



# CNR

## Summer School 2017

### *Foundations and Methods of Agricultural Economics and Policy for Sustainable Mountainous Development*

At the campus of the College of Natural Resources (CNR) in Lobesa (Bhutan)

Workshop 1 // Principles of farm economics and resource planning // 11.9. – 15.9.2017

Workshop 2 // Environmental economics in the context of Bhutan // 18.9. – 22.9.2017

Workshop 3 // Analysis of agricultural policy scenarios in Bhutan // 25.9. – 29.9.2017

Supported by the German Academic Exchange Service (DAAD)  
with funds of the Federal Ministry of Education and Research (BMBF)



- *You would like to enhance your theoretical and practical knowledge in applied economics and natural resource management?*
- *You are interested in learning about the principles of farm business analysis, environmental economics and agricultural policy?*
- *You would like to acquire analytical skills by applying methods hands-on using real world examples?*

... then register for the **CNR Summer School 2017!**

Application Deadline: 31<sup>th</sup> of August, 2017 (extended)

Organized by:



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## **What is the CNR summer school about?**

The **CNR Summer School 2017** is a three week summer school focusing on *Foundations and Methods of Agricultural Economics and Policy for Sustainable Mountainous Development*. The school is jointly organized by the College of Natural Resources (CNR), Lobesa, the Humboldt-University of Berlin and University of Hohenheim. The summer school consists of three one-week modules and will take place on the CNR campus at Lobesa from September, 11<sup>th</sup> to 29<sup>th</sup> 2017.

## **Objective and content**

The objective of the summer school is to familiarize participants with state of the art theories and research methods in agricultural economics. The focus is on methods which can be applied within the participants' academic or professional work using relatively simple software tools (primarily Microsoft Excel). The summer school consists of three week-long workshops:

*Workshop 1* focuses on the principles of farm economics and resource planning and will introduce participants to resource and investment analysis.

*Workshop 2* builds on workshop 1 and extends the scope to environmental economics, teaching participants methods to consider environmental aspects in cost-benefit analysis.

*Workshop 3* teaches the participants the implications of agricultural policies using policy scenarios relevant to Bhutan.

Each workshop will contain real world case studies, which relate to relevant topics of the Bhutanese agricultural sector such as sustainable land management, mechanization of land preparation, conversion to organic agriculture and mitigation of human-wildlife conflicts. An important feature of the summer school is that participants are taught methods hands-on such that they will be able to conduct own analysis during the summer school. Please note, the preliminary schedule of each workshop week is presented at the end of this flyer.

## Who is teaching at the summer school?

### ***Dr. Jonas Luckmann (Lecturer workshop 1)***

Dr. Jonas Luckmann is a research associate at the Chair of International Agricultural Trade and Development at Humboldt-University of Berlin. His areas of research include econometric analysis of agricultural markets as well as the management of water and ecosystem services applying simulation modelling, focusing on economy-wide models. Together with Mr. Feuerbacher, Dr. Luckmann is working on improving the representation of the specificities of the Bhutanese agricultural sector in general equilibrium models. He is primarily interested in analyzing policies to promote sustainable agriculture and the preservation of natural resources.



### ***Prof. Dr. Christian Lippert (Lecturer workshop 2)***



Prof. Lippert is a professor for Production Theory and Resource Economics at University of Hohenheim in Germany. His past research focused on the analysis of land use activities like organic farming and the assessment of regional climate impacts on German agriculture. His current research deals with the valuation of ecosystem services and environmental resources. Prof. Lippert is especially interested in how Bhutan's pioneering role for natural resource conservation can be combined with policies for sustainable rural livelihoods. He visited Bhutan in 2016 and is currently working on the economic valuation of measures mitigating the human-wildlife conflict in Bhutan.

### ***Prof. Dr. Harald Grethe (Lecturer workshop 3)***

Prof. Grethe holds the chair of International Agricultural Trade and Development at Humboldt-University Berlin. He has ample experience in the analysis of policies related to agriculture, development and trade in the European Union as well as many other countries such as Turkey, Israel, China and Ethiopia. Since 2012, Prof. Grethe is the chair of the Scientific Advisory Board on Agricultural Policy, Food and Consumer Protection at the Federal German Ministry of Food and Agriculture. He visited Bhutan in 2015 and 2016. He is particularly interested in how policies can promote both animal and environmental protection as well as agricultural productivity and rural incomes in Bhutan.



