



**Lifelong Learning for Sustainable
Development (SUSDEV)**



**University of Natural Resources
and Life Sciences, Vienna**



Methodological workshop and meeting

Coimbra, 27-29 June 2018

Advanced teaching methods and tools
BOKU Examples

Margarita Himmelbauer, Alexandra Strauss-Sieberth and Willibald Loiskandl

Major topics addressed

Case studies / examples

- Regular courses (WMEE)
- MINT project *Sustanicum*
- LLL projects

Lecture Series in Soil, Water and Atmosphere VO 815.340

Thomas Ertl	H811 Institute of Sanitary Engineering and Water Pollution Control
Willibald Loiskandl	H815 Institute of Hydraulics and Rural Water Management
Hubert Holzmann	H816 Institute of Water Management, Hydrology and Hydraulic Engineering

What do I intent to do?

Objectives and Outcomes

built on “815.340 Lecture Series in Soil, Water and Atmosphere”

→ Repeat as much as necessary: Prerequisites (may be defined by you)

Provide useful links → Glossary

There is so much knowledge out there!	Literature (books, papers, internet links) Motivate you to make your own search!
Encourage you to look for it.	

...and what not?

Do not repeat:

- Hydrology
- Basics for rural water management (e.g. evaporation/transpiration)
- What is treated in lectures like soil water management and irrigation design

Objectives and Outcomes

Aim of the lecture

- Providing an overview of the relevant processes of the water cycle in the surface and subsurface environment and its interaction with atmosphere, plants and soils.
- The course introduces methods of meteorological, hydrological and soil physical measurements and refers to computational methods for the modelling of water transport. Also soil functions and soil processes are addressed. Water quality and quality impact will be considered with respect to surface and subsurface water bodies.
- The objective of the course is to provide a basic knowledge for follow up courses.

Outcome

With respect to the Bologna Study Principles the outcome of the particular courses has to be defined.

These outcomes will explicitly be addressed for the specific course units.

Lecturers

- **Priv.-Doz. DI Dr. Thomas Ertl**
- Email: thomas.ertl@boku.ac.at
- Office hours: Please ask for an appointment per e-mail

- **Ao.Univ.-Prof. DI Dr. Hubert Holzmann**
- Email: hubert.holzmann@boku.ac.at
- Office hours: Tuesday and Thursday 10:00-12:00

- **Univ.-Prof. DI Dr. Willibald Loiskandl**
- Email: willibald.loiskandl@boku.ac.at
- Office hours: Monday 15:30-17:00

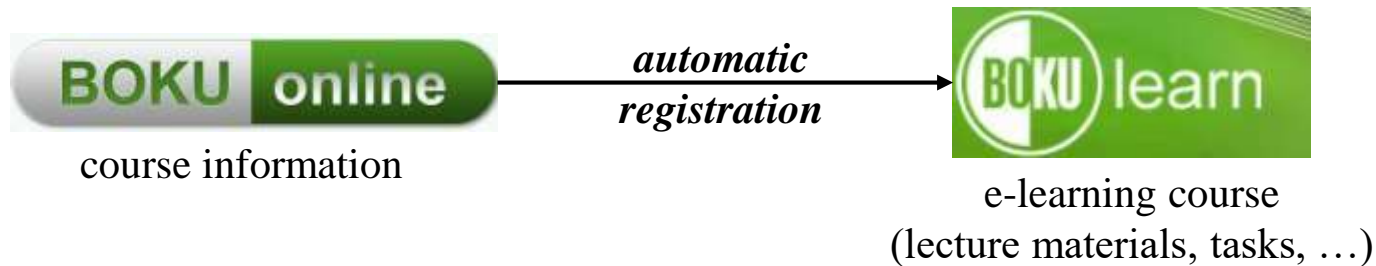
Lecture Room

- MUG3-SR13 (alternatively HS XXI)
- **Time:** Friday 14:00 – 16:30h

Organisation

Registration of Participants

Please register in BOKUonline even if you have already registered by email!



Grading example

The grading for the lecture is based on e-learning participation and written examination.

- E-learning Exercises: 30%
 - Written Examination: 70%
- **Both parts** have to be positive (> 50%)

Schedule and Content

Organisation

Date	Lecturer	Content
Basic level		
16.11.2012	Holzmann	Introduction
		Water Balance and Scale Issues
		Processes
		Monitoring and Observation of water balance components
	Loiskandl	Interaction Soil / Vegetation / Atmosphere – Introduction
	Ertl	Water quality and index class
23.11.2012	Loiskandl	Soil (Genesis, Type, Properties)
		Soil-Water-Movement
30.11.2012	Holzmann	Runoff Formation
		Rainfall Excess, Methods
07.12.2012	Holzmann	Runoff Processes (Drought, Flood)
		Model Overview
		Legislation
13.12.2012	Loiskandl	Soil-Water-Plant Interaction
		Soil Erosion by Water
Date	Lecturer	Content
Advanced level		
14.12.2012	Loiskandl	Legislation and Soil Water Management
		Case Studies from Thailand, Iran and East Africa
11.01.2013	Holzmann	Application of Rainfall Runoff Models (Forecast, Risk Management)
		Spatial Analysis, GIS
18.01.2013	Ertl	Urban Water and Solute Flow Processes
25.01.2013	Ertl	Urban Drainage
		Sanitary Engineering
		Case Studies and Indication

- The grading for the lecture is based on a written examination
- Dates and locations will be announced in BOKUonline

Master Programme



Water Management and Environmental Engineering (WMEE)

Compulsory Subjects

Σ 30 ECTS

Basic Subjects
Σ12 ECTS

Complementary Subjects
Σ12 ECTS

Engineering Project
Σ6 ECTS

**Master's thesis
Σ 30 ECTS**

**Master Seminar
Σ 2 ECTS**

Sectoral Subjects

Σ 46 ECTS

1. Sanitary Engineering

2. Rural Water Management

3. Hydrology and Water Management

4. Hydraulic Engineering and River Basin Management

5. Aquatic Ecology and Wetland Management

6. Water Management in Developing Countries

7. Waste Management

8. Economy and Law

9. Mountain Hazard Processes

10. Mitigation Measures for Mountain Hazards

11. Risk Management

Choose **5 Sectoral Subjects (blocks)** and take à 6 ECTS of the **obligatory courses**: Σ 30 ECTS
+ **elective specialisation subjects** out of your chosen blocks: Σ 16 ECTS

