The joint-venture expedition project "IX. Brasil Norte-Sul" from 12th July to 08th August 2016, carried out together with the Federal University of Paraná, Curitiba, Brazil and the National University of Amazonas Madre de Dios, Peru

Centre for Wood Science at the Department of Biology / MIN Faculty / University Hamburg, Germany

Information on the participating Latin American universities

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0. Introduction

The vast Brazilian territory results in notable differences between forestry practices in each region. The Brasil Norte-Sul project (BNS) is a scientific, technological and cultural immersion in sustainable forests from the Atlantic South to the Pacific North of Latin America. The essential part of the project is an expedition which lasts approximately 25 days. This year the route enabled students from Brazil and Germany to have insights into the forestry sector of eight Brazilians states and parts of the Peruvian Amazon Forest.

a. History

The relations between the Centre for Forestry and Forest Sciences (CIFLOMA) of the Federal University of Paraná (UFPR) in Curitiba / Brazil and the Centre for Wood Science of the University of Hamburg in Germany have been initiated during a capacity building project by the FAO back in the 1970s. Several scientists from University of Hamburg helped to build infrastructure in forestry and timber sector institutes in South America. Since 2007, this close cooperation has been further intensified. Between 2007 and 2012, several scientists of UFPR worked as guest at UH. Further, there is a student exchange between the two universities as part of the bilateral UNIBRAL project (2008/09, 2010/2011 and 2012/2013). In this context, Brazilian students take part regularly within an academic year at the B.Sc. and M.Sc. programme in Hamburg and vice versa.

The Brasil Norte-Sul project (BNS) was born in 2008 through the initiative of Prof. Dr. Renato Cesar Gonçalves Robert trying to form professionally advanced alumni, who are ready to work responsibly in difficult decisive situations. In the first edition, which was supported by the WWF, only eight students participated. The student's experience motivated another generation to go straight forward and look for additional support. The following year already 30 students went to Acre, this time on the ground with stops and visits along the 4.000 km journey. This project so far was realized only through support by UFPR and the Acre state government. Since then, the expedition developed every year and in 2014 UHH staff took over the organization of the European project part. In 2015 a counterpart was organized. With the support of DAAD and BDH e.V. a group of 14 Forestry and Wood Science students from four South American universities was invited to Hamburg and Germany last year. The academic internship (Studienpraktikum) of the Brazilian guests successfully laid the foundation for the project year 2016. The won contacts and network infrastructure intensely helps planning and operating an expedition project 2016.

b. Reasons

We are encouraged to rather continue investing energy and efforts in our long-term quality partnerships with abroad universities instead of superficial diversification of the international network. Hence, we institutionalized the project and keep the organizational management in-house at UHH. Additionally we are able to bring students from all over Europe to join the expedition team.

The BNS participants and alumni are the future decision makers in policy, education and industry. Hence, the motivation to widen their professional and socio-cultural horizon is evident. One of the principal goals was to concretize and exchange knowledge in forestry, land-use chance and adaptive value chain development. The project especially focuses contents which are not adequate to be taught in theoretical classes. During the expedition the participants enter literally the "green lecture auditorium" by visiting experimental forestry sites, conservation units, partner universities, companies of forest based products as well as companies of non-timber-forest-products, institutions of technological innovation, political entities and forest concession units where sustainable management inside the Amazon forest is implemented.

The network fostering of Brazilian, Peruvian and German BNS alumni is a transgenerational main objective. Through our long-term project, we established an extended multinational community with experts on nearly all adjacent professional fields. This way we provide job opportunities for alumni as well as the possibility to overview the complexity of the natural resource management and utilization sector.

1. Description of the scientific project conception of BNS

More than 1.6 billion people are dependent for their livelihoods on forest products to varying degrees. In remote areas with high degree of poverty, people depend even stronger on forests (Angelsen &Wunder, 2003).

Brazil offers an enormous variety of biomes on a total area of 8.5 million km², of which 4.7 million km² are primary and secondary forests and about 5.6 million ha planted forests (FAO, 2010). Enormous monoculture plantation areas of soya, sugar cane, rice and agricultural crops dominate the central and Southern part of the country. These steadily increase, causally determined by ever-growing global demand for Brazilian agriculture products as well as national consumerist welfare advancement.

