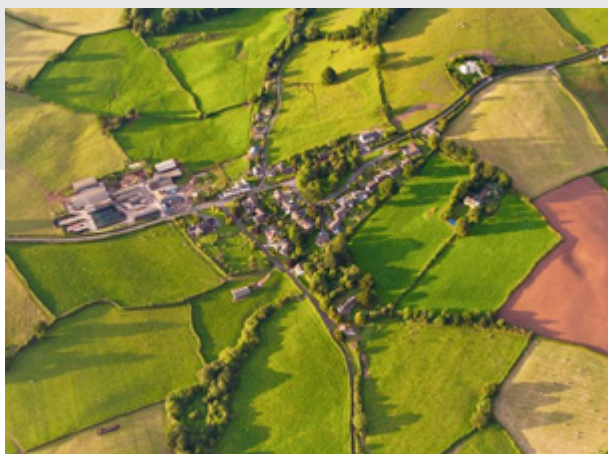


Landscape 2018

Frontiers of agricultural landscape research



Programme

12–16 March 2018

Berlin, Germany, Adlershof con.vent



Photo: Petair | Fotolia, frontpage: fotoVoyager | iStock

Conference Chairs

Frank Ewert
Leibniz Centre for Agricultural Landscape Research (ZALF)
Müncheberg, Germany

Mark Rounsevell
Karlsruhe Institute of Technology, IMK-IFU
Garmisch, Germany

Conference Host

Katharina Helming
Leibniz Centre for Agricultural Landscape Research (ZALF)
Müncheberg, Germany

sponsored by:



nature
sustainability

endorsed by:



Rationale and Aims

Agricultural landscapes are shaped by human activities and are subject to permanent change through the interplay of natural processes, land use and societal developments. Knowledge about the underlying processes of landscape dynamics at all relevant spatial and temporal scales is the prerequisite for sustainable landscape management.

The aim of the conference is to present recent advances in landscape research to promote the development of sustainable agricultural land use and landscape strategies. The particular objective is to bring together key findings from relevant disciplinary and interdisciplinary approaches as well as from basic and application-oriented research.

Scope

The conference focuses on recent scientific work related to:

- › The functioning of landscapes, with a focus on element cycles and microbiomes including approaches to scale up from individual processes to the landscape scale.
- › Sustainable land use practices and appropriate governance systems which secure the provision of food and fibre as well as other ecosystem services and biodiversity.
- › Advances in science toward the development of an integrated landscape theory.

Main Sessions

I. Landscape Functioning Element Cycles and Microbiomes



Scientific Committee

Jørgen Olesen, University of Aarhus
Andreas Richter, University of Vienna
Pete Smith, University of Aberdeen
Harry Vereecken, FZ Juelich, University of Bonn

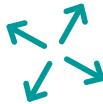
Session Chairs

Laurent Philippot, INRA
Steffen Kolb, ZALF

Special Issue

A special issue is planned (call announcement): *Frontiers* (open-access publisher)
Research topic: Landscape and Ecosystem Microbiology
<https://www.frontiersin.org/research-topics/6836/landscape-and-ecosystem-microbiology>

II. Land Use and Governance Managing Ecosystem Services and Biodiversity at the Landscape Scale



Scientific Committee

Leon Braat, Wageningen University & Research
Brendan Fisher, University of Vermont
Adrienne Grêt-Regamey, ETH Zuerich
Eva Lieberherr, ETH Zuerich

Session Chairs

Sonoko Bellingrath-Kimura, ZALF, Humboldt-Universität zu Berlin
Bettina Matzdorf, ZALF, Leibniz Universität Hannover

Special Issue

A special issue based on this session is planned by the session chairs and scientific committee.

III. Landscape Synthesis Integrated Systems Analysis – Towards a Landscape Theory



Scientific Committee

Erling Andersen, University of Copenhagen
Cécile Albert, IMBE
Martha Bakker, Wageningen University & Research
Axel Kleidon, MPI, Jena

Session Chairs

Peter Verburg, Vrije Universiteit Amsterdam
Gunnar Lischeid, ZALF, University of Potsdam

Programme Structure

Monday, March 12, 2018				
	EINSTEIN-KABINETT	NEWTON-KABINETT	PASTEUR-KABINETT	CURIE-KABINETT
08:00	Registration			
09:00 – 12:00	Satellite Workshop 1	Satellite Workshop 3	Satellite Workshop 2	
12:00 – 13:00	Lunch break			
13:00 – 16:00	Satellite Workshop 1	Satellite Workshop 3	Satellite Workshop 2	MACSUR Meeting
Tuesday, March 13, 2018				
	BUNSEN-SAAL	EINSTEIN-KABINETT	NEWTON-KABINETT	
08:00	Registration			
09:00 – 09:15	Welcome			
09:15 – 10:00	Plenary Keynote and Discussion			
10:00 – 10:30	Coffee break			
10:30 – 12:30	II. Analysing and Assessing Land Use Change I	I. Food Production	III. Management and Land Use Change	
12:30 – 13:45	Lunch break			
13:45 – 15:15	II. Analysing and Assessing Land Use Change II	I. C and N Cycle of the Landscape I	III. Integrated Models	
15:15 – 15:45	Coffee break			
15:45 – 17:15	II. Analysing and Assessing Land Use Change III	I. C and N Cycle of the Landscape II	III. Understanding Landscape Structure	
Wednesday, March 14, 2018				
09:00 – 09:15	Welcome			
09:15 – 10:00	Plenary Keynote and Discussion			
10:00 – 10:30	Coffee break			
10:30 – 12:00	II. Design and effects of governance models I	I. Water Dynamics	III. Research strategies I	
12:00 – 13:00	Lunch break			
13:00 – 14:30	II. Elevator Pitch and Poster Session	I. Poster Session	III. Poster Session	
14:30	Bus shuttle to Müncheberg (ZALF), Meeting point: in front of the conference venue			
16:00 – 17:30	ZALF Tour: Landscape Live			
17:30	Bus shuttle to Wulkow Castle			
18:00 – 21:00	Conference Dinner at Wulkow Castle			
21:00	Bus shuttle to Berlin Adlershof			
Thursday, March 15, 2018				
09:00 – 09:15	Welcome			
09:15 – 10:00	Plenary Keynote and Discussion			
10:00 – 10:30	Coffee break			
10:30 – 12:30	II. Design and Effects of Governance Models II	I. Microbes in the Landscape	III. Research Strategies II	
12:30 – 13:45	Lunch break			
13:45 – 15:15	II. Design and Effects of Governance Models III	I. Structured Discussion	III. Final Discussion	
15:15 – 15:45	Coffee break			
15:45 – 17:15	Final Plenary and Discussion			
Friday, March 16, 2018				
08:30 - 18:45	Field Trip to the Quillow Region: AgroScapeLab Quillow – A Landscape Lab			
08:45 - 17:15	Field Trip to the Biosphere Reserve Spreewald: Nature Conservation 2.0			
09:00 - 15:45	Field Trip to the Albrecht Daniel Thaer Exhibition in Möglin			
09:00 - 16:00		Satellite Workshop 6		