+ Σ 12 ECTS free electives

 Master – Water Management and Environmental Engineering → 3 Blocks out of **1, 2, 3** and **4**

 Master – Mountain Risk Engineering → Choose blocks **9, 10** and **11**

Sectoral Subjects (blocks)

1. Sanitary Engineering

2. Rural Water Management

3. Hydrology and Water Management

4. Hydraulic Engineering and River Basin Management

5. Aquatic Ecology and Wetland Management

6. Water Management in Developing Countries

7. Waste Management

8. Economy and Law

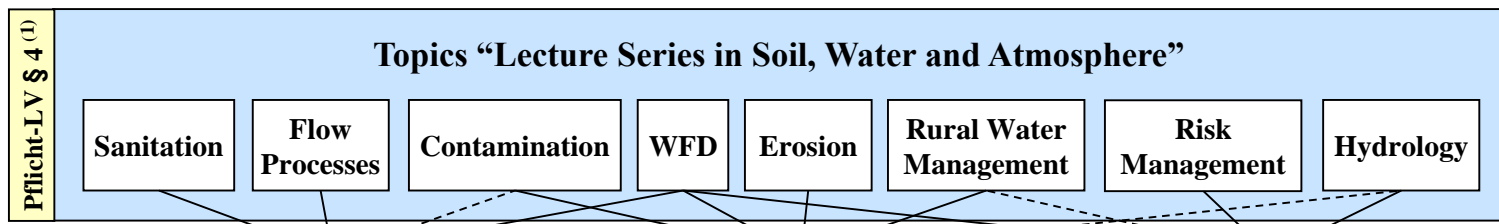
9. Mountain Hazard Processes

10. Mitigation Measures for Mountain Hazards

11. Risk Management

Master Programme

Water Management and Environmental Engineering (WMEE)



Wahl-LV §5 (2)	Pflicht (2a)	Case Studies in Sanitary Engineering	Water Supply and Wastewater Treatment	Rural Water Management (advanced)	Soil Conservation and Soil Protection	Hydrological Processes and modelling	Water Resources Planning and Management
	Wahl (2b)	On Site Solutions for Water Supply and Sanitation	Modelling in Sanitary Engineering (Sewer, Treatment Plant + Receiver)	Simulation in Vadose Zone Environment	Physical and Selected Chemical Methods of Soil Analysis	Integrated Flood Risk Management	Application of GIS in Hydrology and Water Management
		Industrial Water Management	Water Resources Management in Developing Co-operation	Soil erosion models and their application	Soil water management	Environmental Risk Analysis & Management	Possible Impacts of Climate Change on Water Resources
		... excerpts					

Targets	Sewer System	Water Quality	Soil Water Management	Soil Water Protection	Water Balance Components	Process Understanding
	<i>understanding and implementation</i>					

Annotation: ¹ *Pflicht-LV § 4 (compulsory courses): Σ30 ECTS*
² *Wahl-LV §5 (elective courses): Σ 46 ECTS*
^{2a} *Pflicht (compulsory courses): Σ30 ECTS → 5 out of 11 sectoral subjects; each Σ6 ECTS*
^{2b} *Wahl-LV (elective courses): Σ16 ECTS*

1) Tools for Rural Water Management (RWM) and Integrated Water Management (IWM)

Technical Tools	More Informal Tools
<ul style="list-style-type: none">- Water Balance Calculations- Summarise what we have learned in previous lectures (e.g. hydraulics)- Channel hydraulics- Pipe hydraulics- Groundwater	<ul style="list-style-type: none">- SWOT-Analyses:<ul style="list-style-type: none">strength → weaknessopportunities → threats- Traditional irrigation (low level vs. high level)- Trajectory studies
Water Accounting	
	Resilience

2) Project Based Learning

Use of case studies (real one's; literature)

Aim: to increase decision capacity → Capacity Building

Compromise between known knowledge and new aspects.

3) Reflection what we have achieved

No one knows everything (except god), but according to Pierre Teilhard de Chardin (eschatology)

we move in the direction of the better!

Materials and Information

Course Materials on the Internet

<http://www.boku.ac.at/iwhw/LVA816335/>

International Glossary of Hydrology (from UNESCO)

<http://webworld.unesco.org/water/ihp/db/glossary/glu/aglu.htm>

Glossary of Soil Science Terms (from SSS of America)

<https://www.soils.org/publications/soils-glossary/>



Deutsch | English Login

SUSTAINICUM COLLECTION
EDUCATIONAL MATERIAL FOR SUSTAINABILITY

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Search resources: Go advanced



SUSTAINICUM is a cooperative project by the [University of Natural Resources and Life Sciences, Vienna](#), the [University of Graz](#), and the [Graz University of Technology](#).

The project aims to advance topics in university teaching that are relevant to sustainability from the perspective of diverse disciplines. For this purpose a platform was developed where a variety of different types of resources can be collected and displayed. These resources (Building Blocks, Teaching Methods, Lecture Notes and Teaching Modules) should support teachers both in terms of content and through the practical application of innovative teaching methods, as well as promote systemic and holistic thinking. Teachers can submit their own resources on a rolling basis in order to make them available to other colleagues. For further information please see the pages [Content & Goals](#) and [Your Contribution](#).

A focus on ecologic and natural scientific aspects should also stimulate interest, particularly among female students, for the MINT disciplines of mathematics, informatics, natural sciences and technology.

