

Multifunctional research platform Eisenwurzen
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A preamble

"LTER sites" stands for long-term ecosystem research (Long-term ecosystem research). It refers to research, which deals with the totality of ecosystems and their development over decades seized (processes and structures). The locations of this kind of research, since the 70s of the 20th Most rivers century defined (for example catchments smaller waters), of limited size (1910-1000 hectares), and preferably natural areas with nature protection ("LTER-sites"). The organization of such LTER-Standorte occurred in national and continental networks. Thematic LTER sites focused on the handling of scientific questions like for example Fuel Cycles (high, but intermittent technical expenses).

With the beginning of the 21st Century began an intense discussion to further alignment of existing LTER-Netzwerke (NRC, 2004). At the same time, the strategy launched Education for the construction of new power plants in areas subject to its long-term research Ecosystem still no formal framework. These include a number of European countries where a large number LTER-relevant infrastructure projects and research groups usually without a vote and utilization of potential synergies exist. This fact laments a report by the European Environment Agency, EEA (Gee, 2001). He emphasized the immense importance of effective ecosystem research for the early detection of environmental problems and for the direction of sustainable development (precautionary principle). The research strategy formation of the European Commission to pay in the 6th And 7 Under research program account (ALTER, infrastructure initiative of the EC).

A central element of all renewal processes in the LTER sites is the extension of the ecosystem around the concept of social disadvantage. That means the inclusion of social,

economic, demographic and nutzungsgeschichtlichen aspects. The working title for this is "LT (S) ER" (Long-term socio-economic and ecosystem research), so traditional Ökosystemforschung plus factor "Human use." To ecosystems in these dimensions as possible, was an extension of the geographic reference needed. The research areas of LT (S) ER are exceptional and nutzungsgeschichtliche units, which are also for socio-economic information exist. So they move in a size range that our "Regions" term, as he hoists For the region "Eisenwurzten" in Austrian Nuclear space is used.

The challenge was and is selected European regions platforms hochvernetzter research to develop (Multifunctional Research Platforms, MFRPs). These acts across scientific disciplines and is also working closely with the local populations, regional developers and decision-makers together. After a complex analysis process is the österr Election to 2 regions like, "High Alps" (Öztaler and Stubai Alps) and "Eisenwurzten." They are the elements of the Austrian LTER-Netzwerks and our contribution to various continental and global networks.

Research goal is to develop a scientific basis for a sustainable regional development, the regional characteristics and the use history ("Heritage") under the same consideration as part of the global change, social factors and economic areas. Structural focus is the efficient use of existing facilities and projects of various substrate with the platform-education, their optimal development and the attraction of additional research activities and resources from external (least from the international context).

This document represents the inhaltlich-strategische basic conventions of the structural elements, players, supporters, etc. (client groups see Chapter 3.8) of the Multifunctional research platform "Eisenwurzten" (MFRP Eisenwurzten, MFRP-EW).

Two conditions

2.1 The international LTER-Prozess

Austria has since 2001 actively in the international LTER-Prozess introduced. The background for this engagement were long discussions on national Strategiebildungen since the mid-90s (LERAMONA, EcoForesightsAustria ...) and an initiative of the permanent representation of Austria in the United States. Nationally and internationally are streamlining, networking and harmonizing the wide range of projects in the area of long-term research, the core concern. Synergies from the multi-functionality of research infrastructure are becoming scarce resources, despite a maximum of research activities and maps.

Overview 2.1.1 LTER sites internationally

IST International operates in this sense. The worldwide network consists mainly in continental regional groups (such as South America, North America, "" Patzifischer space ", etc.). In this system was missing until 2001, a pan ILTERN-meeting element. There were only regional groups for "Central and Eastern Europe" (former Soviet bloc countries) and Western Europe. "

A core group of LTER-RepräsentantInnen (NERC / UK, CNRS / F, Umweltbundesamt / A) was able to 2002, a European LTER-Prozess printshops. This process resulted in two specific products: the "LTER-Europe initiative with the EEA as a central stakeholders and the Network of Excellence" ALTER "(FP6: 6th Research Framework Program of the European Commission), which was launched in April 2004.

