

# Engaging with Academia and Research Institutions (ARIs) to support Family Farmers and Food System Transformation During and Post COVID-19 Pandemic in Asia



*With technical assistance from the FAO Regional Office for Asia and the Pacific*

# Enhancing capacities of the young generation in Cambodia

for supporting rural transformation and agroecology mainstreaming through **education for sustainable development (ESD)**



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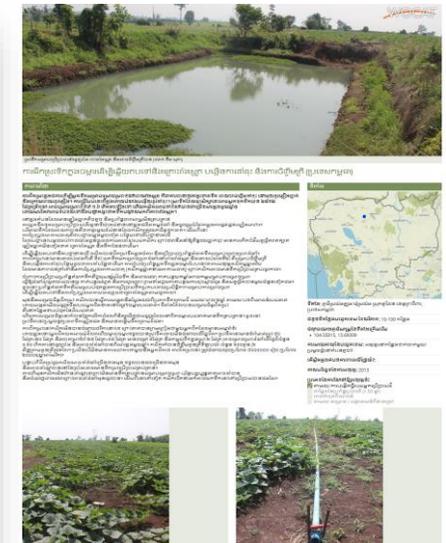
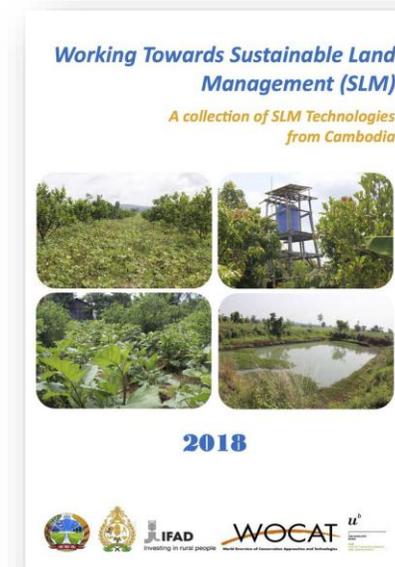
# Embedding agroecology / SLM in higher education

## CONTEXT

- Curricula of agriculture higher-level education institutions in Cambodia **do not explicitly teach** agroecology / sustainable land management (SLM) and sustainable development
- Large part of students go to work for extension and need to **build up the right competences**

## TASK

- Agroecology/SLM needs to **be integrated as a key topic** in higher education
- Future generation needs to be trained on **climate-resilient agroecology/SLM solutions**



# How can we capacitate the young generation to become future change agents?

What **competences** do students need to master **to foster sustainable development** in their future jobs?

How are they able **to address today's and future challenges** of food security, climate change, resource degradation, and poverty?

Graduates of RUA assume positions of responsibility in **government, extension, research, teaching, private industry, civil society, ...**

How can we design **effective teaching-learning arrangements at RUA** to build these competences?



# Pilot project: develop a Sustainable Development and Sustainable Land Management / Agroecology curriculum at RUA

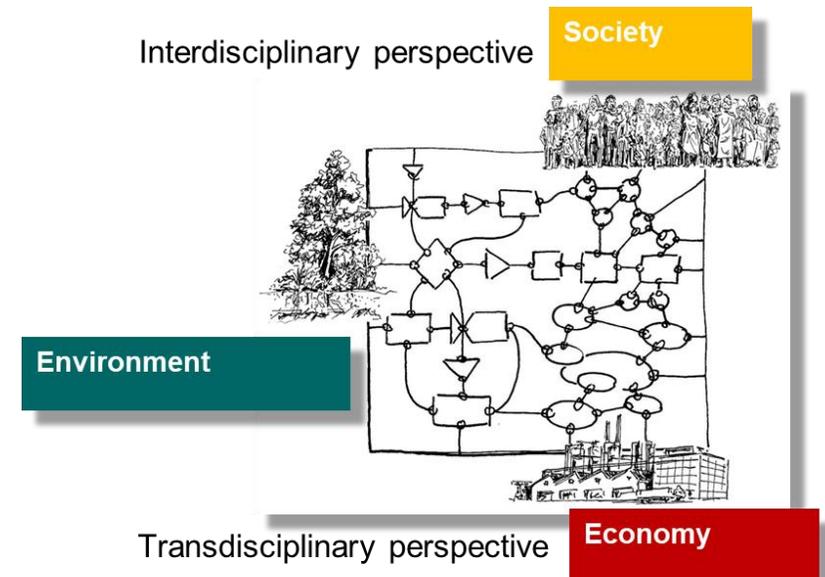
## Collaborative process

- Co-design of curriculum for the RUA and other agriculture-focused higher education institutions in Cambodia.
  - ✓ Including systemic perspective
  - ✓ Including tailored solutions for specific contexts
  - ✓ Building on existing knowledge bases, e.g. Global WOCAT SLM Database
  - ✓ Including participatory processes between science and practice
- Support and high interest by the rector of RUA and the UNCCD focal point of the Ministry.

