Teaching eco-innovations in forestry on the basis of students' case studies

Tempus project BOKU
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Teaching by EFI PC INNOFORCE

▶ **BOKU lecture „Innovations for sustainable forest management"** (since 2004 ongoing; part of English language Master in „Mountain Forestry")

▶ **EU Socrates Erasmus IP „INNO-FOREST Integrating innovation and entrepreneurship research in higher forestry education"** (05-07)

▶ EU Socrates Erasmus IP „INNO-NATOUR Innovation in Nature Based Tourism" (applied for 09-12)

▶ EU Socrates Erasmus IP „START-RUBIZ Starting new enterprise in rural context" (appl. for 09-12)

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Teaching Principles

▶ **Theoretical frame: Innovation research (approach: Systems of Innovation), innovation policy, innovation management, innovation for sustainable development.**

▶ **Methodical approach: Combination of lectures and student's active work**

▶ **Students' contributions: in form of case study analyses, or as virtual business plans**

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Theoretical approach

▶ **Definition of innovations:**

novelties in firms - new products or processes that are at least new to the firm, or new to the sector or market – including incremental or radical innovations

▶ **Innovation systems:**

Innovations are not only developed and implemented by the firms alone but are the result of complex processes and the interaction of many different kinds of public and private actors and institutions.

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Criteria for eco-innovations

▶ **Neutral innovation and eco-innovation:**

Innovations as such are neutral concerning sustainable development (SD) – they may be counteracting or supportive for SD.

▶ **Eco-innovations need additional criteria:**

Contribution to SD is only given if the innovation-direction is considered strategically in the decision and development process.

▶ **Incentives:**

Incentives may be given by the firm's policy or by public policy measures such as regulations (e.g. emission standards) or financial incentives (tax exemptions or subsidies).

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Examples for eco-innovations

▶ **Relevance of cases for eco-innovations:**

Innovation projects are chosen from different fields that are particularly important for SD:

- ▶ Non-timber products, such as bio-energy
- ▶ Non-wood forest products, such as mushrooms
- ▶ Forest-related services, such as recreational or nature-conservation services (guided tours, forest education, outdoor sports and adventure, carbon sequestration, biodiversity conservation, eco-sponsoring, etc.)
- ▶ Environmental-oriented production
- ▶ Advanced wood products e.g. in construction

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Use of cases in lectures

1) BOKU course

Title:

„Innovations for sustainable forest management"

Aims:

- ▶ to provide students basic knowledge on innovation processes and management and skills to analyse and manage innovation projects

- ▶ addresses the role of innovation in economic development in general and in sustainable forest management in particular as well as necessary skills and tools in innovation management

- ▶ combined lecture and seminar

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1) BOKU course

„Innovations for sustainable forest management"

Lecture parts:

▶ Introduction to lecture and students' group work
▶ Theories in innovation research
▶ Innovation in forestry: survey results and cases
▶ Innovation management at business level
▶ Innovation and sustainability and innovation in a development context
▶ Innovation policy
▶ Students' presentations (oral presentation of the group work)

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1) BOKU course

„Innovations for sustainable forest management"

Students' contributions (choice for group work):

▶ **CASE STUDIES of INNOVATION PROJECTS**

Students select innovation projects that they know from their countries or research on the internet, etc.

▶ **VIRTUAL BUSINESS PLANS (BP)**

Student groups develop BPs for a virtual business start up in the field of forestry, as if they were planning it for themselves and applying at some institution for additional funding.

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2) IP course INNO-FOREST

Title: „INNO-FOREST"

Aims:

▶ to transfer knowledge on innovation and entrepreneurship (I&E) generated in research into higher education using real world cases.

▶ to provide students with basic knowledge on innovation processes and management and skills to analyse and manage innovation projects.

▶ provides participants with a better understanding of theoretical aspects of I&E and the embeddedness of innovation activity of a firm in a larger context of policies and institutions.