Anyway, Brazil has the potential to be the leading forestry nation in the world. Economic policy incentives are still too few, considering that Brazil occupies about Europe's surface (24 times Germany). An impression of the national Brazilian wood consumption in numbers:

Subsector	**Wood consumption from primary, secondary and plantation forests [m³]**			
	Eucalyptus spp.	*Pinus* spp.	Others	Total
Pulp & paper	56.628.357	8.067.258	498.085	65.193.700
Panel industry	6.428.162	13.457.258	378.612	20.264.031
Sawnwood and timber	6.870.498	15.295.499	357.052	22.523.049
Charcoal	23.533.724	-	-	23.533.724
Biomass for energy	41.832.528	3.929.361	4.262.239	50.024.128
Modified wood	1.824.012	-	-	1.824.012
Wood chips	1.129.621	-	781.200	1.910.821
Total	**138.246.903**	**40.749.376**	**6.277.187**	**185.273.466**

(IBA, 2013)

In contrast, the Amazon macro-region, which accounts for nearly half of the Brazilian territory, shows the largest biodiversity worldwide. About 60 % of this region pertains to Brazil (FAO 2010). The product variety from this region is splendid. Nevertheless, the economic share of this region in the national GDP is marginal. In Brazil the variety of forest products (and their derivatives) covers:

- coniferous and non-coniferous sawn wood from primary and secondary forests
- fast growing plantation wood
    - eucalypt (pulp, paper, sawn wood, energy, wood based materials)
    - pine (sawn wood, wood based materials, resins)
- non-timber-forest-product (NTFP) in different categories of utilization
    - nutrition (castanha nut, açai fruit, palm heart)
    - medicinal, pharmaceutical, therapeutical (andiroba oil, bee antibiotics)

- artisanal (seeds for jewelry)
- construction (bamboo, palm wood, bast fibers)
- specialties (latex for several uses, vegetal oils for biodiesel)

As a consequence of the geographical, climate, ecological and cultural gradient the overall socio-economic and technologic situation in Brazil differs strongly along the North-South axis. Steady economic growth driven by the key sectors agriculture (including forestry), mining and heavy industries, led to a substantial prosperity in the South and South central parts of the country. However, regions which neither participated in economic growth nor in rising prosperity can be found in the whole North of Brazil. In the Northeast littoral region and its hinterlands, the so-called Sertão, in the rural regions in the federal states Amazonas, Roraima, Acre, Rondônia, the overall infrastructure is still less developed.

The state of Acre, Southwest Amazon, is a relatively isolated region of 153.000 km² extent of which 90 % are forests. This region is characterized by many principal rivers of the Amazon drainage basin, which act as natural transport ways for remote settlements. Of approximately 600.000 inhabitants, one half lives in the forests. The average population density in the West Amazon macro region shows to be around 3,8 inhabitants per km². Many of them live isolated from urban areas on indefinite land tenure. Their main income derives from timber, fuelwood and NTFP commercialization, subsistence small-scale agriculture, hunting and fishing. Typical products in this region are latex and Brazil nut (castanha), but surprisingly bamboo still does not play an economically role in these remote communities.

