

Ministry of Education and Science of Ukraine
Sumy State University
Economic Research Centre
Youth NGO "ECO"

12th International Student Conference
is dedicated to the 15th anniversary of the department
of Economics and Management

**"Economics for Ecology"
ISCS'2006**

*Sumy, Ukraine,
May 3-7, 2006*



XII Міжнародна студентська конференція
присвячена 15-річчю факультета Економіки та менеджмента
"Економіка для екології"

*м. Суми, Україна,
3-7 травня 2006 р.*



12th INTERNATIONAL STUDENT
CONFERENCE
**"ECONOMICS FOR ECOLOGY"
(ISCS'2006)**

May 3-7, 2006, Sumy, Ukraine

**The conference
organizers:**

Sumy State University
Economic Research Centre
Sumy Regional Youth NGO "ECO"

The official sponsors:

JSC "Sumykhimprom"
NPO "Eco-Product"
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youth and sports

Support:

Evgen Lapin, Ukrainian Parliament Deputy
Mykola Trofimenko, Head of JSC
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**The topics of the
conference:**

theoretical problems, case studies,
methodology, co-operation examples,
environmental education, NGO activities and
so on.

**The conference is
directed to:**

students, young researchers, representatives of
youth organisations and NGOs.

Conference languages:

the official conference language is **English**

Conference place:

Sumy State University

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**PROGRAM OF THE INTERNATIONAL STUDENT
CONFERENCE
"ECONOMICS FOR ECOLOGY" (ISCS'2006)
May 3-7, 2006
Sumy, Ukraine**

Wednesday, 3

8.00 – 16.00	Registration of the participants (Sumy State University)
13.30 – 15.30	Sightseeing tour (Sumy downtown)
16.00 – 17.00	Opening Ceremony
17.30	Departure from Sumy to the recreation center "Rovesnik" (15 km from Sumy)
18.00 – 19.00	Accommodation
19.00 – 20.00	Dinner
21.00 – 23.00	Welcome party

Thursday, 4

8.00 – 8.45	Breakfast
9.00	Departure to the Sumy State University
9.30 - 11.30	Plenary session
11.30 – 12.00	Coffee Break
12.00 – 14.00	Plenary session
14.00 – 14.45	Lunch
15.00 – 17.30	Holiday concert "15 years of department"
18.00	Departure from the Sumy State University
19.00 – 20.00	Dinner
20.30 – 23.00	Ukrainian party

Friday, 5

8.15 – 8.45	Breakfast
9.00 – 11.00	Workshops
11.00 – 11.30	Coffee break
11.30 – 14.00	Workshops
14.00 – 15.00	Lunch
15.00 – 17.30	Workshops
18.00 – 19.00	Conclusions of the workshops
19.00 – 20.00	Dinner
20.00 – 23.00	International party

Saturday, 6

8.15 – 8.45	Breakfast
9.30 – 20.00	Excursion
20.00 – 21.00	Dinner
21.00 – 23.00	Farewell party, Camp-fire party

Sunday, 7

8.30 – 9.00	Breakfast
11.00	Departure to Sumy

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STABILITY AND CHANGABILITY IN SUSTAINABLE DEVELOPMENT

Leonid Melnyk

Sumy State University, Ukraine

In the end, sustainable development relies on the following three aspects, each of which belonging to the class of open stationary systems:

- a man as a biological organism and as a social being;
- ecosystem and biosphere in general;
- social-economic system

The systems analysis of the problem can provide us with fundamental differences of the formulated goals of the sustainable development. As it stands, the principle goal of the sustainable development is associated with predominantly infinite existence of human civilization and its progressive development. This goal has two levels: 1) *necessary, also known as subsistence level*, which basically means physical survival of a biological human being; 2) *sufficient level*, which means spiritual development of a social human being. Both levels are extremely important.

There are also some *providing objectives* that are aimed at: (i) preservation of *biosphere* in a very narrow sense when human biological being can exist (i.e., human organism can maintain its homeostasis level); this depends on such parameters as key climate characteristics and physical parameters (temperature, electromagnetic features, cosmic emanation), atmosphere and water composition, the composition of soil used for agricultural production; (ii) preservation of the entire landscapes as informational basis for development of a personality (a social human being).

As well there are *supporting objectives* that stipulate the creation (maintenance) of the conditions, in which biosphere and its components can exist and which actually provide and renew some vital conditions for a human being as a biological being and as homo sapience.

Social-economic system also helps to achieve some goals of sustainable development. These goals are: (i) provision of biological metabolism (nutrition and drinking water supply); (ii) provision of optimal physical conditions; (iii) provision of material and informational flows for spiritual development of a human being.

Principle difference amongst three components of sustainable development mentioned above is as follows. *A man as a biological being* can live only within a very narrow interval of physical and environmental parameters set for him by nature. Any deviation from these parameters threatens the entire existence of human civilization. To preserve this narrow interval, some negative feedback mechanism is required based on constraints, standards, bans, sanctions, etc. This is exactly the goal economic mechanism must be aimed at.

In contrast, constraints that are associated with the necessity to preserve *biosphere and ecosystem elements'* homeostasis are relative in nature. Change in the environmental conditions and biosphere's homeostasis as well as preservation of

ecosystem's homeostasis are the required conditions for a human being. Negative feedback loops including economic instruments are needed to preserve original lands (reserves and national parks) as well as to reduce ecological impact on all components of the natural environment.

Social-economic system is the only element that can and must transform rapidly. It is necessary for: first, satisfaction of social needs of a human being, which change very quickly or in other words which progress; second, improvement of the social-economic system itself. The latter is based on production that satisfies ever-increasing human needs. In order to be able to provide for constantly growing population and to stay within the capacity of ecological system, production needs to become more efficient to achieve resource savings, particularly in terms of reduction in material and energy consumption. So, in contrast to the biological human being and biosphere, management of the social-economic system should be directed towards progressive change in homeostasis instead of just its preservation. In this regard, positive feedback mechanisms should be developed.

Two approaches, *conservative* and that of *positive changes* constitute a methodological basis of a modern economic mechanism to achieve sustainable development.

Conservative approach is based on the use of negative feedback mechanisms. With their help mankind resists any changes (this is where the name comes from) that can threaten ecosystem's sustainability. Currently, in environmental sciences this approach is realized in the following forms:

- *preservation methods*: creation of reserves, national parks -territories, where the impact on nature is reduced; bans on rare biological species;
- *restricting methods*: licenses for the use of natural resources; quotas for wild animals trade; environmental standards; regulation of hunting; birthrate regulation;
- *banning methods*: bans on hunting of certain animals; bans on cloning, bans on production and use of some substances (pesticides, ozone harmful substances);
- *regulating methods*: soil cultivation (kinds of crops and kinds of cultivation to be used on hills with different angle tilt); transportation and storage of ecologically dangerous substances; use and transportation of biological species and biologically active substances;
- *suppressive methods*: economic sanctions, fines, increased prices, taxes.

Positive changes approach is associated with incentives to stimulate changes on condition that they help to reduce destructive pressure on the environment. Such approach is based on the use of positive feedback mechanisms. In particular, the approach is based on the use of different favorable terms, material and moral incentives for innovations. The principle goal of this approach is to provide constant renewal (re-production) of four basic components of social-economic system: (1) demand; (2) supply; (3) people; 4) motives of human activities.

In countries with market economy economic mechanism is the basis for the sustainable development. Economic mechanism includes the whole complex of

economic structures, institutions, forms and methods of management with the help of which current laws are implemented in accordance with social and private interests. Basic components of such a mechanism are:

1. legislative basis of economic activity (rights, duties, licenses, restrictions, procedures);
2. property rights;
3. organizational structure of economy;
4. system of public institutions (traditions, moral basics, religion, spiritual values);
5. economic instruments.

Conditionally economic instruments can be differentiated into three interdependent and interconnected groups: prices of resources; economic benefits/costs, transfer payments.

Depending on the implementation, systems of ecological and economic instruments can be divided into 4 basic groups:

1. *Administrative redistribution of funds* (mostly fines and subsidies). This group of economic instruments is a system of well defined and well addressed cash flows (for instance, from a guilty party to victims) which is used in cases of environmental emergency when the consequences of environmental impact are not conventional and they need specific evaluation.

2. *Financial transfers*. This is well-regulated and controlled system of redistributive mechanisms (taxes, payments, credits).

3. *Free market mechanisms of funds redistribution*. A good example of this instrument would be the so called tradable emission permits that have become widely spread in some USA states.

4. *Promotion on the market*. This instrument is related to the use of non-monetary forms of economic promotion (rewarding with special signs; free of charge advertising), which gives additional competitive advantage.

Different ecological and economic instruments are used in different countries. However, the most popular ones are: taxes, subsidies, grants, bonuses, payments, fines, promotions, price control, insurance, and amortization instruments.

DIRECTIONS AND PRIORITIES OF INNOVATIVE-INVESTING ACTIVITY IN THE SPHERE OF RATIONAL NATURE MANAGEMENT

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Stimulation of innovative activity in the sphere of rational nature management nowadays acquires leading significance in reforming and transformations of economy. It is stipulated mainly by environmental degradation in Ukraine, excessive use of natural resources and environmental pollution.

Transition to market relations is accompanied by a number of negative consequences, the basic of which is the reduction of a state role in economy. At the same time a basis of only market principles there cannot be achieved sustainable socio-economic development in the country, and in different regions in particular.

The regulation in innovative sphere, first of all at a regional level, is determined mostly in development and productivity of the state innovative policy concept directed on ecologization of economy and rational nature management to the basic directions of which it is possible to attribute the next ones:

- A state support of the enterprises occupied in innovative activity in sphere of rational nature management at the expense of centralized investments on a competitive basis only;
- Increase of a role of inner accumulation sources of the enterprises for financing ecological innovations;
- Expansion of practice of state-commercial financing with attraction of other countries' capitals;
- Magnification of the state control over an expenditure of the central budget means which are directed on activization of innovative activity in sphere of rational nature management, in the form of free budget financing and in the form of credit.

In the same time it is necessary to create and consistently to realize the innovative-investing mechanism which would answer new economic, sociopolitical, and ecological realities, which would provide significant on scales come of the capital for ecologization and reforming of economy. A starting point of this mechanism is processing selective innovative-investing strategy which will find reflection in state and regional innovative and investing programs, the projects designed for a long period and directed on ecologization of economy and the decision of ecological problems. The main problem consists in a choice of priorities of production where concentration of innovative resources can supply success and chain reaction of transition to higher spheres of public managing in a rather short period of time.

To priority spheres of innovative-investing activity which deserve a special attention, at rendering a state support, belong the next ones:

- Maintenance of production of ecologically clean food at the expense of a support and stimulations of innovative activity in a net of small, farmer and personal part-time farms. The leaguering role in realization of this priority is given to regional programs;

- Introduction resource-saving ecologically clean technologies which are necessary for more complete extraction of mineral riches from bowels and deep complex processing of natural raw material. Here it is necessary the essential state support and significant both state and interstate investments;

- The Support of projects on development of “no waste” technologies on production, processing and use of natural raw material that will help to reduce resource-spending and to supply an additional revenue from realization on inner and external markets of deep processing of raw material;

- Maximum use of renewable resources and search of new alternative sources of the raw materials, allowing to replace nonrenewable, rare and expensive natural resources.

The listed priorities should make a basis of system of state and regional innovative-investing programs directed on ecologization of economy, and to get a prime support by the way of direct investments, soft loans, tax privileges and so on.

INTERNET HISTORY AND IT'S PERSPECTIVES IN CENTRAL ASIA – INTERNET FOR SOTIAL AND POLITICAL DEVELOPMENT: COMMUNITY BUILDING

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Abstract:

This paper shall give a brief history of Internet's development and it's perspectives in Central Asia. It concludes that Internet has great perspectives in Central Asia and that it becomes more and more supported by people and authorities. It can help to build local communities and support the advancement of democracy in Central Asia.

History

Nowadays Central Asia presented by the countries of former Soviet Union, such countries as: Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan. Tradition and culture of these countries is a little bit similar due to some territorial position, cultural unity and dominating religion, but all of them were influenced by Russian culture and life style during a long period of time.

The Internet came to Central Asia firstly in the time of big changes that took place in Soviet Union in 1990'ies. Since this time the Internet become well-known to the people. From that time on some small companies provided the opportunity to the people to use the Internet. But currently almost all of them are closed and their

place was occupied by some communicational monopolies which now provide Internet service.

Infrastructure and local resources

It's also important to remark that some percentage of population of Central Asia is living in rural areas. This fact arise the problem of providing telecommunication infrastructure and electricity in those rural areas even in the 21th century. Therefore, most of Internet users are living in urban areas and cities.

Local web resources are underrepresented in the Internet. That can be explained due to technical difficulties, lack of qualified personal and financial means. The larger part of local web resources in the Internet still is written in Russian or English language. Web resources formulated in the languages of Central Asia (which, for instance, are Kazakh, Kyrgyz, Tajik, Uzbek) are not wide spread, although this situation is continuously changing. But unfortunately that change is still too slow. For the development of localized web resources it will be important that the people of the region will understand that this development strongly depends on their readiness to participate in building up those localized web resources.

The Internet in Central Asia

Actually most of the people of Central Asia do understand that the Internet could play a very important role in their lives - especially for grass-root organizations, NGOs, and so on, but also for students, teachers, and employees. Last but not least the Internet could be an important tool for state authorities and administration. All of these institutions, groups and individuals need actual information that the Internet could provide in case that there is a wide spread readiness to produce and to share it with others. In fact, people use the Internet in their daily life as a source of information and a means to communicate with each other. The Internet is a tool that provides the opportunity of inter-cultural contacts and actually the young generation uses it to create relationships and to gain new experiences. It seems that the Internet does not crush the cultural identity. On the contrary it seems that it provides a field of multi-cultural inter-action and mutual understanding in Central Asia and beyond that region.

