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## **EBERSWALDE UNIVERSITY FOR SUSTAINABLE DEVELOPMENT: WITH DEEP ROOTS IN FORESTRY TOWARDS A "WHOLE INSTITUTION APPROACH" IN SUSTAINABILITY**

Eberswalde University for Sustainable Development (HNEE) is a University of Applied Sciences in Brandenburg and one of Germany's greenest universities with 4 faculties and a unique profile. The basic principle of HNEE is sustainability, anchored in the mission statement, 'Mit der Natur für den Menschen' (With nature for mankind), and research is focused in the three areas: Sustainable rural development; Sustainable production and use of natural products, and Sustainable management of limited resources. HNEE provides several innovative study programs, such as Forestry, Organic Farming, Wood Technology, International Forest Ecosystem Management on Bachelor level. On Master level the study programs are Regional Management, Global Change Management, Sustainable Entrepreneurship and Forest Information Technology, a double-degree program together with Warsaw University of Life Sciences. Furthermore, HNEE's portfolio is complemented with further education Master programs such as Strategic Sustainability Management. The Higher Education Institution at Eberswalde has a long history going back to the early 19th century when it was a Faculty of the Berlin University. During the Cold War the Faculty was closed due to political reasons. After German reunification, among others a University of Applied Sciences was founded, with focus on practical application. The current situation of HNEE is described emphasizing the so-called 'Whole Institution Approach', i.e. sustainability is seen as an integrative concept for human life and economic development. The Whole Institution Approach encompasses a sound environmental management program aiming at zero emissions. Last but not least, some features of the Faculty of Forest and Environment are outlined. Especially worth to be mentioned is the international focus of the faculty, with four international study programs and many research topics of international relevance. Moreover, the Centre for Economics and Ecosystem Management is attached to the faculty.

**Keywords:** higher education institution; sustainability; whole-institution-approach.

**Introduction.** The Eberswalde University for Sustainable Development (Hochschule für Nachhaltige Entwicklung Eberswalde – HNEE) is a University of Applied Sciences in Brandenburg, near to Berlin. HNEE is Germany's greenest university with a unique profile focusing on sustainable development. Teaching, research and transfer at the HNEE are firmly connected with the principles of sustainability and based on the cooperation with regional and international partners in research and transfer and teaching. Priorities of the research are focused in the three areas: Sustainable rural development; Sustainable production and use of natural products, and Sustainable management of limited resources.

The basic principle of HNEE is sustainability, anchored in the mission statement: "Mit der Natur für den Menschen" (With nature for mankind). Whilst the mission statement of the Ukrainian National Forestry University (UNFU) is: "Ad naturam vivere discimus" (We learn to live with nature). Thus, both universities have many things in common: starting with deep roots in forestry, many similar careers and – most important – an ecologically based understanding of sustainability.

Are they maybe congenial partners? Let's have look at the HNEE, and then you may decide by yourself.

### **Our deep roots in forestry**

**1. The year 1992.** In 1992, the "Rio summit" took place in Rio de Janeiro or, more precisely, the United Nations Conference on Environment and Development. It was the great visionary conference, which finally led with Rio+20 to the demand for a "great transformation" into a climate-friendly society without the use of fossil fuels and to the important climate agreements of Paris and Marrakesh.

**2. The "green thread" developed from forestry tradition.** At the same time, but only at the same time and by no means due to Rio, the Eberswalde University of Applied Sciences in Brandenburg started its business with 45 forestry students after the political change in Germany, exactly on April 1<sup>st</sup>, 1992. Even then it started with a clear profile. By decision of the founding senate a "green thread" had to connect all faculties, all teaching programmes and all the fields of research. This "green thread" took up a long and essentially forest-based tradition.

The forestry scientist Georg Ludwig Hartig (1764-1837) had already formulated the first implementation of the principle of sustainability into forestry practice in 1804. In the second edition of his "Anweisung zur Taxation der Forsten" it says:

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"...es läßt sich keine dauerhafte Forstwirtschaft denken und erwarten, wenn die Holzabgabe aus den Wäldern nicht auf Nachhaltigkeit berechnet ist. Jede weise Forstdirektion muss daher die Waldungen des Staates ohne Zeitverlust taxieren lassen und sie zwar so hoch als möglich, doch so zu benutzen suchen, daß die Nachkommenschaft wenigstens ebensoviel Vorteil daraus ziehen kann, als sich die jetzt lebende Generation zueignet" ("...no sustainable forestry can be thought of and expected if the wood delivery from the forests is not calculated on the basis of sustainability. Every wise forestry directorate must therefore have the state's forests assessed without loss of time and try to use them as highly as possible, but in such a way that the descendants can at least derive as much advantage as the now living generation; Hartig 1804, p. 1).

