

сприяти збереженню лісів. Таким чином буде підтримуватись динаміка змінного лісогосподарювання з відповідним логічним обертом через втручання.

Розуміння доцільності сертифікації лісів дозволить лісовим господарствам виходити на міжнародні ринки деревини, а не продавати її через посередні фірми. Це дасть змогу отримувати необхідні кошти, протистояти лісовій бюрократії чиновників, бути самостійними в управлінні та виконувати принципи сталого ведення лісового господарства. Сертифікація лісових підприємств повинна проводитись поетапно, оскільки менеджмент лісових підприємств є застарілим. Впровадження нового менеджменту у лісових господарствах є неможливим без належних фахівців та законодавчої підтримки. Розуміння проблем в управлінні лісових господарств дозволить упереджено підходити до планових замовлень на заготівлю деревини. Обсяг заготівель деревної продукції повинен визначатись із врахуванням соціальних, екологічних та економічних вимог, а не тільки виконанням плану. Керівники лісових підприємств повинні виходити із результатів діяльності підприємства тобто мінімальних затрат. Повинні враховуватись не тільки доходи від продажу деревини, а й затрат на відтворення лісових земель і вкладених трудових ресурсів. Використання нових технологій не означає впровадження техніки, яка вимагає шалених капіталовкладень. Це означає, перш за все, уміння отримувати високоякісну деревну продукцію, не завдаючи шкоди лісовому середовищу.

Література

1. Klins U. (2000): Die Zertifizierung von Wald und Holzprodukten in Deutschland. Dissertation zur Erlangung des Doktorgrades der Forstwissenschaftlichen Fakultät der Technischen Universität München. 306. S.

2. www.fsc-deutschland.de.

3. ПРОБЛЕМИ ЕКОЛОГО-ЕКОНОМІЧНОЇ ОСВІТИ

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A NEW STUDY COURSE "ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS – ENARECO": BASIC APPROACH

It is discussed the basic approach for the training of the economists – ecologists based on practically oriented education, which can serve as a model not only for other universities and high schools of Ukraine, but for universities of other countries too.

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Новий навчальний курс "Економіка довкілля та природних ресурсів – ЕНАРЕКО": основний підхід

Обговорюється основний підхід до підготовки економістів-екологів, оснований на практично орієнтованій освіті, яка може служити моделлю не тільки для інших університетів і вузів України, але також для університетів інших країн

The aim of the joint European Tempus Tacis project ENARECO is to establish a new, three-semester Master's Program in Environmental and Resource Economics, to give a final qualification of Environmental Economist. This report discusses the conceptual background against which this project has been developed by its initiators, and points out directions for its future development.

When Meadows, encouraged by the Club of Rome, published his book *Limits of Growth* in 1972, he seriously questioned, but on a general level, the policy of "continue the way we've been going, ever faster, ever bigger, ever higher". Even if the book's predictions and conclusions were not shared by everyone in every detail – and many proved to be wrong or exaggerated – the general message to the world was nevertheless widely accepted and understood: our natural resources are finite, nature and the environment cannot tolerate unlimited exploitation! Humanity would have to change its behaviour towards the utilisation of natural resources considerably and use them more carefully in order to avoid the destruction of its basis of existence, and ultimately of itself. The damage to the environment was already immense and needed to be remedied, and new damage and stress had to be prevented at all cost.

Environmental protection has since become the primary political topic in many countries, especially in those which are highly developed. In Germany, for example, opinion polls have listed environmental protection as the foremost political problem for many years, clearly outranking such topics as health, secured employment, sufficient income, education, etc. Unquestionably, environmental protection has since not only been talked about, but has been actively implemented and improved. Public pressure on elected officials and their policies has simply been too strong, the desire of the population for better environmental conditions was so marked that it was impossible not to act. Moreover, the problems were too visibly exposed and too urgent to simply be pushed

aside or discussed away. However, the efforts made were obviously not sufficient. New environmental problems have arisen or have been identified such as the ozone hole, the CO₂-problem in connection with global climate changes, and last but not least the latent and acute threats posed by the use of nuclear power, with Chernobyl serving as a striking symbol.

Looking back over the last 25 years, it becomes quite obvious that the book Limits of Growth has given a strong impetus to rethink human behaviour in terms of the excessive use of natural resources and damage inflicted on the environment. However, at the same time it has taken the public conscience into a direction which ultimately leads to a dead end, a dead end which will may eventually may cause more damage than good to environmental protection. Limits of Growth suggests that human survival is only possible through the abandonment of further economic development. Not only can the standard of living not continue to rise – so states the abbreviated conclusion of the book – but it must be taken back below the current level. Economic growth is no longer feasible. Subsequently, the terms "zero growth" and even "negative growth" were introduced into the debate. Incidentally, this interpretation of the limits of growth was soon judged by the less developed countries as an attempt by the Western countries to perpetuate their underdeveloped status.