Impacts of the Internet

The Internet in Central Asia seems to have some impacts to mass media. There are some changes of the local mass media, since almost all of them use information provided by the Internet. It is difficult to determine the sources and the quality of such information but it is used anyway. People get used to it and find it up-to-date and interesting - in the future perhaps a more critical stance could help to provide better information. More important, in contrast to traditional mass media, the Internet is a medium that can be used to distribute information unfiltered and uncensored. All the information that cannot be published in local media due to many reasons can be freely published in the Net. There-fore, it could be a tool to the advancement of democracy in Central Asia.

Besides the aspect of the advancement of democratic processes the Internet is an important factor in economic progress. Actually one can learn that the

economies of the countries of Central Asia are vastly growing and developing. To strengthen that improvement, the digital divide has to be closed. It necessary to provide the opportunity to access the Internet to everyone who wants to access it - especially in rural areas. Even for the population living in urban areas and cities the lack of access to the Internet still is pressing. Some international Foundations tried to change that situation by pro-viding some Internet access points and Internet courses free of charge. Some of the universities in the region offer Internet access free of charge to their students, too.

Some problems

However, at the time the usual type of Internet access are dial-up-connections with low bandwidth, so the speed of data transfer normally is slow. Broadband connections are still expensive, but it is very likely that in the near future people will use broadband connections due to some technical advantages like Wireless LAN which can provide a relatively cheap infrastructure and can be build up very fast especially in urban areas and cities. Most of the governments of the countries in Central Asia have recognized the importance of the Internet as a tool of economic competition in the context of the globalisation as well as a tool of social and political advances. Therefore, on the governmental agendas connecting schools, colleges, and universities to the Internet and hence building up a local informational space is an important task.

In contrast to the governmental attitudes, which are characterized by control, concerning traditional mass media, the governmental way of behaving to the Internet lacks that strictness of control - one even could say that there is a kind of liberalism concern-ing the Internet at least in some countries of Central Asia. In those countries there are no limitations to the free flow of information which in the future could open the door for social and political advances and democratization of the societies in Central Asia.

Conclusion

As a conclusion it can be said that the Internet has great perspectives in Central Asia. It becomes more and more supported by people and authorities. Internet could make life of the people easier and it can help to solve political and economic problems efficiently and much faster than without it. However, the Internet is just a tool - it needs people to use it.

BASIC PRINCIPLES OF ENVIRONMENTAL ADVERTISING

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Environmental advertising allows reach consumers where an enterprise can make a direct impact on brand preference. All environmental advertising consistent with environmental regulations and mandatory programmes and should conform to

the principles of fair competition, as generally accepted in business. No advertisements or claims should be such as to impair public confidence in the efforts made by the business community to improve its ecological performance.

1. *Honesty*- advertisements should be so framed as not to abuse consumers' concern for the environment, or exploit their lack of environmental knowledge.

2. *Environmental behaviour*- advertisements should not appear to approve or encourage actions which contravene the law, self-regulating codes or generally accepted standards of environmentally responsible behaviour.

3. *Truthful presentation*- advertisements should not contain any statement or presentation likely to mislead consumers in any way about the environmental aspects or advantages of products, or about the actions being taken by the advertiser in favour of the environment. Expressions such as "environmentally friendly" or "ecologically safe" implying that a product or activity has no impact - or only a positive impact - on the environment should not be used unless a very high standard of proof is available.

4. *Scientific research* - advertisements should only use technical demonstrations or scientific findings about environmental impact, when backed by serious scientific work. Environmental or scientific terminology is acceptable provided it is relevant and used in a way that can be understood by consumers.

5. *Testimonials* - in view of the rapid developments in environmental science and technology, particular care should be taken to ensure that, when testimonials or endorsements are used to support an environmental claim in an advertisement, changes in product formulation or market circumstances have not made the testimonial out of date.

6. *Superiority*- environmental superiority over competitors can only be claimed when a significant advantage can be demonstrated. Claims in relation to competitive products, when based on the absence of a harmful ingredient or a damaging effect, are only acceptable when other products in the category do include the ingredient or cause the effect.

7. *Product ingredients and elements* - environmental claims should not imply that they relate to more stages of a product-life cycle, or to more properties of a product, than justified and should where necessary clearly indicate to which stage or which property they refer. When advertisements refer to the reduction of ingredients or elements having a negative environmental impact, it must be clear what has been reduced.

8. *Signs and symbols* - environmental signs or symbols should only be used in an advertisement when the source of these signs or symbols is clearly indicated, and there is no confusion over the meaning. Such signs and symbols should not falsely suggest official approval.

Some of the assumptions about environmental advertising claims are:

8.1 *Recycled* - product should not be labeled recycled unless it is made of materials that were "diverted from the solid waste stream for use as raw materials in the manufacture or assembly of a new product or package." But this term has been

widely abused. Some products labeled as recycled are made from reconditioned or reused parts or are made from industrial scraps that would normally be reused anyway. Some products that contain only 10 percent waste material and 90 percent virgin material will claim to be recycled.

8.2 *Ozone friendly* - some products that may not contain any ozone-destroying chemicals may contain volatile organic compounds that, when released into the atmosphere, can cause photochemical smog.

8.3 *Biodegradable* - probably no term has been as abused as this one. To decompose, most materials must be in contact with the elements - sunlight, air, wind and water. Since most plastic trash bags are disposed of in a landfill, cut off from the elements, this claim is quite deceptive

8.4 *Phosphate free* - phosphates are organic compounds that create problems when they reach bodies of water. Many cleaners that declare themselves to be phosphate-free still contain other harmful chemicals.

8.5 *Organic* - organic farmers are allowed to use a genetically altered bacteria on their crops to control insects.

8.6 *Fat-free* - some products contain Olestra, a new no-fat cooking oil. Olestra may cause abdominal cramping and loose stools. Olestra inhibits absorption of some vitamins and other nutrients. Vitamins A, D, E and K have been added

8.6 *Non-toxic* - the most environmentally sensitive cleaner made by a very reputable company, still carries the warning, "Caution: eye irritant, harmful if swallowed, keep out of reach of children, contact a physician immediately."

8.7 *Cruelty free* - the finished product itself may not have been tested on animals, but without doing some research, you really don't know if all the components of the product were also made without animal testing.

9. *Waste collection recycling and disposal*- environmental claims referring to waste separation, collection, processing or disposal are acceptable provided that the recommended method of collection, processing or disposal is generally accepted or sufficiently available, or the extent of availability is accurately described.

10. *Substantiation* - descriptions, claims or illustrations relating to verifiable facts should be capable of substantiation. Advertisers should have such substantiation available so that they can produce evidence without delay to the self-regulatory bodies.

Environmental advertising can create unique opportunities to maximize messages and sponsorships. Advertising creates branded entertainment and environmental designs that attract customers and leave a positive message.

THE GOVERNANCE OF COASTAL REGIONS IN TURKEY AND LOCAL ENVIRONMENT COUNCILS

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Coasts as a source of numerous economic and social benefits for people with their characteristics and coastal eco-system are under great pressure due to population increase, industrialization, urbanization, and tourism activities of our day. While this pressure is causing the spoilage of coastal eco-system, coasts themselves are the biggest mean of water and sea pollution. That is why, both in the world and in Turkey, it is utmost important to protect the natural structure of the coastline and it's eco-system, and to use those areas without causing sea and water pollution. It's also obligatory to protect the coastline in the direction of sustainable development idea

The most important problem encountered in coastal regions governance today, generally in Turkey and especially in Muğla, is the overlapping authority of too many public institutions and organizations. Consequently, there exists a coordination problem in coastal governance. There are coastline related clauses in many laws, by-laws and regulations in Turkey.

Consequently, it is obvious that organizational processes ascribe authority and responsibility to various public bodies. This concept obstructs the integrated work and make difficult to coordinate the activities aiming the common objectives of all institutions, on the other hand. With this reason, inappropriate structuring, sea and water pollution, destruction of naturel eco-system in coastal region come forward as results which are opposite to the idea of sustainability.

Coordination problem is more obvious at the provincial level, because the executive units of public authorities that are responsible of coastal regions and their hinterland structuring are embodied within the provincial structure. Among those activities run at the provincial level, it is known that environmental protection and development concept is covered by the objection field of more than one public authority. In this respect, a body called "Local Environment Council" was structured under the chairmanship of governors in provinces to synchronize the provincial level environmental activities.

Local Environment Council were first founded in Turkey in accordance with the law -2872 approved in 1983. The most senior public authority (governor) chairs these provincial level councils and decides the provincial objection fields for the council, while high level officials are implementing those decisions. In addition, related professional chambers and local managers are included in the council structure. The council's activities are also open to non governmental organizations (NGO) and it's possible to invite other public officials when needed by the council. In this way, the structure of Local Environment Council and its responsibilities give opportunity to all kind of activities at provincial level to be run effectively and simultaneously. On the other hand this structure forms a base for "Governance" implementation which is on the recent agenda of Local Environment Council.

It is possible for all parts (Private Environment Group, Municipality, harbour management, Coastguard, non governmental organizations etc.) to convene, produce joint decisions and form an implementation plan for those decisions, under the

umbrella of this council. In this way, decisions about coastal regions can be taken and implemented by the related authorities in coordination.

ECOLOGICAL RATINGS AND ITS ROLE IN ENTREPRENEURSHIP'S EVOLUTION

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Ecological ratings is a list of firms, companies and enterprises, ranked by ecological danger, measures of impact on the nature and nature-conservative measures, which it provides in its activity.

When we speak about determining a role of ecological ratings we should note purposes of these ratings. They are:

- status augment of environmentally responsible enterprises;
- increasing of common ecological markets sensitiveness;
- attract attention to leaders and stimulation outsiders;
- forming ecological consumers' behavior.

Participation firms and companies in ecological ratings, openness in these ratings, giving an information for demonstration environmental goodnature in different aspects, all these are graphic evidence of focusing firm's attention on environmental direction in its activity.

It is necessary to know that the way of information people about environmental activities of enterprise by ecological ratings and independent expert examination is very useful, effective and more favorable then direct report to community about social-ecological programs of companies.

Forming and plantation these ratings is a one way of public relation in such questions as ecological and social consequence of production.

To building ecological ratings and use them we need to do:

- determine principle of selection and structure necessary economic indexes;
- choose or create independent agency, which is able to compare companies;
- organize collection of information, data handling and analyze received results;
- publish received ratings and antirations.

We should notice that in role of rating agency can be government institutes, nongovernmental ecological organizations insurance companies and mass communication media.

It is important to define aspects of ecological ratings. Breadth of estimation vectors of ecological successfulness enterprise development is very varied. We can mark following:

- resources costs (land, water, energy, labour and other);
- pollution grade (air, water, hard and toxic waste);

- tendency of these parameters;
- ratio of production and nature-conservative costs;
- staff ecological training;
- presence of environmental policy and system of environmental management;
- fullness of ecological accounting.

Thus, in that way efficient implantation ecological rations in enterprises will have a great importance in decision making process of business as in internal as in international structures evolution of partner relationship. And the state will defend ideas of use environmental clean way in public relation for any companies and enterprise. Exactly this is one of the main indication of sustainable development and base for business and community evolution in future.

INFORMATIONAL PSYCHOLOGICAL WAR

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Informational psychological war it's the way of control of informational space with the purpose of influence to all fields of social, economical and political relations.

Informational psychological war allows influencing on the objective contrasts of social and state systems on almost all the levels of any country or region. The purpose of this influence is to achieve the planned level of intensity of this contrasts in the necessary direction.

The basis of informational psychological war is the same complex of hidden informational psychological influences on the social communication, that is used in the any other field of social life. This complex is natural stage of evolution of the social conflict, relations in the civilized society when it enters the new informational stage of development. The society entered the new status but didn't develop the mechanism to control new models and new kinds of relations in the society.

The problematic field of informational war concerning the next points:

- The political and social aims acquire to use the methods of informational war;
- Objective necessity to control and to limit methods of psychological influence on the wide social mass;
- The informational conflict can't be liquidated, it can be only decreased on the level of its source;
- The mechanisms of control and management of the apparatus of informational war must be created and functioning on the governmental level.

In the status of forming of the information society informational psychological tools of influence are the most useful and effective in the outer and inner policy, social struggle. The unique possibilities of the hidden management of the social and political spheres, to control and to use the opponents for your own purpose are the main benefits, given by the informational psychological war. Those opportunities are the aims of any political or social active group.

In the informational society informational psychological war is a part of the political system and special field of action. By its nature it is a political conflict. It appears when the interests of some social or political groups contradicting to each other. The target of those groups – to achieve maximum sphere of influence and to get political control on the level of informational perception.

The components of the apparatus of the informational war are the complex of methods of influence on the consciousness and perception of the individual personality and its social group. The key moment of its influence is the mass media. Every media channel has its own peculiarities, connected with its technological moments, level of its accessibility and spread.

Depending of the media channel, ways of influence changing their intensity and some times even the idea of the hidden informational message. It is caused by the nature of the channel and the fact, that different social layers and focus groups under the informational attack are using and accepting different mediachannels, better then others. Even the receptivity of the person depends on its social status, education, occupation etc.

Informational weapon is the most powerful and effective kind of weapon. It causes no material damage, but its influence of the social life is immeasurable. Methods of the informational war acting are used almost in every field of social life.

The main aspect of informational attack is the scale of influence. Wider social area, that must be covered, causes the higher level of expenditures of material, financial and human capital that must be spend on this influence. It is the first direct dependence, characterizing the correlation between the expectation of the effect from the informational attack.

