



NEWSLETTER

Vol. 1 - April 2016

News - Forthcoming

- **International Rubber Study Group (IRSG) Focus Forum on Sustainability**
Mai 10. - 11., 2016, Singapore, Singapore
SURUMER invited speaker: Dr. Gerhard Langenberger
- **[Ecosummit 2016](#)**
August 29 - September 01, 2016, Montpellier, France
SURUMER session: "[Ecologizing agro-industrial tree plantations in the 21st Century- testing ground for transdisciplinary approaches and ecosystem engineering](#)"
- **[13th International Symposium on River Sedimentation](#)**
September 19 - 22, 2016, Stuttgart, Germany
[SURUMER contributions](#)
- **[Sustainable Rubber Conference 2016](#)**
October 16 - 19, 2015, Xishuangbanna Tropical Botanical Garden, China
Conference October 16-19, 2016
Workshops October 20-21, 2016
Excursion October 22, 2016
[Register now!](#)

Conference contributions and meetings

- **[The International Conference on World Food Policy: The Future Faces of Food and Farming: Regional Challenges](#)**
December 17 - 18, 2015, Bangkok, Thailand
Oral presentation Min, S. et al.: "Land use, agrobiodiversity and smallholder rubber farmers' risk perception: A case study from Xishuangbanna, China."
 - **[Sustainable Land Management "Final Conference 2016"](#)**
March 7 - 9, 2016, Berlin, Germany
[SURUMER participation and contributions](#)
 - **[Wildlife Seminar](#)- Albert-Ludwigs-Universität Freiburg, Wildlife Ecology and Management**
February 09, 2016, Freiburg, Germany
Guest lecture by Harich, F.: "Wild mammal diversity and conflicts with people in rubber-dominated landscapes in Southeast Asia."
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Conference contributions and meetings II

- [17th Annual World Bank Conference on Land and Poverty- Scaling up Responsible Land Governance](#)
March 14 - 18, 2016, Washington DC, USA
Oral presentation and manuscript Waibel, H. et al.: "[Smallholder Participation In Land Rental Market In A Mountainous Region Of Southern China: Impact of Population Aging, Land Tenure Security and Ethnicity.](#)"
- [3 Jahrzehnte Trinkwasserkolloquium – 3 Jahrzehnte Entwicklung in Wasserversorgung und Gewässerschutz](#)
February 18, 2016, Stuttgart, Germany
Poster presentation Azizi, N. et al.: "[SURUMER - Sustainable Rubber Cultivation in the Mekong Region - development of Strategic Water Management Tool.](#)"

SURUMER publications

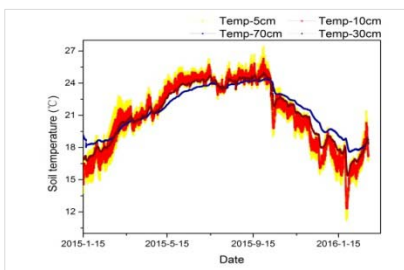
- Häuser, I., Thellmann, K., Cotter, M., Sauerborn, J., (2015) [Ecosystem services and biodiversity of rubber plantations- a systematic review.](#) CAB Reviews 10(37):1-6; DOI: 10.1079/PAVSNNR201510037.
 - Blagodatskiy, S., Xu, J., Cadisch, G. (2016) [Carbon balance of rubber \(Hevea brasiliensis\) plantations: a review of uncertainties at plot, landscape and production level.](#) Agriculture, Ecosystems & Environment 221:8-19, DOI 10.1016/j.agee.2016.01.025
-

Scientific Topics



Presence of SURUMER and rubber in the media

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Carbon stock and erosion in rubber plantations

[Read more...](#)



Successful application for stipends in the ASA-Preneurs Baden-Württemberg Program

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Snake Inventory – Are snakes a reason for the common clear-weeding in rubber plantations?

