



University Graduate Study Programme
Environmental Protection

INTERNATIONAL SUMMER SCHOOL

ENVIRONMENTAL AND RESOURCE
MANAGEMENT

Ljubljana, July 19th to August 2th, 2009



University of *Ljubljana*



Dear Student,

We invite you to the International Summer School on

Environmental and Resource Management

which will be held in Ljubljana from July 19th to August 2th, 2009.

This summer school is a joint initiative of different universities. It brings together students and academic staff from partner institutions in the beautiful city of Ljubljana to study and discuss environmental issues in an interactive and intensive way.

www.turningtechnologies.com/highereducationinteractivelearning.cfm

The academic staff comes from all over Europe, making the summer school a truly international and multidisciplinary experience.

The aim is to invite 35 well-motivated, advanced undergraduate or postgraduate students with at least two years of academic experience from member, associated universities and partners, regardless of their fields of study to experience this new and, hopefully, rewarding opportunity.

Enclosed you will find information on the Republic of Slovenia and its capital city of Ljubljana, information on the University of Ljubljana, and its summer school together with practical details about your stay.

If you have any additional questions do not hesitate to contact the international relations office of your university or directly to franc.lobnik@bf.uni-lj.si. We expect you to turn in your application to the international relations office of your university by May 15th, 2009.

All universities involved are encouraged to grant their students academic recognition for their participation in this intensive seminar.

The total workload is measured at 5 for European and 7 ECTS credits for American and Australian students. This includes attendance at all lectures and seminars, presentation and successful completion of the final essay.

International Summer School Environmental and Resource Management

Ljubljana, Summer School: July 19th August 2th 2009

Academic Committee: F. Lobnik, B. Gunnarsson, F. Evers, C. Olazabal, P. Novak, G. Steiner
H. Wiggering, M. Kibblewhite, W. Blum, I. Dubus, K. Muller, G. Haag, J. Mencinger, L. K. Bogataj

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Wording: F. Lobnik

Opening speech: A. Kocjancic Rector of Ljubljana University

Invited lecturers:

G. Steiner, Karl-Franzens-University of Graz (Austria)

W. Blum, BOKU (Austria)

B. Gunnarson, School for Renewable Energy Science (Iceland)

M. Kibblewhite, Cranfield University (UK)

L. Kajfež Bogataj, University of Ljubljana (Slovenia)

C. Olazabal, DG Environment (Belgium)

J. Mencinger, University of Ljubljana (Slovenia)

P. Novak, University of Ljubljana, (Slovenia)

I. Dubus, FOOTPRINT (France)

G. Steiner, Karl-Franzens-University of Graz (Austria)

H. Wiggering, ZALF (Germany)

F. Evers, EEAC (Netherlands)

K. Muller, WISDOM (Austria)

G. Haag, WISDOM (Germany)

Fieldtrips:

M. Pintar, University of Ljubljana, (Slovenia), 1. field trip

M. Zupan, University of Ljubljana (Slovenia), 2. field trip

Illustrations and Pictures: Archives

**of The Council for Environmental Protection
of the Republic of Slovenia, <http://www.svo-rs.si>**



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1.



INTERNATIONAL SUMMER SCHOOL

ENVIRONMENTAL AND RESOURCE MANAGEMENT

Ljubljana, July 19th - August 2th, 2009

Students from invited Universities can apply before **15 May, 2009** at the International Office of their university and via electronic application form from organizer of Summer school.

Lecturers from 8 different countries will hold courses amounting to a workload of 5 for European and 7 ECTS credits for American and Australian students.

All universities involved are encouraged to grant their students academic recognition for their participation in this intensive seminar.

The fee of **500 €** includes tuition, study materials, organised excursions and accommodation in double rooms with breakfast and lunch.

*Some universities offer scholarships to cover part of the fee.
Please inquire at your International Office.*

INTERNATIONAL SUMMER SCHOOL

ENVIRONMENT AND RESOURCE MANAGEMENT

University of Ljubljana, 19th July - 2th August, 2009

Introduction to the International Summer School:

- *We constantly interact with the environment.*
- *Environment influences us and we modify it in everything we do.*
- *We respond to the environment and to our perceptions of it.*
- *If environment stimulates us in ways we do not like, we take action.*
- *We can manipulate the environment with human activities. When we do so, we may have a long-term impact on the environment.*
- *What can we do to promote harmony between our thoughts, actions and the environment we construct?*
- *Sometimes our relationships with the environment have strong biological, geological, chemical, physical roots. Over time, these may be captured in experience, tradition and culture.*

The objectives are to present scientific knowledge about Environmental and Resource Management, explain the vulnerability of the environment to different sources of degradation, and explore solutions to environmental problems that involve all relevant stakeholders and employ sustainable technology. We will also debate the essential questions of how best to transfer knowledge and recommendations to policy makers, regulators, local authorities and business.



University of Ljubljana (Rectorate)

Main Universities and Partners invited to send students to Summer school

Aarhus (Denemark)	Krakow (Poland)
Antwerp (Belgium)	Leipzig (Germany)
Basel (Switzerland)	Lille I USTL (France)
Belfast Queen's University (N. Ireland)	Ljubljana (Slovenia)
Bergen (Norway)	Lund (Sweden)
Bochum (Germany)	Madrid - University Complutense (Spain)
Bologna (Italy)	Malta (Malta)
Brno (Czech Republic)	Reykjavik (Iceland)
Budapest - Eötvös Lorand (Hungary)	Strasbourg I, II and III (France)
Coimbra (Portugal)	Thessaloniki (Greece)
Cork (Ireland)	Utrecht university & arts school (Netherlands)
Helsinki (Finland)	Vilnius (Lithuania)
Hull (England)	Graz (Austria)
Riga (Latvia)	Bratislava (Check Republic)

Baylor University	University of Nebraska at Kearney
Iowa State University	University of Nebraska at Lincoln
Kansas State University	University of Nebraska at Omaha
University of Kansas	University of Oklahoma
University of Missouri-Columbia	Oklahoma State University
University of Missouri-Kansas City	South. Illinois University Carbondale
University of Missouri-Rolla	University of Texas at Austin
University of Missouri-St.Louis	Texas Tech University
Edith Cowan University	University of Tasmania
Deakin University	University of Western Sydney
Griffith University	University of Wollongong
Macquarie University	

PARTNERS

Cranfield University (UK)	Centre for Agricultural Landscape Research ZALF (Germany)
Council for Environmental Protection of the Republic of Slovenia	RISC rare incidents with strong social consequences (SI, A)
BOKU University of Natural Resources and Applied Life Sciences, Vienna (Austria)	
Karl-Franzens-University of Graz (Austria)	

Last four years we organized a fruitful "Environmental Resource Management" Summer School, discussing environmental issues with diverse group of students from three continents. Participant's various backgrounds were the cause for a lively discussion among them, which reflected in their workshop results as well. The Summer school in this period was under the patronage of the Utrecht Network. This network is a group of 27 universities from almost all European countries co-operating in the area of internationalization in the broadest sense of the word. The Utrecht Network is associated to the Mid-America Universities International (MAUI), a consortium of 16 institutions in the Midwest region of the United States and the Australian European Network (AEN), a consortium of 7 Australian universities. The Utrecht Network is not anymore sponsor of the Summer School "Environmental Resource Management". The School is now organized by Ljubljana University and partners; Cranfield University (UK), Centre for Agricultural Landscape Research ZALF (DE), Council for Environmental Protection of the Republic of Slovenia, BOKU University of Natural Resources and Applied Life Sciences, Vienna (A), University of Zagreb (HR), RISC (SI, A), Karl-Franzens-University of Graz (Austria). Beside students from the Utrecht Network, the students from universities which have Agreements with the University of Ljubljana and partners are welcome. If students need ECTS credits, they need acknowledgement of sending institution.