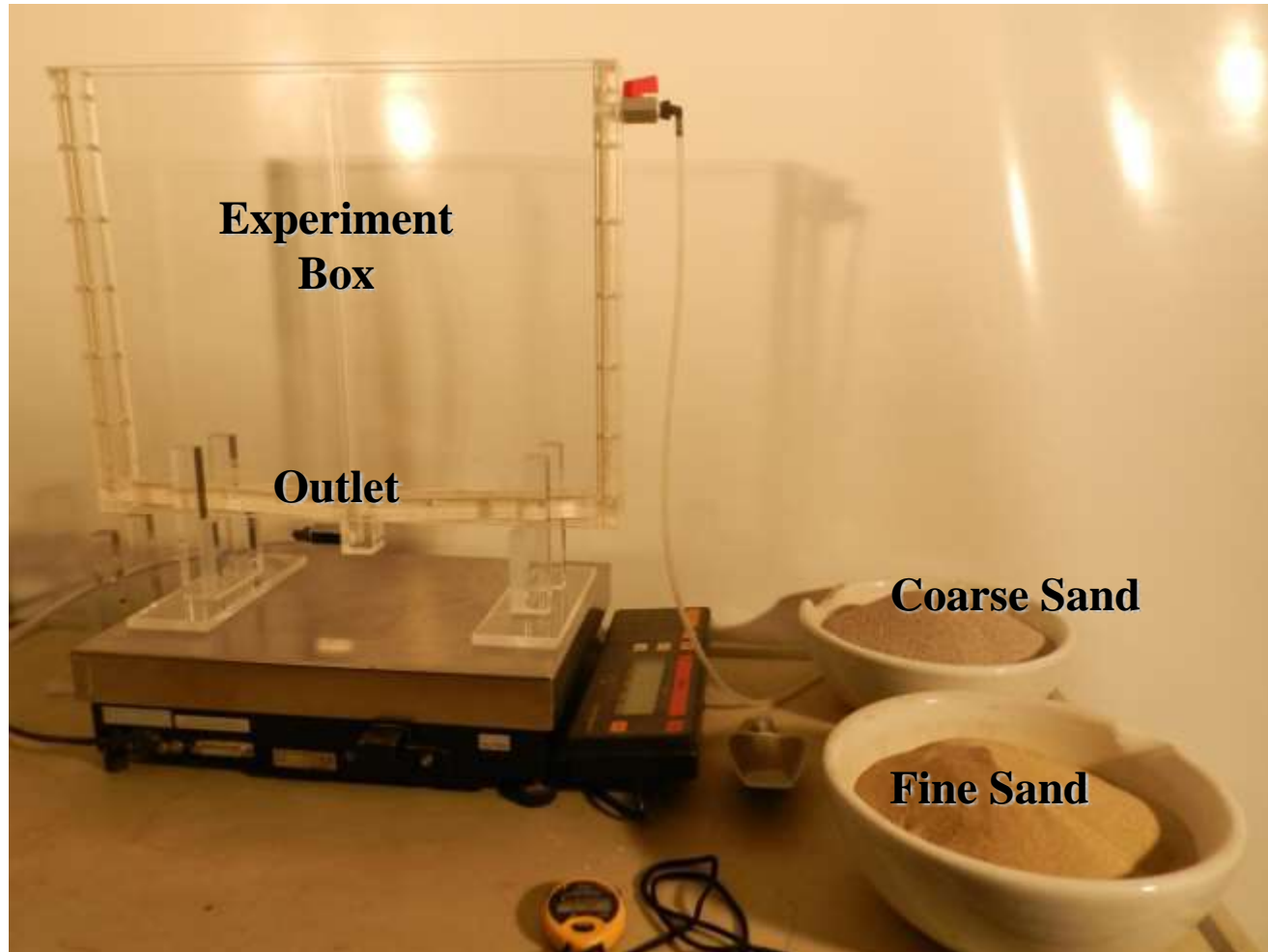
The project is funded by the [Austrian Federal Ministry for Science and Research](#) within the framework of the call "Projekt MINT- Massenfächer" (2011).

<http://www.sustainicum.at/en/modules>

<http://www.sustainicum.at/en/modules/view/122.Bodenwasserbewegung>

Water movement in different soil types

Box Experiment





LLL Project ALP: *Autonomous Living for Sustainable Production*

Margarita Himmelbauer

Stakeholder Partnership for LLL

Case study: **LLL Project ALP: *Autonomous Living for Sustainable Production***

Project funded by: **FFG- Austrian Research Promotion Agency**

Program: **Research skills for the Economy** / Qualification & network development,
Federal Ministry of Science, Research and Economy (BMWFV)

Scope:

- Development of a special target group-oriented training program + Delivery of up-to date research expertise
- Sharing the expertise's of the involved participants and enterprises, increasing the synergies
- Establishment of a longstanding qualification network between **five SMEs and the IHLW as a scientific partner**



**Increasing the competitiveness and resilience of the participants
in the field of sustainable production/ small farming and gardening**

Partners: Inst. of Hydraulics & Rural Water Management (IHLW) at BOKU

Hydrip GmbH

ADAPTIVIA GmbH

Arche Noah

bio-garten

SEKEM Energy GmbH

Target Group:

Staff, owners and managers (experts) in small private companies (SME) dealing with gardening & small farming, environmental monitoring technique, irrigation systems and management, preserving diversity of cultivated plants,..

Training program structure

Informal, extra-occupational education,
 “train the trainer” for development of own training programs

Blended learning concept = presence (face to face) meetings + e-learning units

Modular structure: 5 Basic and Specialization Modules covering topics related to:
*Applied soil sciences, Measurement systems, Irrigation techniques and management,
 Data management, sustainable plant productivity /food production and economical relevance, etc.*

Source: ALP project proposal

AP Nr.	AP Titel	Dauer in Mo	Start – TT/MM/JJ	Ende - TT/MM/JJ
1	Management des Projekts Project management	24 Mo	01.10.2012	30.09.2014
2	Vorbereitung der Qualifizierungsmaßnahme Development of the	> 4 Mo	rough planning at the start of the project	31.01.2012
3	Grundlagen: Basis – Module (Tasks) Modul 1 Angewandte Boden- bzw. Naturwissenschaften Modul 2 Sensor- und Messtechniken Modul 3 Bewässerungstechnologien und Steuerungssysteme Modul 4 Auswertung und Interpretation der Ergebnisse/ Daten Modul 5 Autarke Nahrungsmittelproduktion und agrarwirtschaftliche Relevanz geschlossener Stoffkreisläufe Basic modules	> 10 Mo		30.11.2013
4	Spezialisierung: Vertiefungs - Module (Tasks) Module 1 bis 5 wie im AP3 Specialization modules	5 Mo	mixed, practice-oriented program, with topics from all 5 modules running in parallel	30.04.2014
5	Abschlussarbeiten Final thesis/ project	3 Mo		31.07.2014
6	Nachbereitung der Maßnahme Quality assurance / Follow-up	2 Mo	01.08.2014	30.09.2014

Training program implementation - Examples

Sie sind angemeldet als Margarita Himmelbauer (Logout)