Monday, March 12, 2018

Satellite Workshops

08:00 *Registration*

09:00 Workshop 1:
Nature conservation 2.0
Organizer: Team of the cp³ research project;
Claudia Sattler, ZALF
EINSTEIN-KABINETT

09:00 Workshop 2:
Metropolitan agri-food-systems
Organizer: Ingo Zasada, ZALF; Bernd Pölling,
South Westphalia University of Applied Sciences;
Alexandra Doernberg, ZALF; Marcin Spyra, Martin
Luther University Halle-Wittenberg
PASTEUR-KABINETT

09:00 Workshop 3:
**Towards innovative land management
strategies**
Organizer: TALE consortium;
Emma van der Zanden, Vrije Universiteit Amster-
dam; Martin Volk, Helmholtz Centre for Environ-
mental Research UFZ
NEWTON-KABINETT

12:00 *Lunch break*

13:00 **MACSUR Leadership Meeting**
Organizer: Kurt-Christian Kersebaum
CURIE-KABINETT

Monday, March 12, 2018

Satellite Workshops

13:00 Workshop 1:
Nature conservation 2.0
(project internal workshop)
Organizer: Team of the cp³ research project;
Claudia Sattler, ZALF
EINSTEIN-KABINETT

13:00 Workshop 2:
Metropolitan agri-food-systems
Organizer: Ingo Zasada, ZALF; Bernd Pölling,
South Westphalia University of Applied Sciences;
Alexandra Doernberg, ZALF; Marcin Spyra, Martin
Luther University Halle-Wittenberg
PASTEUR-KABINETT

13:00 Workshop 3:
**Towards innovative land management
strategies**
Organizer: TALE consortium;
Emma van der Zanden, Vrije Universiteit Amster-
dam; Martin Volk, Helmholtz Centre for Environ-
mental Research UFZ
NEWTON-KABINETT

16:00 *End of Satellite Workshops*

Tuesday, March 13, 2018

Plenary

08:00 *Registration*

Plenary

Chair: Frank Ewert, ZALF

BUNSEN-SAAL

09:00 **Welcome**

Frank Ewert
Scientific Director, Leibniz Centre for Agricultural
Landscape Research (ZALF), Germany

Mark Rounsevell
Head of Land Use Change Research Group,
IMK-IFU, Germany

Katharina Helming
Lead of Sustainability Assessment Group, Leibniz
Centre for Agricultural Landscape Research (ZALF),
Germany

09:15 KEYNOTE
**Idea- vs Data-Driven Microbial Modeling for
Soil Carbon Dynamics**

Yiqi Luo
Northern Arizona University, USA

10:00 *Coffee break*

Tuesday, March 13, 2018



I. Landscape Functioning
Element Cycles and Microbiomes

I. Landscape Functioning

Chairs: Laurent Philippot, INRA
Steffen Kolb, ZALF

EINSTEIN-KABINETT

10:30 KEYNOTE
**Sustainable management of carbon, nitrogen
and phosphorus cycles at landscape scales**
Jørgen Olesen, University of Aarhus, Denmark

Food Production

11.00 **Terrestrial carbon dioxide removal potential
of pyrolytic treated biomass produced by
sustainable carbon farming**
Hans-Peter Schmidt, Ithaka Institute for Carbon
Strategies

**Considering management-induced temporal
dynamics of soil hydraulic properties in
hydrological systems**
Parvathy Chandrasekhar, UNU-FLORES and Tech-
nische Universität Dresden (TUD)

**SCREESOM – screening methods for a cost
effective detection of supply with SOM in
arable and grassland soils**
Malte Ortner, Universität Trier

**Influence of food production and consumption
on river water quality in the Ishikari river
watershed in Hokkaido, Japan**
Ryusuke Hatano, Hokkaido University, Japan

12:30 *Lunch break*

Tuesday, March 13, 2018



II. Land Use and Governance

Managing Ecosystem Services and
Biodiversity at the Landscape Scale

II. Land Use and Governance

Chair: Sonoko Bellingrath-Kimura, ZALF

BUNSEN-SAAL

10:30 KEYNOTE

**Can we derive "optimal" governance strategies
for co-developing land use and governance
approaches?**

Christine Fürst, Martin Luther University
Halle-Wittenberg

Analysing and Assessing Land Use Change I

11:00 **Impacts of environmental changes on the
provision of agricultural ecosystem services under
different climate and land management scenarios**
Anett Schibalski, Technische Universität Braunschweig