The second peculiarity of the informational war act considering the nature of the information itself. Information is unlimited resource, its copying doesn't affect the loses or changes of its structure. From this point we make the conclusion that one informational source can make the multiplying effect on the group of individual persons. The multiplying effect as high, as fast the communication speed in every social group, that is under the informational attack. From this point of view the correlation between the level of expenditures on the informational influence and its effect is reverse.

The control system of actions and protection from the informational influence of the outer source must be created on the level of the governmental institutions. The system of informational protection of the society must include next parts:

1. Subsystem of control of the informational war as a social phenomenon;

2. Subsystem of control of the informational psychological conflict as a political conflict;
3. Subsystem of control of the informational war as a psychological conflict;
4. Subsystem of resistance and neutralization of the informational conflict;
5. Subsystem of informational acting and informational weaponry.

REGION ENVIRONMENTAL ANALYSIS: REVIEW OF WORLD BANK'S WORK IN THE EUROPE AND CENTRAL ASIA REGION

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The Europe and Central Asia (ECA) region is rich in natural resources, accounting for 24% of the world's forest area, 12% of its renewable water resources, and 20% of its arable land, with a rich variety of ecosystems. Environmental situation in ECA region was caused by many reasons. But mostly it reflects the attributes of the Soviet era, rapid political transition and associated economic disruptions that followed. To 1990s, people enjoyed generally good (often highly subsidized) access to water, heat, housing, and health services. At the same time, the region experienced rapid industrialization based on highly polluting technologies. The collapse of state systems left most ECA countries with a deteriorating stock of energy, housing, and water supply infrastructure, and with a widespread legacy of polluted soil and water. With economic recovery ongoing over much of the region, the challenge for ECA countries now is to restore the quality of life for their citizens and to become competitive in the international marketplace. Key elements include:

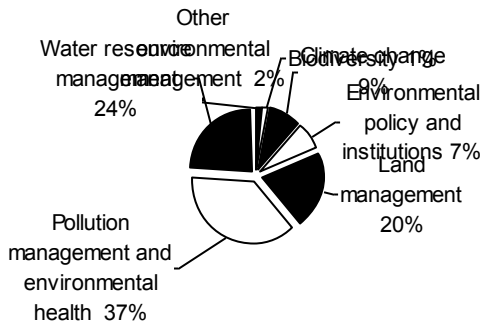
- Restoring utilities and services with due regard to quality, efficiency, affordability, and sustainability.
- Cleaning up "legacy" pollution.
- Incorporating modern environmental and health standards in industrial and agricultural sectors to meet new internal and external market demands for safety and hygiene.
- Environmental management must also be addressed within the context of important ongoing changes in institutional structures and responsibilities, including privatization of state-owned enterprises and a growing emphasis on cost recovery for basic services.

The World Bank is assisting ECA client countries in all these areas through direct investment and through financial and technical assistance for policy and institutional reform.

Governments are making the restoration of environmental and other basic services a high priority, both in response to domestic demand and to facilitate tourism development, which is seen as an important area for future economic

growth in many ECA countries. This is reflected in World Bank assistance in the ECA Region, which includes many projects for water supply, wastewater, and solid waste management.

The ECA Regional Environment Portfolio



Percentages based on commitment amounts.

At the end of June 2005 the active portfolio of World Bank environmental lending in the ECA Region was \$1,8 billion.

Responsibility for the pollution legacy from past state-run industry and mining operations- including toxic waste dumps, contaminated land and water, and orphaned hazardous waste sites- usually remains with the governments in the region. Where enterprises cannot be privatized, but closure is unacceptable because of potential economic and employment impacts, the challenge is to balance economic realities with the need to reduce adverse environmental and health impacts. The World Bank is assisting with direct investment and with financial and technical assistance for cleanup operations, replacement of obsolete technologies, and improved regulation, monitoring, and compliance. Projects aimed at reducing pollution in ongoing industrial activities include the Russian Federation Environmental Management Project and the proposed Ukraine Aligning Industrial Development with European Environmental Standards Project.

Important environmental health issues in the agriculture sector include excess nitrates and other nutrients and agrochemicals discharged to surface and groundwater (including threats to international water bodies such as the Danube river, Black Sea, Adriatic Sea, and Caspian Sea), and the need to meet international standards for food safety in order to access new markets. Bank-financed projects in this sector include improving agricultural practices to reduce agrochemical runoff from fields and to reduce residues in meat and produce, and improving waste management at animal rearing facilities, slaughterhouses, and other agroprocessing

enterprises. Examples include the Romania Agricultural Pollution Control, Ukraine Agricultural Competitiveness and Food Safety, and Romania and Croatia Agricultural Acquis Support Projects.

So, the World Bank's strategy for the ECA region includes four broad and interrelated pillars: supporting environmentally responsible growth and poverty reduction; addressing vulnerability to natural disasters; enhancing sound environmental governance; and protecting global public goods.

THE IMPORTANCE OF SUSTAINABLE TOURISM FOR ECOLOGY

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The legal basis for the development of tourism in Ukraine is set forth within the law, On tourism, in which it is stated, that "tourism is a temporary departure of a person from the place of his permanent residence with health-improving, educational or professional purposes".

The primary focus for ecological tourism in Ukraine is on recreational activity; however it is limited by the need to meet environmental protection demands. The legislative pre-conditions for ecotourism organization are stated in the laws, on the natural reserve fund of Ukraine (1992) and on tourism (1995).

The main tasks, which are necessary for the development of an ecotourism industry, are:

- Restructuring of the existing recreational, sanitary and tourist fund according to social needs of the
- Population and market economy conditions;
- Construction of new establishments, which answer world standards, for the development of the national tourism system and integration into international tourist structures;
- Provision of vacation conditions of socially sensitive categories of the population, especially those, who were exposed to radiation from the Chernobyl accident;
- Creation of legislative conditions for the development of ecotourism, which will promote the rational use and protection of landscape resources.

The prognosis for tourism, recreation, health- resort system development determines the main directions of solving the above mentioned problems during three stages: I stage (2001-2006)- the growth of the given branch fund is projected to be 1.2 times; II stage (2006-2016) - 1,5.2 times; III stage (2016-2026)- 2,1.3 times. These are the periods of implementing investment programs, modernization to the world standard levels of the existing tourism infrastructure and ecotourism development - internationally acclaimed phenomenon of the XXI century.

The priority directions of ecotourism development in Ukraine are:

-Normative-legal provisions in this sphere, in particular, concerning the preservation and use of biodiversity, ecological entrepreneurship, international ecotourism activity;

- Improvement of ecotourism territorial organization on the basis of international ecological existence of landscape complexes and quality assessment;

- Solving the questions of financial and tax priorities concerning the use and protection of natural reserve areas, which fulfill ecotourism functions;

- Norm development of ecological nature use, economical mechanisms of balanced ecotourism development, models of integrated management in the conditions of departmental management of ecotourism objects

- Creation and implementation of ecotourism development projects, broadening through mass media of ecotourism organization advantages.

The area of potential recreational territories in Ukraine comprises 12,8% of the country's area and is divided accordingly to the natural peculiarities of the regions.

The health-improving resources are unique, since more than 500 mineral water and clay deposits have been found. Beaches comprise 47% of the seashore territory of the Black Sea and Azov Sea. This natural potential needs to be protected, reserved and rationally used because it forms the basis of sustainable development of health-resorts, recreational zones, and tourism.

Ecological tourism in Ukraine has developed within the territory of the natural reserve, in the boundaries of which people can take long-term or short-term vacations, acquaint with the flora and fauna. To the categories of the national reserve fund of Ukraine, where ecological tourism can be developed, belong: national natural parks (Carpathian, Shatsky, Sinevirsky, Azov-Sivashsky and others), regional landscape parks (Dnister Canyon, Kinburn Split, Dikansky and others), and biosphere reserves (Carpathian, Askaniya Nova, Black Sea, Danube).

International cooperation will play an important role in the development of ecotourism and problem solving in Ukraine. This cooperation is carried out in different programs in the regions of the Carpathians, the Black and Azov Sea shores, with assistance of the UN, the World Bank and other international organizations. The further activation of this cooperation and the development of external economic activity with a unique natural-cultural potential are designed to play a significant role in the international tourism system.

GREEN TOURISM AS A NEW WAY OF REDUCING ECONOMICAL RISKS IN AGRICULTURE

Oleg Boychenko

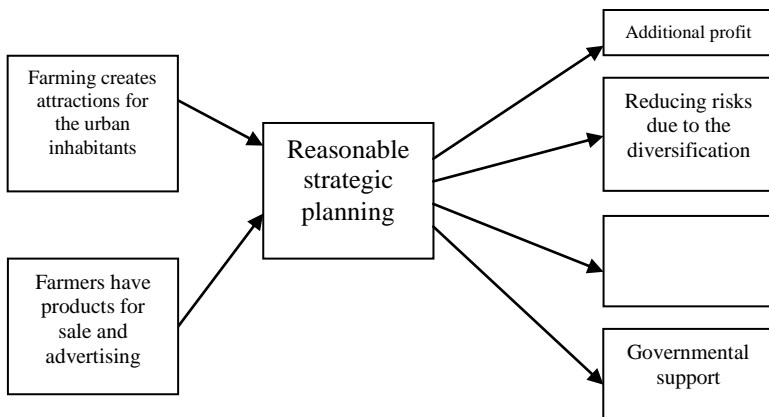
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Tourism is now one of the most quickly developing branches of the economy with the growth rate of the turnover of the tourist agencies of about 40% per year in

average in 2001-2004. At the same time possibilities of building new hotels and recreations are very much limited by the geographical areas of Crimea and Carpathians and this causes additional pressure on the environment. That's why decentralization of tourism could become a governmental priority in this sphere.

We also need to increase the profitability of the agrarian production and this also gives a green light to the green tourism.

According to the legal definition green tourism is a rest with any purpose and different form of organization in rural territory including staying at a country house of a farmer. It is especially spread in the regions with some specific characteristics but can exist in any farm cottage in city suburb.



German experience in this sphere is especially useful for Ukraine while some orientation on the support of agriculture, and small and average scale farming is characteristic for both countries. Most German country resorts belong to the farms with more than 200 ha land and sustainable financial position. Big producers invest money in green tourism because they have possibilities to create proper landscapes for the visitors and see the opportunities of green tourism among which are:

- reducing risks due to the diversification of production;
- possibility to advertise other products;
- organize selling goods not only of their own but also of other local farmers;
- gain governmental support for reducing areas under crop (in EU).

Basic conditions which let farm get into green business and revenues which it can get afterwards could be summarized using the graph below.

So we could make a conclusion that green tourism is a very promising sphere of production already popular abroad which is anyway more likely to be developed within big farming companies who have good facilities for creating proper environment and plan to decrease agricultural risks due to diversification of production.

IMPROVEMENT OF STATE REGULATION IN BRANCH OF BEEKEEPING WITH THE PURPOSE OF REALIZATION OF ECOLOGICAL MONITORING

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Ukraine belongs to number of the states which have the advanced beekeeping. In branch of beekeeping receive such products, as honey, pollen, wax and others. These products are raw material for food, pharmaceutical and perfumery branches. However at transition of branch to market conditions of managing there were some negative tendencies. This reduction of quantity of bees, decrease of quality of products of beekeeping. The reason of these tendencies is the imperfection of state regulation in branch of beekeeping. Especially important there is a problem of maintenance of manufacture of ecologically clean products of beekeeping.

For this purpose it is necessary to bring in additions to the Law of Ukraine " About beekeeping " (№ 1492- III from February 22, 2000). These additions concern the following aspects: regulations of use of veterinary preparations, maintenance of qualitative fodder base, use of the advanced technologies, processing of products of beekeeping.

Besides it is necessary to make changes to the given law which the opportunities of use of bees for realization of ecological monitoring concern. The essential seasonal tax of flower pollen (about 25 kg) and honey (about 100 kg), allows quickly to receive necessary quantity of tests and to estimate a status of an environment as locally and on the large areas. Except for flower pollen and honey as tests it is possible to take and other products of beekeeping - propolis, wax and others.

These additions meet the requirements the Law of Ukraine " About protection of an environment ", in which is spoken, for maintenance of the tax, processing, preservation and analysis of the information about a status of an environment, in Ukraine the system of state monitoring of an environment is created. Thus the state bodies together with scientific establishments provide organization of forecasting of change of an environment.

The entering of the specified additions responds also requirements of the Law of Ukraine "About ecological examination" (from February 9, 1995 № 45/95. with changes). In the whole entering specified of changes in the law " About beekeeping " will allow on the one hand to receive ecologically clean products of beekeeping, and on the other hand to carry out ecological monitoring of an environment. This method of realization of ecological monitoring not by a road also can be applied in different conditions of pollution of an environment.

IT IS WE WHO SHOULD CARE!

Andrew Buznya

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We are living in a world of increasing demand, stress and pressure for individuals to perform to higher levels and reach optimum goals in our modern society. World events including terrorism, war and poverty put extra demands on people's day-to-day living, and in terms on ecological problems.

The important question is to be asked: "Does living within the ruined nature and high- technologies equal health and wellness?" Neglecting this simple fact means neglecting yourself on the way to health.

Many people try to figure out what they do wrong in their lifestyles or what else is the reason why they live in the world of diseases and illnesses. In most cases, they do not necessary do something wrong. Simply, one great planetary drawback is not valuing our nature resources and a strong belief in the enormous power of high - technologies. But the one can never understand that due to these we see the global changes and how they terribly affect not just one or two particular individuals, but all of us. And this is just the beginning!

In such cases, I believe that the best course of action is to step back and to look objectively at the global situation, rather than shutting your eyes and keep on pretending everything is fine. When a situation like this arises, people also tend to try to find so-called "quick fixes", temporary solutions, which handle the situation in short term, and which then have negative effect in long term.