GENERAL INFORMATION

Target group

About 35 students will be selected to participate in the summer school. The target group will consist of advanced undergraduates and postgraduates, irrespective of their academic background, though some affinity with the subject is recommended. Major selection criteria will include maturity skills, and a clear indication of motivation and expectations that programme will bring as the impact on your further study.

Working language and language proficiency

The working language of the Summer school is English. In order to assure active participation of all students, a good command of English in all its aspects (spoken, written and comprehension) is a prerequisite.

Fees

The contribution fee of 500 € covers tuition, study materials, organized field trips and accommodation in double rooms with breakfast and lunch.

Application procedure

Please complete the application form ([available on www.let-group.com](http://www.let-group.com)) and send a copy together with a short c.v. and a letter of motivation to the international relations office of your university before May 15th, 2009.

A confirmation letter and a full information package will be addressed to all selected students in the second half of May. It will include practical information as well as reading material available at www.uni-lj.si/en, and www.let-group.com as an essential preparation for successful attendance of the programme.

We invite you to apply and we are looking forward to meet you soon in Ljubljana.

The students are requested to contact the international relations office of their university in order to apply for a potential scholarship. The member universities are encouraged to contribute by making an extra small student grant available.

Programme

All the technical knowledge in the world does not necessarily lead societies to change environmentally damaging behaviour. Hence a critical understanding of socio-economic, political and cultural processes and structures has been acknowledged of central importance in approaching environmental problems. An increasing number of environmental courses is now being introduced at many universities.

The Credit system in Europe is allowing a much more intensive student exchange programme and Summer Schools are effective tools for getting students together from different cultural and social surroundings.

The Summer School Program will provide short topic - centred lectures on environmentally relevant areas. This will reflect the fact that students will approach their subject matter from a great variety of different disciplinary backgrounds; not just within social sciences and humanities, but from physical and natural sciences, too. And for those students who may not be familiar with the background to some of the topics, they will be intensively co-opted in the workshop program, which will be guided by lecturers. To achieve the right mix of flexibility, depth and breadth, and volume, the program with most modular courses is designed carefully to create maximum accessibility from a variety of backgrounds.

Each lecture leads into its topics by giving an adequate introduction, and each leads out by pointing towards complexities and areas for further development and study. Data, case studies, overview diagrams, summary charts and self-check questions and exercise are some of the pedagogical devices that will be found. We hope that Summer School will provide sufficient depth to maintain the interest of students with relevant backgrounds because programs will cover public policies, human resource management, environmental conflicts, environmental law, landscape architecture and environment, air quality and global changes, water management, land use and soil pollution, agriculture, food and society indicators and sustainability, sustainable energy management, spatial analysis and the use of GIS in environmental management.

We have to acknowledge that sustainable development must fulfil economic, social and environmental objectives. The survival of the natural environment is crucial for economic and social development in the long run, they have focused on the environmental dimension of sustainability.

The aims of the summer school are:

- How to develop a comprehensive environment for a European programme addressing in particular trans boundary environmental problems
- To provide a sound basis for effective measures strategies and policies to address environmental problems nationally and regionally; and
- To inform the participants and raise awareness about our common responsibility for the environment.

UNIVERSITY OF LJUBLJANA
University Graduate Study Programme
Environmental Protection

INTERNATIONAL SUMMER SCHOOL 2009

Environmental and Resource Management
19th July – 02th August 2009, LJUBLJANA, Slovenija

Summer school web: <http://www.let-group.com>

Head of school: Franc Lobnik

franc.lobnik@bf.uni-lj.si

Contact person for application: sergeja.mitic@uni-lj.si

Contact person for organization: nikola.povrzan@svo-rs.si

July 20 Monday	Workshop I.	Environmental management, economy and governance
	10:00 – 10:15	WELCOME, A. Kocjančič, Rector of the University of Ljubljana
	10:15 – 10:30	Introduction into the Environmental and Resource Management <i>F. Lobnik, Head of School</i>
	10:30 – 10:45	Information about University Graduate Study Programme Environmental Protection <i>M. Brilly, Head of Graduated Study Programme (Slovenia)</i>
	10:45 – 11:00	Break
	11:00 – 12:45	Global economic crisis and green new deal <i>J. Mencinger, University of Ljubljana (Slovenia)</i> J. Mencinger: Case studies for workshop and audience response solutions
	12:45 – 14:00	Lunch
	14:00 – 17:00	Negotiating for Sustainability development by the mutual gains approach <i>F. Evers, EEAC (Netherland)</i> F. Evers: Case studies for workshop and audience response solutions
July 21 Tuesday	Workshop I.	Environmental management, economy and governance
	9:00 – 10:45	RISC-Processes in the Environment: An Overview <i>K. Müller, WISDOM (Austria), G. Haag (Germany)</i> K. Müller and G. Haag: Case studies for workshop and audience response solutions
	10:45 – 11:00	Break
	11:00 – 12:45	RISC-Processes in the Environment: An Overview <i>K. Müller, WISDOM (Austria), G. Haag (Germany)</i> K. Müller and G. Haag: Case studies for workshop and audience response solutions
	12:45 – 14:00	Lunch

	14:00 – 15:45	Environmental management: Tools for sustainability in theory and practice <i>G. Steiner, Karl-Franzens-University of Graz (Austria)</i> G. Steiner: Case studies for workshop
	15:45 – 16:00	Break
	16:00 – 17:45	Environmental management: Tools for sustainability in theory and practice <i>G. Steiner, Karl-Franzens-University of Graz (Austria)</i> G. Steiner: Case studies for workshop
July 22 Wednesday	Workshop II.	Climate change and low carbon society
	9:00 – 10:45	Conventional and abrupt climate changes <i>Lučka K. Bogataj, University of Ljubljana (Slovenia), member of IPCC</i> Lučka K. Bogataj: Case studies for workshop and audience response solutions
	10:45 – 11:00	Break
	11:00 – 12:45	Environmental Security: Impacts of Climate Change in the Arctic <i>B. Gunnarsson, School for Renewable Energy Science (Iceland)</i> B. Gunnarsson: Case studies for workshop and audience response solutions
	12:45 – 14:00	Lunch
	14:00 – 15:45	Energy and low carbon society <i>P. Novak, University of Ljubljana, (Slovenia)</i> P. Novak: Case studies for workshop and audience response solutions
	15:45 – 16:00	Break
	16:00 – 17:45	Essential governing principles of the biosphere and ecological engineering <i>W. Blum, BOKU (Austria)</i> W. Blum: Case studies for workshop and audience response solutions
July 23 Thursday		
	9:00 – 10:45	<i>I. (G. Steiner, F. Evers, J. Mencinger, K. Müller, G. Haag)</i> <i>II. (Lučka K. Bogataj, B. Gunnarsson, P. Novak, W. Blum)</i> Instructions to participants of workshop I. and II.
	10:45 – 11:00	Break
	11:00 – 12:45	<i>I. (G. Steiner, F. Evers, J. Mencinger, K. Müller, G. Haag)</i> <i>II. (Lučka K. Bogataj, B. Gunnarsson, P. Novak, W. Blum)</i> Instructions to participants of workshop I. and II.
	12:45 – 14:00	Lunch