Start Mein BOKU learn Kalender Nachrichten FAQ Support Impressum

Meine Startseite ► Meine Kurse ► Forschungsprojekte ► QualiNetz

Navigation

- Meine Startseite
 - Website-Start
 - Website
 - Mein Profil
 - Dieser Kurs
 - QualiNetz**
 - Teilnehmer/innen
 - Auszeichnungen
 - Allgemeines
 - Organisatorisches
 - Businessplan
 - Veranstaltungs- und Literaturhinweise
 - Kommunikation
 - Feedback
 - Basismodule - 1.
Termin: 16. Oktober 2012
 - 2. Termin: 4. Dezember 2012
 - 3. Termin: 8. Jänner 2013
 - 4. Termin: 22. Jänner 2013
 - 5. Termin: 13. Februar 2013 (Mittwoch!!!)
 - 6. Termin: 20. Februar 2013 (Mittwoch!!!)
 - 7. Termin: März 2013
 - 8. Termin: April 2013

E-Learning zum Quali-Netz: Autarke Lebensstile für nachhaltige Produktion (ALP)

Präambel

Die über Jahre kumulierten Erfahrungen in der Bodenwissenschaft (z.B. in der Bodenkunde, Optimierung der Wassernutzung, Unterflurbewässerung im Weinbau) soll mit den TeilnehmerInnen geteilt und für ihre speziellen Fachgebiete nutzbar gemacht werden.

Abstract

Im Rahmen dieses zweijährigen Fortbildungsprogramms werden die TeilnehmerInnen in einem praxisorientierten Fortbildungsprogramm umfassend in Grundlagen- und Vertiefungsmodulen aus den Bereichen angewandte Bodenwissenschaften, Messtechnik, Bewässerung und Pflanzenproduktion im geschlossenen System ausgebildet. Die TeilnehmerInnen werden auch die Expertisen der beteiligten Unternehmen einbringen und Synergien zwischen den Unternehmen und dem BOKU-Team aufbauen.

Within this two-year practice-oriented further education programme regard to closed food production, the experiences of the enterprises are linked and synergies are increased. In addition to the training of participants, the expertises of the enterprises are linked and synergies are increased.

Projektaufzeit: 01.10.2012 - 31.03.2013

Projektnr.: 836253

Projektpartner:

- Hydrip GmbH (Kornbrunn) [Link](#)
- Universität für Bodenkultur Wien, Institut für Hydraulik und landeskulturelle Wasserwirtschaft (IHLW) [Link](#)
- Sekem Energy GmbH [Link](#)
- Adaptivia GmbH [Link](#)
- bio-garten [Link](#)
- ARCHE NOAH Gesellschaft für die Erhaltung der Kulturpflanzenvielfalt und ihre Entwicklung [Link](#)

Gefördert durch:

FFG - Forschungsförderungsgesellschaft, Sensengasse 1, 1000 Wien, Österreich
Programm: Forschungskompetenzen für die Wirtschaft
Ausschreibung: Qualifizierungsnetze 2011 [Link](#)

- Calendar and schedules
- Collection of materials for each training unit (lecture materials, articles, films, links, etc.)
- Repetition, exercises, individual deepening..
- (Photo) Documentation
- Information delivery and communication (forums)
- Work on the common thesis and on the business plan
- Feedback and Evaluation
- ...

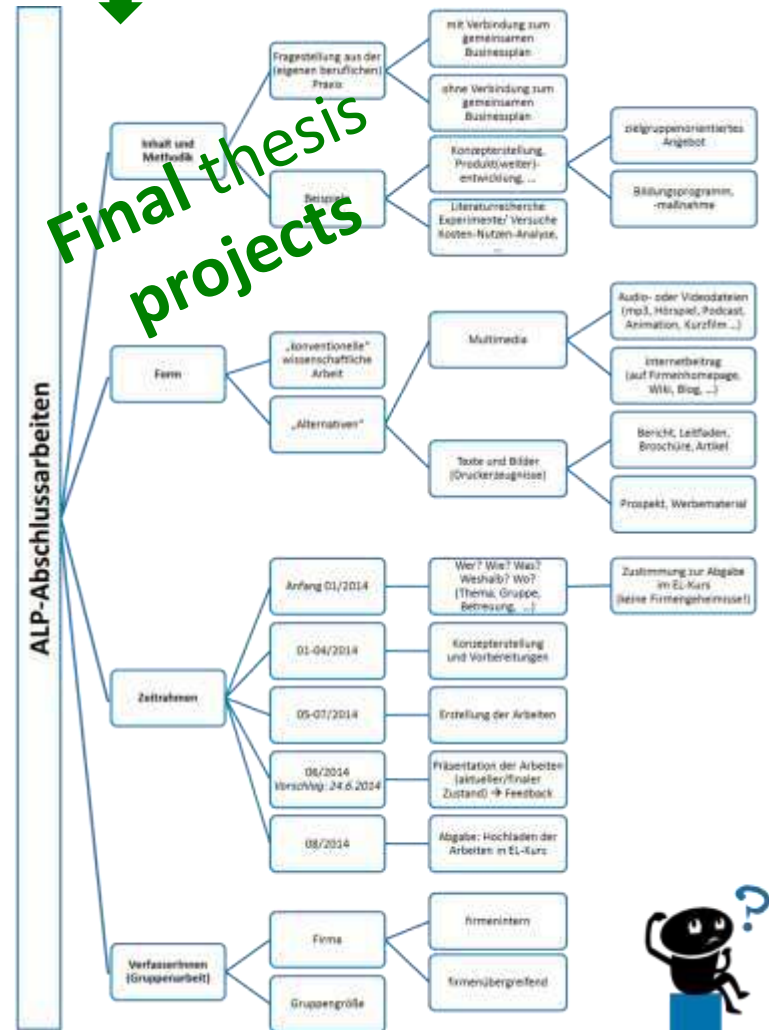
Training program implementation - Examples