More to it, I would like to point out that every 2,000 years or so, the planetary influences on Earth change dramatically in order to reflect the new evolutionary impulses. All souls, who happen to be incarnated in human bodies at the turn of the 20th and the 21st century, have the unique opportunity to experience the global changes as regards the warning of the modern age.

This global planetary change can induce a lot of apprehension and fear if these exporting harm processes are not understood properly and in time.

We have thousands of high-quality term papers, research works, essays, book reports and dissertations on many, many ecological topics. But who cares?

Huge quantities of hazardous emissions are being exported to our Mother-Land where they are processed in operations that are extremely harmful to human health and which cause the titanic ecological damages.

While it is well known that the high-tech revolution has radically transformed late 20th century civilization, it is less well-known that high-tech development also harms people's health as well as the ecological environment that sustains all life.

The dark side of high technology reveals polluted drinking water, waste discharges that harm fish and wildlife, high rates of miscarriages, inborn defects, cancer clusters among people, and many other unpleasant things.

In conclusion, I would like to say that since we are living on the edge we should be aware of the global changes that are happening. In particular, one great change this age gave a human being is a choice. We can now choose either to make a career and participate equally in the social and economic life of the modern society, or to dedicate more time to the improvement of the environment.

In previous centuries people didn't need this choice and were required to live by default. However, embarking on a new decade does not mean that we have to forget all the ancient wisdom and start from scratch. Quite the opposite, we should learn the ancient wisdom and incorporate it into the new conditions of our times. Only by understanding how the things were created in the first place, can we gain insights into why certain trends are emerging at present.

With regards to the World development, it is impossible to understand the concerns of others until we look into the very sources of creation. The Bible for example, can lead us to significant insights in this relation, of course if we know how to interpret it properly. For, we have to learn how to manage the knowledge we've gained and transform our dealing with the high - tech development by using it to bring about health and wellness, and to put the end to an illness of any kind.

The huge ecological hazard is hanging, so shall we be through with this? The answer is up to You but first think if You can find the answer to what we really are: the homo sapience or a simple animal that doesn't make the difference of "give" and "take"...

USING NATURAL DYES IN UKRAINIAN LIZHNYCK'S TEXTILE CRAFTS: ECOLOGICAL ASPECT

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There are some unic textile crafts in Ukraine. One of the famous of them is the Carpathian lizhnyck's craftcentre. A lizhnyck is a handmade carpet weaved from woolen yarn, specially kneaded and carded, decorated in traditional mays. But there are many problems appeared in this craftcentre during last 20 years: political, economical, ecological and technological. Among the ecological and technological problems the main are using synthetic dyestaffs for dyeing wool, and as a result, it courses decreasing of quality level of produced lyzhnycks, pollution of environment etc. Also is a problem to preserve this textile craft with ethnical peculiarity and ecological safty for environment, becource using of synthetic dyes coursed deterioration of colouristic design of lizhnycks and pollution of springs and rivers of this region by toxic deviation of dyeing process.

That's why in 1998 in Javoriv village Ivano Frankivska region started long-term project, named "Ecologacal perspective", the main aim of which was to revive traditional producing of lizhnycks, including 100% acceptable in ecological term,

on the basis of that traditions. Such traditional textile, like lizhnycks, should be made of ecological wool and, preferably, be hand-woven fabrics that have been dyed with natural dyestuffs taking into account ecological requirement. Also using of synthetic dyestuffs coursed, that traditional ethnic decoration of lizhnycks became to lose.

During eight years the planaries had been held in Javoriv (within project “Ecological perspective”), many professional artists and craftsmen had taken part in this project. The scientists, among them the author, conducted researches of properties of natural dyes, suggested by them for dyeing wool, which had been used for making lizhnycks. But the safty of fabrics and yarn, dyed with natural dyes, during dyeing process heavy metals are used like mordants, isn’t confirmed in many cases and must be researched. Many of natural dyes, being used abroad are tested on ecological safety and as dyeing process such dyed textile materials correspond to all ecological demands and to be concidered ecofriendly. In Ukraine many natural dyes and methods of dyeing must be tested on their’s ecosafety. Some of them are confirm to ecological standards. The natural dyes, proposed for dyeing lizhnyck’s wool were mainly extracts from plants: *Allium Cepa*, *Chamaenerium angustifolium*, *Rumex confertus*, *Frangula alnus* and many other. But the main aim of pleneries was to use plants, widespread in the Carpathian region, which have high expluatation characteristics and to elaborate ecofriendly technologies of dyeing with natural dyes.

Many of plant dyes and methods, proposed for dyeing wool during long-term project “Ecological perspective”, allowed to receive coloured wool and lizhnycks, which confirm to ecological standard ECO-TEX-100 (the safty of textile material) and use ecological friendly technologies of wool dyeing. Was also estimated stability of colours of many textile materials, dyed with plant dyes. Almost all of them have hight light resistance, resistance to dry cleaning, heat stability etc. Many of researched dyes were reccomended for dyeing textile materials, especially wool for lizhnycks making.

That’s why during “Ecological perspective” were held master-classes of dyeing with natural dyes. The scientists and professors taught the participants of planairies and craftsmen of wool dyeing methods.

The main results of long-term work of reviving dyeing with natural dyes in Javoriv during “Ecological perspective” are:

- Reviving using of natural dyes in lizhnycks textile craft in Javoriv region;
- Using for colouring wool plant dyes widespread in this region of Carpathian mountings, which have good exploitational propeties;
- Proposed methods of dyeing of lizhnyck’s wool with natural dyes allowed to decrease pollution of environment;
- Liznycks, had been made from wool coloured with natural dyes, had better design, the assortment of this products became much more various as in was some years before;

- Lizhnycks, coloured with natural dyes much more correspond to traditional decoratin of this products of textile craft then synthetic ones;
- Colours, received by natural dyes on textile materils are “soft”, “not aggressive” and make the man in harmony with the elements of interier, clothes etc.
- Using dyeing of textile with natural dyes like element of merketing strategy for promotion of product of lizhnyck’s textile craft.

The introduction of dyeing technologies with natural dyes in practice of craftsmen and professional artists is an example of effective strategy reviving and preserving national textile crafts according to ecological policy of state.

TOURISM SUSTAINABLE DEVELOPMENT AND ECOTOURISM

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The goal of sustainable development is to meet the needs of today's generations without gepardising possibilities of future generations to meet their needs. World Tourism Organization defines tourism sustainable development as «tourism that leads to resource management in such a way that economical, social and estetical needs are fulfilled with sustaining cultural integrity, valuable ecological processes and biological diversity and improvement of life quality». According to WTO, «tourism sustainable development involves improvment of local communitie's life condition, but also providing high-quality tourist product, as well as protection of resourses that are being consumed by tourism system». Three main principles of tourism sustainable development are:

6. Ecological sustainability, meaning development of tourism on destinations that sustains valuable ecological processes, biological diversity and biological resources;

7. Social and cultural sustainability, meaning development of tourism that increases local communitie's control of their enviroment and that's compitabile with their cultural identity

8. Economical sustainability, meaning development of tourism that is economicly efficient and provides resource management that will be of use to future generations

Blueprint for meeting these principles is Agenda 21, a document signed by 182 countries on Earth Summit in Rio in 1992. After this document was addopted, World Travel and Tourism Council, World Tourism Organization and Earth Council addopted Agenda 21 for tourism industry in 1995. Agenda 21 for travel and tourism industry defines the following 12 principles for tourism sustainable development:

1. Travel and tourism industry helps people to live a healthy and productive life in harmony with nature

2. Tourism should be involved in conservation, protection and restoration of world ecosystem
3. Travel and tourism industry should be based on sustainable forms of productivity and waste
4. Nations should cooperate in promoting free economy system in which travel and tourism industry operates in sustainable ways
5. Protectionism in travel and tourism industry should be stopped and reversed
6. Tourism, peace and environment protection depend on each other
7. In order to accomplish sustainable development, environment protection should be consisted as integral part of tourism development
8. Tourism development should be managed in a way to involve local population, where planning decisions should be agreed on local level
9. Nations should warn each other on threats that can effect tourists or tourist areas
10. Since employment of women is necessary, to achieve sustainable development, women employment must be possible
11. Tourism development should recognize and support identity, culture and interes of local community
12. International environmental laws should be supported by travel and tourism industry

There are many positive tendentions in tourism development, and two of them, most important for the environment, are:

1. Tourists have more ecological consence
2. Discovering ecotourism as low-cost produce development

There are various deffinitions of ecotourism. International Ecotourism Society gave one of the firts deffinitions of ecotourism in 1991: «Ecotourism is responsible trip to natural surrounding wich saves the environment and keeps the pleasure of local community. In 1996, World Conversation Union defines ecotourism as trip which is responsible towards the environment and visit to relatively untouched parts of nature to enjoy it, as well as all complementary cultural objects from the past and present and promotes sustainability, which visitors have a low impact on it and provides useful and active social and economical involvement.

So, ecotourism is consisted of rural and cultural tourism elements. Tourists interested in ecotourism are usually more educated than average tourist. They are interesting in learning about flora and fauna in a non-polluted area, and in life of the local community that's living it that area at the same time. Their interests can be meet by integratong of activity of ecotourism subjects and cultural heritage tourism, forming a tourism product that could provide an overview of local tradition, art and local folklore, as well as natural surrounding. Tourists visiting national parks and forests have various possibilities for «tourist experiance». Many of worlds national parks have rivers and lakes, which provides an oportunity to

form different tourist offers that include rafting, swimming, boat rides, fishing and birdwatching.

National parks in many countries attract a lot of visitors. In USA, every year, 285 million tourists visit national parks, and 340 million tourists visit national forests, which is a significant contribution to economical development of USA. There are over 300 000 employees whose profession is connected with tourism industry in national parks, and profit from tourism industry in these areas are over 14 billion dollars every year.

THE USE OF ICTs FOR BUILDING INNOVATIVE KNOWLEDGE SOCIETIES

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Lifelong Learning

The training provided at formal institutions of higher education in developing countries is becoming less relevant to the requirements of emerging knowledge societies. As policymakers and other stakeholders develop new, more flexible approaches to training, it is important to assess the benefits of ICTs and to introduce them in ways that help countries achieve their unique development objectives. Ardent supporters of the ICT revolution insist that electronic conferences, small discussion groups around computers, and surfing on the Internet will prepare students for the knowledge societies of the future. In their view, scientific and corporate teams in many different parts of the world will be addressing most problems. Students will prepare papers collectively and log on to networks to confer with others in foreign countries. Others caution that the most basic applications of ICTs, including conventional television and radio broadcasts, will continue to play an important role in ICT-assisted learning. They also point to the very real scarcity of funding to support initiatives to incorporate ICTs into mass education. Nevertheless, the range of ICT applications in the education sector is substantial, and many have relevance to the needs of developing countries. Computer-aided instruction is used in a growing number of public- and private-sector training programs to support self-learning, not only in the classroom but also at a distance from the formal classroom.

Tools for Building Information Society

ICTs can be used to help overcome teacher shortages, and they are used to develop and upgrade teaching skills. The evidence suggests that electronic communication between teachers can enhance the benefits of these applications, enabling teachers to exchange experiences and teaching materials. ICTs and network access can be used to create repositories of study materials to be accessed, transmitted, and reproduced at low costs if the appropriate facilities are in place.

The main danger is that ICTs will be incorporated into inflexible education programs and that available resources will support training for already-advantaged people in developing countries. The challenge for an ICT strategy is to ensure that resources are also available to support lifelong learning opportunities for marginalized people.

ICTs offer a variety of tools to strengthen the social and technological capabilities in developing countries and build innovative knowledge societies. Both types of capabilities accumulate through formal and informal learning, and these capabilities can be combined in ways to facilitate knowledge-based development.

These capabilities are essential if digital information is to be transformed into useful knowledge for development. This is the case on the shop floor, in schools, in agriculture, in health, in nonprofit community organizations, in commercial settings, and in government initiatives to protect the environment. To make this transformation, developing countries will need to invest in generic and specialized education and training, including selected areas of ICT-related Research and Development. Even if these technologies are available off the shelf, little can be accomplished unless the capabilities are in place to use the tools effectively.

Investment in ICTs may compete with other claims on scarce resources needed to address development priorities. Sometimes there is a reluctance to invest in building capabilities for effective ICT use until other pressing problems have been alleviated. However, although the evidence from experience in developing countries is still limited, it suggests that creating strategies that support the use of ICTs as an enabler of development is a worthwhile endeavour.

The potential benefits of investment in ICTs and related capabilities are unlikely to become available if this investment is not coordinated with strategies for investment in development in high-priority sectors. Policymakers operate in a world in which established practices and urgent development problems constrain their capacity for action. Private-sector investors, quite appropriately, seek a reasonable return on their investment. Coordinated ICT investment strategies can produce economic returns and social benefits.

Constructing the Infrastructure

Many of the most beneficial applications of ICTs for social and economic development do not require a highly sophisticated telecommunication infrastructure. ICTs can be used with stand-alone computers, televisions, and radios. They can be embedded in devices to automate manufacturing processes and to control and monitor natural-resource extraction and environmental pollution. As knowledge-based development becomes a more important aspect of the global economic and social order, advanced communication networks will become more central to the acquisition and exchange of information. If developing countries have no communication infrastructure or it is unreliable, limited in capacity, or simply too expensive to use, they will be unable to exploit the new opportunities these networks provide.

Constructing an ICT infrastructure tailored to the particular needs of a developing country is a major task. This infrastructure includes the communication network, but it may also include computer hardware and software, as well as information content. The task is especially great for countries with low national incomes that need to invest large sums to extend and upgrade existing networks. Developing countries can no longer expect to base their development on the comparative advantage of low labour costs. Development will increasingly depend on excellence in the use of knowledge. Without the appropriate communication infrastructure, ICTs might accentuate, rather than ameliorate, existing disparities in income, wealth, and opportunity.