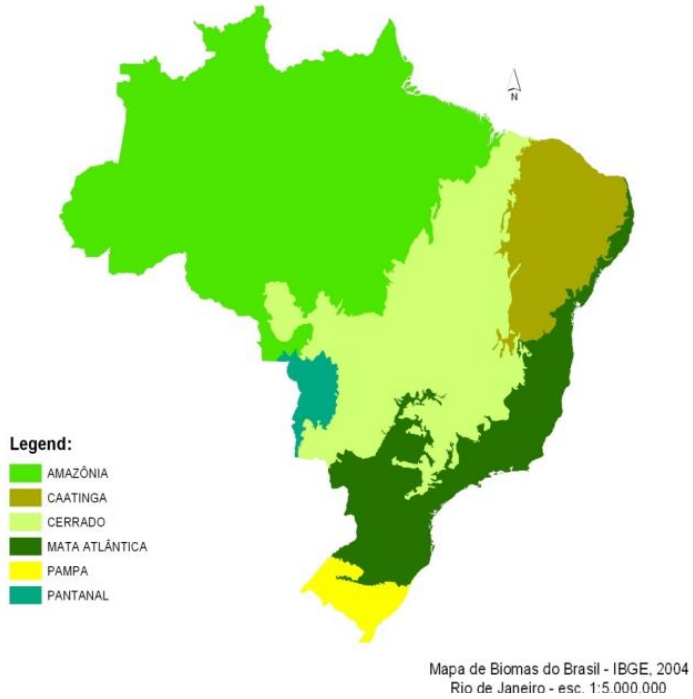

Figure 1 Map of the six Brazilian biomes (IBGE, 2004)

The European participants together with the postgraduate students from Brazil will form three panel groups. Each group will choose one professorial docent from their regarding home universities. The panel groups will consist of students from at least three universities of which at least two will be South American students. This way we want to guarantee a mid-term relation within the project community. This structure resulted out of the project collaboration between UHH, UFPR, HNEE, ALUF, TUDD, Krakow University and BOKU, Vienna. The following stated topics are of particular concern, some of which are to be chosen as an example, and/or edited by the participating students. The panel groups may work on questions as like:

Panel I: Correlations of the progressive land-use change by unsustainable agriculture and illegal tropical hardwood logging – the role of national regulations, law enforcement and the consumer markets

1. What role does the South American / European timber industry play in illegal harvesting and trafficking of wood? What are quantitative and qualitative consequences in the economic, social and environmental aspect?
2. How do sustainable value chains in tropical forestry work in Brazil from the purchase of lands to the finished product?

3. Which products result out of those value chains and how are they marketed?
4. How do international measures as REDD+, FLEGT and CITES contribute to sustainable development of the timber sector?
5. How did the European Timber Trade Regulation (EUTR 2013) influence the export in Brazil and Peru?
6. What is the economic, social and ecologic impact of certification like FSC, PEFC, rainforest alliance, et cetera?

Panel II: Climatic, technological and economic structural differences of Brazil's southeast coast to the north-western Amazon region and its characteristic forest formations Amazon, Caatinga (scrubland and forest), Cerrado (savanna), Atlantic Forest (Atlantic Forest), Pantanal (tropical wetland) and Pampa (grassland)

1. Where does the political and economic incentive focus lays in South American forestry and wood industry?
2. How did the public organs influence and control the development of frame conditions of the Brazilian forestry sector in the Amazon in the last twenty years?
3. What are the characteristics of the use of non-timber-forest products (NTFP's) through local and / or indigenous populations (for example, rubber, bamboo, oil palms, Mandiok, etc.)?
4. What agroforestry use systems are known and how they work in practice?
5. Which NTFP's are used industrially (palm oil biodiesel, resin production, nuts, fruits) and where these are marketed and used?

Panel III: Timber production in plantations as the solution - differentiation of the advantages and disadvantages for population, regions and the country's economy

1. What are the forestry and processing relevant characteristics of pine (*Pinus elliotii, P. taeda*) and eucalypt (*Eucalytpus* spp.) and what makes them so successful particularly in the South-eastern plantation forestry?
2. What role teak (*Tectona grandis*) and acacia (*Acacia mangium*) play in the plantation economy in the western states of Mato Grosso and Mato Grosso do Sul and how does their production work?
3. Can bamboo be produced on plantations and compete with biomass production volumes of traditional tree species?
4. What are main forestry challenges in the development of the plantation industry in South America and which are concerns in regard to land-use changes and ethnic groups?
5. What potential do lignocellulosic non-timber resources (bagasse, bamboo, palm trees) have as a basis for material use in the wood-based-panel industry?

The Brazilian partners plan and concept the practical part of the BNS project. The distance to be travelled from Curitiba to the destinations is more than 4.500 km. The route will be driven on a long-distance coach provided by the UFPR. The geographical extent of the project guarantees that the participants can win a unique cross-section of impressions. Each panel group may investigate deeply their topic focus at several stages.