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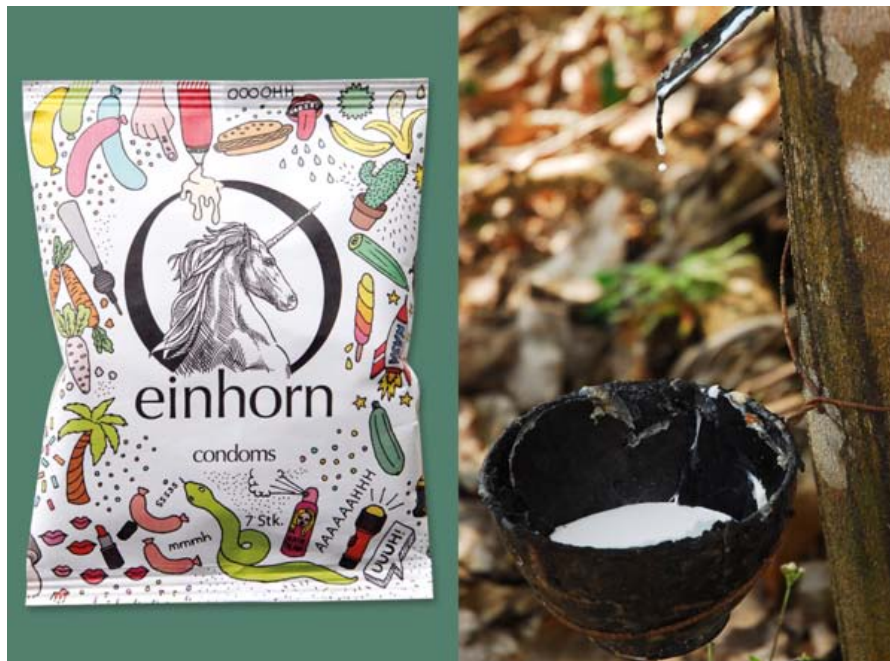


Training movies on rubber management and responsible use of agro-chemicals available.

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Presence of SURUMER and rubber in the media

- [National Geographic](#)
“Why we (still) can’t live without rubber”
by Charles C. Mann, January 2016
- [Wirtschaftswoche Green Economy](#)
“Kautschuk: Dank Öko-Gummi werden Kondome und Matratzen endlich fair”
(„Rubber: Ecological condoms and mattresses thanks to Eco-rubber“)
by Angela Schmidt, January 2016
- [Press release University of Hohenheim](#)
“Kautschuk-Forscher beraten Kondom-Startup”
(“Rubber researcher consult condom start-up”)
by Florian Leonhardmair



Pic. 1 - A successful cooperation - einhorn condoms and SURUMER
© Photo credits: www.einhorn.my / Uni Hohenheim



Carbon stock and erosion in rubber plantations

Considerable progress was made in SP1 concerning the analysis of soil erosion and carbon stock in rubber plantations.

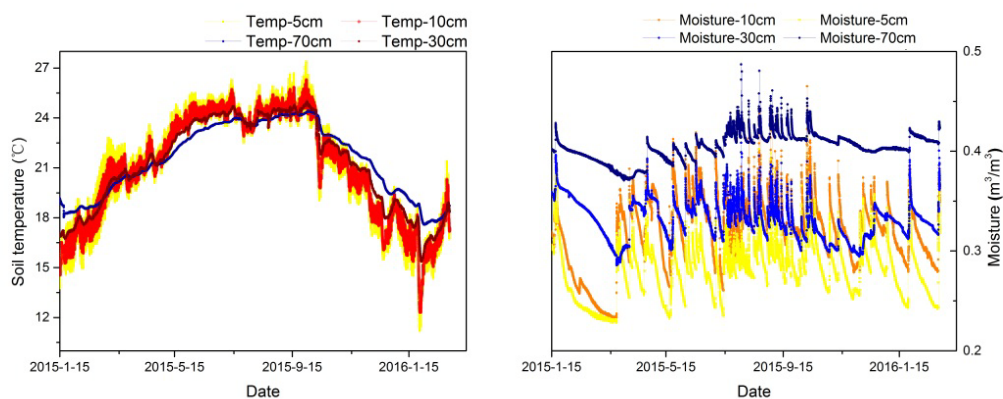
A review manuscript entitled "Carbon balance of rubber (*Hevea brasiliensis*) plantations: A review of uncertainties at plot, landscape and production level" has been prepared by Dr. Blagodatsky, Prof. Xu and Prof. Cadisch and was accepted by Agriculture, Ecosystem and Environment (in press). In this paper, we showed how rotation length, rubber clone and management strategies like tapping frequency or planting density affect C stocks, discuss the uncertainties in C stock estimation and highlight improved approaches. We concluded that upscaling of C stocks and dynamics under different climate scenarios and rotation lengths to a regional level required the use of time averaged C stocks.