**Use of spatially explicit census data of grassland
intensities for holistic ecosystem service mapping**
Robert Huber, Agricultural Economics and Policy ETH

**Site and management situation of heterogeneous
fen grassland in northeast Germany**
Jürgen Pickert, ZALF

**From global to local - addressing future landscapes
view and features migrating global agroecological
zones to local agroecological zones**
Yavor Yordanov, National Soil Survey, Bulgaria

**Measuring biodiversity driven ecosystem
functions at the landscape scale - Impacts of
landscape heterogeneity, biotope elements and
land use**
Michael Glemnitz, ZALF

12:30 *Lunch break*

Tuesday, March 13, 2018



III. Landscape Synthesis

Integrated Systems Analysis –
Towards a Landscape Theory

III. Landscape Synthesis

Chair: Gunnar Lischeid, ZALF

NEWTON-KABINETT

10:30 KEYNOTE

Why do landscapes change?

Matthias Bürgi, Swiss Federal Research Institute,
WSL

Management and Land Use Change

11:00 **Land tenure in European agricultural
landscapes**
Erling Andersen, University of Copenhagen

**Proximate drivers of crop land use change in
two intensive agricultural regions**
Bano Mehdi, BOKU, Vienna

**A framework to analyse the resilience of EU
farming systems**
Pytrik Reidsma, Wageningen University

**Accounting for incremental crop management
adaptations to climate change in agricultural
integrated assessments**
Heidi Webber, University of Bonn and ZALF

12:30 *Lunch break*

Tuesday, March 13, 2018



I. Landscape Functioning

Element Cycles and Microbiomes

I. C and N Cycle of the Landscape I

Chairs: Laurent Philippot, INRA
Steffen Kolb, ZALF

EINSTEIN-KABINETT

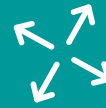
13:45 **Impact of soil erosion status on C fluxes and C storage of heterogeneous croplands**
Jürgen Augustin, ZALF

Dissolved organic carbon and nitrogen in small agricultural streams
Marlen Heinz, Julius Kühn Institute

Land use change implications on the soil C sequestration potential of peri-urban environments
Lona van Delden, University of Hohenheim

15:15 *Coffee break*

Tuesday, March 13, 2018



II. Land Use and Governance

Managing Ecosystem Services and Biodiversity at the Landscape Scale

II. Analysing and Assessing Land Use Change II

Chair: Brendan Fisher, University of Vermont

BUNSEN-SAAL

13:45 **How biodiversity services of farms can be recorded, evaluated and visualized in a practical way**
Birte Bredemeier, Leibniz Universität Hannover

Enhancing farmland ecosystem services, productivity, and resilience-building at landscape level on European arable crops
Annik Dollacker, Bayer AG Crop Science Division

Ecosystem services assessments on N cycling of China
Meihua Deng, Zhejiang University

Maximize the balance! – Optimizing trade-offs between ecosystem services and biodiversity in agricultural landscapes
Andrea Kaim, Helmholtz Centre for Environmental Research UFZ

A model based assessment of the tradeoffs between provision of agricultural commodities and other ecosystems services
Alice E. Milne, Rothamsted Research

15:15 *Coffee break*

Tuesday, March 13, 2018



III. Landscape Synthesis
Integrated Systems Analysis –
Towards a Landscape Theory

III. Integrated Models

Chair: Martha Bakker, Wageningen University & Research
NEWTON-KABINETT

13:45 **The impact of global food trade on food security and land use in the context of climate change - an empirical agent-based model**
Jiaqi Ge, The James Hutton Institute

NOAHMP-GECROS: Soil-plant-atmosphere-interactions of winter wheat and silage maize in model regions of Germany against the background of climate change
Pascal Kremer, University of Hohenheim

Cyber-physical landscapes – a framework for agriculture 4.0
Claas Nendel, ZALF

Agent-based modelling of a synthetic pastoral landscape
François Guerrin, INRA

15:15 *Coffee break*

Tuesday, March 13, 2018



I. Landscape Functioning
Element Cycles and Microbiomes

I. C and N Cycle of the Landscape II

Chairs: Laurent Philippot, INRA
Steffen Kolb, ZALF

EINSTEIN-KABINETT

15:45 **Links between plant rhizodeposition and N cycling in grassland system**
Petr Kotas, University of South Bohemia, Czech Republic

Landscape-scale BVOC emission from energy crops – A modelling approach
Tommaso Stella, ZALF

Coupling crop model with different water balance and root water uptake approaches: An analysis of the predictive capacity in simulating spatially variable CO₂ and H₂O fluxes and crop growth process
Thuy Huu Nguyen, INRES, University of Bonn

Modeling ecosystem services in transition zones of forest to agricultural land in Europe
Martin Schmidt, ZALF

17:15 *End of Day 1*

Tuesday, March 13, 2018



II. Land Use and Governance

Managing Ecosystem Services and
Biodiversity at the Landscape Scale

II. Analysing and Assessing Land Use Change III

Chairs: Bettina Matzdorf, ZALF

Sonoko Bellingrath-Kimura, ZALF

BUNSEN-SAAL

15:45 **Assessing ecosystem services tradeoffs across
agricultural landscapes in a mountain region**

Davide Geneletti, University of Trento

**Integration of process-based and socio-
ecological approaches for ecosystem service
trade-off analysis in cultural landscapes**

Miguel A. Cebrián-Piqueras, Leibniz Universität
Hannover

**Impacts of land sharing and land sparing
strategies on ecosystem services and
biodiversity in an Austrian case study region**

Martin Schönhart, BOKU, Vienna

16:30 **Structured Discussion: "Analysing and
assessing land use change at the landscape
scale?"**