Looking at the north-south route, one goes through different social, economic and cultural realities which are caused by factors as climate, vegetation zone, historical development and economic performance. Also land-use, forestry and timber industry are structurally different: Good infrastructure and largely industrialized companies in the South (Parana, Sao Paulo, Santa Catarina) are in extreme contrast to the moderately developed North (Rondônia, Acre) with its exploratory and agricultural orientation. These structural differences can also be found on the product portfolio again. The furniture, wood materials, paper and sawmill industry in the Southern regions commercialize their products on domestic and international markets (Asia, North America, Europe). In Brazil's North, the sawn timber, intermediate and niche products (NTFPs, biofuels) sell mainly regionally. Some products (tropical plywood, agrofuel, pulp) are marketed abroad, but the foreign trade surplus would remain to the capital donors in the South.

2. Detailed schedule of the expedition (30.03.2016)

Date	Institution/Company	Action/Course	Location
12.07.2016	Universidade Federal do Paraná; Experimental forestry site	Arrival at Curitiba and transfer to accomodation sites - ice-breaker evening "Dia do Engenheiro Florestal"	Rio Negro, Paraná
13.07.2016	Universidade Federal do Santa Catarina	Prof. Dr. Fantini: Sustainable forest management in secondary Atlantic rainforest	Massaranduba, Santa Catarina
14.07.2016	Universidade Federal do Santa Catarina	Networking session at UFSC, meet-up with forestry students and return to Curitiba and switch means of transport (bus)	Florianopolis Santa Catarina
15.07.2016	Universidade Federal Rural de Rio de Janeiro	Understanding the concept of urban national parks in Brazil - Parque Nacional da Tijuca	Rio de Janeiro, Rio de Janeiro
16.07.2016	Ilha Grande National Park	Guided walk through the national park	Ilha Grande, Rio de Janeiro
17.07.2016	BioVert	Ecological compensation service agency with own multistage nursery for native tree species	Silva Jardim, Rio de Janeiro
18.07.2016	UnB, SFB, LPF	Networking event with forestry students of the Federal University Brasília	Brasilia, Distrito Federal
19.07.2016	IBAMA, SFB, LPF	Panel discussion with experts at the Brazilian Institute of Environment and Renewable Natural Resources	Brasilia, Distrito Federal
20.07.2016	UnB	Federal University of Brasília	Brasilia, Distrito Federal
21.07.2016	Floresteca	Analysis of forestry and quality management with teak plantation wood for export and processing industry	Jangada, Mato Grosso
22.07.2016	Parque Nacional de Chapada dos Guimarease	Threats and mitigation strategies in a Brazilian National Park	Chapada dos Guimarães, Mato Grosso
23.07.2016	Bus travel	Passage through the deforestation belt of Mato Grosso and Rondonia	Bus travel
24.07.2016	Bus travel	Passage through Rondonia and Acre - Preparation for following day	Manoel Urbano, Acre

25.07.2016	Agrocortex	Understanding the largest forestry concession in South America: Mahagoni and other hardwoods	Manoel Urbano, Acre
26.07.2016	Agrocortex	Understanding the largest forestry concession in South America: Mahagoni and other hardwoods	Manoel Urbano, Acre
27.07.2016	Travel to Ashaninka territory	Passage on land and water ways to enter	Around Cruzeiro do Sul, Acre
28.07.2016	Ashaninka tribe	The advantages of the indigenous agroforestry community	Marechal Thaumaturgo, Acre
29.07.2016	Ashaninka tribe	The advantages of the indigenous agroforestry community	Marechal Thaumaturgo, Acre
30.07.2016	Travel to Ashaninka territory	Passage leaving the Ashaninka territory	Cruzeiro do Sul, Acre
31.07.2016	Break with optional networking event	Networking meeting with members of FUNTAC, Embrapa Acre	Rio Branco, Acre
01.08.2016	Natex and rubber community Seringal Cachoeira	NTFP: Rubber processing branch in Acre state	Xapuri, Acre
02.08.2016	Travel from Brazil to Peru	Passage across the Andes mountains	Iñapari, Peru
03.08.2016	Bozovich tropical timber production	Challenges in processing and marketing Cumarú tropical timber from Peruvian Amazon forests	Puerto Maldonado, Peru
04.08.2016	Universidad Nacional Amazonica de Madre de Dios	Prof. Dr. Persi: The Peruvian forestry sector and ist approaches to sustainable forestry management in the Peruvian Amazon	Puerto Maldonado, Peru
05.08.2016	Travel to Cuzco	Crossing the Andes mountains	Cuzco, Peru
06.08.2016	Macchu Picchu (optional)	Spare time	Macchu Picchu, Peru
07.08.2016	Hostel meeting room	Panel groups share contact details and preliminary post-project work plan	Cuzco, peru
08.08.2016	Preparation for the land way travel back to Curitiba	Official end of the practical phase of the project	Puerto Maldonado, Peru
11.08.2016	Arrival at Start		Curitiba, Brazil