In 1821, through the initiative of Georg Ludwig Hartig, the "Royal Forestry Academy" was established at the University of Berlin (now the Humboldt University of Berlin), headed by Wilhelm Pfeil, Oberforstrat (senior forestry officer). Pfeil, on the other hand, soon thought to relocate the forestry training and founded the "Höhere Forstlehranstalt" in Neustadt-Eberswalde in 1830 – and thus close to the forests and clearly practice-oriented. Even then, sustainability was a very important topic in forestry science: Pfeil dealt with it and ruthlessly tore apart, among other things, anyone he suspected of deviating from the path of sustainability in his then feared "Kritische Blätter für Forst- und Jagdwissenschaft" (Pfeil 1822-1859).

Moreover, Eberswalde has a long tradition in applied forestry research based on long-term observation plots, starting in 1871. A preliminary landmark here was the foundation of IUFRO, the leading international network of forest research organisations 1892 in Eberswalde.

**3. From the Faculty of the Berlin University to the University of Applied Sciences Eberswalde.** Since then, forestry teaching and research have belonged to Eberswalde, until 1963, when for political reasons the university in Eberswalde (which belonged by then as faculty of forestry to the Berlin University) was closed by the government of the German Democratic Republic (GDR). While research was continued at the Institute for Forest Sciences Eberswalde (IFE), founded in 1954, with up to 700 employees\* until its liquidation in the years 1990-1991, higher education in forest sciences has been concentrated at Tharandt near Dresden. At that time, sustainability was usually equated with ecological sustainability, i.e. "green", and until the mid-1970 s of the 20th century it was a rather marginal topic worldwide. Soon after the fall of communism, IFE staff members were involved in the (re-) opening of a forestry faculty at the Humboldt University of Berlin in Eberswalde, which finally led to the founding of the Eberswalde University of Applied Sciences, the current HNEE. In several intermediate steps, big parts of the IFE had been transformed in the Thünen-Institut für Waldökosysteme Eberswalde (Thünen Institute for Forest Ecosystems Eberswalde) as a federal research institute, the present Landeskompetenzzentrum Forst Eberswalde (LFE) as a state research institute and the Eberswalde University of Applied Sciences, whose forestry department recruited many colleagues from the former IFE and which was closely linked to the predecessor institutions of the LFE through six joint professorships.

**4. The current situation.** Currently, the HNEE has two campuses with four faculties and a botanical garden, it offers ten bachelor programs and ten master programs (Table). In 2017 more than 2.200 students were enrolled in the different programs and the HNEE generated 438 graduates (Figure 1).

Table. Faculties and study programmes at HNEE

<p><b>Faculty 1/ Forest and Environment</b></p> <p><b>Bachelor-Programmes</b></p> <ul style="list-style-type: none"> <li>– International Forest Ecosystem Management</li> <li>– Forestry</li> </ul> <p><b>Master-Programmes</b></p> <ul style="list-style-type: none"> <li>– Forest Information Technology</li> <li>– Global Change Management</li> <li>– Forestry System Transformation</li> </ul>	<p><b>Faculty 2/ Landscape Management and Nature Conservation</b></p> <p><b>Bachelor-Programmes</b></p> <ul style="list-style-type: none"> <li>– Landscape Management and Nature Conservation</li> <li>– Organic Farming and Marketing</li> </ul> <p><b>Master-Programmes</b></p> <ul style="list-style-type: none"> <li>– Regional Development and Nature Conservation</li> <li>– Management in Organic Agriculture</li> <li>– Strategic Sustainability Management</li> </ul>
<p><b>Faculty 3/ Wood Engineering</b></p> <p><b>Bachelor-Programmes</b></p> <ul style="list-style-type: none"> <li>– Wood Science and Technology B. Eng.</li> <li>– Wood Science and Technology B. Eng. [dual]</li> <li>– Mechatronic Wood Science [dual]</li> </ul> <p><b>Master-Programmes</b></p> <ul style="list-style-type: none"> <li>– Wood Science and Technology</li> </ul>	<p><b>Faculty 4/ Sustainable Business</b></p> <p><b>Bachelor-Programmes</b></p> <ul style="list-style-type: none"> <li>– Business Management</li> <li>– Finance Management</li> <li>– Regional Management</li> </ul> <p><b>Master-Programmes</b></p> <ul style="list-style-type: none"> <li>– Sustainable Tourism Management</li> <li>– Sustainable Business Management</li> <li>– Municipal Economy</li> </ul>