	14:00 – 17:30	<i>I. (G. Steiner, F. Evers, J. Mencinger, K. Müller, G. Haag)</i> <i>II. (Lučka K. Bogataj, B. Gunnarsson, P. Novak, W. Blum)</i> Instructions to participants of workshop I. and II. Workshop III. participants have free day
July 24 Friday		
	9:00 – 11:00	Workshop I. <i>Chairman: F. Evers</i>
	11:00 - 11:15	Break
	11:15 – 13:15	Workshop II. <i>Chairman: Lučka K. Bogataj</i>
	13:15 – 14:30	Lunch
	14:30 – 16:30	Workshop I. and Workshop II., audience response solutions, discussion
July 25 Saturday		
	7:30 – 22:00	Field trip to Goriška brda: Innovative Soil, Land and Water Management Strategies for enhancing a sustainable use of natural resources (audience response solutions) <i>M. Pintar</i>
July 26 Sunday		
		BREAK
July 27 Monday	Workshop III.	Sustainable land use and resource management
	9:00 – 10:45	Multifunctional Landscapes: negotiating land use <i>H. Wiggering, ZALF (Germany)</i> <i>H. Wiggering: Case studies for workshop and audience response solutions</i>
	10:45 – 11:00	Break
	11:00 – 12:45	Soil Thematic Strategy <i>C. Olazabal, EU, DG Environment (Belgium)</i> <i>C. Olazabal: Case studies for workshop and audience response solutions</i>
	12:45 – 14:00	Lunch
	14:00 – 15:45	FOOTPRINT, creating tools for pesticide risk assessment and management in Europe <i>I. Dubus, FOOTPRINT (France)</i> <i>I. Dubus: Case studies for workshop and audience response solutions</i>
	15:45 – 16:00	Break
	16:00 – 17:45	Land-based natural capital: policy, management and scientific challenges <i>M. Kibblewhite, Cranfield University (UK)</i>

		M. Kibblewhite: Case studies for workshop and audience response solutions
July 28 Tuesday		
	9:00 – 10:45	<i>III. (H. Wiggering, C. Olazabal, I. Dubus, M. Kibblewhite)</i> Instructions to participants of workshop III.
	10:45 – 11:00	Break
	11:00 – 12:45	<i>III. (H. Wiggering, C. Olazabal, I. Dubus, M. Kibblewhite)</i> Instructions to participants of workshop III.
	12:45 – 14:00	Lunch
	14:00 – 17:30	<i>III. (H. Wiggering, C. Olazabal, I. Dubus, M. Kibblewhite)</i> Instructions to participants of workshop III. Workshop I. and II. participants have free day
July 29 Wednesday		
	9:00 – 11:00	Workshop III. <i>Chairman: H. Wiggering</i>
	11:00 – 11:15	Break
	11:15 – 13:15	Workshop III. , audience response solutions, <i>Chairman: H. Wiggering</i> Discussion
	13:15 – 14:30	Lunch
July 30 Thursday		
	12:00 – 13:00	TEST
	13:00 – 14:30	Lunch
	19:00 – 21:30	Farewell dinner and granting of certificates
July 31 and 01 August Friday and Saturday		
	Departure at 7:30h Arrival second day at 22h	2 days field trip : Celje zinc smelter, Thermo electrical plant Šoštanj, Fly ash remediation, Mežica lead mine, Impact of lead mining on environment <i>M. Zupan</i>
August 02 Sunday		
		Departure

- Each lecturer shall provide written material (cases studies) and books necessary for students workshops presentations, 15 questions with a,b, c answers for audience response solutions;
- Conference room will have available equipment for overhead projector and computer presentation, (Power point presentation);
- Separate room with computers connected to the internet, copy machine and printer will be available;
- All activities will be video recorded
- Students Laptops are welcome
- Sportswear for excursions is recommended

Official site of International Summer School
“Environmental and Resource Management”
www.let-group.com

Other useful information's:

Flights: <http://www.amadeus.net>

Train: http://www.slo-zeleznice.si/en/international_transport/international_links/

Welcome to Slovenia: <http://www.slovenia.info/?lng=2>

Ljubljana Turist Information : <http://www.visitljubljana.si/>

Map of Slovenia: http://zemljevid.najdi.si/index_maps.jsp?q=&tab=maps

Summary

July 20, Monday

WELCOME:

Rector of Ljubljana University, A. Kocijančič

The aim of the 2009 summer school is to present and debate on a comprehensive European environmental program with effective measures strategies and policies to be implemented nationally and regionally.

INTRODUCTION TO ENVIRONMENTAL AND RESOURCE MANAGEMENT SUMMER SCHOOL

F. Lobnik: Head of School

We constantly interact with the environment. The objective is how to present the current scientific knowledge about Environmental and Resource Management, how tolerant the environment is to the different pollution sources and how environmental problems can be solved. Also important is the transfer of the results to the policy makers. Local authorities and engineering companies will also be debated to give an overview of the future of some techniques in the treatment of different pollution sources. The survival of nature is crucial for future, and the sustainable development must fulfill economic, social and environmental objectives.

SUSTAINABLE DEVELOPMENT, GLOBAL PROBLEM?

F. Lobnik, University of Ljubljana (Slovenia)

Our twenty-first century civilization is known as knowledge based economy. If so, we should not move onto an economic path that was environmentally unsustainable. Many earlier civilizations also found themselves in environmental trouble. According to historians; the Sumerians, the Mayans, and other early civilizations that were not able to make needed adjustments in time, collapsed and disappeared. Are we now in the same situation? Do we have enough knowledge and information to prevent such an occurrence? General opinion is that we have to educate young generation if we want to raise responsible society. Our global economy is outgrowing the capacity of the earth to support it. Shrinking forests and eroding soils, falling water tables, collapsing fisheries, expanding deserts, deteriorating rangelands, melting glaciers, more-powerful storms, disappearing species, and soon, shrinking energy supplies are unsustainable trends which have been confirmed by recent international assessments. Sustainable development should be a fundamental component of all education curricula (primary, secondary, tertiary).

INFORMATION ABOUT UNIVERSITY GRADUATE STUDY PROGRAMME ENVIRONMENTAL PROTECTION

M. Brilly, Head of Graduated Study Programme (Slovenia)

With the University Post-graduate Study Programme in Environmental Protection the University of Ljubljana has entered into the worldwide flows of environmental protection. The study of environmental protection at the University of Ljubljana connects experts from various faculties and departments with a common goal of environmental protection. As to content, the program has been by its different orientations and as a whole harmonized with present-day study programs in Europe, in particular in the EU, and in USA. Numerous elective courses offer a wide selection of knowledge in environmental protection.

The aim of the study program is to provide experts, who will be able to protect the environment against pollution prior and after it takes place. In the first case, prevention measures will be taken: with public participation, proper distribution of activities in land use and management, sustainable use of natural resources, proper technical measures etc. In the second case, they will have to help eliminate the consequences, reduce pollution and introduce measures of environmental upgrading primarily with technical, remediation, medical and hygienic measures, measures of spatial planning and other.

The post-graduate education programme is carried out by the following faculties of the University of Ljubljana:

- § *Biotechnical Faculty*
- § *Faculty of Economics*
- § *Faculty of Social Sciences*
- § *Faculty of Civil and Geodetic Engineering*
- § *Faculty of Chemistry and Chemical Technology*
- § *Faculty of Mathematics and Physics*
- § *Faculty of Maritime Studies and Transport*
- § *Faculty of Mechanical Engineering*
- § *Faculty of Arts*
- § *Faculty of Medicine*
- § *Faculty of Natural Sciences and Engineering*
- § *Faculty of Law*
- § *Veterinary Faculty*

GLOBAL ECONOMIC CRISIS AND GREEN NEW DEAL

J. Mencinger, University of Ljubljana (Slovenia)

The sub-prime mortgages were just the trigger for the current economic crisis; without “financial innovations” it would not have gone global. When the crisis is over the world will be different. Will it be better? Perhaps. There are several indications that creation of virtual wealth will come back when current panic on financial markets calms, when states intervene with billions of new “assets” and a significant amount of the lost “wealth” is recovered. Shall we again become obsessed with limitless competitiveness? The crisis is generating possibilities for a break with the present, and the search for a

new economic order. The economy could be restarted by increased demand which could be generated if we resolve social problems and protect the environment.