From the analysis of erosion in rubber plantations under different managements, Hongxi Liu et al. (2016) completed and submitted a manuscript entitled "Impact of herbicide application on soil erosion and induced carbon loss in a rubber plantation of South-West China". This study focused on impact from different herbicide application on erosion and concluded that reducing herbicide can much better conserve soil by protecting undergrowth. Increasing understory plant cover exponentially decreased soil loss by increasing infiltration and decreasing sediment concentration.

In order to understand carbon emission/sequestration attributed by land use change, a detailed plot to landscape evaluation was conducted in Naban Watershed National Nature Reserve (NRWNNR). Yang et al. (2016) submitted a manuscript entitled " Land-use change impact on time-averaged carbon balances: rubber expansion and reforestation in a biosphere reserve, South-West China ". The time-averaged carbon stocks (C_{ta}) of lowland and highland rubber plantations showing larger carbon sequestration potential than non-forest land use types (agricultural crops, bush and grassland) but much lower than C_{ta} of natural forest. The whole landscape of the nature reserve gained 0.644 Tg C carbon gain during 23 years (1989-2012). The results indicate that despite rubber expansion, biosphere zoning strategy (experimental, buffer, core zones), and reforestation activities succeeded conducted in NRWNNR to enhance the carbon stocks.

Monitoring the microclimate parameters in rubber plantations and natural forest is important to understand the difference resulted from land use change. From the beginning of 2015, we installed a series of HOBO loggers to continuously record the air temperature and relative humidity, soil temperature, and soil moisture on measurement sites in Naban River Watershed Natural Reserve. After one year recording, Rong Lang visited the field and read out soil temperature & moisture from two HOBO stations, soil temperature from Pedant on six sites, and air temperature & relative humidity on five sites.

Monitoring of these parameters was ended after acquired one year recordings. Figure at below showed an example of soil temperature & moisture dynamic in an old rubber plantation.



Pic. 2 - Example for soil temperature and moisture dynamic in an old rubber plantation.

Besides SP1 attended and contributed to "The sustainable Land Management 'Final Conference 2016'" March 7 - 9 in Berlin. Our poster combined results from fields and modeling, focusing on displaying interaction between erosion, biomass and latex production. It is proved by LUCIA model that latex production can increase 25% under improved management with better soil conservation. (SP1)

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Wild bee diversity in the landscape context: rubber versus forest

The analysis of field collections of bees related to landscape structure is now completed, and we can report some of the results: we found that solitary bees, honeybees and bumble bees respond differently to landscape structure at different spatial scales. Solitary bee species richness showed the most pronounced relationship to landscape context, with significantly increasing numbers with forest area. Bumblebee species showed similar, but less pronounced patterns of distribution, whereas honeybee species showed no response to forest area. In all bee groups, the number of individuals showed no response to the surrounding land use. Our data also show that a notable proportion of solitary bee species was not affected by the proportion of forest and rubber area. This indicates that a certain number of species might not depend on forest, but exist in cultivated habitats, where they probably depend on specific conditions (such as bare soil for nesting). Furthermore, solitary bees negatively responded to rubber around the recording sites. The negative response of solitary bees to rubber area is another indication for the unsuitability of rubber plantations in providing habitat and resources.

