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## M.Sc. "Integrated Natural Resource Management" (INRM)

### An Introduction

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# Challenges to sustainable .....development

- Loss of biodiversity, climate change, conversion of land use, ...
- Local, regional and global pollution
- Overexploitation and degradation of living and fossil resources
- Hunger, poverty and social exclusion
- These challenges...
  - ...are, in principle, well-known, ...
  - ...we know some fixes since decades, ...
  - ...but they are not solved yet.

# Challenges for you

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- Becoming up-to-date experts on these topics in the next two years
  - Becoming more smart than analysts and decision-makers in the last decades
  - Converting difficulties from working in an interdisciplinary and international group into an asset
- You will be studying in one of the most outstanding sustainability science clusters in Germany, probably in Europe

# Structure of INRM

1. Compulsory Modules (“Pflichtmodule”,  $\approx 4$  courses / 16 SWS / 24 ECTS)
2. Focal Modules (“Wahlpflichtmodule”,  $\approx 9$  courses / 36 SWS / 54 ECTS), that need to cover
  - At least 3 out of 4 Knowledge Areas (“Wissensgebiete”) of INRM
  - Two out of six study Foci (“Studienschwerpunkte”, each  $\approx 3$  courses / 12 SWS / 18 ECTS)
  - The optional Student Project (8 SWS, 12 ECTS) can replace two Focal Modules
3. Elective Modules outside INRM (“Überfachlicher Wahlpflichtbereich”,  $\approx 2$  courses / 8 SWS, 12 ECTS)
4. Master Thesis (30 ECTS)

Plan your Focal Modules for the two years as soon as possible

# Compulsory Modules

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Winter term, 1<sup>st</sup> semester

- Institutional Economics and Political Economy

Summer term, 2<sup>nd</sup> semester

- Environmental and Resource Economics
- Ecosystems of Agricultural Landscapes and Sustainable Natural Resource Use

Winter term, 3<sup>rd</sup> semester

- Soil and Water Protection

# Focal Modules within the 4 Knowledge Areas (KA)

- ➔ Natural Sciences Applied to the Use and Protection of Natural Resource Systems
- ➔ Social Sciences Applied to the Use and Protection of Natural Resource Systems
- ➔ Advanced Methodologies for Empirical Analysis of the Interaction of Social, Natural and Technical Systems
- ➔ Management of Environmental and Natural Resource Systems

Cover at least 3 KA, each with at least one module

[= not more than 1 KA shall be completely unstudied in the end]

# List of Study Foci



- I. Methodology and Modelling of Sustainability
- II. Sustainable Production Processes
- III. Sustainability Institutions and Policies
- IV. Land and Water
- V. Biodiversity and Nature Conservation
- VI. Climate Change and Renewable Energy

select two of them

Need to be announced at  
Examination Office at end of second semester

# Composition of Study Foci



- Two Study Foci must be selected
- Choice must be made before 2<sup>nd</sup> study year

■ Each Study Focus comprise 5 modules from which 3 modules need to be chosen (18 ECTS)



## Study Focus 1: Methodology & Modelling of Sustainability

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1. Human-Environmental Systems Interaction  
– KA III
2. Advanced Empirical Methodology for Socio-Ecological Systems Analysis - KA III
3. Geographic Information Systems and Quantitative Landscape Analysis – KA III
4. Risk and Uncertainty in Science and Policy  
– KA III
5. Economics of Human Development – KA II

## Study Focus 2: Sustainable Production Processes

1. Practices and Organisation of Organic Farming – KA I
2. Environmental Management and Information Systems – KA IV
3. Plant Pathogens in the Environment and Control Management – KA I
4. Cooperation and Cooperative Organizations – KA II
5. Public Policy Analysis: Agriculture and Food Policy – KA III

## Study Focus 3: Sustainability Institutions and Policies

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1. Environmental Sociology and Environmental Policy – KA II
2. Advanced Environmental and Resource Economics – KA II
3. Cooperation and Cooperative Organizations – KA II
4. Human-Environmental Systems Interaction – KA III
5. Advanced Empirical Methodology for Social-Ecological Systems Analysis – KA III

## Study Focus 4: Land and Water

1. Irrigation and Drainage Systems – KA I
2. Land and Water Management – KA IV
3. Geographic Information Systems and Quantitative Landscape Analysis – KA III
4. Project Management - Applied to Natural Resource-based Sectors and Development Programmes – KA IV
5. Advanced Environmental and Resource Economics – KA II

## Study Focus 5: Biodiversity and Nature Conservation

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1. Biodiversity: Assessment, Function and Evolution – KA I
2. Biodiversity and Conservation Management – KA IV
3. Advanced Empirical Methodology for Social-Ecological Systems Analysis – KA III
4. Integrative Fisheries Management – KA IV
5. Advanced Environmental and Resource Economics – KA II

## Study Focus 6: Climate Change & Renewable Energy

1. Agricultural Climatology and Ecophysiology – KA I
2. Climate and Energy Management – KA IV
3. Human-Environmental Systems Interaction – KA III
4. International Forest Use and Management – KA IV
5. Advanced Environmental and Resource Economics – KA II