3. Programme description and a topic related list of visits and events

The programme of the BNS expedition is currently being planned. The process will take until end of May 2016. In the following, the main events are listed and their related institutions are introduced. Furthermore, each station's relevance for the student panel groups is highlighted.

- **Overview on Brazilian forestry and processing sector and the graduate and postgraduate research-driven academic education at Federal University of Paraná (UFPR)**

The itinerary of the expedition is mainly set up by our Brazilian partner. The necessary local contacts have been established over years and are mostly personal contacts of UHH employee Goran Schmidt. The individual companies and institutions to be consulted will be presented shortly. The relevance of content (visits, seminars, workshops) relating to the previous questions is evident.

The **Federal University of Paraná** is one of the oldest universities in South America. A close cooperation exists between the CIFLOMA (Forestry and Wood Sciences Institute at UFPR) and the Centre for Wood Science, Hamburg University exists since 2008. A presentation of the Institute and the contact with local students and faculty members are in the foreground of the introductory visit at UFPR. We intend to sustainably secure the future of our tightly meshed network with South American institutions by involving our undergraduate and graduate students as early as possible. A workshop of the expedition participants (German, Brazilian and other international students) will be held on the experimental forestry farm site at of UFPR in Rio Negro.

On the occasion of the **National Day of the Forestry Engineer** ("Dia do Engenheiro Florestal") on 12th July 2016, we will kick-off the expedition with a networking evening with Brazilian, German and Peruvian colleagues in Santa Catarina.

For further information: http://www.ufpr.br
Panel group I + II + III

- **Long-term management of mixed secondary *Pinus* spp. forests as invasive species in secondary Mata Atlântica rainforests at Federal University of Santa Catarina (UFSC)**

Secondary forests differ from primary forests In terms of biodiversity, height and structure. Usually secondary forests are less high, have only one canopy layer and a few tree species are dominant. Normally the trees stand closer than in primary forests and there is more undergrowth. Logically there are no huge trees with high BHD. For many owners the lack of big trees, the difficult accessibility and the missing know-how lead to the impression that it is not valuable for them to use their forest land.

There are two more phenomena which promote this development. The younger generation of forest owners tends to move to urban areas for studies or labour. Only few of them turn back to overtake their parent's forestry activities. Another problem is a well-meant law which was adopted in 2006 – the Mata Atlântica law. This law should prevent deforestation by prohibiting the logging of native tree species. So for investors and forest cultivators it seemed economic non-sense to plant native tree species, not being able to harvest them in the future. As a consequence, only exotic tree species or even Eucalyptus monoculture plantations were established on former secondary forest lands.

Our host Prof. Dr. Celso Fantini will introduce the participants to the management strategies in Mata Atlântica. Together with the responsible panel team, a discourse will be held about the advantages and disadvantages of the management strategies. The elaboration will work out the comparison of secondary Mata Atlântica forestry and plantation forestry.

For further information: http://www.ufsc.br
Panel group II + III

- **Exotic plantation woods, innovative tree nurseries and environmental consultancy for ecological restoration and compensation services – Solution or problem?**

Biovert Florestal e Agrícola offers a unique combination of environmental agency services and technical forestry advice. The main focus of the company is on the production of seedlings of native tree species for soil improvement of degraded land, city greening and environmental services (e.g. carbon credits). The nursery produces its own substrates for their seedlings. Biovert produces about 4550 plants per hectare. At least 80 different and rare native species are reproduced and help to supply about three million seedlings per year. The company offers an unique compensation strategy for large-scale construction or infrastructure projects. Due to the business model, Biovert is quite susceptible to unfavourable legislations of the Brazilian government. They strongly depend on Rio de Janeiro state. Biovert will only have clients, if law enforcement is sound and construction companies and real state agencies are pressured to mitigate the impact they cause by restoring areas These conflicts with forestry officials and the unfavourable legislation made Biovert an independent and innovative forestry company in Brazil.