Our manuscript is now ready for submission, and we hope that we can present the full paper with more interesting data soon. (SP4)

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Successful application for stipends in the ASA-Preneurs Program

In the framework of our collaboration with Einhorn Condoms we successfully applied for three stipends to conduct research and implement SURUMER results in Malaysia, where Einhorn sources its natural rubber for its condom production. The ASA-Program, run by 'Engagement Global' (<http://www.engagement-global.de/homepage.html>) and funded by the German Federal Ministry for Economic Cooperation and Development, "*supports young people in their commitment to make a difference! The ASA-Program is a dynamic learning program based in Germany which trains young people who are open minded and interested in development cooperation and social and political issues*". Recently the federal state of Baden-Württemberg joined the program to motivate universities to participate. The University of Hohenheim is one of the first universities in Baden-Württemberg that joins this pilot program. Together with a successful application from Einhorn we thus have a powerful team of 4 people to study the framework conditions for sustainable rubber on the source plantations of Einhorn and develop improvements based on SURUMER findings. Additional information on the program can be found on the web:

<http://www.asapreneurs.de/asapreneurs/startseite/>. (SP5)

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Snake Inventory

Snakes are a common feature of tropical environments, and the core of many stories about the tropics. This is also true for our research area. During discussions with farmers it was often spread that snakes are a problem, although there is hardly any evidence or systematic assessment. We therefore used the “Workshop on Rubber Management & Responsible Use of Agro-Chemicals”, held November 5-6, 2015, at NRWNR’s Mandian Research Centre to initiate an assessment on the experience of farmers with snakes. We conducted nearly 90 interviews on farmers’ experience with snakes and their perception of the risks associated with snakes. The results still need to be analysed. (SP5)



Pic. 3 - This “cave racer” (*Orthriophis taeniurus*) has been confiscated by the Naban River Watershed National Nature Reserve Bureau from an illegal hunter who intended to sell it on the local market. It has been released after picture taking.

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Training movies on rubber management and responsible use of agro-chemicals available.

The “Workshop on Rubber Management & Responsible Use of Agro-Chemicals”, held November 5-6, 2015, at NRWNNR’s Mandian Research Centre, has been accompanied and documented by a movie team of the Xishuangbanna TV. Based on the lectures five training movies have been elaborated (Chinese language) and are intended to support the work of local institutions in the training of farmers. They are freely available from SURUMER or our local partner NRWNNRB:

1. 过量使用农药带来的危害 (The danger of over use of Agro-chemical)
2. 如何合理使用水资源 (Water management)
3. 科学使用农药化肥 (How to use pesticides and fertilizer)
4. 可持续橡胶管理 (Sustainable rubber management)
5. 橡胶间种的影响和意义 (Rubber intercropping)

(SP5)

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Sustainable Land Management “Final Conference 2016”

SURUMER was well represented (see contributions below) during the closing event of the Sustainable Land Management Program, although this event came a bit too early for our project. Since approval of the 12 projects occurred successively and SURUMER was one of the last projects approved, we could not yet present final results since we are still in the process of data analysis and processing. Nevertheless, with five oral presentations and four posters we could provide a good overview on our activities and achievements. (PMC)



Pic. 4 - SURUMER stand in the market place of the conference showing amongst others raw rubber and rubber tapping tools on the table (right).

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Sustainable Land Management “Final Conference 2016” - SURUMER contributions