17:15 *End of Day 1*

Tuesday, March 13, 2018



III. Landscape Synthesis

Integrated Systems Analysis –
Towards a Landscape Theory

III. Understanding Landscape Structure

Chair: Peter Verburg, Vrije Universiteit Amsterdam

NEWTON-KABINETT

15:45 **A gradient perspective on landscape
classification**

Trond Simensen, University of Oslo

**Landscapes as thermodynamic, optimizing
systems: Formulation and applications**

Axel Kleidon, Max Planck Institute for
Biogeochemistry

**Understanding the effect of land cover
change in southeastern Amazonia with a
thermodynamically-constrained surface
energy balance approach**

Luigi Conte, Max Planck Institute for
Biogeochemistry

**Cross-disciplinary links in environmental
systems science: Current state and claimed
needs**

Daniel Ayllón, Universidad Complutense de
Madrid

17:15 *End of Day 1*

Wednesday, March 14, 2018

Plenary

Plenary

Chair: Mark Rounsevell, IMK-IFU

BUNSEN-SAAL

09:00 **Welcome and introduction to the day**

Mark Rounsevell
Head of Land Use Change Research Group, IMK-IFU, Germany

09:15 KEYNOTE
Landscape, biodiversity and agroecological services

Sandrine Petit
Director of Research, INRA, France

10:00 *Coffee break*

Wednesday, March 14, 2018



I. Landscape Functioning

Element Cycles and Microbiomes

I. Water Dynamics

Chairs: Laurent Philippot, INRA

Steffen Kolb, ZALF

EINSTEIN-KABINETT

10.30 **Soil structure effects on flow and transport indicating the link to soil and crop management**

Horst H. Gerke, ZALF

Long-term modelling of hourly evapotranspiration and soil water contents

Martin Wegehenkel, ZALF

Small area, big impact – small lentic waterbodies in the agricultural landscape

Marlene Pätzig, ZALF

Preferential flow through biopores from plot to catchment scale

Anne-Kathrin Schneider, Technische Universität Braunschweig

12:00 *Lunch break*

Wednesday, March 14, 2018



II. Land Use and Governance

Managing Ecosystem Services and Biodiversity at the Landscape Scale

II. Design and Effects of Governance Models I

Chair: Adrienne Grêt-Regamey, ETH Zuerich

BUNSEN-SAAL

10:30 **Spatio-temporal characteristics of ecosystem services and governance in rural landscapes**

Lenny van Bussel, Wageningen University & Research

Towards multifunctional agricultural landscapes: assessing and governing synergies between food production, biodiversity and ecosystem services

Martin Volk, Helmholtz Centre for Environmental Research UFZ

Assessing the biotic and economic impacts of different greening rules for farms in three northern German cases study regions

Peter Zander, ZALF

Local visions of land-sparing and land-sharing – Is there room for improving strategies to better maintain multiple agroecosystem services?

Nina Zarrineh, Agroscope, Switzerland

The acceptability of innovative strategies for sustainable valorisation of marginal wetlands in the Spreewald region (Germany)

Maria Busse, ZALF

12:00 *Lunch break*

Wednesday, March 14, 2018



III. Landscape Synthesis

Integrated Systems Analysis – Towards a Landscape Theory

III. Research Strategies I

Chair: Erling Andersen, University of Copenhagen

NEWTON-KABINETT

10:30 **Conceptualising fields of action for sustainable intensification – a systematic literature review and application to regional case studies**

Meike Weltin, ZALF

Success in transdisciplinary landscape research

Thomas Weith, ZALF

Recent progress in eliciting diverse values and meanings of landscapes

Tobias Plieninger, University of Göttingen and University of Kassel

Understanding the evolution of land systems from complex system perspective: resilience, tipping point and regime shifts

Zhanli Sun, IAMO

12:00 *Lunch break*

Wednesday, March 14, 2018

Poster Session

13:00 **Poster Session**
List of all posters p. 36 ff.

I. Landscape Functioning Element Cycles and Microbiomes

EINSTEIN-KABINETT

II. Land Use and Governance Managing Ecosystem Services and Biodiversity at the Landscape Scale

13:00 **Elevator Pitch (Plenary)**

13:30 **Poster Session**

BUNSEN-SAAL

III. Landscape Synthesis Towards a Landscape Theory

NEWTON-KABINETT

14:30 *End of Poster Session*

Wednesday, March 14, 2018

ZALF Tour & Conference Dinner

14:30 *Bus shuttle to Müncheberg (ZALF)*
Meeting point: in front of the conference venue

16:00 **ZALF Tour: Landscape Live**

LEIBNIZ CENTRE FOR AGRICULTURAL
LANDSCAPE RESEARCH (ZALF)
MÜNCHEBERG

18:00 *Bus shuttle to Wulkow Castle*

18:30 **Conference Dinner**
WULKOW CASTLE

21:00 *Bus shuttle to Berlin Adlershof*

Thursday, March 15, 2018

Plenary

Plenary

Chair: Katharina Helming, ZALF

BUNSEN-SAAL

09:00 **Welcome and introduction to the day**

Katharina Helming
Lead of Sustainability Assessment Group, ZALF,
Germany

09:15 KEYNOTE
**Landscape science: the role of models, data
and theory**

Marcel van Oijen, Centre for Ecology and
Hydrology (CEH), Edinburgh

10:00 *Coffee break*

Thursday, March 15, 2018



I. Landscape Functioning

Element Cycles and Microbiomes

I. Landscape Functioning

Chairs: Laurent Philippot, INRA

Steffen Kolb, ZALF

EINSTEIN-KABINETT

10:30 KEYNOTE

**How much microbiology do we need to
understand landscape-level processes?**

Andreas Richter, University of Vienna, AU

Microbes in the Landscape

11.00 **Soil microbial influence of natural landscape
elements and landscape structure on agricultural
fields**