Floresteca is Brazil's largest producer of teak wood from plantation forests. The plantations are distributed in several states (Pará, Mato Grosso) and reach a total area of 24,000 hectares of teak. Several thinnings (4./7./10./15. year) provide logs which are mainly exported to India. Small diameter trees are sold increasingly on regional and national markets, V. A. Energy Use. The advantages and disadvantages of this form of production are here clearly to the entire value chain and should be independently assessed and discussed by the participants.

For further information: http://www.biovert.com.br/ http://www.floresteca.com.br/
Panel group II + III

- **National parks, tribal community agroforestry, non-timber forest products and low impact logging – Different approaches to the same problem**

The **Ilha Grande State Park** is an area of public domain protected by law in order to achieve the peaceful encounter between man and the environment. In the park the state government preserves the rare species of fauna and flora to protect the cultural heritage. Since the island has been a lepra prison for decades, the area is a nearly untouched region of primary forests. The State of the Great Island Park (Peig) was created in 1971 with 4.330 ha, expanded in 2007 to 12.052 ha. Nowadays 62.5% of the total area of the island are completely protected - 193 km². The administration of the park, the Rio de Janeiro **State Environmental Institute** is based in Vila do Abrao, RJ. In park areas is not allowed to cut trees, plucking seedlings, hold, feed or scare away animals, conduct any agricultural activity and pastoral, hunting and fishing in rivers, extraction mining of any kind, residential occupation, commercial and industrial activities, i.e. one cannot

change the environment in a predatory manner. What the advantages, challenges and disadvantages of this kind of national park system is, will be focus of the discussion in Rio de Janeiro.

The **Chapada dos Guimarães National Park** protects an area of 32.630 ha of the Cerrado Biome. It is located in the state of Mato Grosso and was created in 1989. The National Park pertains to the Chapada dos Guimarães community (35%) and the city of Cuiabá (65%). The park is categorized as a so-called permanent conservation area in the year 2002 by the Sistema National de Unidades de Conservação, which was itself created in 2000. Such protected areas have the aim to preserve the flora and fauna and special features of an area.

In Brazil the Chico Mendes Institute is the main management program of all protected areas and each conservation area has a consultative council that includes the relevant local stakeholders. Until 2009 the management plan for Chapada dos Guimarães National Park was elaborated and published. Important contents are the biotic, abiotic, cultural, historic, social and economic factors of the park and the environment. The park is located at the meeting point of three different biomes; these are Cerrrado, Mata Atlântica and the Amazon rainforest. More than 659 varieties of plant species growing and some rare animals like tapir and jaguar.

One of the last untouched vast parts of the Cerrado is protected here, but is endangered by growing agriculture and extending settlements. The current park managers have to deal with many different problems like settlers, tourism infrastructure and fire mitigation management. Nowadays settling in the park is not allowed, though some farmers lived in the district before its status changed into a national park. These farmers get reparations from the government so they can start a new life somewhere else. However, problems with illegal settlements and subsidy agriculture lead to conflicts with authorities and police.

For the first time the expedition team will visit an **Ashaninka tribal community** and get to know their **agroforestry techniques.** The Ashaninka are one of South America's largest tribes. Their homeland covers a vast region, from the Upper Juruá river in Brazil to the watersheds of the Peruvian Andes. Recently, the Ashaninka have reported unusual encounters with dozens of uncontacted Indians close to their homes. It is believed that these uncontacted tribes have fled into Brazil from Peru to escape the waves of illegal loggers invading their territory, a situation with which the Ashaninka are familiar. Colonists, rubber tappers, loggers, oil companies and Maoist guerillas have been invading their lands for decades.