***Assoc. Prof. Dr. Tulsi Gurung (Coordinator of the Summer School)***

Mrs. Gurung is an associate professor at the College of Natural Resources in Bhutan. Her research focuses on horticulture in Bhutan. She has been working on various research projects concerned with climate change impacts in the context of Bhutan. In collaboration with the International Center for Integrated Mountain Development (ICIMOD), Mrs. Gurung worked on value chain analysis of goat farming and vegetable cultivation. Currently, she works on a ICIMOD project concerned with the role of transdisciplinary co-production of knowledge on the sustainability of mountainous agroecosystems.



***Arndt Feuerbacher (Assistant lecturer for workshop 1 and 3)***



Mr. Feuerbacher is a PhD candidate at the International Agricultural Trade and Development research group at Humboldt-University of Berlin. He conducts research on the impact of agricultural policies on rural livelihoods in Bhutan employing economy-wide model frameworks. He visited Bhutan in 2013, 2015 and 2016. His research interest particularly focuses on rural labour markets and technological changes in the agricultural sector. Together with Prof. Tulsi Gurung from CNR, Mr. Feuerbacher is also responsible for the coordination and organization of the summer school.

***Manuel E. Narjes (Assistant lecturer workshop 2)***

Mr. Narjes is a PhD candidate at the Department of Production Theory and Resource Economics of the University of Hohenheim, where he works as a research and teaching assistant. His doctoral research is concerned with the economic value of policies to conserve wild bees and their contribution to crop pollination, and with how markets respond to changes in the provision of the latter. His attention has also been drawn to Bhutan's rich beekeeping tradition and its potential to reconcile the economic incentives of individual smallholders with the broader goal of conserving the native pollinator fauna and its habitats.



## **Registration for the 2017 CNR summer school**

The summer school was designed to meet the needs of persons either studying or working in the context of agriculture, forestry and natural resource management. However, we also welcome interested participants with different backgrounds. In such a case, please let us know about your motivation. Participants may register to attend all three workshops or only to attend the workshops of their choice. However, it is advisable to attend all workshops, as the individual workshops build on each other.

### **Application deadline**

Please register before 31st of August, 2017 (extended deadline)

### **Who should register?**

The minimum qualification required for the participation is a bachelor degree earned in either natural or social sciences. In addition, good knowledge of Microsoft Office, particularly Excel, is a prerequisite. The summer school was designed to meet the needs of persons either studying or working in the context of agriculture, forestry and natural resource management. However, we also welcome applicants with different backgrounds. In such a case, please let us know about your motivation.

The maximum number of participants for each workshop week is 15 participants. Participants may apply to attend all three workshops or only to attend the workshops of their choice. However, it is advisable to attend all workshops, as the individual workshops build on each other.

### **Fees**

The summer school is free of charge.

### **Accommodation and transportation**

Participation at the summer school does not include accommodation and transportation. Participants have to organize lodging and accommodation on their own, however we can support participants finding low-cost options within our capacity. During the summer school, lunch as well as tea, coffee and snacks will be provided at no cost.

## **How to register**

Interested participants may register for the summer school by sending the following details to the coordinators Associate Prof. Dr. Tulsi Gurung ([gurungt2010@gmail.com](mailto:gurungt2010@gmail.com)) and Arndt Feuerbacher ([feuerbacher@hu-berlin.de](mailto:feuerbacher@hu-berlin.de)).

- ✓ Name and contact details (email and cell phone)
- ✓ Your current CV stating the place of work/study program and formerly received education
- ✓ Important! Please state whether you can bring along a personal notebook with Microsoft Excel installed.
- ✓ Please state whether assistance in finding accommodation at CNR (unfortunately, no financial assistance possible) is needed.

We are looking forward to your registration and please feel free to contact us if you have any questions!

## **Contact details:**

### **Associate Prof. Dr. Tulsi Gurung**

Office No: 00975 2 376249

Cell: 00975 17 360 100

Email: [gurungt2010@gmail.com](mailto:gurungt2010@gmail.com)

### **Arndt Feuerbacher**

Email: [feuerbacher@hu-berlin.de](mailto:feuerbacher@hu-berlin.de)

## Overview over preliminary program

The summer school takes place on the campus of the College of Natural Resources (CNR), Royal University of Bhutan, Lobesa and consists of three week long workshops each lasting over five days from Monday to Friday. Lectures take place from 9 AM to 5 PM. There will be two 20 minutes tea breaks and an 80 minutes lunch break, which will also allow for informal exchange between the resource persons and participants. A detailed preliminary schedule of each workshop is presented below. In addition to the lectures there is one extra-curricular evening program per workshop planned which will allow for slide shows on German agriculture, introduction to German food and culture as well as presenting interesting DAAD funding opportunities to enrol in master and PhD programs at Humboldt University of Berlin or University of Hohenheim.