NEGOTIATING FOR SUSTAINABILITY DEVELOPMENT BY THE MUTUAL GAINS APPROACH

Frans W. Evers, LLM, Adj. prof., EEAC

Sustainable development evolved as a geopolitical answer to the conflicts in the eighties between the social-economic interests of developing countries and the concerns in the western world over the rapid disappearance of natural resources. It is also an answer to the enormous pollution that resulted from the economic activities in the western world.

It is very useful when trying to make sustainable development operational, to present dynamic vision of sustainable development. Sustainable development is not a characteristic of a static situation and it is therefore difficult to capture it in a fixed set of criteria or in a precise definition. Maybe, sustainable development can be best described as a dynamic process of permanent negotiation between often opposing convictions and interests. In the course of this process the parties must continuously search for a common framework of norms and values. And since these norms and values will depend on time and place, the concrete content of sustainable development will also continue to change.

This process is of course a negotiation process, where participants try to build an optimum for themselves and for the other stakeholders, a consensus. Consensus is essential for sustainable development, since participants try to find an optimum result. A compromise is never an optimum, a result that participants want to defend at home before their constituency. Traditional negotiating to find a compromise, as politicians usually do, can never result in sustainable development. Effective design and management of participation, consultation and consensus building processes helps to ensure the transparency, credibility and ultimate acceptability of development decisions.

Consensus building is a way to structure and facilitate this process of multi-stakeholder, multi-issue negotiation, using several steps and tools. As we can learn from recent negotiations about climate change and other items on Agenda 21, development decisions are often framed by negative history among parties to be successful, parties must all be involved (including government, multilaterals, NGOs, community orgs and the private sector). They must share information, learn each other's interests, explore options jointly, and build consensus. Using the mutual gains approach to negotiation increases the likelihood of achieving and maintaining stakeholder consensus on sustainable development issues. This approach is different from conventional negotiations tactics for development issues.

It seeks to maximize joint gains, and then distribute them through agreed upon criteria. This process can help to ensure the transparency, credibility and ultimate acceptability of development decisions through the framing of process goals, engagement of

appropriate stakeholders, development of ground rules & work plans that clarify stakeholder roles and responsibilities for information sharing; joint fact-finding and option development and binding decisions. The mutual gains approach has five basic principles: focus on interests, not positions; know your BATNA (Best Alternative to a Negotiated Agreement), create value before you distribute value and make sure to agree on follow through. It takes a certain kind of conversation - one that is cooperative, creative, has positive energy where stakeholders are able to see possibilities.

The first step is to identify stakeholders, assessing their interests, capacities, and potential for reaching consensus-based agreements. In the field of international development, intergovernmental agencies like UNDP frequently play a convenor role, e.g., in bringing together government and international agencies to build agreement on development priorities, design and implement programs. Public officials, Advisory councils and bodies, NGOs and foundations can also play convenor roles when they meet the criteria listed above.

The second step is to determine whether to proceed with a consensus building process, and starting the process with clear goals, ground rules, work plan and timetable. After the stakeholders have reviewed this assessment, the convenor should hold one or more organizational meetings so that stakeholders can consider and modify the process that has been proposed, and determine whether they want to participate.

The third step is to use joint fact finding to resolve technical and factual questions and help the group focus on the development of feasible options. Joint fact finding is a process to help stakeholders build a shared understanding of technical and scientific issues and their implications for policy. It can also help resolve disputes about scientific and technical methods, data, findings and interpretations.

The fourth step is to manage the process of deliberation among those stakeholders to maximize the chances for reaching agreements that are technically sound and politically acceptable. This is the stage of a consensus building process where individuals can make major contributions to achieving agreed goals by using the mutual gains approach: preparing effectively, focusing on interests, exploring options without committing, and developing shared criteria to guide decision-making, promoting consensus agreements where possible, and enabling near-consensus alternatives when full consensus is not possible. After the group has gone through the process of joint fact finding, clarifying interests, brainstorming to invent options, and developing multiple proposals for each possible clause, it will still need to reach agreement.

The fifth step is to provide opportunities for stakeholders to revisit and revise their agreements as necessary during the implementation phase. At the end of a consensus building process, stakeholders are asked to endorse the final recommendations. It is extremely important to devise a means of holding the parties to their commitments. Some agreements can be nearly self-enforcing, because they are closely aligned with the interests of all stakeholders and no additional resources are needed to implement them. Others may require legal or regulatory changes, additional resources and/or

organizational capacity building to be fully implemented.

July 21, Tuesday

RISC-PROCESSES IN THE ENVIRONMENT: AN OVERVIEW

K. Müller, WISDOM (Austria), G. Haag (Germany)

Many processes in the natural world, but also within contemporary societies are characterized by a particular distribution of events. In most instances, these events turn out to be marginal and have very little impact, but in rare instances these events exert very powerful and, at times, highly adverse effects both for the environment and for contemporary societies. Due to this characteristic distribution these processes have been characterized as RISC-processes (Rare Incidents, Strong Consequences). Examples for RISC-processes in the environment abound and comprise, inter alia, earthquakes, tsunamis, forest-fires, avalanches or eco-systems in general. In these entire domains one can observe the occurrence of rare events with very strong consequences, embedded in a very large number of very frequent events with small or no effects.

The main purpose of these lectures is to present an overview of environmental RISC-processes. A summary will be given on the generative mechanisms which account for RISC-processes and some current model applications will be shown, although in a descriptive and not in a formal or technical manner. A particular emphasis will be given to the problem of forecasting, prevention and damage control. It will turn out that a substantial number of RISC-processes, due to their complexity and due to observation and measurement problems, cannot be predicted with spatio-temporal precision and certainty. Nevertheless, intelligent prevention measures contribute significantly to dampen or even minimize the effects of these rare events. With respect to earthquakes, for example, intelligent building and construction designs can reduce the effects of strong earthquakes enormously, despite the non-predictability of these rare events.

ENVIRONMENTAL MANAGEMENT: TOOLS FOR SUSTAINABILITY IN THEORY AND PRACTICE

G. Steiner, Karl-Franzens-University of Graz (Austria)

Sustainability is the principle of ensuring that our actions today do not limit the range of economic, social, and environmental options open to future generations'. The effective management of environmental impacts has become key goals for policy actions at global, local, and single business levels as well. You will explore whether organizations will need to fundamentally reevaluate their philosophy and policies if they (and we) are to have any kind of sustainable future. You will examine sustainable development as a concept integrating global environmental and development agendas

and how environmental concerns need to be integrated into the day-to-day management and functioning of organizations and the evaluation and monitoring of their ongoing performance. Sustainable Development provides a unique opportunity for the participants to study and develop skills relating to one of the most important principles for the development of single businesses and whole regions as well and needs consideration both on the local and the global level. The framework of this course will be given by applied systems thinking, stakeholder considerations as a core element of transdisciplinarity and various tools as e.g. the sustainability balanced scorecard and networks, but also tools for creative problem solving. This course will be mainly based on group-work and case-study method, giving the participants an opportunity to experience the application of various types of highly innovative tools of environmental management in practice. Therefore most recent experiences made in a joint project together with the ETH-Zürich will also be included in the working sessions.

July 22, Wednesday

CONVENTIONAL AND ABRUPT CLIMATE CHANGES

Lučka K. Bogataj, University of Ljubljana (Slovenia), member of IPCC

A Climate change – both through its direct impacts and the implications of measures to tackle the problem through reducing greenhouse gas emissions – is likely to be a major influence upon global socio-economic development during this century. The fundamental mechanics of climate change are well understood; the world is warming; and much of the warming is due to human emissions of greenhouse gases. There is mounting evidence that climate, at least regionally, has changed much more rapidly in the past decades, and there are suspicions that human-induced global warming could trigger rapid and abrupt climate changes in the future. The Fourth assessment report of the Intergovernmental Panel on Climate Change (IPCC, 2007) projected an increase in global average temperature of between +1.8°C [likely 1.1-2.9°C] and 4°C [likely 2.4-6.4°C] by 2100, a rate of increase without precedent over at least the last 10,000 years. Rapid or abrupt climate changes can be defined to be either a step change in climate regime or a rate of change outside the IPCC range.