2.1.2 IST

IST, the global LTER-Netzwerk (International Long Term Ecosystem Research Network), is a merger of the world's LTER-Regionalgruppen the national LTER-Netzwerke represent (office in the United States, funding by National Science Foundation). In the period of 2004-2006 should IST from its rigid loyalty to the United States dissolved and an internationally oriented institution (Discussion: UNESCO) here.

Some states are looking to membership in IST, on the criteria for a catalog decided. This and other information about IST <http://www.ilternet.edu/> are documented.

2.1.3 LTER-Europe

LTER-Europe described the initiative on the establishment of a European LTER-Netzwerkes. This network should Europe as a regional group in the world LTER-Netzwerk (IST), respectively.

LTER-Europe (<http://www.lter-europe.ceh.ac.uk/index.htm>) is closely coupled with ALTER. In ALTER, the design for LTER-Europe done and the institutionalization of that.

2.1.4 ALTER

The Network of Excellence in FP6, 6 Research Framework Program of the European Commission (25 partners, 500 ExpertInnen). The consortium grew out of ALTER-five consortia, the Expressions of Interest submitted in FP6. One of them was "ALTER-Europe" (An LTER sites Forecasting Network for Detecting and Managing Change in European Socio Systems), whose central aim of establishing a European LTER-Netzwerkes was (initiators: CEH / UK, CNRS / F and Federal Environmental Agency / A). All other consortia were in the area of biodiversity research, and therefore the content extension to biodiversity-questions.

Abstract (from the official project application)

This Network of Excellence (NoE) will create an inter long-term European research facility for research on the complex relationship between ecosystems, biodiversity and society.

ALTER will develop the research, the capacity and the institutional structures necessary to provide co-ordinated approaches to research on the socio-economic drivers of biodiversity, the assessment of biodiversity and its change, the impact of the main drivers and pressures on biodiversity, the development of conservation options, public attitudes to conservation, and forecasting change in biodiversity, structure, functions and dynamics of ecosystems and their services. These activities will consider biodiversity at the genetic and species and ecosystem levels, and will be integrated, notably through the consideration of socio-economic implications, public attitudes and policy dimensions throughout, with the ultimate goal of structuring biodiversity and ecosystem research into a long - term network.

ALTER is thematically in 6 (R1-R6) and 6 technisch-strategisch-integrativ oriented (I1-I6) Working Groups (Work Packages).

The content was the entire Austrian Previously the maximum participation of synergy with the parallel development of the national LTER-Netzwerkes and securing a key role in the design of multifunctional research platforms (MFRPs, see below). This approach follows the evolution of the traditional LTER-Konzepts (locations of limited size, focusing on scientific approaches) to research structures in which entire landscapes with its interactions between gesellschaftli-chen ecosystem and the patterns and processes investigated object. The medium-term goal was and remains the establishment of an Austrian MFRP in the first season of European LTER-Regionen to the test of the MFRP-Konzepts be.

ALTER-net information can be found at <http://www.alter-net.info/> and

<http://www.alternet-lynx.ceh.ac.uk/>

2.2 embedding in the MFRP Eisenwurzen LTER sites in Austria (MFRP-Konzept)

The LTER-Prozess since 2001, and is in Austria by two partners in engester cooperation and coordination, namely the association "LTER-Austria" and the Federal Environmental Agency.

2.2.1 Austrian Society for the long-term research (LTER-Austria)

In Austria forced the node "long-term research" by the NUF (BMBWK) the emergence of Austria. Society for long-term research (LTER-Austria) as a general interest of the community long-term Austrian researchers. The association has access to a large pool of experts and serves as a forum for the coordination of practical needs and scientific concepts and project developments (<http://www.univie.ac.at/lter>).