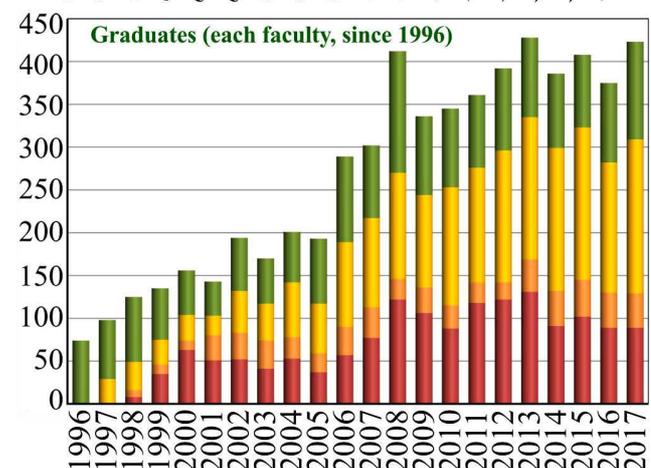
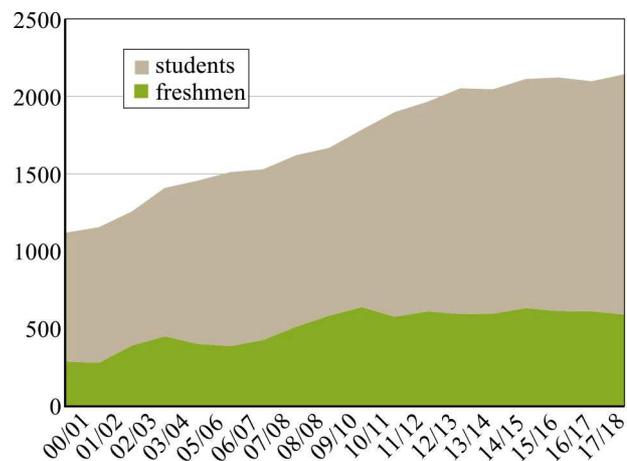


Figure 1. Dynamics of students "and graduates" numbers at HNEE

The university is predominantly financed by funds of the regional government (Land Brandenburg 12,8 Mio. Euro; 55,7 %) and third-party funds (8,7 Mio. Euro; 37,8 %), which become continuously more important for the University (Figure 2). Additional federal funds contribute to the budget of the University – 1,5 Mio. Euro (6,5 %). 58 entitled professors and a total of about 270 employees are working at the university, i.e. the average third party funding per professor came up to about 158.000 Euro (all values refer to the year 2017).

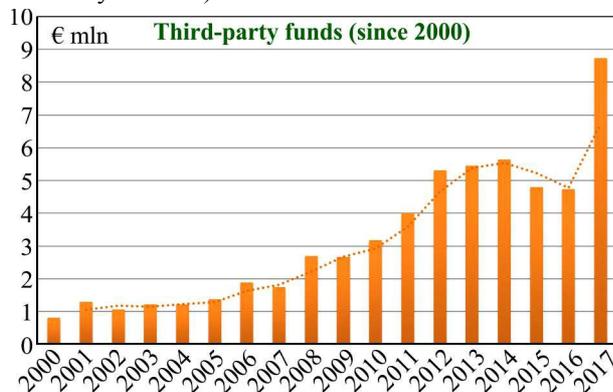


Figure 2. Dynamics of third party financing of the HNEE activities

All the degree programmes are dedicated to sustainability and sustainable management. Many seminars, projects and excursions are held in cooperation with renowned local, regional and international partners from research organisations and universities, administrations or from the business world. That ensures that students have a focus on practical implementation and receive insights into potential professions. The campus' location in Eberswalde is also rooted in a successful network of science, business, administration and politics in the region.

The focal points of research at HNEE are: Application-oriented, sustainable development-related research in the sense of a holistic ecosystem management; analyses of biomass potentials and the production of renewable energy from forestry and agriculture; nature conservation, climate change and climate protection; education for sustainable development and environmental education; organic farming and marketing; sustainable tourism; sustainable economy and enterprise development; deployment, customization and optimization of the raw material from agriculture and forestry; basic research and development of wood materials and wood analogues; technical-oriented product and process development along company value chains; applied technical adjustments of production processes, with particular respect to computer-based systems.