Seringal Cachoeira is a culturally, historically and forestry unique community in Xapuri, Acre. Rubber extraction and other NTFP's are the main sources of income of the local population. The entire history of the state and the national commitment to the protection of natural resources is the family history of Chico Mendes (1944 - 1988) connected. To fully understand the ever-worsening tensions land titles and land conversion, this station for participants of particular importance.

One sawmill and a connected parquet fabrication started production in the industrial wood complex in **Xapuri** in 2005. This arose from the initiative of the previous government (Governador Jorge Viana) to build a sustainable forest industry sector in the state of Acre. The processed here timbers are all from the local management of natural forests and are certified partly with FSC. Due to the latest crisis and climatic changes, the wood working industry suffered a strong decrease of raw materials. The participants will analyse the reasons and talk about solutions and alternatives.

Preservativos Natex was founded in 2008 by the state government of Acre which processes the collected rubber to condoms. In Acre, the rubber collection methods didn't change for many generations and still many local forest family's income bases on *borracha*, the natural latex. The former Brazilian latex

industry in the Amazon region focused on export markets, a relevant national demand did not exist back then. Today, Natex integrates a production chain with community-based collection schemes and a high quality product of public interest. The preservatives produced at Natex are sold to the public health sector which then provides these for free to society. Natex is an excellent example of how the use of NTFP's public interests and sustainable economic structural development can harmonize.

For further information: http://www.narobe.com/ http://www.icmbio.gov.br/parnaguimaraes/ http://www.preservativosnatex.com.br/
Panel group I + II

- **Panel discussions with experts and decision makers in university, governmental and public services at the capital Brasília**

South Americas most important semi-governmental institution in agricultural and forestry issues is **IBAMA (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis).** Topic focus at the Brazilian Institute of Environment and Renewable Natural Resources will be the new system for forest operations monitoring (SINAFLOR: Sitetam nacional de Controle da Origem de Produtos Florestais). The system covers the control of private companies regarding correct harvest method as well as the commitment to the timber origin documents (DOF: Documento de origem florestal). IBAMA, in collaboration with CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) protects threatened animal and plant species from extinction and prevent loggers from illegal harvest in Brazil. The participants will prepare questions in interview form and get an important political view on how forestry works in Brazil.

The **Federal University of Brasília** (UnB) was created in 1962, following the plan of its founders, educator Anísio Teixeira and anthropologist professor Darcy Ribeiro. In 2010 UnB had 1700 professors and nearly 2400 employees as well as over 30.000 graduate and undergraduate students. On the graduate level, the university offers 49 master's degrees and 27 doctoral programs. Of special interest here is the composition of elite alumni from UnB. Many government officers and even ministers (Environmental Ministry) recruited their staff from UnB alumni.

The Brazilian Forest Service (SFB) is a unit of the basic structure of the Ministry of the Environment established by Article 54 of Law No. 11,284 / 06. Its main objective is the management of natural resources, particularly public forests of Brazil. The expedition participants will especially be introduced to the forest concession system and the Rural Environmental Registry (CAR).

Forest concessions are legal in Brazil since 2006. Since then, the government may provide forest concessions in rural areas for private enterprises and associations. The clients have to follow the rules of sustainable impact forestry, NTPF recovery or may use the area for eco-tourism. The concessions operate under the regulatory framework of SFB, IBAMA and certification agencies. The main objective of the SFB concessions is the preventive action against illegal logging for agriculture purpose.

The, so-called rural environmental registry (or “cadastro ambiental rural”) is a mandatory electronic document for all over Brazil. It is comparable to a common land registry system integrating environmental of the registered area. The information helps the protection of natural reserves as the APPs (Áreas de Preservação permanente) and RL (Reserva Legal). The CAR was founded in 2014 and came up as a brand new topic in South American forestry. It appears to be a system for monitoring and supervising private operations, enabling the public sector to control the environmental planning for future years.

Technology as a solution for the sustainable development of forestry is the focus of the **Forest products laboratory** (LPF - Laboratório de Produtos Florestais). Since 1973, the lab is working with wood technology and NTFP's. It has an important role in the growing demand for natural resources. The lab is part of the SFB (Serviço Florestal Brasileiro). Their main objectives cover timber species identification, characterization and utilization methods (CITES and non-CITES species) and the multiplication within the foresters community. The LPF gives courses for public employees as well as private companies. They deliver a major contribution to the development and use of wood products, as well as non-timber forest products.