2.2.2 Umweltbundesamt

The Federal Environmental Agency, in many LTER-Prozessen acts as a formal (institutional) Partner. As a long-term institution takes it apart conceptual tasks in cooperation with the Association least LTER-Austria Management, networking and infrastructure tasks:

- ALTER official partner in Austria (Austrian Networking experts in the ALTER)
- LTER-Drehscheibe to implement the Multifunctional research platforms (MFRPs in Austria)
- International representation in IST, LTER-Europe (from 2001)

2.2.3 Establishment of the Austrian LTER-Netzwerks

2004, the starting point for the development of the Austrian LTER-Netzwerks in the US-EU-LTER-Workshop in Motz (R, 2003) presented MFRP-Konzept (s.u.). There was a consensus on the planned LTER-Konzept and spatial concentration of österr LTER-Aktivitäten manufacture, carrier institutions and research partner in the research platforms to integrate institutional commitment to prepare the development of research projects in the MFRPs to promote and shape the receiving network continuously in the international processes involved. Milestones in this process were:

- National LTER in Gumpenstein (28-29 January. January 2004)
- preparation of the application for accession to the global LTER-Netzwerk (IST)
- National LTER in Obergurgl (28-29 January. October 2004)
- Startup Workshop research platform Eisenwurzen (25.11.2004)

The main results of the implementation of Austrian LTER sites are:

- Two out of three projected MFRP-Regionen are in the phase of implementation underfoot (High Alps, Eisenwurzen).
- The different situations and structures of the two MFRPs are an excellent case for the necessary conditions for a successful implementation: Without permanent ownership, centralized management and project securing the basic infrastructure, is a successful construction and operation of MFRPs hardly possible.
- LTER-Austria was the "label" developed and harmonized externally worn. The strategic approach is in many developing countries as example (momentum in the development of LTER-Deutschland, strong demand for the sessions MFRP-Konzept from Italy, Spain and Brazil, the latter in the course of the reorganization of the already established national network).
- In the pan-European compilation of LTER-Einrichtungen (ALTER, WP I3), the two Austrian MFRPs first in the form of organized modular platforms.

3 Multifunctional research platform Eisenwurzen

3.1 Begriffsdefintion the multi-functional research platforms

The multi-functional research platforms (Multifunctional Research Platforms, MFRPs), as a cluster of research institutions ("existing facilities") of various orders of magnitude (or "Scales" Klein-Wassereinzugsgebiet/Catchment to landscape), and other elements in LTER-relevanten nutzungs geschichtlich and / or rivers defined regions. They serve as concentration areas for LTER-Aktivitäten in Europe, the previously fragmented. The European network of MFRPs be the most important biogeographical zones represent (cover as wide a natural gradient) and the first time an integrative processing of sociological, economic and scientific issues in a regional context. Austria wants here

show-case platforms to evaluate the inter-and transdisciplinary MFRP-Konzeptes provide the framework of Work Package (Group) I3 of ALTER-developed and tested. Currently there are two concrete MFRPs in development, "High Alps" in the high Tyrolean Alpine and the region "Eisenwurzen" in the northern Limestone Alps.

The strategic objective of a contribution by Austria in the first season of European LTER-Regionen to the test of the MFRP-Konzeptes be, Austria least With the MFRP Eisenwurzen close for the following reasons:

- The conceptual advance in the area within the consortium proposes in a zu-nehmenden MFRP-Konzeptes and anchoring the involvement of the leading Austrian Experts in the development of the design of European LTER-Standorte down (ALTER-working groups / Work Packages I3: Overall design; R1/I2: integration of socio-economic issues; R6: Integrated Assess-ment, Scaling aspects).
- With regard to the implementation of MFRPs Austria significant steps to advance. Firstly, the national MFRP-Konzept relatively wide acceptance, secondly, has a choice location in a relatively smooth process already taken place, thirdly, there is a general agreement on cooperation on the part of affected institutions and fourthly, the Austrian Research funding by modern and highly integrated concepts such impulses.