Relevant projects at the HNEE had been for example: Development of an integrated land management scheme for sustainable use of water, nutrients and carbon in North-East Germany; Optimization of tree cultivation in agriculture and forestry with regard to climate change and bioenergy; Network for efficient and sustainable wood processing based on wood modification processes...

### Towards a whole institution approach

**1. Redefining the mission statement and change of the name.** An amendment to the Higher Education Act of Brandenburg in December 2008 allowed the universities to define names of their own. This was taken as an opportunity by the university management to bring the topic of "na-

me change" into the internal discussion with the aim of clearly anchoring the topic of "sustainability" in the name.

At the beginning of 2009, the Senate commissioned a small working group to analyse the need for changes resulting from the new Higher Education Act and to develop proposals for names. A large amount of feedback addressed the word "sustainability". The proposed names were hotly debated in the Senate. In the online-based debates, all university members were able to participate.

On the one hand, there was the concern of some students and professors that the new name could worsen the career prospects of graduates\* and the attractiveness of the university. On the other hand, there were reproaches such as greenwashing, megalomania or simple unbelief. After intensive discussion, the compromise variant "Eberswalde University for Sustainable Development" was able to secure a majority.

**2. Focusing: Whole Institution Approach.** Since then, the HNEE has pursued a whole institution approach in teaching, research and transfer more and more systematically. The renaming has developed into an important driver and in a self-reinforcing process that permeates all areas of the university. In all activities, the question of sustainability is raised both externally and, above all, internally. This is the self-imposed yardstick, the measure of the university's credibility. Sustainability must not only be taught, it must also show ways to implement it and be exemplary. The aim here is to achieve maximum coherence, and also visibility. The implementation of sustainability in the sense of a Whole Institution Approach is promoted and reflected in the various areas of the university. The open round table on sustainable HNEE development was founded in a bottom-up process, in which each member of the university can participate and help shape the process of sustainable further development of the university.

The University for Sustainable Development Eberswalde understands sustainable development as an *integrative concept* in which the functional integrity of the global ecosystem is the prerequisite for all human life and economic activity (Figure 3).

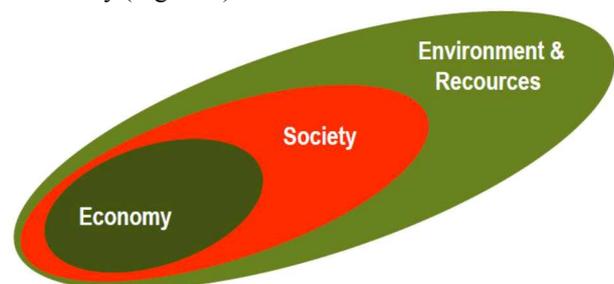


Figure 3. Integrative model of sustainability

Communication and participation within the university itself and in the anchoring of society is very important. The "Round Table" has developed into a very efficient bottom-up driver that promotes sustainability at all levels. For example, a binding framework for action for the university was developed and continuously updated via the formulation of sustainability principles (Figure 4), coordinated with the Executive Committee and then adopted by the Senate. In addition, the Round Table will deal with the concrete design of sustainability at the university, also in social fields of action (forms of communication, appreciation, balancing the common good), and with quite down-to-earth things such as the sustainable provision of food in the dining halls.



**Figure 4.** Sustainability principles in the HNEE, developed by the round table process

**3. The ecological footprint.** Since December 2009 the HNEE has been successfully EMAS (Eco-Management and Audit Scheme) certified. EMAS is an EU-developed voluntary self-regulatory instrument on the environmental performance of an organization. Within the framework of EMAS certification, HNEE has established several objectives, among others:

- Economical handling of resources;
- Reduction of the environmental footprint;
- Transparency in all environmentally relevant processes;
- Efficient and ecologically oriented handling of energy and material;
- Information to the public on environmental management at the HNEE to meet the role model;
- Involvement of all university members and students (practice-oriented teaching and research on environmental management topics, regular surveys and other possibilities, ideas on environmental protection, etc.).

Having won the European EMAS award now two times (2010 and 2017) the HNEE is currently among the European leaders in the field of institutional environmental management.