### Workshop 1 - Monday 11<sup>th</sup> to Friday 15<sup>th</sup> of September, 2017 Principles of farm economics and resource planning

Lecturer: Dr. Jonas Luckmann, Humboldt University of Berlin

Assistant: Arndt Feuerbacher, Humboldt University Berlin

Time	Monday 11.09.2017	Tuesday 12.09.2017	Wednesday 13.09.2017	Thursday 14.09.2017	Friday 15.09.2017
9.00 – 10.20 AM	<b>D1.1 – Luckmann</b> <ul style="list-style-type: none"> <li>Welcome to participants</li> <li>Presentation of workshop content</li> <li>Introduction to farm management</li> </ul>	<b>D2.1 – Luckmann</b> <ul style="list-style-type: none"> <li>Farm planning and Control: Enterprise budgeting and analysis; calculation of gross margins and total farm income</li> </ul>	<b>D3.1 – Luckmann</b> <ul style="list-style-type: none"> <li>Investment Analysis</li> </ul>	<b>D4.1 – Luckmann</b> <ul style="list-style-type: none"> <li>Brief introduction to production economics</li> </ul>	<b>D5.1 – Luckmann/ Feuerbacher</b> <ul style="list-style-type: none"> <li><b>Ex. VII:</b> Extending Linear Programming Models</li> </ul>
20 Min	Tea break				
10.40 AM – 12.00 PM	<b>D1.2 – Luckmann</b> <ul style="list-style-type: none"> <li>Farm resource analysis</li> </ul>	<b>D2.2 – Luckmann</b> <ul style="list-style-type: none"> <li>Partial budgets</li> <li>Cash-flow analysis</li> </ul>	<b>D3.2 – Luckmann</b> <ul style="list-style-type: none"> <li>Loan Repayment Plans</li> </ul>	<b>D4.2 – Luckmann</b> <ul style="list-style-type: none"> <li>Introduction to Linear Programming and Whole Farm Planning</li> </ul>	<b>D5.2 –Luckmann/ Feuerbacher</b> <ul style="list-style-type: none"> <li><b>Ex. VIII:</b> Extending Linear Programming Models</li> </ul>
80 min	Lunch break				
1.20 – 3.00 PM	<b>D1.3 – Luckmann</b> <ul style="list-style-type: none"> <li>Balance sheet analysis</li> </ul>	<b>D2.3 – Luckmann/ Feuerbacher</b> <ul style="list-style-type: none"> <li><b>Ex. II:</b> Budgeting &amp; Gross Margin Analysis</li> </ul>	<b>D3.3 – Luckmann/ Feuerbacher</b> <ul style="list-style-type: none"> <li><b>Ex.IV:</b> <i>Investment Analysis</i></li> </ul>	<b>D4.3 – Luckmann</b> <ul style="list-style-type: none"> <li>Implementation of basic farm level models</li> </ul>	<b>D5.3 –Luckmann/ Feuerbacher</b> <ul style="list-style-type: none"> <li>Model Validation</li> <li>Interpretation of Results and Sensitivity Report</li> <li>Opportunities and Limitations of Linear Programming Models</li> </ul>
20 min	Tea break				
3.20 – 5 PM	<b>D1.4 – Luckmann/ Feuerbacher</b> <ul style="list-style-type: none"> <li><b>Ex. I:</b> Balance sheet analysis</li> </ul>	<b>D2.4 – Feuerbacher/ Luckmann</b> <ul style="list-style-type: none"> <li><b>Ex. III:</b> <i>Budgeting &amp; Gross Margin Analysis</i></li> </ul>	<b>D3.4 – Feuerbacher/ Luckmann</b> <ul style="list-style-type: none"> <li><b>Ex. V:</b> <i>Loan Repayment Plans</i></li> </ul>	<b>D4.4 – Feuerbacher/ Luckmann</b> <ul style="list-style-type: none"> <li><b>Ex. VI:</b> Linear Programming Models</li> </ul>	Evaluation of Workshop Week
7.00 PM			<b>German evening:</b> Insights into German culture and way of farming		