Subprojects involved	Authors	Title	Oral/ Poster
SP7, SP8, SP9	Aenis, T.; Ahlheim, M.; Shi, M.; Huang, J.; <u>Waibel, H.</u>	Land use, agrobiodiversity and risk perception: an economic analysis of rubber cultivation	Oral
PMC Invest, SP1, SP3, SP4, SP5, SP8, SP9	<u>Aenis, T.</u> ; Wang, J.; Hofmann.Souki, S.; Lixia, T.; Langenberger, G.; Cadisch, G.; Cotter, M.; Krauss, M.; Waibel, H.; Liu, F.; Li, Z.;	Research-praxis integration in South China- the rocky road to implement strategies for sustainable rubber cultivation in the Mekong Region	Oral
PMC Invest, SP1, SP3, SP5, SP9	Cadisch, G.; <u>Blagodatskiy, S.</u> ; Cotter, M.; Höuser, I.; Langenberger, G.; Liu, H.; Lang, R.; Yang, X.; Krauss, M.; Steinmetz, H.; Seitz, L.; Wieprecht, S.; Waibel, H.; Xu, J.	Integrated landscape and land use management for sustainable rubber cultivation in South-East Asia	Oral
PMC Invest, SP1, SP4, SP5, SP6	<u>Cotter, M.</u> ; Harich, F.; Häuser, I.; He, P.; Sauerborn, J.; Langenberger, G.; Martin, K.; Cadisch, G.	Biodiversity and Ecosystem Services - A case study for the Assessment of Multiple Levels of Species and Functional Diversity in a Tropical Cultural Landscape	Oral
SP1, SP3, SP4, SP5, SP7, SP8	<u>Krauss, M.</u> ; Azizi, N.; Kuch, B.; Steinmetz, H.; Seitz, L.; Wieprecht, S.; Ahlheim, M.; Cadisch, G.; Martin, K.; Langenberger, G.; Liu, H.; Blagodatskiy, S.; Aenis, T.; Zhou, X.	Integrated Water Resource Management and measures for a more sustainable rubber cultivation	Oral
SP7	Ahlheim, M.; Pelz, S.; Tannenberger, P.	Welfare economic evaluation	Poster
SP4	He, P.; Martin, K.; Zhu, C.- D.; Liu, X.-W.	Wild bee diversity and pollination services in a rubber-dominated landscape	Poster
SP1, SP4, SP5	Langenberger, G.; Feng, L.; Cadisch, G.; Martin, K.	Rubber intercropping revisited	Poster
SP1	Liu, H.; Yang, X.; Blagodatskiy, S.; Marohn, C.; Cadisch, G.; Xu, J.	Integrated modeling of land use management impact on soil conservation and carbon sequestration potential of rubber plantations	Poster

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International Symposium on River Sedimentation – September 19-22, 2016 in Stuttgart



The 13th International Symposium on River Sedimentation (ISRS 2016) will be held at the University of Stuttgart, Germany from 19-22 September 2016. The symposium series provides an important forum for scientists, engineers and policy-makers from all over the world to share information, exchange ideas and collaborate in the field of erosion and sedimentation processes. The conference offers different special sessions dealing with a great variety on sediment transport issues and river sedimentation problems. SURUMER will be represented in this conference with a special session called: Sustainable Land Management. Participants from the SURUMER project and the SUMARIO project (Sustainable Management of River Oases along the Tarim River) have the chance to present their results on sediment related topics within this special session.

For more information about the symposium please follow this link:

<http://www.isrs2016.de/>

Please find an overview over the SURUMER contributions below.

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13th International Symposium on River Sedimentation - SURUMER contributions

Subprojects involved	Authors	Title
SP1, SP3, SP4, SP5, SP8, SP9	Aenis, T.; Wang, J.; Hofmann-Souki, S.; Tang, L.; Langenberger, G.; Cadisch, G.; Martin, K.; Cotter, M.; Krauss, M.; Waibel, H.;	Research-praxis integration in South China- the rocky road to implement strategies for sustainable rubber cultivation in the Mekong Region
SP1, SP3, SP5, SP8	Langenberger, G.; Liu, H.; Blagodatskiy, S.; Krauss, M.; Wang, J.; Aenis, T.; Cadisch, G.	Managing rubber plantations towards improved water protection
SP1	Liu, H.; Blagodatskiy, S.; Marohn, C.; Cadisch, G.	Impact of land cover change on soil erosion and water yield in rubber dominated landscape
SP1	Liu, H.; Blagodatskiy, S.; Cadisch, G.	Dynamic change of anti-erosive effectiveness of rubber plantations and ist improvement by herbicide management
SP3	Seitz, L.; Krauss, M.; Azizi, N.; Steinmetz, H.; Wieprecht, S.	Reduction of fine sediment infiltration into rivers by implementing riparian buffer strips in an agricultural dominated area in Southwest China

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