 Schweizerische Eidgenossenschaft  
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Swiss Confederation

Federal Department of Economic Affairs,  
Education and Research EAER  
State Secretariat for Education,  
Research and Innovation SERI

**ETH**  
Eidgenössische Technische Hochschule Zürich  
Swiss Federal Institute of Technology Zurich



# Education for Sustainable Development (ESD) approaches

Combination of innovative didactics, new teaching-learning arrangements, and thematic issues of sustainable development, SLM, agroecology, climate change, DRR, ...

At the end of the course ...

- ... what do they need to know (**academic knowledge**)?
- ... what do they need to be able to do (**professional skills**)?
- ... what should their attitude and values be (**critical awareness**)?

High interest by rector of RUA on ESD approaches



# Joint development of SD-SLM curriculum

Which competences have to be built?



- **Understand concepts and frameworks** in land degradation (LD), sustainable land management (SLM), agroecology, climate change adaptation & mitigation, and disaster risk reduction in the context of sustainable development, particularly the SDGs, and relate them to the context in Cambodia.
- **Understand the fundamental principles and functioning of (complex) nature-human interactions**
- **Master tools and methods** to document, assess and evaluate LD and SLM/agroecology practices at farm and landscape levels
- **Develop potential solutions** for SD challenges jointly with farmers and other actors (multi-perspective knowledge)
- **Monitor impacts** of implemented solutions
- **Communicate adequately** with a broad range of actors
- **Share results** in writing (reports, posters) and orally (presentations)
- Etc.

# Topics of SD-SLM curriculum

## 6 thematic chapters

- Chapter 1: Introduction to SD, LD and SLM
- Chapter 2: SLM Technologies and Approaches, and Ecosystem Services
- Chapter 3: SLM, Climate Change and DRR
- Chapter 4: Mapping land degradation and SLM by using different tools
- Chapter 5: Decision-support tools for SLM and assessment of ecosystem services
- Chapter 6: Concluding session

### Chapter 1: Introduction to Sustainable Development, Land Degradation and SLM

1.1	1	1	<b>Chapter 2: SLM Technologies and Approaches, and Ecosystem Services</b>
	1	2.	Introduction to SLM Technologies and Approaches
	1	1	
	1	2.1	<b>Chapter 3: SLM, Climate Change and DRR</b>
1.2	1	2.1	3. SLM, DRR, CCA and resilient livelihoods
	1	2.1	1
	1	2.2	3. SLM and Climate Change Mitigation
	1	2.	2
	1	2.2	<b>Chapter 4: Mapping land degradation and SLM by using different tools</b>
1.3	1	2.2	4. Introduction to LD and SLM Maps in national and global context
	1	2.	1
	1	3	4. Introduction to mapping tools including WOCAT, remote sensing for the assessment of ecosystem services, climate change adaptation and mitigation
	1	2.	2
	1	4	<b>Chapter 5: Decision-support tools for SLM and assessment of ecosystem services</b>
	1	2.	5
	1	5	5. The role of knowledge-based decision making for up-scaling SLM practices and decision-support tools for SLM
	1	2.5	1
	1	2.5	5. WOCAT participatory stakeholder workshop
	1	2.	2
	1	6	
	1	2.	7
	1	7	SLM related ecosystem services at farm and landscape levels
	1	2.	8
	1	8	Assessment framework for ecosystem services
	1	2.8.1	Bio-physical assessment of ecosystem services
	1	2.8.2	Economic valuation of ecosystem services

# High-level launch of SD-SLM curriculum

The **High-level official launching event** of the SD-SLM curriculum held in January 2020 in Phnom Penh

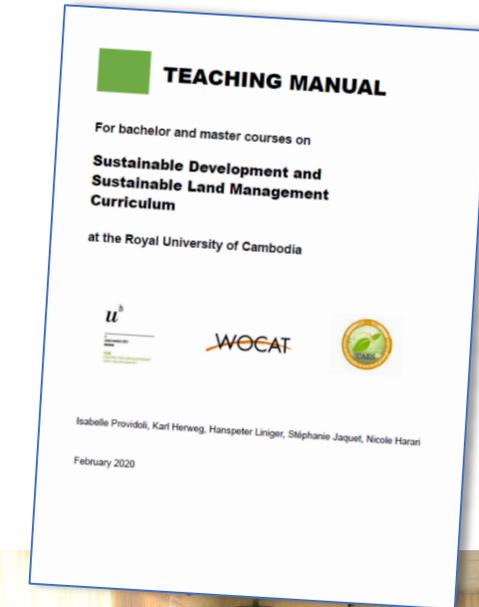
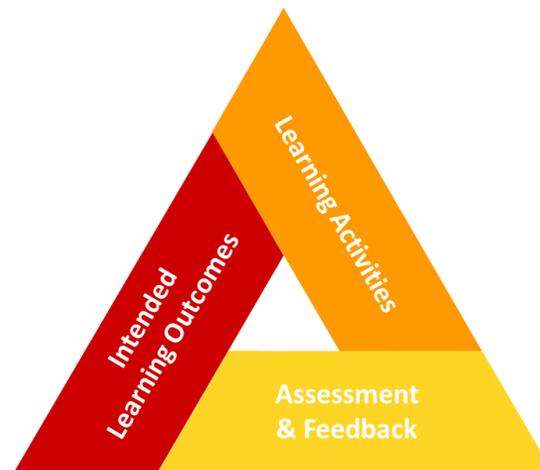
- 64 participants: policy-level officials, donors, HEI lecturers and researchers
- Among others high interest by the UNCCD focal point of the Ministry.



