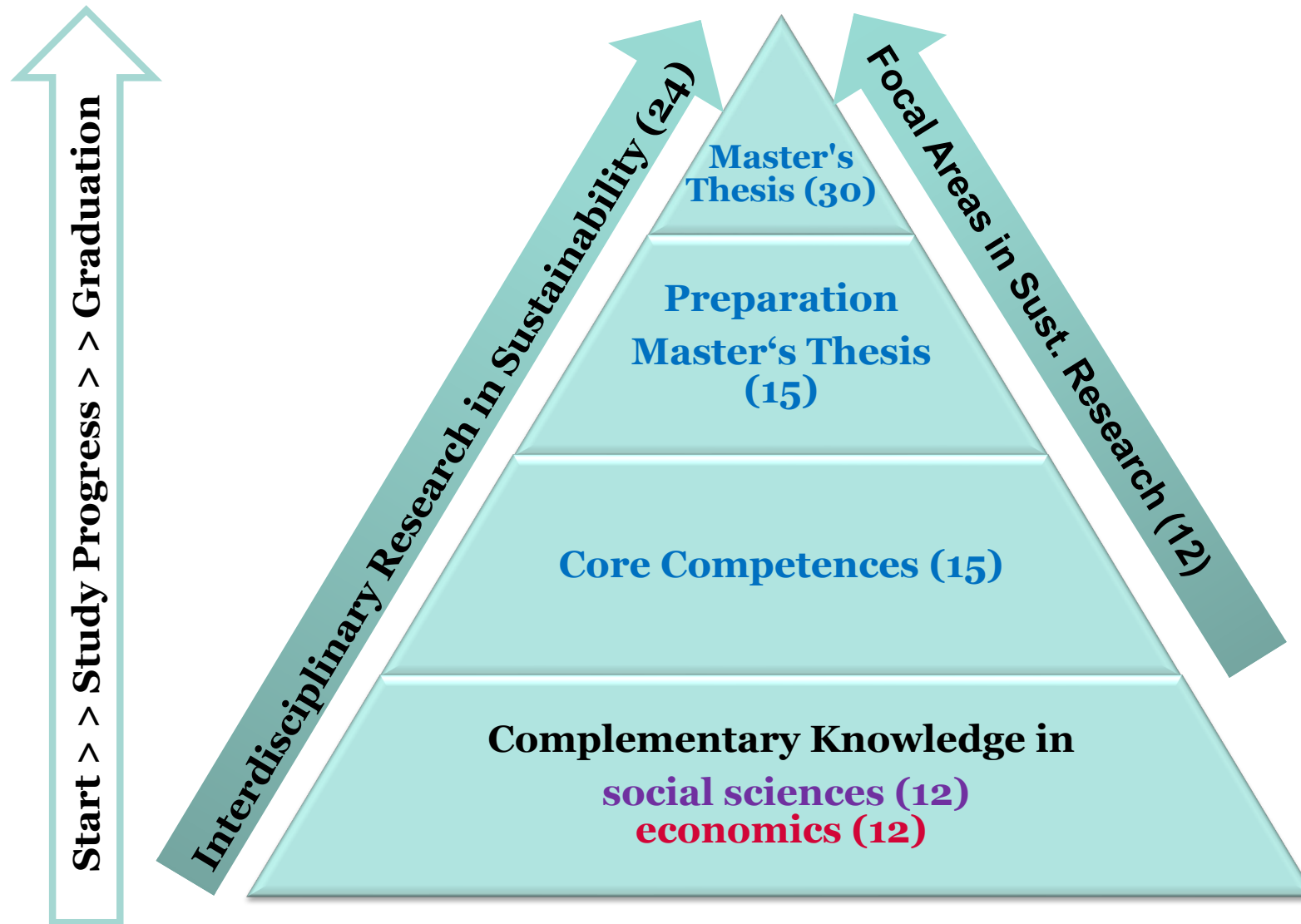
Test details: http://www.ets.org/gre/revised_general/about/content/

Module Structure (Study Regulations § 7):