CONFLICT AS A DRIVING FORCE OF DEVELOPMENT

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If we look at the history of the mankind's development it will be impossible to notice that great number of contradictions, which accompanied and accompanies this development. From the very beginning of the life there appeared an eternal conflict between life and death, between trying of organism to survive and possibility of survival. All the biological essences carried on genetic level the main purpose – to survive. But simultaneously this genetic code carries cardinally opposite information about death.

Then is it possible to speak, once in mechanism of existence there is such conflict, that it is not something negative, but on the contrary it moves our development. Is it possible to claim that death supplies life, saving only the best samples of life, that it is a stimulus of the efficient development? Exactly efficient development because without increasing of efficiency of vital activity it will be not preserved and multiplied the chain of the generations, what is trying to do every living creature. The role of the specified contradiction is obvious. The death, which is opposite to life, measures the time period, in which every living essence must in a most effective way and with minimum costs to realize its life plan.

The presentiment that the motion will stop leads to acceleration of the life processes, to complication of the interconnections, making the more complex biological systems and systems of the interaction "living nature - lifeless nature".

Contradiction is a certain gap between actual condition of the system and its desired condition.

In economy there is the same rule. Economical systems (enterprises for example) are trying to survive in competition with other systems. This competition, this conflict in general case leads to theirs complication and development.

BUSINESS ETHICS AS AN INSTRUMENT FOR THE DECISION-MAKING PROCESS

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Business ethics is one of key elements of corporate culture of Ukrainian organizations actively affecting processes of the competent including of Ukraine into the world system of labor division. But in applied researches, for example, on the personnel management, the specific of moral problems and decisions is not often reflected. So as a result business ethics is considered not as an instrument for a manager, but as a set of commandments. And a question is how to use them in concrete situations.

The substance of concept «business ethics» is associated with the certain form of conduct, based on the respect of interests both the firm and its partners, clients and society on the whole, no infliction the harm to them.

So, for example, in the code of businessman in many countries it is strictly forbidden to do damage by the methods unrelated to the competitive activity. The ethic standards are directed to the goods receiving by a maximal number of market participants and accordance of equal possibilities on access to the resources and management results.

The social contract and the social responsibility of firm are the basis of modern business ethics. The social contract is the informal agreement of firm and its external surroundings about the common conduct norms. Social responsibility of firm is understood both the maximal use of its advantages and leading to the minimum the negative affecting the business participants and society on the whole. It is the obligatory constituent of business ethics.

World level (hypernorms). It is the standards of higher level, based on common to all mankind values and fixed in «Principles of international business» — the world ethics code accepted in 1994 in Switzerland. Briefly are the following:

- social responsibility of business (public benefits and jobs creation, increasing of living standard);
- respect of law norms and providing of equal possibilities in competition;
- admission of ethics norms supremacy ;
- valid attitude toward an environment;
- refusal of illegal actions (bribery, white-washing, sale of weapon to the terrorists, narcotrade and other).

National norms (macrolevel). This the hypernorms and the ethics postulates realized in particular field or in the national codes of business ethics. The most important here are respect of private property and market competition, authenticity of information, absence of unfair discrimination at the labour market.

Corporate level (microlevel, in the case of single firm and its clients). This is the principles of trust and absence of discrimination both between suppliers and buyers, personnel and administration, managers and shareholders etc.

According to the principle of utilitarianism, action is considered morally justified, if it is the most useful to most number of persons. From a total benefit the volume of caused damage is subtracted. If harm outweighs, action (decision) is unethical. If all alternative actions cause one or another degree of harm, the «least evil» are chosen.

During administrative decisions making it is necessary to examine its economic, technological, political, social and ethic aspects. If all or most aspects are taken into consideration, decision is the most substantiated. A moral aspect is presented in many decisions related to the interests of other people or organizations, but the correct decision not always lies in area of ethics. Decisions are usually made, when its efficiency higher of the minimum acceptable level, and is rejected, if it below. For example, the economic decision is rejected, if profit norm on an investment will be below than the set value. As far as ethics is concerned decision unacceptable, if it creates the conflict of interests.

For business the leading role of economic ground of making decisions is natural. But it does not mean that ethics either yields unreservedly or hinderseconomic or other benefit. Managers frequently vainly arrogates the «antiprofitable» orientation to ethics and eliminate it from consideration. Such position is erroneous: at optimum decision making it is important, that the ethics strengthens the action of economic (or any other) factors or that other factors strengthen action of ethics. Ethics does not apply on the role of «judge», it is rather directed on the comprehensively substantiated decision making justified from all points of view.

For the effective use of ethics in the process of decision-making at least two conditions are needed: the high organizational culture and attention of managers to the ethics decisions.

In case of problem occurring it is important to define, in what sphere (economic, technological, political, social, ethics) desirable, minimum acceptable and undesirable decisions lie, to consider, whether it is possible to strengthen minimum acceptable grounds action.

The ethics factors of decision-making must gain high-quality development from confession of necessity of their account to the concrete methods and techniques of involving of ethic requirements into the standard process of business-decisions acceptance.

CONFLICTING APPROACHES TO ENVIRONMENTAL POLICY

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Like any other policy, an environmental policy has to compromise between different demands and expectations, many of them often conflicting with one another.

A policy is said to be expensive if it solves the problem it has supposed to. Effective policies are those which clean the air, restore lakes and save species from extinction, but doesn't take into account the costs required, some social problems.

Efficiency attempts to take into account both costs and effects. A policy is said to be efficient if its costs are justified in terms of its effects. But the idea of efficiency leaves aside the question of fairness, who will pay the costs.

Unlike effectiveness, efficiency, addresses of whether a policy is worthwhile.

A cost-effective policy achieves any given effect at the least possible costs.

Efficiency provides a theoretical criterion.

Making a policy equitable means to balance costs and benefits across all parties concerned by appropriately distributing benefits and/or letting beneficiaries pay an adequate share of costs.

There are three following principles:

1. With respect to the physical volume of inputs into the economy and its outputs: by consciously limiting the overall scale of resource use, shift technological progress from the current pattern of maximizing throughput to maximizing efficiency, understood as the ratio of economic effects achievable from a given throughput.

2. With respect to renewable resources: by exploiting these on a profit maximizing sustained yield basis prevent them from driving to extinction.

3. With respect to exhaustible resources: maintain the total stock of natural capital by depleting nonrenewable natural components at a rate corresponding to the creation of renewable substitutes.

Sustainability principles such as those mentioned above are very general, and do not give many practical clues on how to design environmental policies. Increasingly, however, more specific recommendations are being formulated, and the language becomes closer to that used by politicians and businessmen.

What is even more important, the principles help to realize that environmental issues need to be seen in a much broader perspective than before. They are not just a matter of protection, but a matter of a long-term economic strategy.

CULTURAL DIFFERENCES IN THE INTERNATIONAL MANAGEMENT

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Intensification of economic sphere internationalization causes the expansion of participant-countries staff, which has been increased four times during the last 25 years. It leads to complicated and various forms of economic relations.

According to management practice this process includes both national and corporative cultures approach proceeding disputes.

International management experience shows that companies happen to be unable to find the way to foreign markets or even fail. The main reason is lack of knowledge on specific matters of countries-participants' management, that were formed under the influence of there national traditions, history and culture. Indeed, so long as management is connected with human integration at their enterprises, it deeps inside culture.

Quite often having got an assignment to the work in foreign countries, most managers get culture shock that is the sense of confusion and trouble caused by the change of management commands and corporative culture, by being in the unknown midst, when general daily affairs become the source of stress.

In spite of the fact that in overwhelming majority of researches it was accepted to abstract form cultural aspects of management and interaction between the companies in the international business or to overshadow them, these questions make essence of enterprise activity's daily realization (which success is essentially impossible without mutual understanding, adaptations at human level in the long-term plan).

Knowledge of management system's features, specificity of the national business-culture and typical models of local inhabitants' business behavior form company's particular cross-cultural competence and give you new specific advantages. Also a system of cross-cultural coordinates is necessary. It has to be a system in which subjective observation and objective information will put down firmly.

One of the most well thought-out system which lets expose national character's important parameters was elaborated by Geert Hofstede. So, he identified four dimensions on which managers in multinational corporations tend to view cultural differences: 1)power distance (PDI): it's an extent to which people who don't possess power or are allocated to in less extend, accept the fact that power in the society (and in organizations in particular) is distributed unequally; 2)individualism/collectivism (IDV): it's the extern to which people act on their own or as a part of a group; 3)uncertainty avoidance (UAI): it's the extern to which people in a society feel threatened by uncertain and ambiguous situations;

4)masculinity/femininity (MAS): it’s the extent to which a society values quantity of life (e.g. accomplishment, money) over quality of life (e.g. compassion, beauty).

By the way, the model offered by G. Hofstede was directed towards western countries. But thanks to modern Ukrainian scientists the attempt to determine numerical parameters of four Hofstede’s indexes for Ukrainian culture was made. The research was made on the basis of Ukrainian-American joint venture.

And now lets look through the table of Hofstede’s index (Table 1).

Table 1

	PDI	UAI	IND	MAS
The USA	40	46	91	62
Ukraine	119	119	13	54
Mean quantity	52	64	50	50

It’s easy to notice that size of PDJ and UAJ indexes for the USA are below average, while for Ukraine they are above, average greatly. What’s about IDV index, it’s above average for the USA and below average for Ukraine. And finally the significance of MAS index is a little bit above average for both countries.

Thus, we can come to the conclusion that there are considerable differences of stating the value of the main social standards and ideas that evidently leaves its mark on business processes. Such a contrasting picture let us determine considerable cross-cultural differences more evidently and suggest effective methods of their minimizing.

There are some generalized recommendations that can be used to improve the corporative culture of Ukrainian-American joint venture: 1)the creation of strong vertical hierarchical framework of organization with considerable managerial staff’s proportion; 2)the use of discussion and decision making’s group oriented the collectivism; 3)the providing with constant and intensive training for new and experienced personnel the company; 4)the development of both formal and informal corporative culture that stimulates the effectiveness of the work; 5)the involving as many foreign specialists as possible both for short-term and long-term tasks etc.

Also while communicating with head office such a question appears: “Is it necessary to accept local cultural customs?” In most cases the western company brings Ukraine the real capital, technology, marketing, administrative and financial culture. So the question whether it’s necessary to risk investments to Ukraine accepting present Ukrainian conceptions and values of business has the only answer – “no it’s not”. But on the other hand the single-minded change of Ukrainian business culture is also impossible in short-term perspective. Thus, we should consider foreign head guarders and the Ukrainian division of the transnational company to be representatives of various cultures.

Another important practical question connected with the joint ventures' functioning is: "How (and whether it's necessary in general) can we use foreigners as the branch establishment's top-managers?" We think that the best decision is to assign functions of organization structure's construction, staff selection and the adjusting of personnel training system to the foreign manager. Only after these problems will be soled administrative functions without essential risk can be transferred to local top-manager.

MECHANISM OF ECOLOGIC-ECONOMIC POLICY

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Efficiency of ecologic-economic activity in many aspects is defined by the state internal policy. Its function consists in an establishment of optimum parameters within the limits of which the system of public relations will function. Thus, the optimality provides the environment, which will promote full-fledged functioning of each field of activity and their structures excepting an opportunity of drawing damage within the limits of social system.

The market mechanism has determinative significance in ecologic-economic activity. Market as well as any other mechanism works in how it will be adjusted by the person. The economic mechanism of market regulation possesses enormous potential of regulation and opportunities to solve many problems. It appears that it is necessary only to realize these opportunities by means of effective ecologic-economic policy, in particular by adjustment of basic market action.

The important quality of market consists in its possibility to provide best use of different resources because of price signal about their deficiency. Degradation of environment, exhaustion of natural resources, excessive pollution is evidences of malfunctions in market mechanism. The prices that forming on "ecological" market often give distorted picture of true value of natural goods and services, they do not show real social expenses and advantages of the use of natural (ecological) resources. As a result of this inadequate estimation of resources shortage and values of the supply and demand are formed. That gives the understated stimuluses for efficient using of natural resources and preservation of the environment.

The state on base of direct or indirect regulation must obtain the shift of market optimum level of production (disregarding externalies or collapsing of market) to social optimum level of production output by realizing interests of society.

In system of commodity-money attitudes economic tools have powerful or even the key role. It is caused by the next fact. Influences to the main incentive motives of activity of managing subjects (their economic interests) are transferred

through them. They are usually differentiated on the prices for resources, economic gains, and redistributive payments.

The nature of redistributive tool's action is surprising. It is carrying out functions of ecologic-economic and ecologic-social correction, and also indirectly restrictive and stimulating, and it isn't breaking the mechanism of economic system's self-control by means of the market. These are tools by means of which it is possible to focus their activity in ecologically favorable channel with influencing a financial condition of managing subjects. This process is combined enough: from the order of means' withdrawal, their distribution, with an establishment of corresponding rates and also with necessity of the organization and the control over process. But nevertheless, difficulty of economic tools' realization is insignificant in comparison with ecologic-economic benefit received from it.

The nature of influence on economic interests is directly connected with kinds of motivation of subjects' activity. It is important to note that negative kinds of motivation (a payment for pollution) are used when one tries to keep an existing condition of things. Positive (subsidizing of ecologically focused kinds of activity) initiates fundamental change of system. It is directed on ecologization of social production, on ecologization of economy except nature-conservative activity and it includes liquidation processes of ecodestructive factors and hereunder reduces need for nature-conservative measures, forms basis for ecologically stable, ecosafe social-economic development of national economic complexes.

Rationality of this approach is caused by elimination the reasons of ecological destruction while analyzing possible consequences.

The most efficient results of the ecological reequipment are usually obtained by economy when it optimally combines negative and positive motivations. The first motivations limit ecodestructive processes. The second ones promote transition on new technologies and changing the base economic structures.