Studying the interaction between different components of the climate system, and related natural systems, we should be concern about various possible instabilities. The North Atlantic Ocean circulation is the best known, but is by not the only example. Some studies question the stability of monsoon patterns particularly on the Indian subcontinent. Climate changes over Amazonia might lead to loss of the rainforest during this century. Other very long term possibilities include the melting or collapse of the Greenland and West Antarctic Ice sheets. The scale of threats posed by structural disruption; for example, to African rainfall patterns are extremely hard to evaluate, but clearly should not be ignored. There

are also feedbacks which concern climatologists. Drying of the Amazonian rainforest system would feed more carbon back into the atmosphere. Thawing permafrost in the far north is likely to release frozen methane.

There are inherent uncertainties about such systems; the dynamics that keep them stable, and their limits, are not well known. But especially given the inertia in all these systems by the time limits are fully understood they may already be unavoidable. Systemic changes in monsoon patterns; desertification of the Amazon; and perhaps collapse of salinity shifts in the Thermohaline, may only be clearly identifiable through observational data but by the time changes can be observed in the data with scientific certainty, the inertia in all the systems concerns may well mean that the consequences can no longer be avoided - potentially with dramatic consequences. Three characterisations of rapid climate change will be presented. The first describes an accelerated climate change, caused by the additional release of greenhouse gases from permafrost and the oceans as climate warms. The second represents the potential climatic implications of a collapse of the thermohaline circulation in the North Atlantic, resulting in cooling across Europe. The third characterisation describes the rapid rise in sea level that would result from disintegration of the West Antarctic Ice Sheet.

There are many fundamental problems for society associated with outcomes of rapid climate change. One of them is that the future changes in climate currently being anticipated and prepared for may reverse and, second, the probability of such a scenario occurring remains fundamentally unknown. It is premature to argue therefore that abrupt climate change represents a catastrophic impact of climate change, but it still poses the implications for future research and policy formation.

ENVIRONMENTAL SECURITY: THE IMPACTS OF CLIMATE CHANGE IN THE ARCTIC

Björn Gunnarsson, School for Renewable Energy Science (Iceland)

This lecture discusses some of the environmental changes which have occurred in the Circumpolar Arctic as a result of Arctic warming, as well as further changes which are likely to occur in the next few decades. The information presented is largely based on the results of the Arctic Climate Impact Assessment (ACIA, 2004) and the Intergovernmental Panel of Climate Change assessments (e.g., IPCC, 2007) which predict an average 3-9 °C temperature rise in the Arctic over the next 100 years, or twice as high as the Earth's average.

The environmental changes in the Arctic being highlighted include various effects of higher temperatures (particularly winter temperatures) in the northern part of the Russian Federation; increased river flows of Siberian rivers and flooding; reduced Arctic Ocean sea ice thickness and extent; effects of thawing of previously frozen ground (permafrost); increases in storm surges and coastal erosion; environmental impacts of increased natural resource utilization and shipping in the Arctic Ocean; as well as effects of local and trans-boundary pollution on human health, and on Arctic ecosystems in general.

The rapid increase in the exploitation of oil and gas in the Arctic increases the danger of serious oil spills and other industrial accidents. Recent studies suggest that the effects of oil spills in a high-latitude, cold ocean environment last much longer and are far worse than first suspected. Oil breaks down very slowly and is difficult to clean up in ice-covered waters, and oil can be transported with drifting ice over long distances. The overall strategy for Arctic oil spills must therefore be preventative.

Transportation and industry in the Arctic will increasingly be disrupted by the shortening of the periods during which ice roads and tundra are frozen sufficiently to permit travel. As frozen ground thaws, many Arctic population centers, buildings, roads, railroads, pipelines, airports, river terminals, oil and natural gas production complexes, power stations, and other industrial facilities are likely to be increasingly destabilized, requiring substantial rebuilding, maintenance, and investment. Permafrost thawing is also likely to adversely affect sanitation infrastructure and drinking water quality, limit efficient delivery, and cause direct damage to facilities and lead to adverse impacts on human health.

Winds, rivers and ocean currents bring contaminants into the Arctic. Contaminants emitted from industrial sites in Western Europe, North America and South-East Asia are transported to the Arctic where they may become concentrated as they move up the food chain (bioaccumulation). As temperature rise, snow and ice accumulated over the years and decades will melt, and the contaminants stored within will be released in melt water. POPs and heavy metals (mercury) become increasingly concentrated as they move up the food chain, resulting in high levels in polar bears, Arctic fox and various seals, whales, fish, seabirds, and birds of prey. Arctic people that eat those species are thus exposed to potentially harmful levels of these pollutants. Same applies to radioactive pollutants, e.g. leakage from old military installations, nuclear test sites, weapon storage sites, waste sites, and reprocessing plants.

Thinner, less extensive sea ice creates more open water, allowing stronger wave generation by winds, thus increasing wave-induced erosion along Arctic shores. When the buffer provided by the shore ice has been lost, the full force of ocean waves are allowed to surge against the coastline and coastal villages. Sea-ice decline, sea-level rise, storm surges, and thawing coastal permafrost are very likely to force the relocation of some coastal villages and create increasing stress on others, causing substantial social impacts. Coastal erosion will pose increasing problems for many ports, tanker terminals, and other industrial and transportation facilities.

Attempts to control this erosion will become increasingly expensive as the surrounding coastline continues to retreat. Many current coastal sites could become uninhabitable. Low-lying coastlines experiencing land subsidence are particularly vulnerable. Soil slopes are made less stable by thawing permafrost, and this will result in more landslides. In general, Arctic coastal infrastructure will be impacted with more frequent floods, mudslides, rockslides and avalanches. These events are closely associated with heavy precipitation events, high river runoff and elevated temperatures.

ENERGY AND LOW CARBON SOCIETY

P. Novak, University of Ljubljana, (Slovenia)

Sustainable society, definition. Diamond Society. Climate change and carbon emissions. Energy and society: past, present and future. Role of technology development on energy use. Low carbon society goals. Limits of the growth and climate change stabilization. Technology, economics and social changes for low carbon society. New economic order or social disaster. Solar or/ and nuclear energy – where to go? One sun, one earth, one solution....

ESSENTIAL GOVERNING PRINCIPLES OF THE BIOSPHERE AND ECOLOGICAL ENGINEERING

W. Blum, BOKU (Austria)

Understanding the essential governing principles of the biosphere is a prerequisite for judging human activities in relation to sustainability, including the use of energy.

The essential governing principles can be described as solar orientation (reducing entropy), closing material cycles, using energy and material in cascades and concentrating surplus (minimising entropy production). Finally, for enhancing ecological stability, nature is working with a maximum of varieties (maximum of biological, chemical, mechanical and other options) and is networking in decentralised systems.

- These principles will be explained in detail, giving examples.

Based on this, it is shown how these principles are used in ecological engineering, in two directions:

- in preventive and structuring ecological engineering, e.g. the use of constructed wetlands, soil bioengineering, solid and liquid waste management and others;

- in curative and remediative ecological engineering, e.g. phytoremediation, biofiltration and other approaches. The concept of ecological engineering is "let nature do the job". What nature cannot do, we will do, by supplementary measures.