Karin Pirhofer-Walzl, Freie Universität Berlin; ZALF

**Soil organic carbon drives microbial diversity
under different land use types – Lessons from a
European cross-continental study**

Christoph Tebbe, Thünen Institute of Biodiversity

**Does crop rotational diversity increase soil microbial
resistance and resilience to drought and flooding?**

Jörg Schnecker, University of New Hampshire, USA

**Peaks of in situ N₂O emissions are influenced
by N₂O producing and reducing microbial
communities across arable soils (Poster talk)**

Laurent Philippot, INRA, France

**Role of methanol utilizing bacteria in carbon
dynamics from landscape scale perspective:
the microbial influence on net methanol fluxes
(Poster talk)**

Saranya Kanukollu, ZALF

12:30 *Lunch break*

Thursday, March 15, 2018



II. Land Use and Governance

Managing Ecosystem Services and
Biodiversity at the Landscape Scale

II. Land Use and Governance

Chair: Eva Lieberherr, ETH Zuerich

BUNSEN-SAAL

10:30 KEYNOTE

**It's a Bargain: better landscape-level outcomes
for people and biodiversity at low costs**

Brendan Fisher, University of Vermont, USA

Design and Effects of Governance Models II

11:00 **The ambivalent effects of climate insurance on
land use practices**

Birgit Müller, Helmholtz Centre for Environmental
Research UFZ

**Modelling environmental decisions using
cultural values: the water-land-environment
nexus in the Central U.S. Great Plains**

Gabriel Granco, Stroud Water Research Center

**Searching for the instrumental value of equity in
Payments for Ecosystem Services schemes: Eviden-
ce from behavioural field experiments in Vietnam**

Lasse Loft, ZALF

**An online-marketplace for biodiversity and
ecosystem services in Germany: attitudes of
the private sector and the role of place-based
payment options**

Marlen Krause, ZALF

**Towards an enhanced indication of provisioning
ecosystem services in agro-ecosystems**

Benjamin Burkhard, Leibniz Universität Hannover

12:30 *Lunch break*

Thursday, March 15, 2018



III. Landscape Synthesis

Integrated Systems Analysis –
Towards a Landscape Theory

III. Landscape Synthesis

Chair: Axel Kleidon, Max Planck Institute for
Biogeochemistry, Jena

NEWTON-KABINETT

10:30 KEYNOTE

**Landscapes of the Anthropocene: Evolving
towards a Shared Biosphere**

Erle C. Ellis, University of Baltimore, USA

Research Strategies II

11:00 **Impact assessment of soil management and
soil functions for a bioeconomy**

Katrin Daedlow, ZALF

**Innovative farming systems in landscapes
under change - a plea for a long-term system
approach**

Jens Dauber, Thünen Institute of Biodiversity

**Seeing the landscape for the farm: combining
conceptual and empirical approaches to
understand agricultural systems**

Murray W. Scown, Lund University

**The power of scientists as constructors of
landscape dynamics – a contribution to
integrated systems analysis**

Andrea Knierim, University of Hohenheim

12:30 *Lunch break*

Thursday, March 15, 2018



I. Landscape Functioning

Element Cycles and Microbiomes

I. Structured Discussion

Chairs: Laurent Philippot, INRA
Steffen Kolb, ZALF

EINSTEIN-KABINETT

13:45 **Structured discussion**
based on input from all sub sessions

15:15 *Coffee break*

Thursday, March 15, 2018



II. Land Use and Governance

Managing Ecosystem Services and
Biodiversity at the Landscape Scale

II. Design and Effects of Governance Models III

Chairs: Bettina Matzdorf, ZALF
Sonoko Bellingrath-Kimura, ZALF

BUNSEN-SAAL

13:45 **Farmers' preferences for an agri-
environmental measure designed for climate
friendly peatland management**
Kati Häfner, ZALF

**A neglected debate in Europe: the need for
wild areas**
Felix Kienast, Swiss Federal Research Institute WSL

14:15 **Structured discussion: "Governing at the
landscape scale?"**

15:15 *Coffee break*

Thursday, March 15, 2018



III. Landscape Synthesis
Integrated Systems Analysis –
Towards a Landscape Theory

III. Final Discussion

Chairs: Gunnar Lischeid, ZALF
Peter Verburg, VU Amsterdam, NL

NEWTON-KABINETT

13:45 **Final Discussion**

15:15 *Coffee break*

Thursday, March 15, 2018

Plenary

Plenary

Chairs: Frank Ewert, ZALF
Mark Rounsevell, IMK-IFU
Katharina Helming, ZALF

BUNSEN-SAAL

15:45 **Final Plenary**

**Agricultural landscape research – hot topics,
key challenges and societal relevance: Lessons
learned from the conference and discussion of
follow-up activities**

Best Poster Award

17:15 *End of Landscape 2018*

Friday, March 16, 2018

Field Trip to the Quillow Region

AgroScapeLab Quillow – A Landscape Lab

Organizer: Gunnar Lischeid, ZALF, i.a.

- 08:30 Departure from Berlin Adlershof (conference venue)
Meeting point: in front of the conference venue
- 10:30 Arrival in the Quillow region
CarboZALF site, Dedelow research facilities
Lunch break at Dedelow
Instrumented field sites
- 17:30 Estimated arrival at Berlin Tegel Airport
- 18:00 Estimated arrival at Berlin Main Station
- 18:45 Estimated arrival at Berlin Adlershof Conference
Venue / Hotel



Photo: Maria Busse | ZALF

Landscape research focuses on the often complex interplay between various landscape elements, integrating methods and expertise from different scientific disciplines, and considering long-term effects. To that end, ZALF started joint research and monitoring activities in the Quillow region, about 90 km north of Berlin, in the 1990s. Here arable fields prevail, but forested areas, wetlands and small lakes are quite abundant as well. The ZALF activities have since then been subsequently extended and continue doing so, covering aspects of agronomy, soil science, hydrology, biology and microbiology, socio-economics etc. at different temporal and spatial scales. The field trip will present some of these activities and provides a nice opportunity for discussing concepts of landscape research in the context of specific examples.