## Workshop 2 – Monday 18<sup>th</sup> to Friday 22<sup>nd</sup> of September, 2017

### Environmental economics in the context of Bhutan: *Cost-Benefit analysis of selected land use activities in mountainous agriculture*

Lecturers: Prof. Dr. Christian Lippert, University of Hohenheim

Assistant: Manuel Narjes, University of Hohenheim

Time	Monday 18.09.2017	Tuesday 19.09.2017	Wednesday 20.09.2017	Thursday 21.09.2017	Friday 22.09.2017
9.00 – 10.20 AM	<b>D1.1 – Lippert</b> <ul style="list-style-type: none"> <li>Introduction to workshop content</li> <li>Theory of optimal resource allocation</li> <li>Market efficiency in the context of resource use</li> </ul>	<b>D2.1 – Lippert</b> <ul style="list-style-type: none"> <li>The Economics of Ecosystems and Biodiversity (TEEB)</li> <li>Total economic value of an environmental resource</li> <li>Ecosystem services of rural landscapes</li> </ul>	<b>D3.1 – Lippert/Narjes</b> <ul style="list-style-type: none"> <li><b>Ex. III</b> Valuating insects' pollination services</li> <li>Short recapitulation of investment appraisal</li> </ul>	<b>D4.1 – Lippert</b> <ul style="list-style-type: none"> <li>Ethically problematic aspects of CBA (implications of discounting / externalities)</li> <li><b>Ex. IV (PC-LAB) (cont.):</b> CBA for an orchard revisited</li> </ul>	<b>D5.1 – Narjes/Lippert</b> <ul style="list-style-type: none"> <li><b>Ex. VI (cont.):</b> Presentation of statistical models and discussion of the results of the choice experiment</li> </ul>
20 Min	Tea break				
10.40 AM – 12.00 PM	<b>D1.2 – Lippert</b> <ul style="list-style-type: none"> <li>Market failure in case of environmental resources</li> <li>Environmental externalities of conventional and organic farming</li> </ul>	<b>D2.2 – Lippert/Narjes</b> <ul style="list-style-type: none"> <li>Methods for valuating natural and environmental resources</li> <li>Benefit transfer</li> </ul>	<b>D3.2 – Narjes/Lippert</b> <ul style="list-style-type: none"> <li>Cost-benefit analysis (CBA) in the context of sustainable land use</li> <li><b>Ex. IV (PC-LAB):</b> CBA for a conventional orchard</li> </ul>	<b>D4.2 – Narjes/Lippert</b> <ul style="list-style-type: none"> <li><b>Ex. V (PC-LAB):</b> CBA for an organic orchard and analysis of a farmer's decision on whether to convert to organic production or not</li> </ul>	<b>D5.2 – Lippert</b> <ul style="list-style-type: none"> <li>Agro-environmental policies to internalize land use externalities</li> <li>Examples for agro-environmental policies</li> </ul>
80 min	Lunch break				
1.20 – 3.00 PM	<b>D1.3 – Narjes/Lippert</b> <ul style="list-style-type: none"> <li>Public goods and common pool resources</li> <li>Prisoner dilemma and social dilemma</li> </ul>	<b>D2.3 – Narjes/Lippert</b> <ul style="list-style-type: none"> <li><b>Ex. II (PC-LAB):</b> Valuation of cultural ecosystem services relying upon indirectly revealed preferences</li> </ul>	<b>D3.3 – Lippert/Narjes</b> <b>Projected field trip</b>	<b>D4.3 – Narjes/Lippert</b> <ul style="list-style-type: none"> <li><b>Ex. VI:</b> Discrete choice experiment to assess workshop attendants' willingness to pay for rural landscape preservation</li> </ul>	<b>D5.3 – Lippert/Narjes</b> <ul style="list-style-type: none"> <li>Examples for agro-environmental policies (cont.)</li> <li><b>Ex. VIII:</b> Discussion of appropriate agro-environmental policies for Bhutan</li> </ul>
20 min	Tea break				
3.20 – 5 PM	<b>D1.4 – Narjes/Lippert</b> <ul style="list-style-type: none"> <li><b>Ex. I:</b> Game theory exercises for analyzing social dilemma</li> </ul>	<b>D2.4 – Lippert/Narjes</b> <ul style="list-style-type: none"> <li><b>Ex. II (cont.):</b> Discussion and criticism of the example</li> </ul>	<b>D3.4 – Lippert/Narjes</b> <b>Field trip (cont.)</b>	<b>D4.4 – Lippert</b> <ul style="list-style-type: none"> <li><b>Ex. VII:</b> Design of a benefit transfer to assess the value of ecosystem services in the Punakha valley</li> </ul>	<b>D5.4 – Narjes/Lippert</b> <ul style="list-style-type: none"> <li>Workshop evaluation</li> </ul>
7.00 PM		<b>German evening:</b> Comedy movie on land use change in Bavaria (lunch and beverages will be served)			