In addition, since 2014, the HNEE is the first CO<sub>2</sub>-free University in Germany which was reached by

- The reduction of fossil CO<sub>2</sub> emissions in the HNEE by saving energy, and using renewable energy. A balance of the CO<sub>2</sub> emissions had been made with the EMAS,
- Compensation of the avoidable amount of CO<sub>2</sub> in a project, The aim of the project was the reduction of CO<sub>2</sub> emissions by the distribution of 80 fuelwood saving Upesi Stoves to replace inefficient three-stone-fire-places which compensate for 1.500 t/CO<sub>2</sub> in 3 years (gold standard certificates).

**The faculty of forest and environment.** The faculty of forest and environment is the oldest faculty at HNEE and consists of currently 19 professors, among them 3 research professors. The faculty offers five study programmes: a Bachelor in Forestry, another Bachelor in International Forest Ecosystem Management, a Master in Global Change Management, a double degree Master with Warsaw university of life sciences in Forest Information Technology, and a new Master on Forestry System Transformation, the latter three completely taught in English. The third-party funding at the faculty is around 1.7 Mio. € (2017). Research

areas are Adaptive conservation management (e.g. transboundary biosphere reserves), new innovative inventory approaches and smart data gaining (forestry 4.0), forest adaptation to climate change, wildlife management, assessment of forest biomass, provision of ecosystem services, and service learning, among others. A Centre for Economics and Ecosystem Management with extensive research projects on adaptive conservation management worldwide is attached to the faculty.

### Conclusion

The HNEE has developed a strong profile in sustainability. Its objectives are highly relevant, both, nationally and worldwide; this is in line with the SDGs of the UN of 2015 (objective 4.7): "Ensure by 2030 that all learners acquire the knowledge and skills necessary to promote sustainable development, including through education for sustainable development and sustainable lifestyles".

What this means for universities is outlined by the National (German) Action Plan for Education for Sustainable Development of 2017 (in which the HNEE participates): "As research and educational institutions, universities are central to sustainable development. Through research and teaching, universities develop and impart knowledge, skills and values, and train multipliers and future managers" (National Platform Education for Sustainable Development 2017, p. 51).

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## **УНІВЕРСИТЕТ СТАЛОГО РОЗВИТКУ ЕБЕРСВАЛЬДЕ: З ГЛИБОКИМ ЗАЦІКАВЛЕННЯМ У ЛІСІВНИЦТВІ ДО ЗАГАЛЬНОІНСТИТУЦІЙНОГО ПІДХОДУ В СТАЛОСТІ**

Університет сталого розвитку Еберсвальде (УСРЕ) – це Університет прикладних наук у федеральній землі Бранденбург та один із найбільш екологічних університетів Німеччини з чотирма факультетами та унікальним профілем. Основним принципом УСРЕ є сталість, закріплена в гаслі нашої місії: "Mit der Natur für den Menschen" ("З природою для людини"), а дослідження зосереджені в трьох сферах: сталий розвиток сільських територій, стале виробництво та використання натуральних продуктів, а також стале управління обмеженими ресурсами. УСРЕ забезпечує викладання таких інноваційних навчальних програм, як лісове господарство, органічне землеробство, технологія деревини, управління лісовими екосистемами для освітньо-кваліфікаційного рівня "Бакалавр". На освітньо-кваліфікаційному рівні "Магістр" навчальні програми охоплюють регіональний менеджмент, управління глобальними змінами, стале підприємництво та лісові інформаційні технології, програму подвійного диплому спільно з Варшавським університетом природничих наук. Окрім цього, профіль УСРЕ доповнюється магістерськими програмами, такими як стратегічне управління сталим розвитком. Вищий навчальний заклад в Еберсвальде має свою довгу історію, яка йде з початку XIX ст., коли він був факультетом Берлінського університету. Під час Холодної війни факультет було закрито з політичних причин. Після воз'єднання Німеччини, серед іншого, було засновано Університет прикладних наук, де акцент робився на практичне застосування. Нинішнє становище УСРЕ описують з наголосом на так званому "загальноінституційному підході", тобто сталість розглядають як інтегративну концепцію людського життя та економічного розвитку. Загальноінституційний підхід охоплює ефективну програму екологічного менеджменту, спрямовану на нульові викиди. Також окреслено деякі особливості факультету лісового господарства та екології. Особливо треба відзначити міжнародне спрямування факультету з чотирма міжнародними навчальними програмами та багатьма науковими темами, що мають міжнародне значення. Окрім цього, у структуру факультету входить Центр економіки та управління екосистемами.

**Ключові слова:** вищий навчальний заклад; сталий розвиток; загальноінституційний підхід.