The stimulus of innovation market development appears in connection with appearing of demand for innovation developments. Their application will stimulate filtering in competitive fight of ecological insolvent enterprises.

Considering stated above, it is expected that state can make easier ecologic-economic transition to market economy with the help of ecologically balanced economic reforms and creation of proper ecologic-economic environment on macro level.

COST-BENEFIT ANALYSIS: UNCERTAINTY IN DISCOUNT MODELS AND ENVIRONMENTAL ACCOUNTING

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Important environmental decisions always involve judgments about incommensurable benefits and costs over long time horizons. Cost–benefit analysis, CBA, is one tool for supporting such decisions. In such analyses, costs and benefits of a given policy are computed from the present into the far future, taking into account the expected dynamics of the ecosystem and the economy.

Cost-benefit analysis is controversial for environmental issues, but is nevertheless employed by many governments and private organizations for making environmental decisions. Controversy centers on the practice of economic discounting in CBA for decisions that have substantial long-term consequences, as do most environmental decisions. Customarily, economic discounting has been calculated at a constant exponential rate, a practice that weights the present heavily in comparison with the future. Recent analyses of economic data show that the assumption of constant exponential discounting should be modified to take into account large uncertainties in long-term discount rates.

The process of computing a CBA for an environmental project or policy is as follows. First, the net benefit generated by the project or policy at each point in time is calculated. This time series of net benefits includes all of the benefits and costs of the project or policy at each point in time, in a common unit (usually currency).

The next step is to determine the discount rate at each point in time. The CBA, however, requires future discount rates instead of past discount rates. Future discount rates are projected using various time-series models calibrated on past discount rates. The time series of projected future discount rates is used to compute the discounted sum of net benefits over time from the project or policy. It is important to realize that the projected future discount rate is a random variable. Because the future discount rates are a random variable, the discounted net benefit is a random variable. Therefore, one must compute a mathematical expectation over the uncertainty of future net benefits in order to compute discounted net benefit.

In CBA, as in all other areas of science, models are simplifications of reality that are subject to diverse biases and errors. Users of CBA should recognize two profound sources of model uncertainty for policy evaluation of ecosystem services:

1. The true process that generates future ecosystem services is uncertain and may possess regime shifts or irreversible changes. Models of future ecosystem services are uncertain, and cannot be adequately discriminated by existing data.
2. The true process that generates future discounting rates itself is uncertain, so models of future discount rates are uncertain. Data cannot distinguish among different discount models that have dramatically different consequences for long run valuation in CBA.

In the next example we focus on the second source of uncertainty, the economic uncertainty of the discount rates themselves. To demonstrate this point, consider a simple example in which an environmental project yields \$1 in year 1, and we wish to project the value over 100 years. Suppose we have two simple exponential models for the discount rate (equation 1). The factors $w(t)$ and rates $r(t)$ are related according to this equation. We infer from historical data that the first

model will likely hold 99% of the time, whereas the second model will hold otherwise (Table 1). Under the first model, which has probability 0.99, the discount rate is 0.10. Under the second model, which has probability 0.01, the discount rate is 0.01. Table 1 presents w for $t = 100$ calculated for both models, the probability weighted average, and the value of r corresponding to the probability weighted average. Even though the probability is quite small for the lower model, this model has a large effect on the average discount factor and its corresponding discount rate. This shows that small discount rates have a large effect on the average discount factor, even when the data-based support for small discount rates is small. Note that w is a function of time even if r is not (equation 1). The model with the smaller discount rate has an even greater impact on the average discount factor as the time horizon becomes longer. Over longer periods of time, only the lowest discount rate influences the average discount factor.

$$w(t) = \exp\left[-\int_0^t r(z)dz\right] \quad (1)$$

Table 1. Results of simple example projecting the value of an environmental project over 100 years using two scenarios for the discount rate.

Quantity	Scenario 1	Scenario 2	Probability-weighted average of scenarios
Discount rate r	0.10	0.01	
Posterior probability calculated from historical data	0.99	0.01	
Discount factor $w(t=100)$ calculated by equation 1	0.000045	0.37	$0.99 \times 0.000045 + 0.01 \times 0.37 = 0.0037$
Average discount rate			$\ln[w(t=100)]/100 = 0.056$
Projected value of \$1, $\exp(r \times 100)$	\$22 026	\$2.72	\$270.42

The key point is that the effective discount rate will decline at approximately the minimum possible discount rate after a long period has elapsed. This has powerful impact on the outcome of CBA, as illustrated by the example above.

FORESTS-"LUNGS" OF NATURE OR "HEART" OF ECONOMICS?

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This theme is important for writing of an article, because of acceptance of „Forest code" on February, 8, 2006 by the Verkhovna Rada of Ukraine. Signing of

the Code by the President has some advantages and disadvantages. One of the positive aspects of the Code is the creation of state forest guard which will have the status of law enforcement authority. It is the first step in the struggle against the illegal felling of forests (only during the last year the illegally felling of 84 thousand cubic. m of forests was registered; equivalent to UAH 25,2 mln.). The reduction of felling will support the average annual increase of the Ukrainian forests, that now makes 40 mln.cubic.m. If we transform these numbers to timber, we will get not less than 25 mln.cubic.m wood per year (not taking into account forest reserves) or \$1,5 billion (1 cubic.m wood costs UAH 300).

On the other hand the problem of forest property arises: any resident of Ukraine will be able to acquire up to 5 hectare of forests and dispose of them. It means that firstly, the forest property will be concentrated in the hands of a few financial and industrial groups. Secondly, the ownership by foreign citizens through "false residents" and as a result strategic influence on the state is highly probable.

The incorrect redistribution of budgetary facilities is the basic mistake. In our opinion, forests that execute nature protection functions should have priority financing, because forest's cover 14-15% of all the area of Ukraine, instead of optimal nature protection norm - 20-22%.

Acceptance of the given Code will not solve basic ecological problems:

- „black storms” in Crimea;
- mudflows;
- dust content;
- noise.

The possible ways of solving these ecological problems are:

- expansion of fast growing and valuable species of trees;
- growing of forests by a planting method;
- providing nature protection measures that will save forests.

Let us pay attention that forest is the only natural resource (compared to petroleum, gas, coal) which recommences. A forest complex in Ukraine is formed in conditions of the small bringing and insufficient supplies of forest resources (own necessities are provided up to 20- 25%) in. This happens in the country wonderfully provided with climatic conditions and soils for growing valuable species of trees - oak, beech.

Economic problems of forestry:

- export of valuable species of trees at a low price;
- insufficient development of contiguous and supporting industries;
- import of finished wooden products of the forest complex.

We offer several solutions of the above mentioned problems:

- setting a duty on the export of raw materials of the forest complex;
- separating forestry from forest industry;
- development of the process of wood elaborating;
- introduction of a forest (landed) tax (as in Poland).

In this article the influence of changing the forests ownership form on the ecological and economical problems solution is considered.

ECOLOGICAL FACTOR IN REGULATION OF UKRAINIAN INTERNATIONAL ECONOMIC RELATIONS

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Internationalization of commercially-economic activity determines the necessity of the development of clear and effective mechanism of adjusting of Ukrainian international economic relations, taking into account an ecological factor that is carried out by the proper state and not state structures.

The conducted analysis showed that basic directions of display of ecological factor in the international economic relations are: 1) trans-boundary transfer of contaminating matters, 2) common use of natural resources their contamination and exhaustion; 3) armed conflicts with the use of the newest technologies; 4) international trade which today is one of basic distribution channels of ecological danger.

State adjusting of international economic relations taking into account an ecological factor, can be carried out by the certain aggregate of concrete methods, forms and instruments. All methods of the state adjusting of international economic relations can be divided into following groups: administrative and legal methods, direct and indirect economic methods and socially-psychological methods.

Mechanism of state adjusting of Ukrainian international economic relations is possible to represent as complex of programmatic-co-ordinating, financial and economical, organizationally-economic and legal forms, methods, principles, instruments and levers which are used in practice of Ukrainian international economic relations (table 1). Its basic tasks are: 1) economic evaluation of consequences of exportation and importation unecological products, technologies, services and development of adjusting proper instruments; 2) account of ecological factors and limitations in a theory and practice of international trade, studying the influence of national eco-economical policy on competitiveness of national products, services and economic system on the whole; 3) theoretical grounding and development of proper international eco-economical policy (taking into account the requirements of steady development).

Introduction of Ukrainian adjusting mechanism of international economic relations taking into account an ecological factor is foreseen in three stages: stage 1 – planning and preparation of measures; stage 2 – realization of the planned events; stage 3 – analysis and estimation of the attained results. Introduction of this mechanism must be based on principles of providing active participation of state in implementation of international agreements in relation to the guard of natural

environment; active participation of state in international processes in relation to the obstacle to the trans-boundary moving of technologies, goods and services usage of which can entail harm to the environment and on principles of collaboration in the sphere of obstacle to illegal circulation of natural resources; equality of rights of all foreign economic activity participants, defense by the state of their rights and legal interests absence of discrimination; exception of unjustified intervention from the state and its organs in foreign economic activity, infliction of losses to their participants and economy of country in the whole.

Table 1 – Principle scheme of the mechanism adjusting of Ukrainian international economic relations (taking into account an ecological factor)

Coordinating principles and forms	Financial and economical methods	Financial and economical levers	Organizationally-economic instruments	Legal forms, methods and principles
1	2	3	4	5
Conceptions of the development of Ukrainian international economic relations:	Prognostication of ecological consequences of Ukrainian international economic relations	World prices on goods and services	Complex of all realization forms of international economic relations which do not conflict with the current legislation	International level: - position of international eco-economical law; - Declarations of UNO; - International charters; - International agreements; - International protocols
- Conception of Ukrainian external economic policy; - Conception of Ukrainian foreign economic activity; - Conception of Ukrainian development of export potential	Planning the events on perfection of Ukrainian international economic relations (strategic, middling-urgent, tactical)	Official rates of exchange and currency corridors		
		International crediting		
Bilateral programs – eco-economical and scientific and technological collaboration	Operative management by the international economic relations of Ukraine	Subsidies		National level: position of Ukrainian legislation in the sphere of foreign economic activity and guard natural environment (Laws, decisions, decrees, edicts of KM, orders, instructions, letters)
Bilateral programs of branch collaboration		Grants		
Multilateral plans of eco-economical and scientific and technological collaboration (by a term to 5 years)		State insurance		
Annual protocols and eco-economical and scientific and technological collaboration		Economic approvals		

ECONOMICS AND ECOLOGY

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Economics and ecology are often presented as opposed disciplines. Both fields have strengths and weaknesses. A new trans-disciplinary field, ecological economics, attempts to bring together the strengths of both disciplines with a vision for a sustainable future. Economics and ecology often receive two different responses from natural resources professionals. Economics, which deals with the allocation of scarce human-made and natural resources is viewed unfavorably by many who are concerned about effects of society on the environment and natural resources. Ecology, which deals with nature's allocation of scarce resources, is more often viewed in a favorable light. Economics is burdened, in particular, by a misperception that is synonymous with finance. That is, financial decisions are confused with the much broader equity and efficiency concerns that provide theoretical underpinning for economics. For many years, resource economists have addressed natural resource and environmental issues in theory and in practice.

Ecological economics is a trans-disciplinary field that focuses on the tree linked goals of sustainability, fairness in distribution and efficiency of allocation. As a result, ecological economists have more interest in a vision of the future, methods for analyzing problems in new ways, and institutions and instruments that are needed to implement this vision.

The vision includes recognition that: (1) our planet is essentially a closed system in which our societies are subsystems; (2) a sustainable future exist for all species that is constrained by the global ecosystem; (3) we should be cautious and humble, given the many uncertainties that exist; and (4) our policies must become more proactive, with clearer thought about the interrelationships of the earth's subsystems. Neither economists nor ecologist were adequately addressing this vision and new integrated approach is required. The vision is ambitious, and several aspects may be very difficult to achieve. Nonetheless, we can move forward in other cases.

Specifically, a more formal recognition of the role of the national capital and its relationship to sustainability is needed. In the case of boreal forests, the stocks and flows of forest resources can be assessed to determine prospects for sustainability. The relationship between economic activity and the ecosystem is particularly clear in the management of renewable resources. The ecologist must realize that it is impossible to stop economic development, and the economists must realize that environmental changes are not just irritating externalities. The environment is not an externality, it is the system within which we operate.

ENVIRONMENTAL GLOBALIZATION

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Globalization in economic, social and military affairs contribute to the fourth process, environmental globalization- the increase of movement between continents of pollutants and species. Of the many environmental challenges found around the world, two in particular are driven by environmental interactions between continents: the loss of biological diversity and the increase of global atmospheric pollution.

Increased transportation has breached the oceanic barriers that once ensured the biological separation of species. Thousands of exotic species have been introduced to new continents through various means (biologists transporting these species back to their own countries for study, intentional animal trafficking, and the accidental transport of species through various means of transportation). Invasive species are non-native species that are brought in an area. These species then compete with the native species already existing in the area. Invasive species can be very destructive, often totally eliminating various indigenous species.

Global atmospheric pollution could occur at a rapid rate even if trade, social interactions, and military conflicts decreased. Yet these types of atmospheric pollution are examples of environmental globalization because they require various countries to participate in international agreements in order to effectively reverse the global environmental damage. Nations can address their own soil, water and localized air pollution problems, but the upper atmosphere is truly a shared, global commons. Nations cannot address global climate change, ozone-layer depletion on their own and expect effective results.

The pollutants that cause these environmental problems are released from all nations. Atmospheric wind currents quickly circulate the chemicals to all parts of the globe. Analysis of environmental globalization has led many government leaders to the conclusion that global environmental problems require global solutions. Global agreements to address these problems are complicated by the fact that developed nations release much greater levels of pollutants than the developing nations.