Figure 1: Elements of Multifunctional research platform Eisenwurzen (as of end 2004)

3.2 Objectives of the MFRP Eisenwurzen

The goal of MFRP Eisenwurzen is the exploration of the complex effect of fabric between the nature of space Eisenwurzen region, its historical and current use and controlling the use of these sizes. Considering supra environment (global change, socio-economics), the scientific basis for sustainable management will be developed. That means sessions:

- networking, harmonizing and focus of research activities and research institutions in the region (work programs, parameter sets, Strategy Education)
- collaborations across disciplines (interdisciplinary)
- Tight coupling of scientific areas, including the regional development, regional decision-makers, regionlen training centers, etc. (Transdisziplinarität)
- proximity to subjective and objective demand situation of the regional population (participation)
- Increased emphasis on environmental history of the region (historical land use, palaeoecology) and their impact on the current situation (including use of the potentials for the validation of forecasting models)
- coordination of spatial resolution, on which individual disciplines work or for which they have data (for example census data at the municipal level), in order to allow cross-reference
- Long-term research into ecological processes in relevant habitats (primary production, carbon budget, fabric items, biodiversity, Disturbances), and assessment of trends (Trends)
- Use of Synergisms by coupling of (environmental) Monitoring and Research.
- Using the potential of the diversity of LTER-relevanten facilities and infrastructures in the region in standortsübergreifenden analysis and experiments ("multi experiments")
- Creation of development scenarios and empirical models of inspecting (integrated modeling, Millennium Assessment)

- Develop strategies for securing, sharing and optimal utilization of data, information and metadata information to the region.

An order of priority objectives can only during the implementation and in accordance with the identifying available resources. Nevertheless, this combination of a quality objectives clear: The overall objective is to create a platform for a novel research approach, the one outstanding disciplinary research by a highly working environment with a maximum data base supports. At the same time, but it creates the communications room for the development of methods for handling complex impact structure, which only in a holistic approach observable.

3.3 Mehrwertssteuer

Similarly, the compilation of the goals of the MFRP Eisenwurzen a list of the expected added value as examples only, but an effective picture across the groups provide clients:

- Bond & concentration of research, dealing with the region Eisenwurzen busy, both with relevant regional (sessions from the region motivated) issues as well as global developments in their impact on the region
- Use national and international research funds for the region
- possibility of access to infrastructure funds for research in the region (sessions infrastructure initiative of the European Commission in the 7th Research Framework Program)
- Addressing the International Eisenwurzen as a region
- networking structures and initiatives in the region (integrative effect)
- Use of MFRP Eisenwurzen and their elements for training purposes
- Methodology contribution to the development of a new research approach (LT (S) ER)
- Creating a physical research platform and a communications room, on the usage is also MFRP-Rahmen
- knowledge about the natural space Eisenwurzen and its interactions with society
- Research into sustainable development opportunities for the region
- depth examination of future scenarios for the region
- Increase the efficiency of environmental monitoring in the region
- Improving information access to environmental information to / from the region

3.4 Organization and Sponsorship

The MFRP Eisenwurzen aims to be as quickly as possible structure (s), to the achievement of the outlined in Chapter 3.2 goals efficiently. Major features of this structure (s) are:

- content control
- Internal Organization (sessions decision-making processes, all of client and user groups include)
- external representation nationally and internationally
- Networking
- Data Management (support for data exchange and the cross-mapping of data)
- Public Relations (website)

The pilot and establishment phase is rapidly into a long-term secure production phase. It is a permanent institution of the MFRP Eisenwurzen desirable, preferably by the concerned authorities.

3.5 Data and Other Information

An essential basis for subject and standortsübergreifende research is the existence and the rapid availability of data in a documented form so that the proper use is guaranteed. The data management for a multi-functional research platform is diverse and complex:

- Creation of an overview of existing data and information (reports, monitoring and

research activities, the official statistics, etc.)

- Comparable representation (integration) and standardized description of the data
- representation and regulation of access options (protection of intellectual property and other rights)
- Organization of the technical efficient access to data

In the sense of the Environmental Information Act and the implementation of the Aarhus Convention, the information and data policy MFRP Eisenwurzen as a case example of a costly maximum use information obtained to enable national and international research projects in exchange know-how and other resources for the benefit of the region in the Eisenwurzen deploy (also responsive data and information return).