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2) IP course INNO-FOREST

Working methods

► Group working, e-learning, Problem Based Learning (PBL) and Team Work

Work plan

► Stage 1: Preparatory (home): Preparing curriculum, contents and textbook material, case study plan, e-Learning platform, informing potential students and enterprises

► Stage 2: Ten days IP course: lectures, tutoring sessions, group work, excursions, evaluation sessions

► Stage 3: Finalising (home): finalising case study reports with case enterprises

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2) IP course INNO-FOREST

Students' contributions

▶ **Case studies of INNOVATION STRATEGIES of enterprises and INNOVATION PROJECTS**

Students select case enterprises that they know from their countries or research on the internet, etc. and innovation projects

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Case study (aims)

Aim of case studies

▶ Detailed analysis of innovation systems and processes in a concrete innovation case (micro or macro-case)
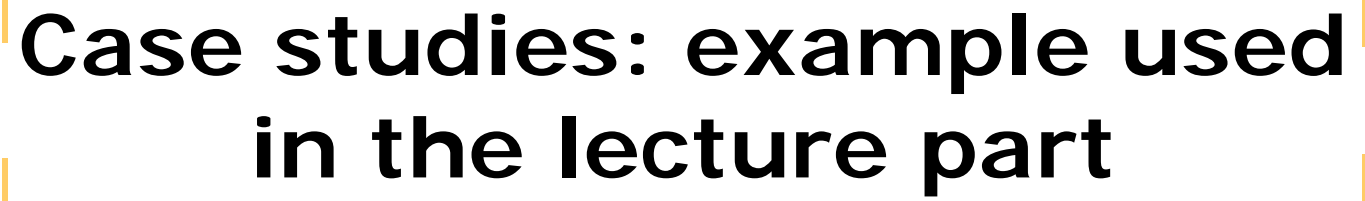
Data collection

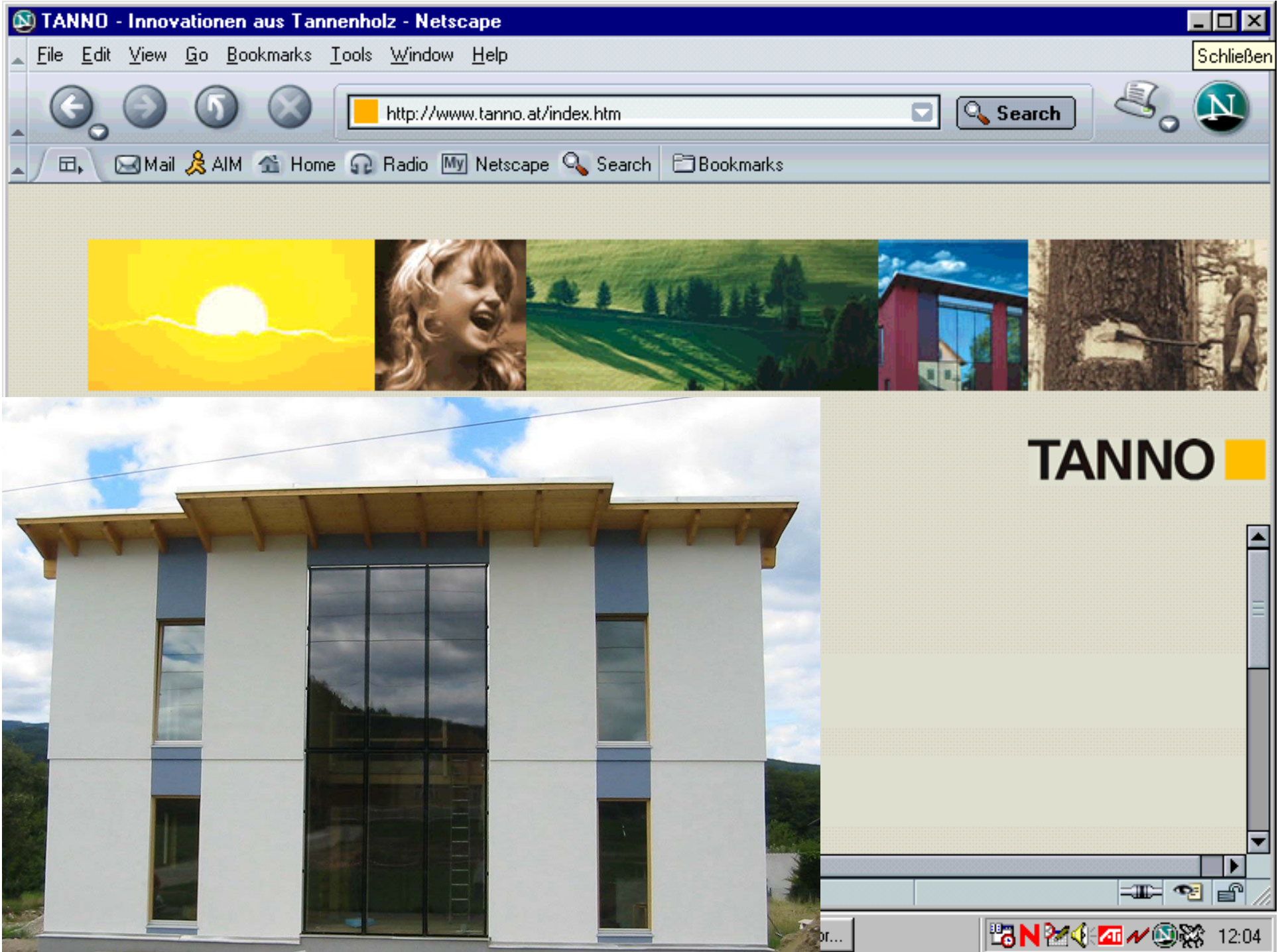▶ Personal interviews with manager of innovating firm and possibly other persons central for the innovation project