The effort to protect ozone layer has been the most successful global environmental project in history. It has involved the cooperation of many international organizations and nearly every national government. Industrialized countries have stopped producing nearly all the worst ozone-depleting chemicals after signing the Montreal Protocol on Substances that Deplete the Ozone Layer.

As a concept globalization is too broad to be useful unless it is broken down into at least four interconnected trends- economic globalization, social and cultural globalization, military globalization, and environmental globalization. These trends are often interrelated. Economic globalization has increased the specialization on

workers, as their employers compete in global markets. Social and cultural globalization has changed cultures through the increased dissemination of communication, information, and technology. Military globalization has consisted of intercontinental blocs of allied nations engaging the military conflict with terrorists and with each other. Economic, social, cultural, and military globalization have often had negative impacts on the environment, requiring that all nations of the world cooperate in an effort to slow the process of environmental globalization. Three environmental issues particular-biodiversity, global climate change, and ozone-layer depletion are either caused by globalization or have serious effect that necessitate global cooperation.

THE TYSA: ECOLOGICAL PROBLEMS

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Ukraine belongs to the countries with a high level of negative ecological consequences cause by production activity. That is why the problem of environmental protection and the reasonable usage of natural resources are of primary importance. High concentrations of population and industrial production (especially in Donbas and Prydniprovyia), imperfect technologies make very bad influence on environment. The most complicated ecological situation arose in regions adjoining.

Water resources protection is an urgent problem for Ukraine. Water supply amounts to 1000 cubic meters of the local flowing per capita per year. But water supply is not adequate for all regions of Ukraine. In Zaporizka, Odeska, Mykolaivska, Khersonska, Donetsk regions and the Autonomous Republic of Crimea at the sea shores – places of rest and cure – tense ecological situation arose because of frequent emergency discharge of municipal sewages.

Human activity has considerably changed he course of natural processes occurring in the Upstream Tysa watershed. Efficient water management on the Ukrainian part of the Tysa basin is extremely important for a sustainable development and preservation of the environment due to the following reasons:

- Much of the water in the Tysa River are formed in mountain areas in the headstream of the river where precipitation levels are high
- The headstream condition directly influences life of people residing in zones with risk of flooding
- The region has been passing through social and economic crisis. This possesses a threat to well-balanced natural resources usage, which in return is a threat for ecological balance of the Tysa

- The headstream is located in an area with natural disposal to mudflows, landslips and catastrophic high waters. Human activity should be oriented on reduction of this risk instead of its increasing

- Upstream the Tysa region is of a great ecological value.

Water quality and erosion (environmental concerns):

During the last decades, the economic infrastructure of the Transcarpathia area has changed considerably; anthropogenic stress for river ecosystem has increased causing water quality deterioration and erosion of river-banks and slopes. The water quality of upstream rivers of the Transcarpathia remains rather good in general. However, absence in the majority of settlements and the enterprises of sewage works and treatment facilities has resulted in pollution of several rivers within the Transcarpathia lowland and a water quality not always meeting actual requirements.

Essential hazard is caused by erosion as a result of significant reduction of the mature forest area because of high level of logging, changing of their specific structure, slow growth of young woods. Ecologically safe methods of logging are not encouraged and illegal logging is still going on. Also overgrazing (concerning sheep and goats) results in vegetative cover destruction, poaching and subsequent surface run-off and erosion increase. Further reasons for erosion are:

- a) economic use of the flood plains without taking into account possible negative consequences,

- b) uncontrolled construction and economic activities on territories with high flood risk, and

- c) mining activities.

Main problem for the Transcarpathia region is protection of population, enterprises, agricultural lands and urban regions against floods and high water caused by the Tysa River and its tributaries. Flood protecting facilities in the Transcarpathia region are designed for different levels of floods but in accordance with standards of the time they were put into operation. Some of them are out of order and need reconstruction and structure rehabilitation. The dams don't meet up-to-date standards and technical requirements. Insufficient financing of flood protection measures in the Transcarpathia region was one of the reasons that caused the hard flood damages of November 1998 and March 2001.

Regional rural development

One of the basic problems is also agricultural reclaiming of high water dangerous floodplains caused by shortage of suitable areas for agriculture. It is necessary to take the following steps:

- disable a part of agriculture land from agricultural usage

- resettlement of people from dangerous areas

- introduction of the circuit-meliorative terrain organization

- introduction of ecologically safe agriculture technologies.

Actual problems in this field are caused by:

- Short-financing of natural-protection fund objects

- Uncontrollable economic activities destroying natural habitats integrity

- Non-authorized deforestation, poaching
- Insufficient education of the population in the field of wildlife conservation.

Successful solutions of these problems depend on the mechanisms and tools created for integrated (complex) development of the regions. Besides the multi-sectoral regional partnerships should be aimed to mobilization of the financial resources for the effective solutions of the economic, social, cultural and environmental problems in the regions. Mobilization of human resources for the wise decision-making and Ukraine development of human resources and transfer of the ecologically friendly technologies into the region also should be taken into account. Integrated development of the regions requires the creation of links between politics and, often not related, institutions and fields, such as local economy, natural, cultural and historical heritage of the regions, information systems, education, agriculture, business and services. By creating the partnerships in the regions we encourage human resources to use the public finances for the public benefit more effectively.

The government plays an essential role in the public administration reform process. It transfers the approved principles onto the regional and local governments, and plays a vital role in mobilization of financial and human resources. It establishes the legislation, introduces the standards into the life, and creates opportunities for the wider participation of the public in the socio-economic development, and not only in the territory of Ukraine. The Tysa is a transboundary river and all Europe community should be interested in the successful solution.

Ukraine relies on international cooperation in water management of transboundary river basins for environmental protection, sustainable development of regions, living standards of population improvement, enhancing of local economy, natural resources and cultural heritage conservation.

These are the following priorities concerning international cooperation on management of the Tysa:

- Preservation and steady usage of a biological and landscape diversity
- Stable local development and terrain planning
- Sustainable and integrated water management (including river management)
 - Stable planning of the transport and infrastructure
 - Sustainable tourism
 - Renewal power sources and high technologies introduction
 - Environmental control of monitoring and prevention
 - The cultural heritage and local customs
 - Increasing of a level of public awareness, education and participation.

FINANCIAL PROVIDING OF ECOLOGICAL DEVELOPMENT OF REGION

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Contamination of environment and inefficient use of natural resources are one of the most actual problems of both humanity on the whole and Ukraine in particular, that threaten to not only welfare but also safety of people. These problems arise up at local level, however carried global character is.

By research workers it is admitted that technical problems in relation to the guard of environment and rational use of natural resources do not exist. This is a problem economic is the problem of financing of nature protection measures.

With reformation of the financial system and its adaptation to the market conditions the previous sources of charges on nature protection necessities were lost. Except for that financing takes place on an aftertaste. Therefore in modern terms maximal attention is to be spared to perfection of operating economic mechanism of environmental and nature protection activity and forming of stable sources of financing of nature protection measures, and also optimum use of the limited resources which can be sent on anticontamination to the purpose.

The state budget of Ukraine and local budgets, budget of the Autonomous Republic Crimea, funds of guard of natural environment of all levels, personal funds of enterprises, foreign receipts and investments, other unbudgetary facilities are the basic sources of financing of nature protection measures.

Estimation of the financial providing of ecological development of regions of Ukraine enables to assert that the positive dynamics of the following indexes of the financial providing of nature protection measures after years on the whole is: charges on major repairs of basic facilities of the nature protection setting; current outlays on basic nature protection measures; investments in the fixed assets on the guard of environment and rational use of natural resources.

However, from other side, it is observed tendency of increase of the ecological collections, produced to the enterprises, organizations and establishments for contamination of natural environment on Ukraine, and their payment not in every region is hundred-per-cent.

Chernivtsi that Cherkasy to the region most facilities outlaid on major repairs of basic facilities of the nature protection setting, and here current outlays on basic nature protection measures most considerable in the Donetsk, Dnepropetrovsk and Kiev regions. These regions planted leading of oneself after the sum of investments in the fixed assets on the guard of natural environment and rational use of natural resources.

Most sums of the ecological collections, produced to the enterprises, organizations and establishments in the Dnepropetrovsk, Donetsk, Zaporozhian and Lvov regions, and actually payment of these payments at none of the transferred

regions did not make 100%. In the last few years only enterprises, organizations and establishments of the Kiev and Winnitca regions paid ecological collections in full.

After the general index of the financial providing of ecological development the first places in 2001p. occupied: Donetsk (Rj=1,648), Kiev (Rj=1,520), Winnitca (Rj=1,513), Sumy (Rj=1,456), Chernivtsi (Rj=1,423) regions; in 2002p.: Donetsk (Rj=1,717), Sumy (Rj=1,508), Kiev (Rj=1,482), Dnepropetrovsk (Rj= 1,457), Winnitca (Rj=1,451); in 2003p.: Kiev (Rj=1,819), Donetsk (Rj=1,621), Kharkov (Rj=1,502), Chernivtsi (Rj=1,410), Dnepropetrovsk (Rj=1,397) regions; and in 2004p.: Kiev (Rj=1,853), Donetsk (Rj=1,732), Dnepropetrovsk (Rj=1,583), Kharkov (Rj=1,560), Chernivtsi (Rj=1,509) regions.

Lowest estimation of the financial providing of ecological development in Zhtomur, Volyn, Kherson, Zaporozhian, Zakarpatian and Kherson regions. This index at them in 1,5-2 times is below, than at regions with the high financial providing.

Summarizing aforesaid, it is possible to do a conclusion, that between the regions of Ukraine there is considerable differentiation in the levels of financing of nature protection measures, which accordingly determines differences and levels of ecological development.

CARBON DIOXID AND CLIMATE CHANGE

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A change of climate resulting from an increase in the atmospheric carbon dioxide concentration may bring increased drought to the interior of continents and increased precipitation to many other regions.

The Earth's surface and atmosphere maintain a balance between the incoming flux of solar radiation and the outgoing infrared radiation balance the mean surface temperature of the Earth is about 15 °C. Disturb this balance and the temperature may up and down. Increased amounts of carbon dioxide and water vapor can cause warming of the global climate. Climatologists are carefully considering this phenomenon in their calculations of change by using large-scale, numerical, computerized climate models. They find that a doubling of the atmospheric concentration of carbon dioxide could produce an increase of the global mean temperature of the Earth of about 3 °C ± 1°C. It turns out that this much of an increase in the mean surface temperature is very significant and is in fact greater than any naturally occurring in temperature during the past 10,000 years.

There is strong evidence that the concentration of carbon dioxide is inexorably increasing in the atmosphere as the result of human activities, such as burning fossil fuels and cutting forests. Earth's climate may be warming, and extremely serious

consequences may result: glaciers may melt, sea levels may rise, and agricultural production may be affected, and ecosystems may undergo substantial systems.

Earth's atmosphere and biosphere evolved together over time. The molecular composition of the atmosphere is the direct result of the gas exchange among the atmosphere, biosphere, lithosphere, and hydrosphere. Green plants, through photosynthesis and respiration, have had significant influence on the atmospheric concentrations of carbon dioxide, oxygen and water vapor.

We can project future rates of CO₂ released from human activities. If we assume that the burning of fossil will be the dominant source of CO₂ buildup in the atmosphere and that about 50% of the CO₂ produced will remain in the atmosphere, then estimates of future fossil fuel use will give estimates of the atmospheric CO₂ levels.

To project future climate conditions, it is important to understand the conditions of the past. If human activities are imposing factors for climate change on naturally occurring factors, it is essential that past relationships between cause and effect be understood. If doubling of the atmospheric carbon dioxide concentration is expected to increase the mean global temperature by 3 °C, it is crucial to understand whether this is a large temperature change or a small one. We can gain this perspective by considering the temperature changes of the past.

Interfere in any way with the stream of radiation from the sun to Earth's surface or with reradiation from the surface to other space and the temperature of the atmosphere, surface and oceans will change. Increase the dust load of the atmosphere and more incoming sunlight will be reflected to space and Earth will cool. Increase the atmospheric concentration of carbon dioxide, ozone, methane, water vapor, or other infrared-absorbing gases and less radiation will escape to space and Earth will warm. Vary the amount of radiation emitted by the sun up or down and Earth's temperature will change up or down.

The mechanism is well established by which an increase of the atmospheric carbon dioxide concentration might affect Earth's climate, that is, the greenhouse effect. Knowledge concerning this mechanism indicates that an increase of the carbon dioxide concentration will produce a warming of Earth's surface and lower atmosphere.

Because the atmospheric carbon dioxide concentration has been increasing steadily from late in the last century to the present, we would expect its influence on climate to correlate with this trend. If its influence has been effective, then mean temperature of Earth must have been rising slowly but persistently. We would not expect the CO₂ trend to account for any of the short-term fluctuations in globally averaged climate, as we do expect from sunspots or from volcanic activities.

OCCUPATION LEVEL INFLUENCE ON THE CONDITION OF ENVIRONMENT

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The problem of ecological consequences of functioning of industrial model of economy for the first time is generated by two representatives of classical political economy – J. S. Mill and K. Marks. First of them correlated industrial development and increase of well-being inclusive to ecological aspects; another proved hopelessness of capitalist system reproduced process, in particular in a context of the analysis of ecological expenses of industrialization and increase of the cities.

The special role in development of ecological questions in neoclassic economy belongs to English scientist L. Pigou. He was the first to investigate a problem of expenses and the costs connected with externalities. He specified, that pollution stimulates increase of external expenses. It is obvious, that for any businessman the major purpose is minimization of own expenses for increase in the profit. The easiest way in this case - economy on nature protection expenses. Pollution and wasting products which are developed in this case, are not taken into account actually by the businessman, and, accordingly, expenses for their liquidation are not taken into account in the cost price.