3.6 networking and multi-functionality of MFRP Eisenwurzen

The networking of MFRP Eisenwurzen follows in Chapter 2, outlined the hierarchy of networks:

- One of two research platforms, the Austrian LTER-Netzwerk represent (LTER-Austria)
- Herzeige- and test platform for the development of the European LTER-Konzeptes under ALTER
- element of the European LTER-Netzwerkes (LTER-Europe), with 2008 preparations should start by ALTER
- One of two Austrian Contributions to the global LTER-Netzwerk (IST)

The MFRP Eisenwurzen to national and international programs and projects as a research object will be offered. Criteria for a high level of attractiveness are the internal organization, the structured and efficient way to make contact, good documentation and data available, as well as a high concentration of active projects and interdisciplinary research groups for questions.

In addition, the MFRP Eisenwurzen about their individual elements (National Parks, Regional Development Associations, monitoring programs) diverse network. This networking will aggressively expanded.

Each element and each partner has the MFRP Eisenwurzen in their own area of impact on resources (laboratories and other infrastructure, know-how), routine processes, and access to information, with minimal or no extra effort in cooperation projects could be used. With higher expenses such Chains also offer the opportunity for additional services. Examples of such work would be networked:

- including locally relevant issues in research projects
- recording of observations on the ground in the daily business (for example Phenology = the development status of plants in the annual cycle)
- Installation of measurement and other measuring devices on existing sites (additional sensors on measuring towers)
- use of office infrastructure for measuring campaigns of projects
- Distribution of (also Fremdenverkehrsrelevanter) Information on the Eisenwurzen

LTER-Kontext

- Employment of local companies and use local products in projects
- analysis of the time parameters in local laboratories
- (Mess) Technical Maintenance of the facilities by several MFRP Wurzen elements, partners and projects by local technicians

3.7 foreign presence and visibility

The MFRP Eisenwurzen be nationally and internationally as a "label" developed and publicized, all the potential for achievement through cooperation and thereby spread the funding of research activities.

These are standard text and graphics developed by the MFRP Eisenwurzen and their context for different user groups describe.

This information should be in the "house-media" elements of the MFRP in the region (flyers, brochures, post fliers, periodicals) performs disseminated. About the systematic identification of the MFRP Eisenwurzen-Bezuges in publications and reports is an anchor across specialized expert groups to reach.

A central portal to the MFRP Eisenwurzen is in the form of LTER-Homepage (BMBWK on behalf of the Federal Environmental Agency), the LTER-Kontext and basic information and data to the overall project. Of particular importance are the websites of MFRP Wurz-iron elements and partners associated with this central portal. For the internationalization of MFRP Eisenwurzen are representations of the total MFRP Wurz-iron elements and partners, and the Notes to the anchoring role in the novel and research contexts in English is desirable. A description of the potential of their respective MFRP Wurz-iron elements and partners as cooperation partners for research projects (infrastructure, data) at this point would be appropriate to project developments.

3.8 signatories (the client groups) and signing

Signatories of the MoU can be (exemplary Listing):

- Winners of LTER-relevanten (R) facilities in the region Eisenwurzen
- makers and cooperation partner of research projects in the Eisenwurzen (active researchers and research groups)
- Protected Areas
- Regional Developer
- Education Institutions
- local decision-makers
- Documentation Centers
- Museums
- Winners of the MFRP Eisenwurzen

The signatories of the MoU in knowledge and want to support the outlined national and international processes in accordance with their capabilities and other obligations and:

- establishing novel research framework conditions, the region Eisenwurzen in all their complexity record
- all possible internal measures, the achievement of the goals outlined
- in the context of the research activities of the MFRP Eisenwurzen an open data and information exchanges operate (proactive information about LTER-relevante aspects)
- an efficient form of organization and the initiation of a permanent sponsorship of the MFRP contribute Eisenwurzen
- The MFRP Eisenwurzen (as a label) to its public relations anchor

The signing of this MoU is done by a written statement of support for the content of the version and date of the memorandum calls to which the consent relates.

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