July 27, Monday

EX-ANTE IMPACT ASSESSMENT OF MULTIFUNCTIONAL LAND USE

H. Wiggering, ZALF (Germany)

European policy making is devoted to the European Sustainable Development Strategy (EC 2003), which puts forward ex-ante sustainability impact assessment as an important tool for policy decisions. Sustainable land use is considered to be intrinsically linked to the concept of multifunctionality (PR(99)88F1). Its underlying rationale is to address the interdependence of social, economic, and environmental effects of land use in a

conclusive way, taking into account commodities and negative/positive externalities. As the term suggests, land use provide a variety of “functions” or “goods and services”, covering aspects of production, regulation, habitat and information. Multifunctionality can thus be seen as a key feature for impact assessment.

The Centre for Agricultural Landscape Research (ZALF) has initiated and is coordinating a European Integrated Project with the acronym SENSOR. This IP aims at delivering ex-ante Sustainability Impact Assessment Tools (SIAT) to support decision making on policies related to multifunctional land use in European regions. The project is based on three key assessment streams: (1) European-wide, indicator-based driving force and impact analysis of land use policy scenarios; (2) region specific problem, risk and threshold assessment making use of spatial reference systems and participatory processes; and (3) case-study based sensitive area studies using detailed information on specific sustainability issues. In the introduction session key features of ex-ante impact assessment of multifunctional land use will be presented. Subsequently, the workshop will give deeper insights into the process of sustainability impact assessment.

THE SOIL THEMATIC STRATEGY

C. Olazabal, EU DG Environment (Belgium)

The Thematic Strategy for Soil Protection consists of a Communication from the Commission to the other European Institutions, a proposal for a framework Directive (a European law), and an Impact Assessment.

http://ec.europa.eu/environment/soil/three_en.htm

FOOTPRINT, CREATING TOOLS FOR PESTICIDE RISK ASSESSMENT AND MANAGEMENT IN EUROPE

I. Dubus, BRGM (France)

The use of pesticides is necessary to ensure the production of food across the EU, but at the same time, the potential health and environmental hazards associated with pesticides may affect the long-term sustainability of the European environment, and in particular that of water resources. It is therefore vital that the risk of pesticide transfer to water resources is minimised when these compounds are used. A major difficulty so far had been the lack of tools allowing any pesticide user or stakeholder to know whether the application of pesticides may lead to a potential transfer to water resources.

The main objective of the FOOTPRINT project was to develop 3 software tools to support the sustainable use of pesticides across the European Union. To ensure maximum impact, we developed 3 tools which cover the needs of all pesticide stakeholders: from decision makers at the national or European level to water quality manager's right through to farmers and their extension advisers.

Each of the 3 tools is designed to: i) identify contamination pathways in the landscape; ii) predict pesticide concentrations leaving fields and entering water systems; and, iii) recommend actions to limit the transfer of pesticides and their impacts.

The FOOTPRINT approach is based on:

i) an extensive and extremely detailed characterisation of all agricultural and environmental conditions where pesticides are being used in all 27 EU Member States, resulting in hundreds of thousands of 'agro-environmental scenarios' combining information on climate, crops and soils.

ii) The deployment of state-of-the-art validated research models to simulate the environmental fate of a large number of pesticides in those agro-environmental scenarios.

iii) The integration of the resulting modelling results in 3 user-friendly software tools.

The FOOTPRINT approach allows the 3 tools to be coherent across scales and the 3 tools can be deployed at the national, regional and farm scale in a consistent way.

The work conducted within FOOTPRINT allows users of the 3 software tools to evaluate the risk of contamination of water resources by pesticides at a range of scales for any location in Europe. FOOTPRINT can very effectively support policy-making by identifying across EU member states the problematic areas where water contamination is likely. The tools can also very effectively support action plans at all geographical scales (basin, catchment and farm) to limit the transfer of pesticides to water resources.

The FOOTPRINT tools are already of major interest to all those involved in the use of pesticides and the protection of water resources across the European Union.

The FOOTPRINT tools will be made freely available from www.eu-footprint.org from the summer 2009 and will be supported in the long-term by a dedicated team of FOOTPRINT scientists and practitioners.

The lecture will provide an overview of the FOOTPRINT work, explaining the underlying science, demonstrating one of the FOOTPRINT software and discussing the applications in FOOTPRINT by various stakeholders (the European Commission, Ministries, water authorities and companies, local authorities, consultancies, agricultural cooperatives, extension advisers and farmers).

LAND-BASED NATURAL CAPITAL: POLICY, MANAGEMENT AND SCIENTIFIC CHALLENGES

M. Kibblewhite, Cranfield University (UK)

Overview

Millennium goals

Natural capital

Asset valuation

Good news!

Worrying news!

Land resources are at or near the tipping point

The challenge

Walking on two legs

Policy - a complex agenda

Scientific priorities

Spatial information

Assessing capacity and use

Soil-services

Value illustration

Special considerations

Conclusions

- *Soil is the foundation of land-based natural capital*
- *Allocation and management of soil resources is critical to sustainable futures*
- *Spatial information about the capacity of soil to deliver services is essential*

1. FIELD TRIP - GORIŠKA BRDA REGION INNOVATIVE SOIL, LAND AND WATER MANAGEMENT STRATEGIES FOR ENHANCING A SUSTAINABLE USE OF NATURAL RESOURCES

Marina Pintar, University of Ljubljana

*The background of the excursion is the idea for **Innovative (Agricultural) Resource Management through Research-Driven Regional Clustering** (the acronym of the idea is **InnoLand**) which has been developed by cooperation of six European regions (i.e. in Slovenia, Germany, Portugal, Slovakia, Croatia, and Poland). The InnoLand idea addresses a challenge that is fundamental to a broad range of European rural regions: to achieve innovative agricultural resource use and sustainable landscape development while aiming at regional cohesion and competitiveness.*

Goriška Brda region is located in the most western part of Slovenia at the border to Italy. It covers 72 km² in total, among which is 28 km² of extensive and 20 km² of intensive agricultural land, and 24 km² of forest. During the last two decades more and more vineyards occurred – some of them extended on plots with less favourable conditions for vine growing. The result is a lower quality of wine and consequently low income for the wine farmers. On the other hand, there is more and more abandoned agricultural land where natural afforestation takes place; in the meantime forest covers over 60% of the northern part of this region, what was not the case a few decades ago.

This big share of wild vegetation already decreases quality of life of the local people living there (e.g. losing the agricultural production potential of the region, losing the landscape identity). Stakeholders (foremost farmers) will be acquainted with the possibility of overtaking natural afforestation with planting economically more valuable forest species. Afforestation should not be only classified as retroactive process as in certain conditions (appropriate forest management) can bring also environmental and financial benefits. Although the region is isolated from Central Slovenia, tourism is beginning to evolve, as it is just a few kilometres from main north-eastern Italy city

centres. However, there are limited possibilities for employment outside agriculture, except some few farms focussed on tourism and art galleries. This causes a migration of working force.

In agriculture recently viticulture is the most important agriculture branch which is still spreading and demands new plots of land. Increase in rural tourism connects locally traditionally important activities as viticulture, fruit and olive growing. This has to be strengthened enabling the preservation of the cultural landscape, assuring cultivation of land, and preventing depopulation of the countryside. This has been partly realised with recognisable quality farm tourism and wine shops and their inclusion in so called vine roads and events, like vine and cherries festivals, Brda and vine, Vine and poetry, etc.

A holistic strategy focuses on an innovative integrative combination of socio-economic analyses (SWOT) and environmental simulations (GIS, SWAT model); based on knowledge and stakeholders experiences, building up strong local networks (using endogenous factors) with which regions could become stronger and well prepared for the global markets.

In the project, an optimal, sustained land use will be defined aiming to avoid erosion and water pollution. The water cycle (including risk of soil erosion, and water quantity) will be checked in the region according to actual land use, and according to historical land use when the forest has been less extended. Strategy for optimal and sustainable exploitation of wood material from agricultural land under natural afforestation process will be elaborated together with a feasibility study for infrastructure for using this material as a local source of renewable energy.