For further information: http://www.florestal.gov.br/ http://www.ibama.gov.br/
Panel group I + III

- **Public-private partnerships of the Brazilian agricultural development strategy in Acre state and adjacent regions**

The **Empresa Brasileira de Pesquisa Agropecuária (EMBRAPA)** is a federally organized, parastatal research company for the forestry and agricultural sectors. The Embrapa is divided into regional bureaus which accept to the respective relevant fields; i.e. in Rio Branco especially sustainable methods of forest management for natural forest management are being sought. In close cooperation with universities and private entrepreneurs an optimal knowledge transfer is ensured.

For further information: http://www.embrapa.br/

Based on experience with various management systems of natural forest management, the **Fundação de Tecnologia do Estado do Acre (FUNTAC)** supported as a Technology Foundation the forestry technical progress in the state of Acre

In addition to practical application to "low-impact logging", "remote sensoring" and Forest Management (skidding paths) in the state forest of Anti Mary, presents itself FUNTAC in your headquarters and research facility in Rio Branco. Here investigations are carried out in particular to the five research areas:

- Applications for native and exotic bamboo species
- The use of natural products in the field of renewable energy (biodiesel)
- The use of NTFP's in the cosmetics, food industry, pharmacy and phytotherapy
- Seedling micropropagation
- Exploratory research on orchids
- forest fire studies, geo-processing and skidding paths

As a practice counterpart, **Agrocortex Florestas do Brazil** nowadays runs the largest sustainable forest management project in Brazil, located between Acre and Amazonas states. It is responsible for the sustainable management of nearly 200.000 ha of tropical forest where it produces more than 150.000 m3 of tropical sawn wood and over 250.000 m3 of residues (fuelwood). Agrocortex is the only project in the world authorized by both CITES and IBAMA, to manage Brazilian mahogany (*Swietenia macrophylla*), producing in a sustainable way, annually, more than 2.000 m3 of mahogany sawn timber. In addition, Agrocortex produces 80.000 m3 of sawn wood from more than 45 species being the largest timber industrial project in Acre state with a total investment of over 100 million and creation of 350 direct jobs. The project is in FSC certification process and therefore has several projects promoting positive social and environmental impacts of the project, having several partners for such reference, which highlights the State of Acre, the Tropical Forest Institute and several universities.

For further information: http://www.funtac.ac.gov.br/ https://www.embrapa.br/ http://www.agrocortex.com.br/

Panel group I + II

- **The Peruvian approach to agricultural development and forestry strategy in the Amazon region in the border areas to Brazil and Bolivia**

Bozovich is a typical tropical sawmill in the Peruvian Amazon region. Large trunk diameter, low-tech processing technologies and low timber yields are typical problems in the timber sector in the region. In general Bozovich produces deckings made of Cumarú timber. The focus on a few species is known to be a strategic problem in the Amazonian timber sector. Similar problems are also visible within the Brazilian North West Amazon region. Here veneers and various assortments are of plywood produced which in the USA and are sold to Europe. The FSC certification, especially the CoC (chain of custody) issue is taken seriously here. Anyway, the company is a good example of the internationalization of timber markets to the remotest regions of the Amazon. The participants will get to know the last stage of the regional value-chain of tropical hardwoods and discuss it regarding viability and ecological, social and economic consequences.

The **Universidad Nacional Amazónica de Madre de Dios (UNAMAD)** is forming forest and environmental sciences professionals. The university is working closely together with private/NGOs and has a recently established formal cooperation contract with the UFPR in Curitiba. Exchange students from Hamburg with the intention to study in Brazil and Peru encounter a low bureaucratic threshold when entering the Peruvian university. UNAMAD works with agricultural and forestry producers' associations, indigenous groups (as the Ashaninka) and others in the Peruvian Amazon. As an institution focusing the challenges of Amazonia, UNAMAD relates its activities to ecosystems services, development of public investment projects, climate change mitigation and adaptation, REDD+ projects, GIS, soil restoration and good governance in forestry.

For further information: http://www.bozovich.com/ http://www.unamad.edu.pe/
Panel group I + II + III