Friday, March 16, 2018

Field Trip to the Biosphere Reserve Spreewald

Nature Conservation 2.0

Organizer: Teams of the cp³, ginkoo, and STRATES research projects, Claudia Sattler, ZALF

- 08:45 Departure from Berlin Adlershof (conference venue)
Meeting point: in front of the conference venue
- 10:00 Arrival in Lübbenau, Biosphere reserve Spreewald
- 10:15 Short introductory presentation of the biosphere reserve Spreewald and the cp³, ginkoo, and STRATES research projects,
- 11:30 Lunch break (lunch package will be provided)
- 12:00 Field trip and discussion with stakeholders from the region
- 16:00 Estimated departure from Lübbenau
- 17:15 Estimated arrival back in Berlin (conference venue/S-Bahn station Adlershof)



Photo: Gernot Verch | ZALF

The biosphere reserve Spreewald is located about 90 kilometers south of Berlin. It protects a very unique landscape within the floodplain of the river Spree with more than 200 small navigable channels crisscrossing through the area. The small-scale mosaic of different land uses with single farmsteads nested into the landscape is the outcome of the traditional land use practices which have been applied in the region for centuries. Grasslands, arable lands and forests cover about one third of the area each, and are closely interwoven with water areas and human settlements. Because of its scenic beauty, the Spreewald region is also very popular for tourism. Landscape management in support of sustainable development in the region which conserves nature and at the same time provides local livelihoods is a challenge which needs to consider and consolidate the interests and concerns of many stakeholders.

Friday, March 16, 2018

Field Trip to the Albrecht Daniel Thaer Exhibition in Möglin

Organizer: Thaer-Gesellschaft, Claus Dalchow, ZALF

- 09:00 Departure from Berlin Adlershof (conference venue)
Meeting point: in front of the conference venue
- 10:15 Arrival in Möglin, A.D. Thaer Exhibition
Visiting the exhibition and the park, lunch break, time for discussions
- 14:30 Estimated departure from Möglin
- 15:45 Estimated arrival back in Berlin (Conference venue/S-Bahn station Adlershof)

The geneticist Erwin Baur, founder of the research site at Müncheberg (today's ZALF), as well as the agrarian reformer Albrecht Daniel Thaer (1752-1828) had at first been doctors of medicine. Both, later on, chose explicitly low productivity sites at Müncheberg and nearby Möglin to do their experiments in agricultural plant breeding and agriculture. Thaer bought the manor at Möglin to do farming according to the principles of rational agriculture. He coined the term sustainability within the realm of agricultural production. As State-Counselor, he participated in the planning and execution of the Prussian agricultural reforms and established the basic principles of soil survey. He came up with remarkable innovations in the research fields of crop rotation, breeding of merino sheep and production of high quality wool. In 1806, he founded an academic teaching institution for agriculture, later known as „Royal Prussian Academy of Landholding“ which existed until 1861, with 777 scholars in total. At Möglin, the exhibition represents his vast activities. Both his estate and his grave in the park may be visited. (Visiting the exhibition and the park requires at least 2.5 hours.)



Photo: Claus Dalchow | ZALF

Friday, March 16, 2018

Satellite Workshops

- 09:00 Workshop 6:
Storylines for European agriculture
(Participation by invitation only)

Organizer:

Hermine Mitter, Martin Schönhart and Erwin Schmid, University of Natural Resources and Life Sciences (BOKU);
Franz Sinabell, Austrian Institute of Economic Research (WIFO);
Katharina Helming and Anja Techen, ZALF

EINSTEIN-KABINETT

Poster Session



I. Landscape Functioning
Element Cycles and Microbiomes

Poster Session



I. Landscape Functioning
Element Cycles and Microbiomes

I Poster Session

EINSTEIN-KABINETT

Assessing economic viability of apple production under replant constraints at field level

Ulrike Cavael, ZALF

Effects of soil fauna plant microbe interactions primary succession

Jan Frouz, Charles University, Czech Republic

Variability of stable isotope signatures of organic matter in differently tilled sandy soil

Shaieste Gholami, Razi University, Iran

Biogeochemical functions and controls of soil biota in agrolandscapes: new chances by combining monitoring approaches with C-N simulation modell

Monika Joschko, ZALF

Spatial variability of the effects of biochar on soybean-rhizobium symbiosis and plant growth on sandy soil

Hua Ma, ZALF

I Poster Session

EINSTEIN-KABINETT

Ecosystem service of aquifer systems - Redox based degradation and retention of nitrate

Christoph Merz, ZALF

Consequences of decreasing atmospheric sulfur depositions on sulfur supply and fertilization of narrow leaf lupin

Frank Pöttsch, Dresden University of Applied Sciences

A proposal to enhance ecosystem services provision in rural landscapes – a study case in Brazil

Ana Paula Turetta, Brazilian Agricultural Research Corporation

Poster Session



II. Land Use and Governance

Managing Ecosystem Services and Biodiversity at the Landscape Scale

II Elevator Pitch (Plenary)

BUNSEN-SAAL

Identification driving factors of land degradation/ restoration in Mongolia plateau from 1975-2015: A case study from Xilingol, China

Nacun Batu, ZALF

Natural and human derived capitals in ecosystem services delivery: A case study from peri-urban agricultural landscapes of Bangalore, South India

Dhanya Bhaskar, Azim Premji University

A Bayesian approach toward sustainable development of rice provisioning ecosystem services

Kinh Bac Dang, University of Kiel

Effect of soil tillage, crop rotation and irrigation on maize yield and its development from 2008 – 2016, in Müncheberg, Germany

Thanh Hien Huynh, ZALF

Contrasting different methods to characterize outdoor recreation user groups: a typology of recreationists in the Kromme Rijn area, the Netherlands

Franziska Komossa, Faculty of Science, Vrije Universiteit Amsterdam

What determines rural land transactions at household level in Sichuan, China?