In the 1970's and 1980's the fundamental dilemma of environmental protection and economic growth became wide spread and dominated the environmental political arena.

The UN Conference for Environment and Development (UNCED) held in Rio de Janeiro in 1992 finally tried to overcome the apparently un-solvable dilemma of Ecology versus Economy with the new concept of sustainable development. The resulting extensive action program for the 21st century, the so-called Agenda 21, confidently laid out the realistic potential for the world's countries for continued economic and social development with an increase in the standard of living, without further long-term destruction of the environment and thus of their basis of existence. The main condition of all human interference must be sustainability, i.e., the environment and natural resources may only be utilised to an extent that will allow the same level of use for future generations.

Agenda 21 was signed by more than 170 States, which committed themselves through their signature to employing the principles of sustainable development within their sphere of influence. However, the ideas of the Agenda 21, which were not difficult to understand and appeared quite convincing on paper, proved to be very difficult to implement. Although the principle of sustainable development seems very plausible, this does by no means guarantee its practical realisation. The basic question remains as to how economic, social and ecological actions need to be organised to lead to a sustainable end result. This requires a new approach to thinking, and the development of new concepts outside the conventional well-worn paths that will allow the arrival at the pre-set goal, i.e., a sustainable development.

Even with the best intentions, it is difficult to visualise the implementation of the complex concept of sustainable development by the current generation of decision-makers of policy, economy and society in their respective countries, without the aid of well-trained specialists. Such an endeavour is bound to fail. However, there is still a decided lack of specialists within this field, not only in Ukraine, but also in many other

countries. The training of these experts is the main goal of ENARECO. This kind of study program had not previously been conceptualised in Ukraine, let alone established. The special structure of the new program and the characteristics of the curriculum are therefore briefly outlined.

Since the protection of the environment has become one of the central political tasks, universities and colleges have, without doubt, tried to react to this trend through their curricula. These attempts became even more acute after the Rio UNCED conference of 1992 which strongly urged the countries of the world to orientate their development at the principle of sustainability, thus ensuring long-term future capability.

Research on the INTERNET will easily reveal that universities and colleges throughout the world have established special programs for the training of students in the field of sustainable development. However, a closer look beyond the course titles often shows that study contents differ quite considerably from those of ENARECO. At other universities, it is usual for existing economic science Faculties to add to their classical curricula new fields such as environmental economics, environmental management, environmental-economic methods, etc. Alternatively, study programs in environmental sciences are created within existing Faculties, which often only deal with the technical and/or ecological, but not with the economic or social aspects of economics and ecology.

The ENARECO Program differs from the above approaches in several ways as detailed below:

1. Regardless of the large number of subjects – the program encompasses no less than 20 study courses – the basic theme for all classes is the question how economic and societal demands can be rendered compatible with the requirements of environmental conservation and a careful use of natural resources; in a word: *sustainable development*.

2. The teaching contents of the study course ENARECO are not limited only to concentrating on the theory of environmentally friendly, resource preserving economic, but attempts to practically illustrate principles of the various sectors of a political economy. Thus the study of agriculture and forestry, tourism and recreation, and land use, is included, which is supplemented by subjects such as environmental policy and environmental law. It is the intent and expectation of the program that this variety of subjects will ensure that students will be trained to become experts, capable of implementing the principle of sustainable development in practically all relevant areas of economy and society.

3. The central concern of the program is a practice-oriented education. Besides the theoretical basics, important as they are, the imparting of practical experiences is a main goal. Therefore, so-called project studies as well as internships in administration and businesses form an integral part of ENARECO.

4. Due to the large range of subjects, it was not practical to assign ENARECO to an already existing Faculty, e.g., the Faculty of economic. The danger would have been too great for the "parent Faculty" to dominate the new study program and to influence its direction and further development. ENARECO has therefore been designed as an independent unit within the university, with its own administration and directly answerable to the rector.

5. The new study program will be open to college graduates from a variety of different fields, not restricted to economists, but also open to geographers, law students, forest scientists, ecologists, etc.

In trying to follow these five considerations, the curriculum of the new study course has been structured in seven teaching areas:

- Environmental policy, incl. environmental law,
- Land use economics,
- Economics of tourism and recreation,
- Natural resource management,
- Environmental economics,
- Enterprise environmental management,
- Methodology of environmental economics.

It has been mentioned before that the program ENARECO is unequalled in the combination of teaching areas and courses offered. Hence, it will certainly not only serve as a model for other universities and higher educational institutions in Ukraine, but will also set an example for many other countries. Of course, teaching contents are subject to permanent changes; therefore, ENARECO will also change its appearance continually in order to keep pace with current developments.