Termin / Datum	Mo dul	Themen / Inhalte	Form/ Methodik	Vortragende	Lernort
1. 4. Dez. 2013	1, 5	Wurzelworkshop 1. Pflanzenwurzel und Bodenmasse • Wurzelsysteme und Dichte • Wasser- und Nährstoff-Trockenstress 2. Methoden der Wurzelforschung • In-situ und nichtdestruktive Labor- u. Feldmethoden • Stationen zu: Morphologie, Scanner-Verfahren, Architektur mit Biolumineszenz, Biomie mitt. Mikroskopie • Interpretation der Ergebnisse: Beispiele u. Fallstudien	Impulsreferat/ Vertiefung (interaktiv im Austausch mit den TN); Videofilme Demonstrationen und praktische Übungen im Laborhandlungsorientierte Lernstationen zu Wurzelanalyse	G. Bodner, Abt. Pflanzenbau, BOKU M. Himmelbauer, IHLW, BOKU M. Sobottk, Pflanzensociologische Institut, Klagenfurt	BOKU SR, Übungs-/ Laborräume Muthg. 18, Wien
2. 17. Jan. 2014	2	Intelligentes Netzwerk – Präsentation Firma <i>Adaptiva</i> • Messen und Schlussfolgern • Laserscanner und LiDAR für Vegetationsstrukturanalyse in der Praxis	Impulsreferat/ Vertiefung; Demonstrationen und Übungen Firmenbesichtigung	G. Simhandl, M. Simhandl und Inian Moorthy Adaptiva GmbH	Adaptiva GmbH, Franz-Josefs-Kai 51, Wien
3. 14. Jan. 2014	2, 3	Bewässerungstechnologien • Bewässerungstechnologien und Steuerungssysteme; Kosten Analysen und Anwendungsbeispiele • Präsentation Firma Hydrip - Erfahrungsbericht und Anwendungsbeispiele mit Tropfbewässerung	Impulsreferat/ Vertiefung (interaktiv im Austausch mit den TN); Videofilme; Demonstrationen und praktische Übungen	R. Nolt, IHLW, BOKU S. Glaser, Hydrip	BOKU, SR Muthg. 18, Wien
4. 21. Jan. 2014	2, 3, 4	Datenmanagement • Von Datenerfassung zu Ergebnissen • Interpretation der Ergebnissen / Datenreihen • Fallbeispiele	Impulsreferat/ Vertiefung; Demonstrationen und Übungen	W. Sokol und R. Nolt, IHLW, BOKU	BOKU, SR Muthg. 18, Wien
5. 11. Feb. 2014	3, 2, 4	Boden und Bodenwasser: Auswertung und Interpretation der Messergebnisse vom Feldtag, Mai 2013 • Messung von Bodenzustandsgrößen und Erhebung von Bodenparametern im Feld (Zusammenfassung) • Auswertung u. Interpretation der Ergebnisse: Fallbeispiele	Wiederholung/ Vertiefung; Demonstrationen und Übungen	G. Kammerer, IHLW	BOKU, SR Muthg. 18, Wien
6. 25. Feb. 2014	1	Pflanzenbau und Bodenschutz • Bodenbearbeitung, Bodenfruchtbarkeit und Bodenwasserhaushalt; Fallbeispiele • Bodenschutz / Erosionsschutz; Fallbeispiele	Impulsreferat/ Vertiefung (interaktiv im Austausch mit den TN); Demonstrationen	P. Liebhard, Abt. Pflanzenbau, BOKU A. Kirr, IHLW, BOKU	BOKU, SR Muthg. 18, Wien
7. 4. Mär. 2014	5	Pflanzenschutz • Bodenpilze und Pflanzenschutz: Pathogene, Symbionten und Biokontrollorganismen • Pflanzenkrankheiten und Pflanzenschädlinge • Präsentation Firma <i>Bio-Garten</i>	Impulsreferat (interaktiv im Austausch mit den TN); Videofilme Demonstrationen und Übungen im Labor	S. Steinkellner, Abt. Pflanzenschutz, BOKU D. Kampas, Bio-Garten	BOKU, SR / Laborraum Pflanzenschutz, Peter-Jordan Str. 82, Wien
8. 25. Mär. 2014	5	City Farming und Low-energy products: Wintergemüse • Wintergemüsebau - Alternative Zugänge zum Gemüseanbau von morgen; Fallbeispiele • Technische Einrichtungen im Gartenbau • Pflanzenzüchtung und Verwertung gärtnerischer Produkte	Impulsreferat und Demonstrationen/ Verkostung; Rundgang durch die Versuchsanlagen Fachexkursion	W. Palma, Abt. Gemüsebau, Lehr- u. Forschungszentrum (LFZ) Gartenbau, Schönbrunn	LFZ Schönbrunn, Grünbergstr. 24 Wien
9. 8. Apr. 2014	3, 5	Umweltökologie und Bodenfruchtbarkeit • Faktoren der Bodenfruchtbarkeit im Grünland • Besichtigung des Wasserlabors, der Wetterstation und der Versuchsanlagen des LFZ's • Feldbegehung u. Bodenansprachen im Gebiet d. Futterersee	Impulsreferat/ Demonstrationen; Feldbegehung und praktische Übungen im Gelände Fachexkursion	A. Bohner und M. Herndl, Inst. f. Pflanzenbau und Kulturlandschaft, LFZ Raumberg-Gumpenstein	LFZ Raumberg-Gumpenstein, Irnding
10. 12. Mai 2014	3, 5	Bodenfruchtbarkeit im Biolandbau • Stickstoff-Management und Humusaufbau im Biolandbau • Bodenleben und Nützlinge im Biolandbau • Besichtigung der Versuchsanlage und der Wurzelarena	Impulsreferat; Demonstrationen und praktische Übungen im Labor und im Gelände Fachexkursion	W. Hartl und B. Kromp, Bio-Forschung Austria	Bio-Forschung Austria, Esslinger Hauptstr. 132-134, Wien
11. 27./ 28. Mär. 2014 Folokativ	3, 5	ÖBG/ ASRR Exkursion • Geologie und Landschaftsentwicklung im Vulkanland • Besuch von drei Musterflächen der Bodenschätzung auf Brauner Auboden, Braunerde und Pseudogley • Wurzelfreilegung und Bodenprofile im Weinbau	Demonstrationen und Diskussionen im Austausch mit den TN Fachexkursion	H. Sogersperger, BMF O. Nestroy, TU Graz A. Bohner, LFZ Raumberg-Gumpenstein A. Köck, Weinbauer M. Sobottk, Klagenfurt W. Loiskand, BOKU	Vulkanland, Oststeiermark