Based on a calculated/simulated new water cycle due to a possible change of vegetation in the watershed, the strategy of water management will be elaborated. Additional water in the area could serve for irrigation. The project will search for solutions being optimal for all three concerned environmental factors (soil, water, land use). Synthetisation is crucial; solutions of one factor should not weaken the others as with the solution of environmental factors we should not deteriorate equilibrium between environmental and social as well as economic sustainable development.

The aim of the field trip is that students will become familiar with a specific situation that will be partly discussed in the sense of innovative (agricultural) resource management and sustainable landscape development while aiming at regional cohesion and competitiveness. The theme will be picked up again broadly during later lectures and workshops of the Summer School 2009.



Landscape of Goriška brda Region

2. FIELD TRIP - CELJE, VELENJE, MEŽICA

Marko ZUPAN, University of Ljubljana

Second field trip is two day tour to the areas where various negative impacts of human activities/technologies were caused environmental problems:

- *Celje municipality with soils polluted by Zn, Cd and Pb,*
- *Velenje in Šalek valley with lignite mine and thermo power plant,*
- *Mežica valley with closed lead-zinc mine and lead smelter.*

Celje is the third largest city in Slovenia (Municipality area 95km²; 48.000 inhabitants). It lies in the middle of Slovenia in the basin surrounded by Alpine foothills. Pollution of air, water and soil were severe before 1970: metallurgy, brickwork, steel-works, enamel coating, traffic, etc. The main source of industrial pollution was zinc smelter; company was established in 1873 and operated near city centre more than 100 years. Majority of the problems are nowadays solved (air and water quality, waste disposal), except contaminated soils and abandoned industrial sites (brownfield). Soils are contaminated mostly with heavy metals Zn, Cd and Pb where Cd represents main threat to the humans and animals due to high bioavailability. Several issues are discussed on the site like extension of pollution, uptake of HM to plants, accumulation of Cd in edible parts of vegetables and crops, home gardening on polluted soils, remediation measures, eco-remediation projects, brownfield redevelopment, etc.

The Šalek valley with the centre Velenje is a young Pliocene basin situated in the Sub-alpine part of Slovenia near the Austrian border. Huge lignite-coal reserves are the crucial factor of human caused changes and pollution of the Šalek valley. The Velenje Colliery is the largest Coal-mine in Slovenija (4 million tons a year) and among the largest underground lignite coal-mines in the world. The thermal power plant located

nearby in Šoštanj (ŠTTP) is the biggest power plant in Slovenia. Consequently, all that resulted in a large inhabitant concentration, intensive urbanisation and pollution of the small sub-alpine Šalek Valley. The most remarkable consequence of coal-mining is subsidence lakes. The surface of the Šalek valley has subsided for more than 110 million m^3 until now, approximately 6 km^2 of the valley surface, and the lakes surface is 2,1 km^2 , and their volume is over 40 million m^3 . In the last decade a lot of environment protection measures have been carried out. And the environment in the Šalek valley has been improved. The development of the subsided area is directed to a better environment. The lake shore is being restored and a lot of recreation and sport activities are already take place there.

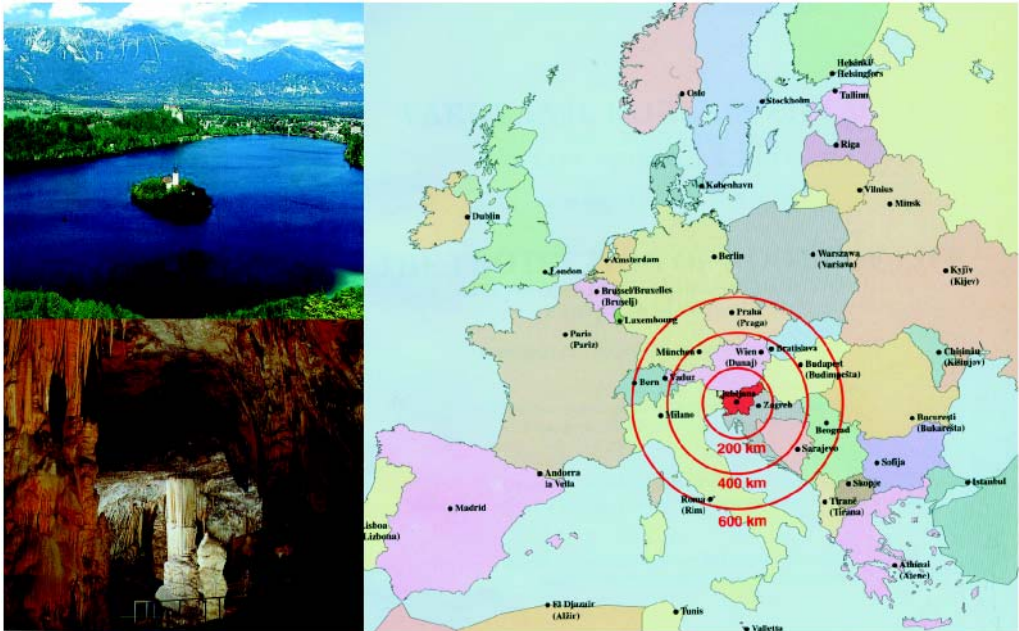
The Upper Meža area with settlements Mežica, Žerjav and Črna na Koroškem is a narrow valley in hilly area on border with Austria. More than three hundred years of active lead mining and smelting gives opportunity for economical development, however mining and smelting caused environmental damages due to poor technology in the past. Soils in the valley are highly polluted with heavy metals, especially with Pb, Cd and Zn, and sounding of smelter was without vegetation because of sulphur emissions - the area of Žerjav was know as 'death valley'. In 1990 lead mining in Mežica stopped, smelter in Žerjav is still work in purpose of recycling old car batteries. Although the lead smelting processing technology was changed in the last decades and lead and sulphur emissions drastically decline, meadow soil and forage in the Upper Meža valley are still polluted. An accidental fire at the landfill in Mežica in December 1995 caused additional pollution. However, people in this area try to find alternative way to survive with environmental limitations and low resources for industrial development.



Landfill in Šalek valley

SLOVENIA AS A NATURAL GARDEN AT THE CROSSROADS OF EUROPE

The Republic of Slovenia, a sovereign state since 1991 and a member of the United Nations from 1992, was founded in 1945 with the uniting of the continental part and the Slovene Coast (this was invaded and occupied from the end of the 1st world war until the end of the 2nd) and established as a national republic within the former federation of Yugoslavia. Slovenia has only short statesmanship from 1991 onwards, but a long national history.



Slovenians now live on the present territory, which was larger earlier, from the creation of the Western European states. It was at first also an independent principality, but from ancient times and the Middle Ages the Slovenian ancestors survived the old Roman Empire, Austro-Hungarian monarchy and other supremacies or occupations. Despite such historical, political and social pressures Slovenes have saved their arable land, forests and culture. Even the representatives of spiritual, cultural and intellectual life, poets, writers and other patriots were progressive rousers of liberation and movements of self management.

The capital of Slovenia is Ljubljana, a town with about 300.000 residents. It lies in the central part of the country, in Ljubljana valley with international junction. Slovenia is growing as a polycentric system: there are 12 administrative regions, but new formal regions are growing with democratic association of communities. Slovenia has three historical parts-central, west-ern and eastern, but other regional centers too. Ljubljana is the biggest university, scientific and cultural centre in the country.



The second regional and university centre is Maribor. The coastal centre with a new university seat is Koper - Capodistria, but in the Mediterranean part you will also find a regional centre of Nova Gorica too. Then on top of these are regional centres also in Kranj, Novo mesto, Celje, Velenje, Ravne, Ptuj, Murska Sobota.