# Training of Trainers (ToT)

**4.5-days** for 15 RUA's lecturers and researchers,  
delivered by CDE senior research scientists

- innovative didactics, new teaching-learning arrangements, and
- thematic issues of SD-SLM-agroecology



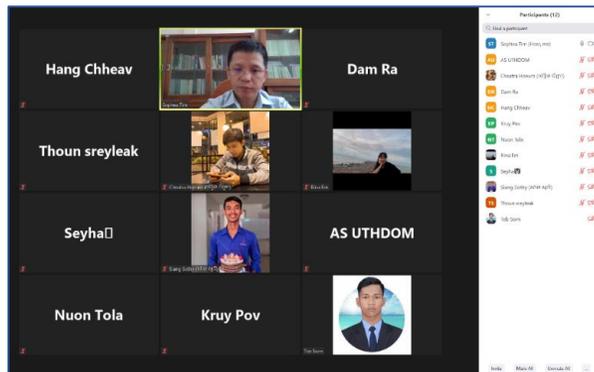
# Pilot teaching

## 1<sup>st</sup> pilot, May 2020

SD-SLM course at RUA Faculty of Forestry Science, BSc. 3<sup>rd</sup> Year, 3 Credits, 64 hours

### Challenges faced...

- Covid-19 problems
- Lecturer is teaching this course for the first time
- Concept of sustainability is new and abstract for students



## 2<sup>nd</sup> pilot, May 2021

SD-SLM course at RUA Faculty of Forestry Science, BSc. 3<sup>rd</sup> Year, 3 Credits, 64 hours

### Improved experience...

- Covid-19 problems, yet virtual class via Zoom is improved due to the better familiarity with it
- Group exercises possible
- More adapting on the content



Students presenting group work results on Cambodia SDGs

# Key takeaways

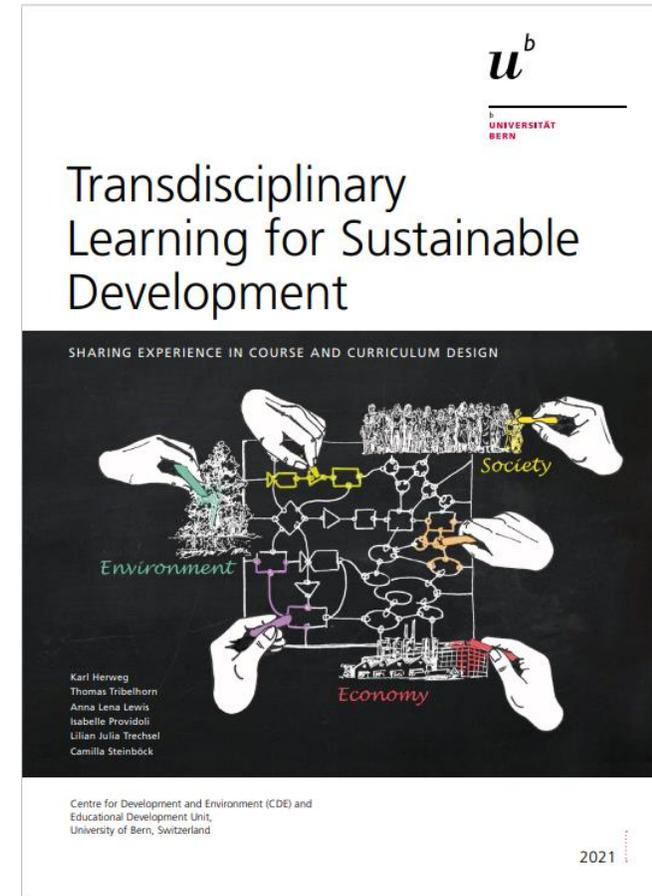
- Agroecology / SLM topics need to be included into higher education
  - ✓ Including systemic perspective of landscape
  - ✓ Tailored solutions for specific agro-ecological zones
- Education for Sustainable Development (ESD) approaches need to be included into higher education
  - ✓ A broad range of competences need to be built (academic knowledge, skills and attitudes)
- Building on regional/global Databases related to agroecology/SLM
  - ✓ Global WOCAT network, [www.wocat.net](http://www.wocat.net) and others
- Link outputs of implementation projects (e.g. tools developed and evidence generated) with higher education curricula

# Further reading

New publication:

Herweg, Karl; Tribelhorn, Thomas; Lewis, Anna Lena; Providoli, Isabelle; Trechsel, Lilian Julia; Steinböck, Camilla (2021). *Transdisciplinary Learning for Sustainable Development. Sharing Experience in Course and Curriculum Design [Textbook]*. Bern, Switzerland: Centre for Development and Environment (CDE), University of Bern, with Bern Open Publishing (BOP)

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# Thank you !



Further information about the project:

<https://www.wocat.net/en/projects-and-countries/projects/bringing-sustainability-science-cambodia-education-sustainable-development>