Specialization modules

← Development of contents by experts from research, teaching, and practice

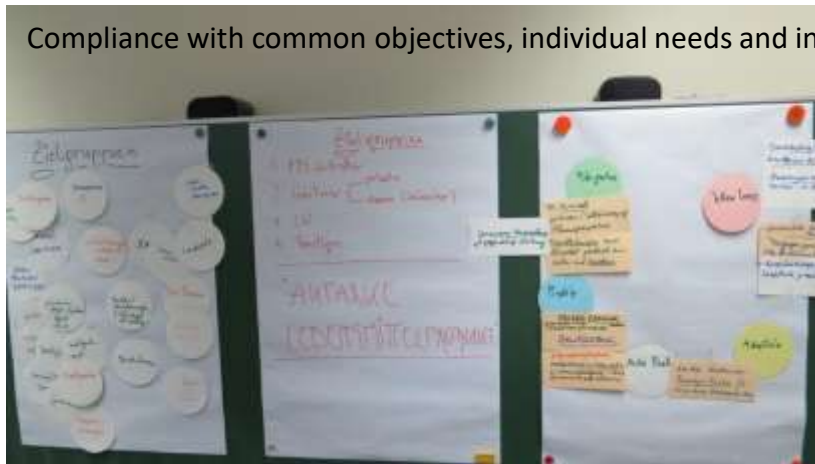
↓ Identification of learning outcomes



Training program implementation - Impressions

Didactical principles of adult education → *Self-determination + self-responsibility*

Compliance with common objectives, individual needs and interests



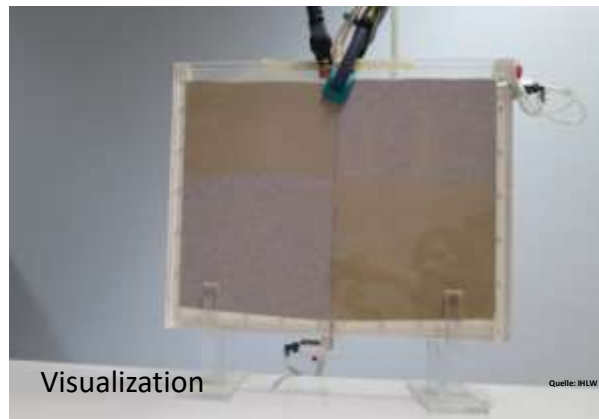
Practice-/ experience-oriented learning



Sharing of knowledge and expertise,
Face-to-face promoted interactions

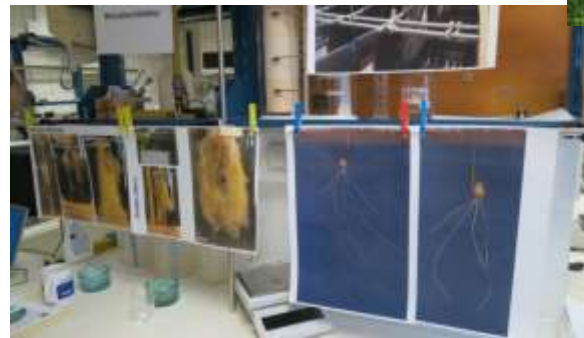
Training program implementation - Impressions

Didactical principles of adult education → *Self-determination + self-responsibility*



Training program implementation - Impressions

Demonstrations and practical exercises



ALP Project in figures:



2 years project duration

5 (basic and specialization) modules of the training program

6 work packages

11 learning sites/ locations

> 30 lecturers and trainers

33 training units

Training program structure

20 training units - basic modules

11 training units - specialization modules

1 video-conference to the business plan

1 final workshop

26 physical presence (*face-to-face*) meetings:

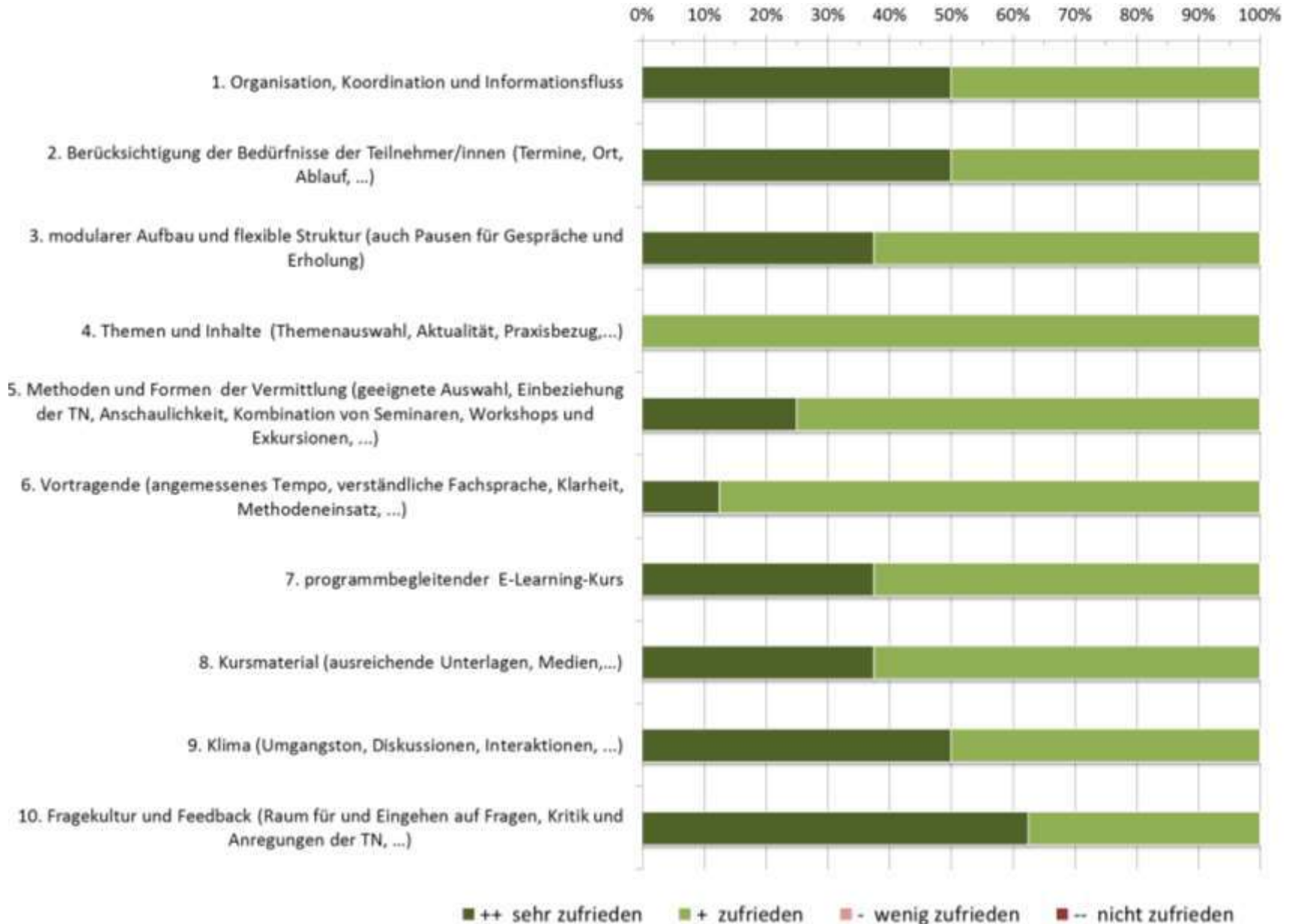
7 lectures + 7 practical trainings + 7 field trips + 5 workshops