Slovenia has a very interesting profile. On the borders of Slovenia are in close touch the Slavonic national group (and Slovenes belong to them) with Roman (westerly), German (northerly) and Ugro-Finnish (easterly) national groups. Our neighbouring states are Italy, Austria, Hungary and Croatia. The sense of this is also the cohabitation of different cultures, but the Slovenian culture is not behind them. An important factor is that the Adriatic Sea as a part of from the Mediterranean comes very deep into the continent of Europe, near the Alps and the Middle Europe, and Slovenia has a small coast line in the northern part of the sea. All over the Slovenian territory, from Trieste Bay and Port of Koper, the easiest way between the Alps and Dinaric Karst with roads and railways that elongate the ocean ways directly to Middle and Eastern Europe. Scenic and biotic diversity with all curiosities are characteristic too.

All of the present Slovenes number nearly 2,2 million, but in the Republic of Slovenia, which has a population of 2 million, there are 1,720.000 of them. Many of the older Slovenian emigrants are living in America (USA, Canada and Argentina), in some west European countries and new emigration group is living in Australia. Slovenia has minorities in border regions of neighbouring countries like Austria, Italy, Croatia and Hungary. There are associated factors for co-operation in all parts, sometimes still asking for more understanding and equality. Meanwhile Italian and Hungarian minorities live in Slovenia, with bilingual cultural and official rights, including some

Germans and newer settlers who want to find jobs and a home in this country. All citizens of Slovenia, minorities included, have equal official and democratic rights and institutions belonging to the nation and nationalities. New capital inflows are bringing new closer relations. Besides this, Slovenia is a very interesting country for foreign tourists.

The social and physical structure of Slovenia is similar to western European countries. As different and attractive the geographical and demographical pictures are, the varied the nature is too. This is caused by changeable climatic inflows from Atlantic, Mediterranean and continental sources from East Europe, and to very heterogeneous relief with naturally different regions. 60 % of the country is covered with forest. There is near to 44 % of the elementary karst, named by the original land of Karst in SW Slovenia. There are more than 6000 caves, from which 27 are accessible and open for tourist visits. Among them are the Ākocjan caves, which are included in the UNESCO register of World heritage.

Also the Postojna caves, the Vilenica cave as a cultural meeting place, periodic Cerknica lake and other curiosities are known worldwide. The lakes Bled and Bohinj are beauties as the remnants of the glacial period in the Alps. Furthermore, there are vineyards, hilly regions in Slovenia, skiing resorts, clean rivers for water sports and fishing etc.

Slovenia as a mountainous country has only 18 % of its territory composed of valleys and depressions, where you find the agricultural land, rivers and water resources,



Lake Bled

towns and where most of population is living, with factories and traffic systems crowded together in a really limited space. At present 29 % of rivers are over polluted, but by the republic environmental developing plan the sanitation of waters is a priority task and many cleaning systems are in construction. This plan could be achieved only with the second priority of eco-management of the waste and developing of local infra-structures. Many factories develop the 'co-natural technologies', bringing in to use environmentally acceptable non dangerous means, modernizing the production and services. The environmental legislation is compatible with that of the European Union. More has to be done in the development of monitoring, in the sector of logistics, in regional planning and with engagement of the public.

We are specially interested to protect the biotic diversity, because in the small part of 0,013 % of land of our planet Earth which belongs to Slovenia (20.2 73 km²) are at present to be found more than 1 % of all in world known species, among them these in carstic underground. Slovenia has some hundred endemic species, and has also the bear, wolf, lynx, salmon trout, thoroughbred lipica's horses, Carniolan (Slovenian) bee, many birds and protected marshland for them etc.

Another valuable natural resource are the mineral and thermal waters. Slovenia has 18 health resorts and several well known climatic mountain resorts like Bled, Kranjska gora, Bovec and Soča valley, Logarska and Savinja valley, Rogla etc. Different though are the hills with vineyards from Brda in the west side to Goricko.



Mountains, forest, lakes - place for relaxation

Slovenia has a part of coastal Istria too. Tourism is important too: in hotels and other tourist facilities Slovenia welcomes yearly more than two million guests (58 % of foreigners), nearly equally concentrated between health resorts, coastal, climatic and other tourist localities.

The economy is in transition from technological, environmental and economical points of view. At agriculture's disposal is 34 % of the land. Cattle breeding is prevailing and with quality meat, fruit and a range of wines, al-so some special products (e.g. air-dried ham) are known and esteemed on the world market. About 70 % of all primary and industrially produced goods are still exported to EU countries. The exchange with other countries is growing. There is steel, machine and car production, white technique, electrical, pharmaceuticals, chemicals, pneumatics, furniture, products of leather, typographic etc.

Two fifths of the GDP are contributed by industry and the associated services are prevailing. GDP per capita is still collated with some EU countries (more than 10.000 €).

Slovenia has the crossing of two transeuropean traffic corridors: the fifth in the south of the Alps between West and East Europe (from Italian Po to Pannonian valley), and the tenth between Middle Europe, Adriatic Sea and Southeast of Europe. Slovenian borders are crossed by some ten million cars and trucks yearly and total road cross-border entries by passengers are about 90 million with 60 million foreigners. The Port of Koper has nearly 10 million tons of national and international harbour traffic and goods transported per year.



Rafting exiting sport for youngsters

Traffic, industry and other productions centred around urbanization are causing serious environmental problems; traffic with vehicle fumes, noise and hazardous cargo. More of the road transport should be redirected to the railways.

It is interesting to know that country with a population of 2 million produces yearly 4000 book titles (750 of them in literature) publishes 6 daily journals and 1330 periodicals, has 3 universities with 80.000 students, 53 museums, 9 professional theatres with two operas and four orchestras, good radio and TV broadcasting, etc. There is 44 % of active population, which is similar to EU countries. Millions of foreign tourists visit famous health resorts, the seaside, mountain places, phenomena of Karst and historical places, all of which are a good reference to enlarge our co-operations.

Ljubljana is smaller than one would expect for a capital with a government and parliamentary building, all administrative services, foreign embassies, the head offices of banks and companies, university and many cultural institutions. But it is nice. Legend relates that the Argonauts fled with the Golden Fleece from the Black Sea to the Adriatic along the river Ljubljanica. A history however speaks of the Romans and the town of Emona, which was established here at the turn of the 1st century A.D. and flourished until its destruction by the Huns.



Izola with marina

It was resurrected at the foot of the castle hill by the Slavs in the 6th century. The town was first recorded as Luwigana in 1144. From 1335 this town with a Slavic soul acquired Germanic administrative feature and life style, because the Habsburgs ruled here until the First World War, except a few years as an Illyrian province and centre under Napoleon. Ljubljana entertained the third congress of Holy Alliance 1821, Ljubljana Congress 1870 and other significant meetings or events since its and Slovenian liberation in 1945 and attainment of independence in 1991.

Ljubljana has an important geographical position with heavy frequented road and railway crossing, linking the Mediterranean and inner of European continent. Traffic, commercial, administrative and cultural centre and life form a modern image of the town.

The streets under castle and along the river Ljubljanica were fostered by the Baroque style, while Romanic cultures were revered by the founders of the Academia Operosorum, the first intellectual club and precursor of the subsequent Academy of Arts and Science. In 1701, this was followed by the Academia Philharmonicorum, the predecessor of the present-day Slovene Philharmonic. The city is also seat of the Ljubljana archdiocese. A new middle European image got the town in renewal after earthquake in 1895. From 1918 up to present urban development Ljubljana increased fourfold in population and got many new buildings, institutions and curiosities, mainly in last decades of 20th and even in the beginning of the 21st century.



Ljubljana centre with the river Ljubljanica.



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