## Workshop 3 – Monday 25<sup>th</sup> to Friday 29<sup>th</sup> of September, 2017

### Analysis of agricultural policy scenarios in Bhutan: Theory and practical application

Lecturer: Prof. Dr. Harald Grethe, University of Hohenheim

Assistant: Arndt Feuerbacher, University of Hohenheim

Time	Monday 25.09.2017	Tuesday 26.09.2017	Wednesday 27.09.2017	Thursday 28.09.2017	Friday 29.09.2017
9.00 – 10.20 AM	<b>D1.1 – Grethe</b> <ul style="list-style-type: none"> <li>Welcome to participants</li> <li>Presentation of workshop content</li> <li>Underlying principles of economics and economic decision making</li> </ul>	<b>D2.1 – Grethe</b> <ul style="list-style-type: none"> <li>Governance and institutions</li> <li>Instruments of agricultural and food policy</li> </ul>	<b>D3.1 – Grethe</b> <ul style="list-style-type: none"> <li>Introduction to policy research methods: partial equilibrium models</li> </ul>	<b>D4.1 – Grethe</b> <ul style="list-style-type: none"> <li>Introduction to the application of general equilibrium models</li> </ul>	<b>D5.1 – All</b> <ul style="list-style-type: none"> <li>Presentation and discussion (Group 1 and 2)</li> </ul>
20 Min	Tea break				
10.40 AM – 12.00 PM	<b>D1.2 – Grethe</b> <ul style="list-style-type: none"> <li>Economic policy and its objectives</li> <li>Correction of market failures</li> </ul>	<b>D2.2 – Grethe</b> <ul style="list-style-type: none"> <li>Instruments of agricultural and food policy</li> </ul>	<b>D3.2 – Grethe</b> <ul style="list-style-type: none"> <li>Deliberation of a partial equilibrium model for Bhutan</li> </ul>	<b>D4.2 – Grethe</b> <ul style="list-style-type: none"> <li>Presentation of a simple CGE model for Bhutan</li> </ul>	<b>D5.2 – All</b> <ul style="list-style-type: none"> <li>Presentation and discussion (Group 3 and 4)</li> </ul>
80 min	Lunch break				
1.20 – 3.00 PM	<b>D1.3 – Grethe</b> <ul style="list-style-type: none"> <li>Distribution and regulatory policies</li> <li>Elasticity of demand and supply</li> </ul>	<b>D2.3 – Grethe</b> <ul style="list-style-type: none"> <li>Welfare implications of policy induced changes in market rents</li> </ul>	<b>D3.3 – Feuerbacher</b> <ul style="list-style-type: none"> <li><b>Ex. II:</b> Partial equilibrium model for the rice market in Bhutan</li> </ul>	<b>D4.3 – Group work</b> <ul style="list-style-type: none"> <li>Preparation of group presentations on selected topics of agricultural and food policy questions</li> </ul>	<b>D5.3 – All</b> <ul style="list-style-type: none"> <li>Evaluation of workshop week and summer school</li> <li>Closing ceremony</li> </ul>
20 min	Tea break				
3.20 – 5 PM	<b>D1.4 – Grethe / Feuerbacher</b> <ul style="list-style-type: none"> <li><b>Ex. I:</b> Exercises</li> <li>Discussion of group assignments</li> </ul>	<b>D2.4 – Feuerbacher</b> <ul style="list-style-type: none"> <li>Case Study: Agricultural – and Food Policy in India and Bhutan</li> </ul>	<b>D3.4 – Feuerbacher</b> <ul style="list-style-type: none"> <li><b>Ex. III:</b> Exercises of rice self-sufficiency and 100% organic agriculture scenarios</li> </ul>	<b>D4.4 – Group work</b> <ul style="list-style-type: none"> <li>Continued</li> </ul>	
7.00 PM			<b>German evening:</b> Studying in Germany – DAAD programs and experience of DAAD alumni		

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### Contact details:

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