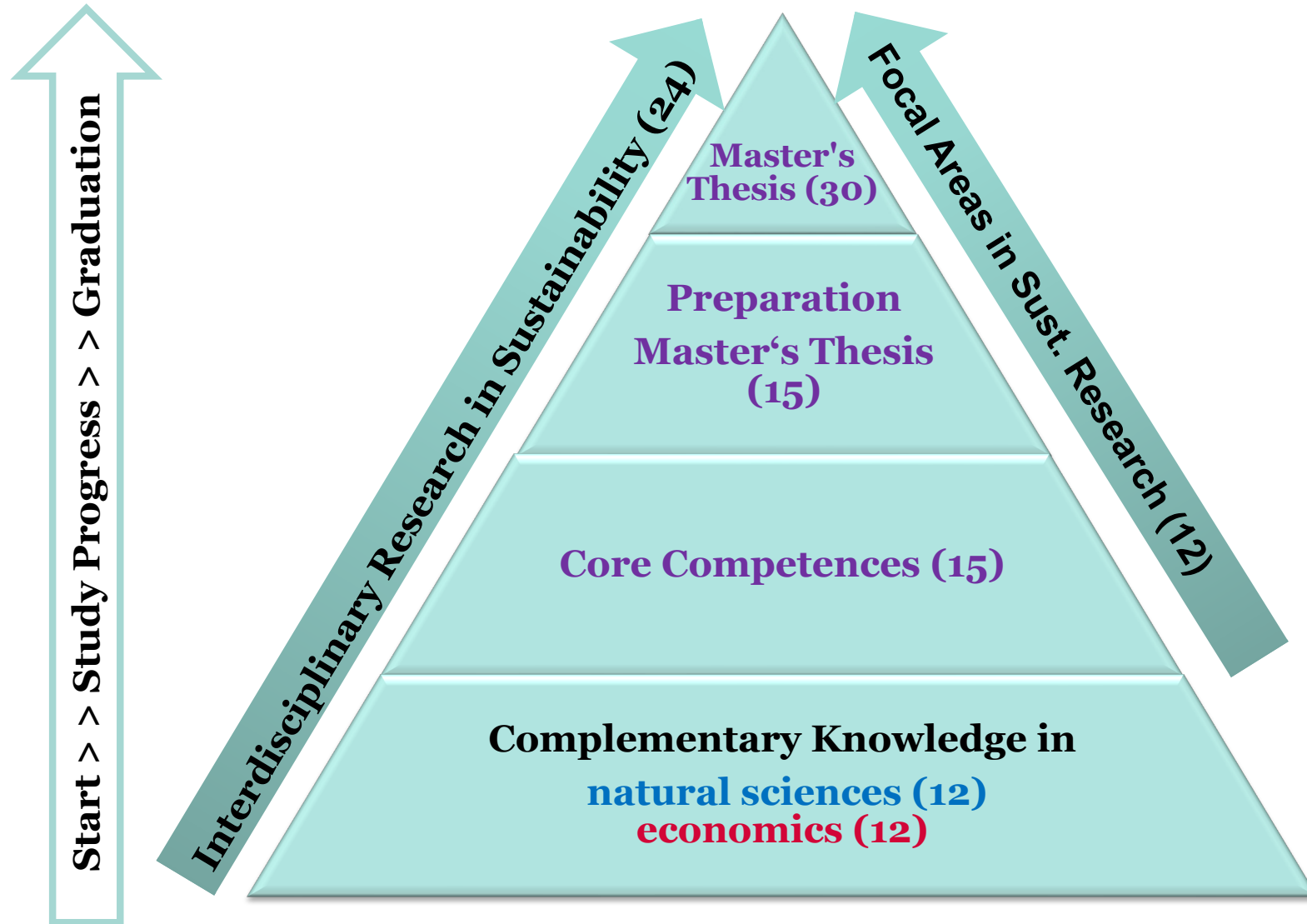
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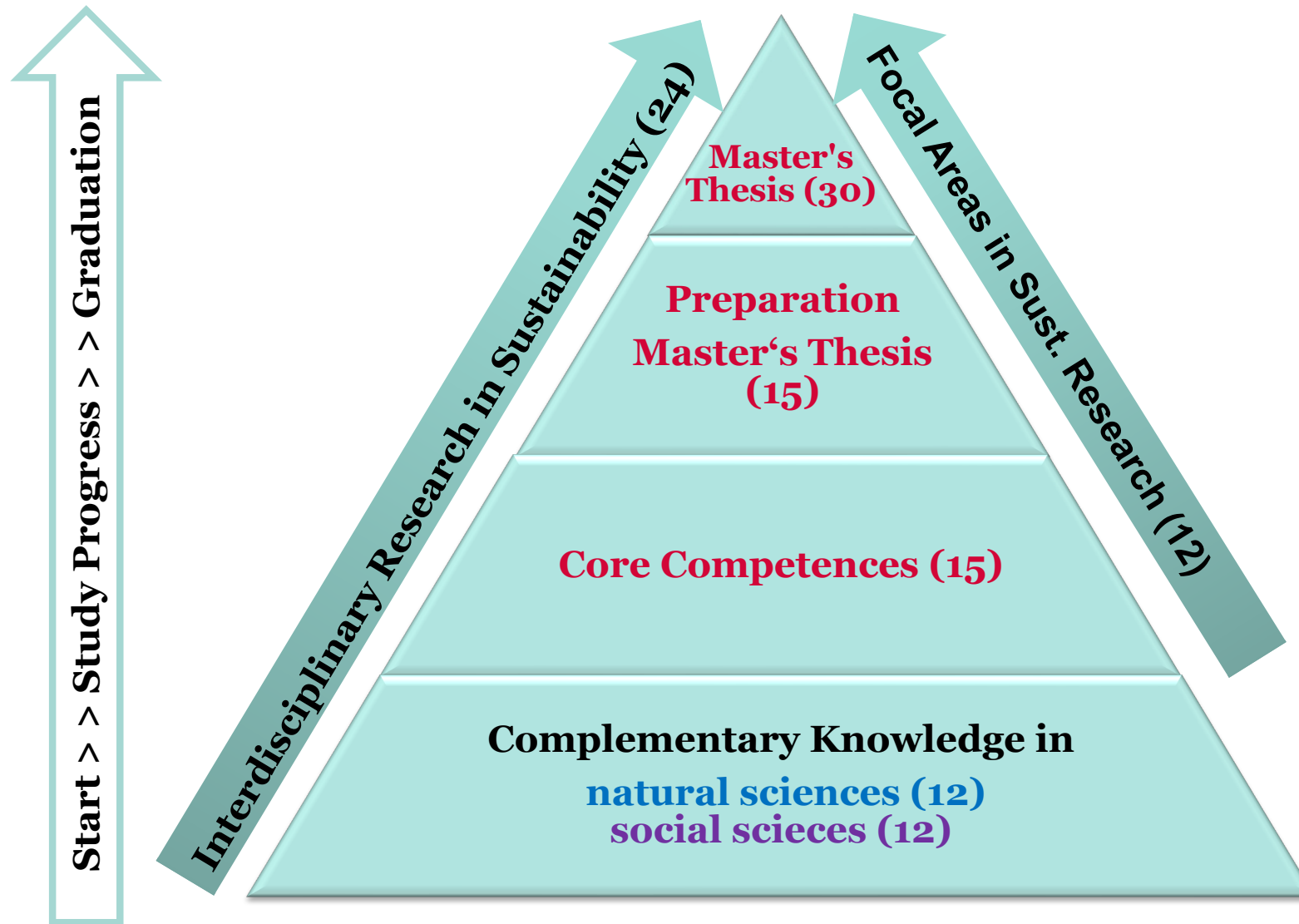
MSD: Module Structure (Study Regulations § 7): Module structure of focus area in natural sciences



MSD: Module Structure (Study Regulations § 7): Module structure of focus area in social sciences



MSD: Module Structure (Study Regulations § 7): Module structure of focus area in economics



What are our Alumni Doing?



- PhD or Post doc positions (Unibas, ETH, Freiburg i.Br., Vancouver, etc.);
- scientists (universities, research institutions, etc.)
- (co-)management- and project management in SD specialized consulting companies;
- sustainability assessment specialist in banks, auditing and insurance companies;
- project management in the field of renewable energies;
- positions in public authorities, museums, NPOs, political parties and corporations, etc.;
- head of the Sustainability Office at the University of Basel;
- founders of start ups dealing with food waste, sustainable mobilities, etc.
- and many more.



University
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You still have questions?

Contact Camelia Chebbi,

head of the coordination office MSD/PtS

coordination-msd@unibas.ch

+41 (0)61/207 04 20



For details regarding **availability** see www.msd.unibas.ch

Individual study counseling upon request