6 e-Learning units

1 video-conference

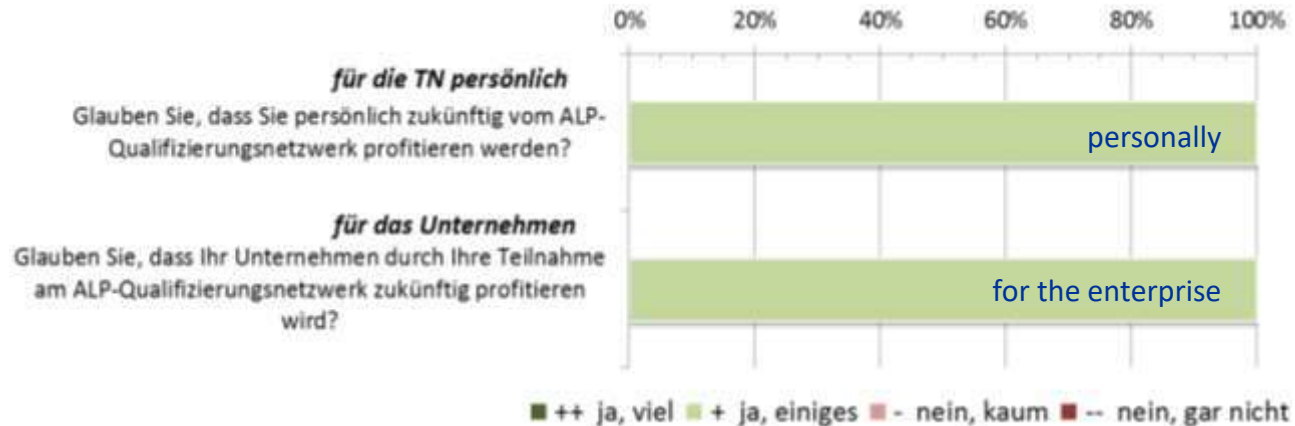
Quality assurance / Evaluation

Assessment of the participants opinion on various aspects of the training program



Quality assurance / Evaluation

Assessment of the benefits of participation in the ALP- Project



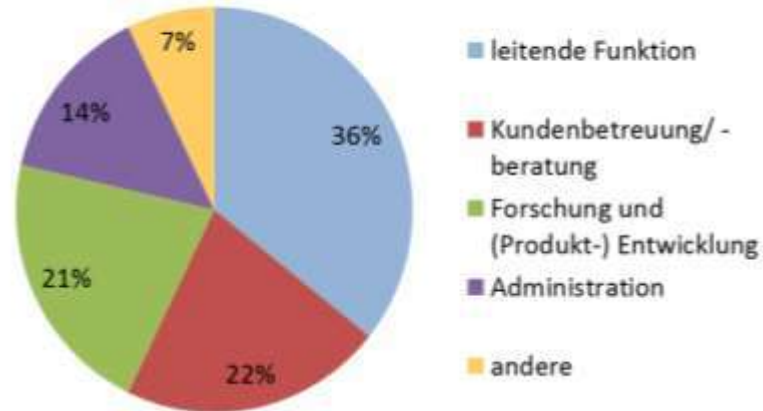
personally



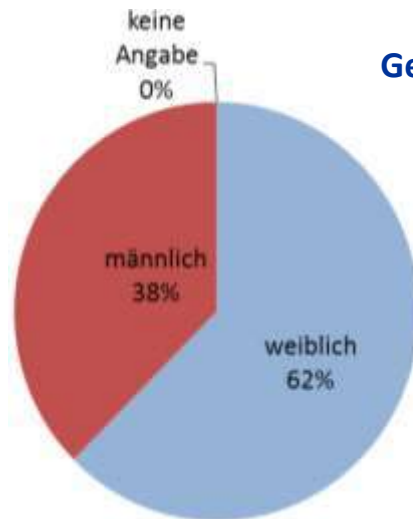
for the enterprise

Quality assurance / Evaluation

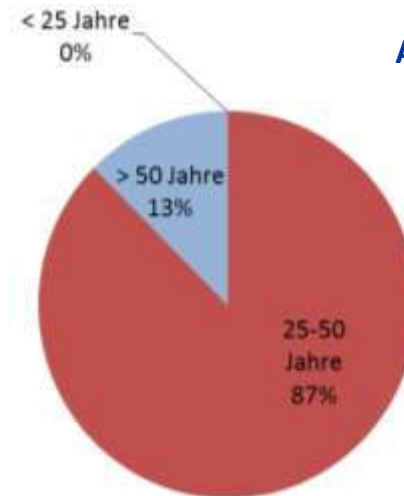
Position in the company / field of activity



Gender



Age



Project output

ALP-Toolkit contents:

- Methods-pool (collection of relevant methods; suggestions and examples for moderators and trainers; SUSTAINICUM COLLECTION - Teaching Materials for education for sustainability, ALP- Templates, etc.)
- Lecture materials (sorted by date and topic)
- Links (as supplement to the lecture materials) to Soil - Water - Plant - Measuring Technology; Virtual water and Water footprint; Water charges and water balance regulations, Renewable resources and community resilience, Tutorials, etc.
- Excursions and field trips (manuscripts and photo documentation)
- E-Learning Materials
- Business Plan (downloads for manuals and guidance)
- Glossaries and Databases (links to relevant databases)
 - Glossary of Soil Science Terms (SSSA)
 - Soils Glossary - soil terms (Cranfield University)
 - International Glossary of Hydrology (UNESCO)
 - Glossary of terms in (adult) education
 - BOKU Research Portal
- EU-programs and funding opportunities (links to various funding programs)

↓ Available to the participants also after the end of the project....