Kristin Leimer, Leibniz Institute of Agricultural Development in Transition Economies (IAMO)

Poster Session



II. Land Use and Governance

Managing Ecosystem Services and Biodiversity at the Landscape Scale

II Elevator Pitch (Plenary)

BUNSEN-SAAL

Storylines for European agriculture to support integrated assessments

Hermine Mitter, BOKU, Vienna

Landscape approach to assess trade-offs in peri-urban agriculture – a case of Bangalore, Karnataka, South India

Sheetal Patil, Azim Premji University

Collaborative governance approaches as boundary organizations for improved landscape stewardship: A case study from Germany

Claudia Sattler, ZALF

Landscape context controls the biodiversity benefit of organic agriculture

Verena Seufert, Karlsruhe Institute of Technology

Reality check for the governance of a multifunctional landscape: Lessons from stakeholders in the German East Frisian Peninsula

Klara J. Winkler, University of Oldenburg

Cropping structures become increasingly clustered and concentrated in China since 1980

Fang Yin, Leibniz Institute of Agricultural Development in Transition Economies

Biodiversity and land use – a comparative approach

Ulrich Zeller, Thae-Institute, Humboldt-Universität zu Berlin

Poster Session



II. Land Use and Governance

Managing Ecosystem Services and Biodiversity at the Landscape Scale

II Poster Session

BUNSEN-SAAL

RESI – River Ecosystem Service Index

Simone Beichler, Leibniz-Institute of Freshwater Ecology and Inland Fisheries

An analytical framework to link governance, agricultural production and ecosystem services in agricultural landscapes

Claudia Bethwell, ZALF

Ecological enhancement of agricultural land in the Upper Rhine Plain

Martin Blank, Bayer AG Cropscience Division

Targeted subfield switchgrass integration could improve the farm economy, water quality, and bioenergy feedstock production

Elke Brandes, Thünen-Institut für Ländliche Räume

A framework to assess linkages between river hydro-morphology and ecosystem services: the HyMoCARES approach

Mauro Carolli, Leibniz Institute of Freshwater Ecology and Inland Fisheries

Poster Session



II. Land Use and Governance

Managing Ecosystem Services and Biodiversity at the Landscape Scale

II Poster Session

BUNSEN-SAAL

Evaluation of the quality and land use in the irrigated area of low service Doukkala Morocco

Kaoutar Doumali, Science University in EL Jadida Morocco

Effect of mixing black medic and alsike clover at different seed densities and proportions on germination rate, biomass production and weed suppression

Heba Elsalahy, Humboldt-Universität zu Berlin

Landuse changes and its impact on the social and environmental fabric of the rural urban interface of Bangalore, India

Meghana Eswar, Azim Premji University

A zero-inflated Poisson mixture model to analyze spread and abundance of the Western Corn Rootworm in Austria

Katharina Falkner, University of Natural Resources and Life Sciences, Vienna

Improved national-scale agricultural mapping using intra-annual time series from sentinel-2 and landsat

Patrick Griffiths, Humboldt-Universität zu Berlin

Participatory scenario development of land sparing and land sharing strategies in European landscapes

Nina Hagemann, Helmholtz Centre for Environmental Research UFZ

Poster Session



II. Land Use and Governance

Managing Ecosystem Services and Biodiversity at the Landscape Scale

II Poster Session

BUNSEN-SAAL

Viability of double cropping systems in the Southern Amazon, Brazil, under climate change

Anna C. Hampf, ZALF

Why grassland conversion matters: A regionalized analysis of decisive factors for Bavaria and their impacts on selected ecosystem services

Maria Hänsel, University of Bayreuth

Regrowing forests contribution to law compliance in private properties of the Brazilian amazon

Leticia Hissa, Humboldt-Universität zu Berlin

Peri-urban agriculture in Istanbul: An analysis of ten family-based urban gardens

Bahar Başer Kalyoncuoğlu, Okan University, Istanbul

Analysing future agricultural production under water restrictions at landscape scale: an Austrian case study

Katrin Karner, BOKU, Vienna

Modeling the spread of the invasive Asian bush mosquito *Aedes japonicus japonicus* in Germany

Antje Kerkow, ZALF

Human-wildlife conflicts in agricultural landscapes: combining ecological field data with participatory stakeholder approaches

Hannes J. König, ZALF

Poster Session



II. Land Use and Governance

Managing Ecosystem Services and Biodiversity at the Landscape Scale

II Poster Session

BUNSEN-SAAL

Sustainable landuse and conservation agriculture to overcome agricultural crisis in Kerala

Shadananan Nair Krishnapillai, Centre for Earth Research and Environment Management

Permanence of efa landscape elements in an intensively cultivated hungarian agricultural landscape

Klaudia Máté, Szent István University

Environment protection through community participation: interventions in Rajasthan, Indi

Satya Prakash Mehra, Rajputana Society of Natural History

Crop residue energy potentials: what role for sustainable intensification?