Dr. Norbert Weber – Germany

DIDACTICS OF THE STUDY COURSE ENARECO

It is discussed that the new study course Environment and Natural Resource Economics (ENARECO) places high demands not only on the students, but also on the involved teaching staff. It must be guaranteed a high educational standard of teaching. Therefore, great importance is placed on the integration of accepted didactic principles in the planning of the study course ENARECO. This effort was impeded by the clearly poor teaching conditions at the Ukraine university when compared to Western standards. Due to an insufficient supply of teaching materials (books and texts) in the conventional courses, a passive attitude is prevalent among the students. Nevertheless, considerable headway was made in the implementation of the new study course where questions of didactics are concerned.

Д-р Норберт Вебер – Німеччина

Дидактика навчального курсу ЕНАРЕКО

Розглянуто, що новий навчальний курс економіки довкілля та природних ресурсів (ЕНАРЕКО) ставить високі вимоги не тільки до студентів, але й до залученого викладацького складу. Повинен гарантуватися високий освітній рівень викладання. Тому велика значимість надається інтеграції акцептованих дидактичних методів планування навчального курсу економіки довкілля та природних ресурсів (ЕНАРЕКО). Ці зусилля затруднені гіршими умовами викладання в українському університеті порівняно зі західними стандартами. Відповідно недостатньому забезпеченню навчальними матеріалами (книги та підручники) переважаючим є пасивне відношення студентів. Тим не менше, суттєвий поступ був зроблений у впровадженні нового навчального курсу у тих випадках, коли приймалися до уваги вимоги дидактики.

Due to its future-oriented and exemplary nature for Ukraine and Eastern Europe, the advanced study course Environment and Natural Resource Economics places high demands not only on the students, but also on the involved teaching staff.

The Ministry of Education of Ukraine generally promotes the use of advanced pedagogical concepts and methods, and the training of a new generation of teachers. The adaptation of university education to worldwide standards and expectations is an explicit goal. Master's graduates (level IV in the Ukrainian educational system) should possess a thorough knowledge and have the abilities to meet the challenges of their pro-

fession. Moreover, the Ministry decidedly supports the concept of Lifelong learning. New teaching methods are designed to solve the problem of internal motivation among teachers and students (Ministry of Education of Ukraine, 1997).

The specific and extensive demands toward the education of ENARECO students have been compiled in official guidelines (Educational Professional Program, Qualification Characteristics, and Educational Plan). Special emphasis is placed on the Qualification Characteristics, which describe the demands which future graduates are likely to encounter. This not only sets the prerequisites of the study course (following the official recognition of the course) but also represents an obligation to employ principles of modern teaching methods in the students' education.

The study course ENARECO is defined by a number of characteristics that carry great didactic importance for the style of teaching:

- the course is being offered for the first time in Ukraine; no previous experiences from other universities in the country are available;
- the study course admits students with different qualifications (e.g. students with first degrees in a variety of subjects, e.g., economics, law, biology, ecology, agriculture, forestry);
- ENARECO is an inter-disciplinary course, spanning a multitude of subjects from different scientific fields (e.g. natural sciences, arts and humanities, social sciences, technical-scientific approaches);
- from a scientific point of view, there has been a rapid advance in knowledge concerning all aspects of environmental protection and natural resources, which can be seen in the vast increase of internationally available literature;
- the teaching contents are characterised by extremely complex problem settings and multi-dimensional interconnections;
- ENARECO students must be ready for practical work within two years, since there exists a great need for action for solving the environmental problems and sustainable use of natural resources in Ukraine.

Due to the specific character of an advanced study course such as ENARECO, special attention must be given to the teaching of key skills that can give the students the abilities and qualifications required for the professional practice. This has been addressed by the content and type of Units that are studied (e.g., applied environmental policy; mechanisms, problems and conflicts in land use; planning, management and analyses). In general, graduates should gain the ability to both analyse and solve environmental problems. They also ought to be able to develop and implement concepts for a sustainable use of natural resources.

In considering the teaching methods for the ENARECO a revised approach is needed, encompassing methods used for adult education, as participants tend to be older than the average student. All students will have already completed a first degree and so would have developed, to a certain extent, their own individual working techniques and self-confidence. Also it is likely that in the near future mature students will be targeted, those who have completed their initial studies quite some time ago, particularly when the advanced training centre at the USUFWT is established in the near future.

Based on experience, it is generally recognised that a reduction in attention span and short-term memory occurs from the age of 30 onwards, while technical and social competence remains on a high level for longer periods. This creates a number of learning impediments typical for adult education. Therefore, the use of a variety of input methods is particularly recommended. Teaching should be connected with pleasurable