ALP Project Output / lessons learned

ALP - training program and experiences



ALP-Toolkit: *Collection of project and other useful materials, guidance, links, glossaries, etc.*



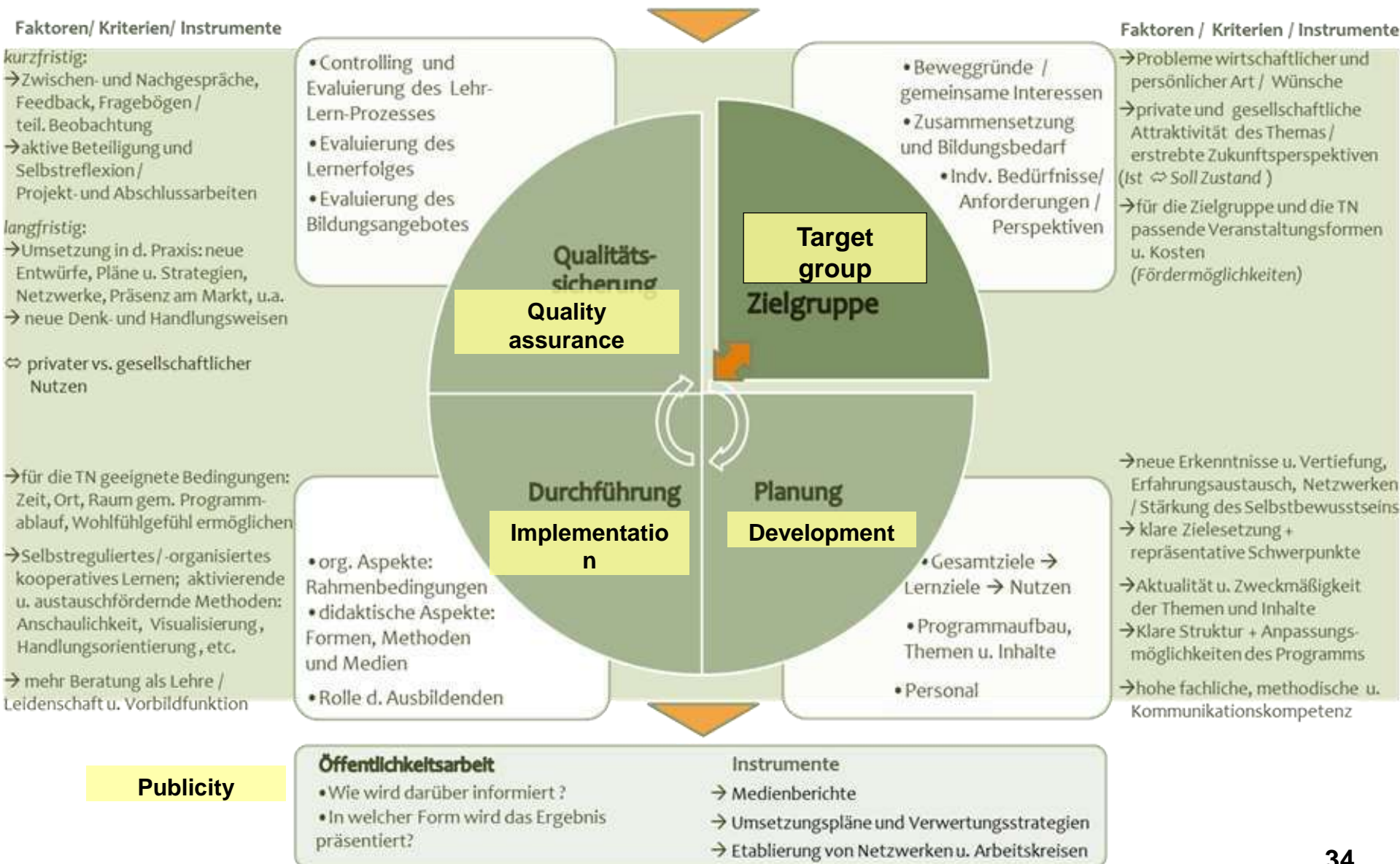
Outlines: *Development of target group oriented education offer for adults*



Template for future informal LLL programs, trainings, courses and other activities and....

Development of target group oriented education offer for adults

Margarita L. Himmelbauer



School Partnership for LLL

Case study: **Project ELWIRA:** *Plants, wood, steel and concrete – life cycle performances of construction materials*

Project funded: **OeAD** - Austrian agency for mobility and cooperation in education, science & research
Program: **SparklingScience**, Federal Ministry of Science, Research and Economy (BMWFW)

The aim:

- **on the education side - to spark young people's interest in research**
- **on the research side - to gain innovative ideas & findings**
- **in the long run - to remove structural barriers and thus create a stimulus for permanent collaboration between research institutions and schools**

Duration: 2 years (01.05.2015-30.04.2017)

Partners:

BOKU Vienna: Inst. of Soil Bioengineering & Landscape Construction (IBLB) (*Coordinator*), Inst. of Structural Engineering (IKI), and Inst. of Hydraulics & Rural Water Management (IHLW)
Bundesrealgymnasium GRG 19, Vienna (*High school*)

School Partnership for LLL

Scope:

High school students cooperate with scientists of the BOKU in life cycle assessment of "new" living building materials

- Combination of laboratory and field methods
Dept. of Civil Engineering and Natural Hazards

Result: Awareness raising of sustainable, climate-friendly and resource- conserving handling of building materials.

Activities

- ✓ Start workshop: *Project expectations vs. What can I contribute to*
...
- ✓ Workshops on aesthetic capabilities of materials...

Source: ELWIRA Website: <https://www.baunat.boku.ac.at/iblb/forschung/schwerp/iblb/elwira/>

Photo documentation





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BOKU Team

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Thank you for your attention

Summary of the activities so far...

Work flow of activities:

BOKU study programme structure (regular curricula)



Master Programmes as case studies: f.e. Water Management and Environmental Engineering (WMEE)



LLL- framework and quality assurance, IT- Tools, e-learning platform



Learning environment at BOKU  **available** for the project partners