Analysis questions:

▶ How to improve the institutional system?

▶ How to support innovation management of the enterprise?

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Case studies: example used in the lecture part

http://www.tanno.at/index.htm

Search

Mail   AIM   Home   Radio   My Netscape   Search   Bookmarks

TANNO

A Case: The TANNO house

A Case: The TANNO house

▶ **Problem**

▶ **Idea**

▶ **First financing attempt: Rural Development Funds**

▶ **Second financing attempt: Regional Development F. (Leader+ Region „Kraftspendedörfer Joglland")**

TEAM7
Natürlich Wohnen

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A Case: The TANNO house

▶ **Actors:**

▶ **ARGE Tanno: regional forest associations, saw-mill, furniture manufactorer, wellness facilities (sauna), pre-fab company, architect (Gemini).**

▶ **Chamber of agriculture (regional office).**

▶ **proHolz (timber marketing) – finding an architect**

▶ **Rural and regional development funds coordination offices (ILE; EU regional mngtmt)**

▶ **Designer (on contractual basis for furniture design)**

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A Case: The TANNO house

▶ **Results:**

▶ **A number of products (pre-fab, furniture, sauna)**

▶ **Modern design (house, furniture)**

▶ **Modern technology (*low energy* house)**

▶ **Sales have started**

▶ **Several awards**

▶ **Follow-up project: TANNO + Gemini technology (*plus energy* house)**

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A Case: The TANNO house

▶ **Conclusions:**

▶ **Considerable time investments are necessary and frustrations in the starting phase have to be calculated!**

▶ **Cross-sectoral cooperation** **takes a lot of time but pays the effort!**

▶ **Look out for „non-sectoral" subsidies!**

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Web-based case database

▶ **Use of case studies for innovation project database:**
  - ▶ The case studies are to be included in the newly set up "Innoforce Database of Innovation Cases in Forestry".

▶ **Use of the database in teaching:**
  - ▶ The database is publicly accessible for research, practice (extension service purposes) and teaching.
  - ▶ The cases may be used in teaching courses in order to find illustrations or material for further analysis.

See: http://cases.boku.ac.at/

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Evaluation

▶ **Strengths:**

▶ Students are very active and engaged in their "own" case study analyses, and particularly in the business plans

▶ Useful interaction of students within the groups

▶ Experiences from real world and from different countries (due to the participation of students from different parts of the world)

▶ **Challenges:**

▶ It shows to be difficult to guide students to theoretical oriented analyses – students tend to stick with the local case and reports lack generalisation and general lessons

▶ How to make sure evenly distributed work loads within groups; how to give grades for single students contributions

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Outlook

Future plans:

Apply case oriented teaching method in further IP projects:

▶ IP INNO-TOUR:
  ▶ Socrates Erasmus IP **„INNO-TOUR Innovation in Nature Based Tourism Services"**
  ▶ Applied for 2009-2012

▶ IP START-RUBIZ :
  ▶ Socrates Erasmus IP **„START-RUBIZ Starting new enterprise in rural context"**
  ▶ Applied for 2009-2012

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Thank you

www.efi-innoforce.org