Ioanna Mouratiadou, Utrecht University

Governing synergies between ecosystem services on agricultural land: a policy analysis of five European case studies

Heike Nitsch, Institute for Rural Development Research (IfLS)

Stability of grain legume yields is a matter of scaling

Moritz Reckling, ZALF

TOPSIS-GRA coupled model for multifunction orientation of rural landscape in metropolitan suburb Shanghai, China

Guoping Ren, China Agricultural University

Poster Session



II. Land Use and Governance
Managing Ecosystem Services and
Biodiversity at the Landscape Scale

Poster Session



II. Land Use and Governance
Managing Ecosystem Services and
Biodiversity at the Landscape Scale

II Poster Session

BUNSEN-SAAL

Assessing the Hydrologic and Economic Impacts of Agricultural Irrigation at the Landscape Level under the Influence of Climate Change

Johannes Schuler, ZALF

Crop vs. tree: Can agronomic managements reduce trade-offs in tree-crop interactions?

Tesfaye S. Sida, International Maize and Wheat Improvement Center (CIMMYT)

Peri-urban landscapes as the arena of human – wildlife interactions: environmental governance recommendations

Marcin Spyra, Martin Luther University Halle-Wittenberg

Reduction of soil-related ecosystem services by erosion – scenarios based on monitoring data

Bastian Steinhoff-Knopp, Leibniz Universität Hannover

CoMOLA: A tool to explore multifunctionality of landscapes

Michael Strauch, Helmholtz Centre for Environmental Research UFZ

Infrastructure for open soil and agricultural research data as basis for sustainable landscape management

Nikolai Svoboda, ZALF

II Poster Session

BUNSEN-SAAL

Influence of habitat heterogeneity on millet pest control in Senegal

Ibrahima Thiaw, CIRAD

Modeling and discussing trade-offs between food production, ecosystem services and biodiversity in agricultural landscapes in Europe

Emma H. van der Zanden, Vrije Universiteit Amsterdam

Poster Session



III. Landscape Synthesis
Integrated Systems Analysis –
Towards a Landscape Theory

Poster Session



III. Landscape Synthesis
Integrated Systems Analysis –
Towards a Landscape Theory

III Poster Session

NEWTON-KABINETT

The study of spatial heterogeneity of landscapes of baikalian Siberia

Irina Bilichenko, The V.B. Sochava Institute of Geography SB RAS, Russia

Impacts of climate change adaptation options in agriculture on soil functions: Evidence from Europe

Ahmad Hamidov, ZALF

Effect of soil and climate data aggregation on regional crop yield simulations in Tuscany (Italy)

Ganga Ram Maharjan, INRES, University of Bonn

Tree species composition of a landscape in North-Eastern Germany in 1780, 1890 and 2010

Kristin Meier, ZALF

Statistical methods of Chernozems characteristics and diagnosis in North-Western Circum-Pontic region

Hryhorii Moroz, Peasant farm enterprise "Balkany", Ukraine

III Poster Session

NEWTON-KABINETT

Integrating the local context into policy adoption and decision making, landscape management and benefit generation: a conceptual development and revisiting of case study examples

Annette Piorr, ZALF

Exploring the factors influencing the polarization of cattle farms in Scotland

Gary Polhill, The James Hutton Institute

Functional and structural diversity aspects of a crop sequence typification approach

Susanne Stein, University of Göttingen

Foresight for Agricultural Soil Management

Anja-K. Techen, ZALF

Linking processes in the soil-plant-atmosphere continuum to the water cycle at landscape scale in a stochastic modeling framework

Tobias KD Weber, Biogeophysics, University of Hohenheim

Notes

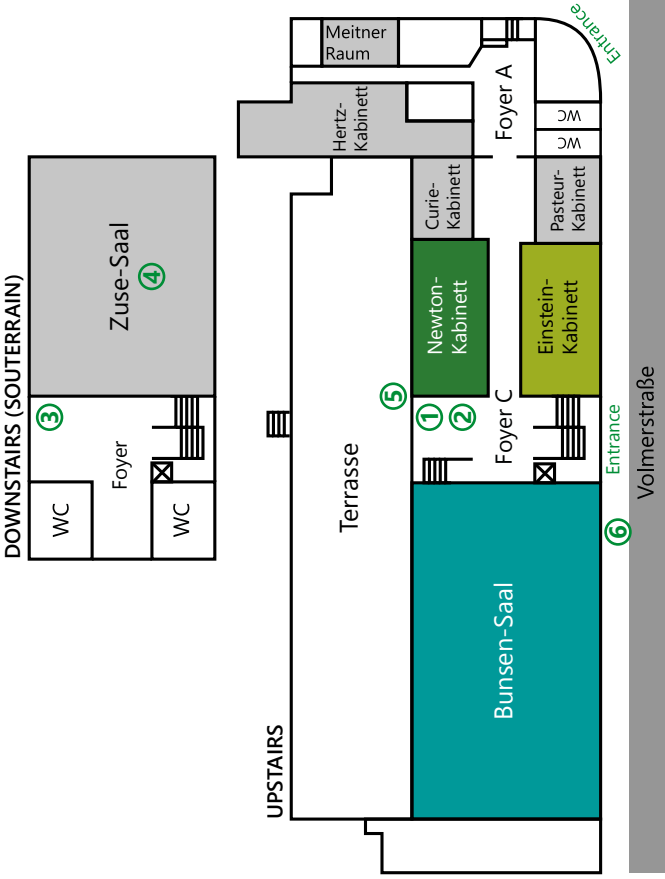


ROOMS AND LOCATIONS

Venue address

ADLERSHOF CON.VENT
Volmerstraße 2
12489 Berlin

- ① Conference Office
- ② Registration
- ③ Cloakroom
- ④ Catering Area
- ⑤ Smoking Area
- ⑥ Meeting Point for Buses
(Wednesday and Friday)



to S-Bahnhof Adlershof →