As against this individualist approach to an estimation of the social organization of a society behind which each member of a society reaches the personal optimum, there is other approach - an estimation with the help of complex criterion of well-being of a society where in the center of an estimation there is an optimum of all individuals as a whole, "distribution of utility among separate individuals won't play any role for an accomplishment of a society".

There are three theoretical directions in approaches to a problem coevolution the nature and a society in the countries of the West examined in V. Voznyak's work "Social development and ecology: interrelation, contradictions, crises".

In the first direction the attention is focused to assumption of negative increase of economic needs of mankind and, accordingly, expansion of "natural" needs which are connected to returning to the nature and refuse from scientific and technological progress. The second direction is connected to social and economic increase: ecological crisis can be solved owing to social and economic development of a society if the mechanism of the market to add to various kinds of wildlife management which are directed on restoration of natural resources. The third direction unites followers of ideas of the creation of "new alternative model of development and a way of life" in which there are social aspects of an ecological situation in center of attention.

From the beginning of industrial revolution business searched for opportunities to save on using labour whereas ground and natural resources were considered as inexhaustible and cheap. While the companies aspired to achieve

increase of productivity of work using smaller quantity of manufacturers, they have neglected the parameters of productivity of using the energy and materials on each production unit.

It, probably, was meaningful, when the qualified labour was really rare and using machines instead of people promised prompt economic progress. Nevertheless, taking into account ecological crisis and a growing number of labour today, it's a time to overestimate these priorities.

Today with increase of productivity of work, manufacture and consumption should grow at least as quickly to support stable occupation levels, and is even faster to increase number of workplaces. But while economic increase will be based on burning of great volumes of mineral fuel, using the excessive amount of materials and creation of a huge avalanche of waste products, such formula is a pledge of growing degradation of an environment. The constant economy should break off existing connection "work - consumption - ecological degradation".

Today the small quantity of manufactures is responsible for overwhelming majority of processes which destroy the environment, providing at the same time only insignificant employment. Increase of the work productivity is possible to explain that employment in industrial sector of the industrial countries remains constant or even decreases, despite of doubling of production. Actual employment in the relation to the volume of produced production in industrial sector has decreased since 1960 till 2000: in Japan - almost in 7 times, in France - in 4,5 times, in Germany and the Great Britain - three times.

Employment grows mainly in sector of "service". As a whole, since 1950 employment in sphere of services in the western industrial countries was almost doubled, and in the USA - has quadrupled approximately. In USA each workplace accounts for almost five places in the services sphere today; in Japan, France and the Great Britain - three - four, in Germany - more than two workplaces.

However shift aside spheres of services have ambiguous influence on an environment and the employment. Term of "service" covers such hardly comparable kinds of activity, as wholesale and retail trade, hotels and restaurants, public health services, a banking and the finance, municipal services, communications and transport. In these sectors there are many very well paid workplaces which demand high qualification, nevertheless there are even more underpaid places where special qualification is not necessary. In the USA the significant particle of a gain of employment falls at retail trade, nevertheless lower salary and not guaranteed employment is more and more inherent in this part of economy.

Workplaces in sphere of services are not a little more proof concerning that whirlpool of changes which has already grasped, for example, a mining industry. In research of Vjurtsburg University it has been proved, that the computerization and information technologies in Germany can liquidate at last 61 % of workplaces in a banking, 51 % - in wholesale and retail trade, 74 % - on transport and in material support.

Reforming ecological taxes is the key in the decision of a problem of creation the satisfactory workplaces and protection of an environment. However in a context of communication between an environment and employment nevertheless there is the other aspect: using of receipts from ecological taxes for reduction of tax charges by wages which finance programs of social protection.

Reform of the ecological taxation can help to change economic priorities from increasing of productivity of work to the increase in productivity of using the energy and materials and consequently is the important compound of any politics directed on achievement of that economic progress does not become a synonym of disappearance of workplaces and significant ecological harm.

SUBCULTURE IN ORGANIZATION

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The definition of subculture is less known to leaders of some organizations then the definition of organizational culture. It's necessary to understand that there are many "local" cultures in one organization. It means each culture is divided into different parts, such as levels, branches, professional, regional, national and other groups. They can coexist under the roof of general culture.

If there are some differences in subculture it will be difficult to organization too. But at the same time subcultures disparities are not always a barrier to organization activity, because they can be a resource for its development.

Organizing culture is a system of values of this organization. This system is included in different sides of its activity. They call it the spirit and character of organization. Such kind of organization is divided into two groups: formal and informal. They are exponent of local subcultures.

Organizing culture phenomenon in its character. So, each organization has many subcultures, and it can be dominated in its own way.

According to organization, subculture is able to definite as the total combinations of values, which differ one group from another in the organization at whole.

We can do the classification of subcultures in different ways:

1. According to the degree of values of subculture, and organizing culture we can bold:

- *"leading" subculture*. As a rule it is the subculture of the central apparatus of management, which influences the dominated culture most of all;
- *no conflicted subculture*. It combines both dominated values and personal ones;

- *contrculture*. The members of such kind of group do not adopt the meaning of the dominated culture. Contrculture is an example of opposition in the organization.

2. According to the kinds of subdivisions in the organization, there are:

- subcultures of the local units of organization, for example, subculture of national representation of international companies and subcultures of various functional subdivisions of organization.

3. As the leaders of subcultures take part in the process of activity of this organization, we can definite subculture such as:

- subculture of top-management;
- subculture of directors of average unit;
- subculture of ordinary employee.

During the process of their development subcultures coincide with each other or become independent in their activities. The strongest subcultures can get isolated from the weakest one.

Because of some managers do not pay much attention to the different kinds of subcultures, it leads to the serious conflicts inside of the company. It is bad for the organization at all and for the results of its activity.

To prevent this conflicts there are some important methods. One of them is to increase the friendly contacts between the members of the staff.

If some subcultures become a threat to organization functioning, it's necessary to accept the strict administrative decision to correct the situation. For example, the manager can recommended the member of company, who is the creator of contrculture, to work in other subdivision.

To manage the company professionally and more effectively, director must know the subcultures of his staff. The manager must be able to form a correct estimate of the situation in his company and manage subcultures well.

IMPROVEMENT OF ORGANIZATIONAL FORMS OF RECREATION ENVIRONMENTAL

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By the basic organizational-legal forms of recreation environmental which the right of the use by earth is understood under, right of lease and right of concession is ratified by the Landed Code of Ukraine right of the permanent use.

Right of the land permanent use, in case of the nature protection, health, recreation or history and cultural setting is the right of domain and use by lot of land which is in a public or communal domain, without establishment of term.

But we have for an object basic attention to spare to such form of recreation environmental as lease. As it is marked in Code, that enterprises, establishments

and organizations of public or communal domain can get the right of permanent lease. In our view, in the system of recreation environmental, it costs to give the right of the permanent use by lot land to the enterprises of private pattern of ownership. Monitoring of activity of private proprietor in relation to the use of lot land was possible and justified in case, that hindered to the inefficient use of recreation resources was periodically conducted, and, from other side, stimulated development of private to the sector of activity of regional markets of recreation resources.

In addition, as we know, support ecologically of the happy state of many natural-recreation objects and territories becomes more improbable for lack of the material providing, in particular, budgetary financing. And as the rational use of natural recreation territories and resources needs having a special purpose financing, private proprietors can become one of potential investors in this sphere of development.

Thus of principle the observance of certain requirements of realization of the leasing use by recreation territories is important:

- natural recreation territories must be passed in the lease as a result of competitions, the basic requirement of which there is the use of territory after having a special purpose its setting;

- tenants there can be faces, which own a license to realizations of some type of recreation activity or person, which will give the proper documents about their intentions of activity in the field of recreation for consideration of commission from the lease;

- at the count certain percent of cost of lot land (10-50 %) in the form of insurance payment which will come back to his payer certain parts at implementation of terms of lease.

Concession as one of organizational-legal forms of recreation environmental also acts enough important part in our time. As a recreation sphere needs certain expenses, and the state financing is inferior, therefore the right of concession in this case is enough advantageous as from the side of the state and users so users by lot lands. As for the use by lot lands on the rights of concession earths not well-to-do are given by the proper infrastructure, that new proprietors must bear yet considerable expenses for their subsequent having a special purpose use.

Thus it costs to mark that it costs to examine the legal forms of recreation environmental relatively separate organizational forms of manage. The choice of organizational form by the subjects of recreation activity depends on the following factors:

- presence of natural recreation resources, their state and possibilities of the use;

- presence and state of recreation infrastructure;

- personal interest and possibilities of participation of organs of local self-government and state organs in development of recreation economy, and also other subjects on this territory.

The following can be the organizational forms of recreation environmental are recreation park; corporation; joint-stock companies; sole proprietors.

That introduction of new organizational and legal forms in the field of recreation environmental will provide stable and effective its development at the keep ecological balance of environment.

DEMOGRAPHIC CHANGES – OVERPOPULATION

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The surge in population is both a cause of the changed relationship and one of the clearest illustrations of how startling the change has been, especially when viewed in a historical context. From the emergence of modern humans 200,000 years ago until Julius Caesar's time, fewer than 250 million people walked on the face of the earth. When Christopher Columbus set sail for the New World 1,500 years later, there were approximately 500 million people on earth. By the time Thomas Jefferson wrote the Declaration of Independence in 1776, the number had doubled again, to 1 billion. By midway through this century, at the end of World War II, the number had risen to just above 2 billion people.

In Other words, from the beginning of humanity's appearance on earth to 1945, it took more than ten thousand generations to reach a world population of 2 billion people. Now, in the course of one human lifetime – the world population will increase from 2 to more than 9 billion, and it is already more than halfway there.

Overpopulation is often defined as the condition of having more people than can live on Earth in comfort, happiness, and health and still leave the planet a fit place for future generations. To most environmentalists, the data suggest that the planet is already overpopulated. Because of differing concepts of carrying capacity, however, experts differ widely over what level of population is considered too high.

Some project that if everyone existed at a minimum survival level, the earth could support 20 to 48 billion people. This existence would require that everyone exist only on a diet of grain, cultivation all arable land, and mining much of the earth's crust of a depth of 1.6 kilometers (1 mile). Other analysts believe the earth could support 7 to 12 billion people at a decent standard of living by distributing the world's land and food supply more equitably and shifting from less abundant resources (such as lead, tin, uranium, oil, and natural gas) to more abundant resources (such as aluminum, glass, and various forms of solar energy).

Others opposed to population regulation feel that all people should have the freedom to have as many children as they want. To some, population regulation is a violation of their deep religious beliefs. To others, it is an intrusion into their

personal privacy and freedom. To minorities, population regulation is sometimes seen as a form of genocide to keep their numbers and power from rising.

Proponents of population regulation point to the fact that we are not providing adequate basic necessities for one out of five people on Earth today who don't have the opportunity to be a net economic gain for their country. They see people overpopulation in MDCs (more developed countries) as threats to Earth's life support systems for us and other species.

These analysts recognize that population growth is not the only cause of our environmental and resource problems. They believe, however, that adding several hundred million more people in MDCs and several billion more in LDSs (less developed countries) will intensify many environmental and social problems by increasing resource use and waste, environmental degradation, rapid climate change, and pollution. To proponents of population regulation, it is unethical for us not to encourage a sharp drop in birth rates and unsustainable forms of resource use to prevent a sharp rise in death rates and human misery and a decrease in Earth's biodiversity in the future.

Despite promises about sharing the world's wealth, the gap between the rich and poor has been getting larger since 1960. Proponents of population regulation believe this is caused by a combination of population growth and unwillingness of the wealthy to share the world's wealth and resources more fairly. They call for MDCs to use their economic systems to reward population regulation and sustainable forms of economic growth instead of continuing their unsustainable forms of economic growth and encouraging LDCs to follow this eventually unsustainable and disastrous path for the planet.

Recently, the Population Crisis Committee compiled a human suffering index for each of 130 countries based on ten measures of human welfare. They found a high correlation between the level of human suffering and the rate of population increase in countries. The 30 countries falling in the *extreme* human-suffering range - all in Africa and Asia - averaged a high annual rate of population increase of 2.8%. The 44 countries with a *high* human suffering rate--all in Africa, Asia, and Latin America — also had an average annual population increase of 2.8%.

REFORMING INSTITUTIONS ON THE WAY TO SUSTAINABLE DEVELOPMENT

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Economic growth is a fundamental driver of human welfare, and a key component of sustainable development. However, nowadays there is actual the problem to include the ecological component into the economic development. Due to inappropriate incentives, economic activities have often taken a toll on the

environment and natural resources. The result of huge resources use is the accelerating environmental degradation. Most resources involved into the economic process are nonrenewable. That means their exhaustion leads to their disappearance from the surface of Earth and to impossibility to use them in the production process hereinafter. As to the idea of justice between generations (so called “time sustainability”) by current actions present generation shorten the future generations’ possibilities to use the resources for their development. The increased scale of global economic activity has thus prompted calls to increase the efficiency with which these resources are used, so as to decouple economic growth and environmental degradation.

Today it’s quite a satisfactory awareness between these two objectives – economic growth and environmental quality – can provide “win-win” solutions that allow for achievement of multiple objectives [1].

In the past, all Central and Eastern European (CEE) countries had developed stringent, but not enforceable environmental legislation. In many of these countries, the new governments face a problem. Some of the legal environmental requirements, especially the existing ambient standards for water and air pollution, are unrealistically strict. However, to downgrade them would cast a better light on the environment performance [2].

In all CEE countries, environmental institutions need a reform.

What are institutions? Institutions are clusters of rights, rules, and decision-making procedures that give rise to social practices, assign roles to participants in these practices, and govern interactions among occupants of those roles. Unlike organizations, which are material entities that typically figure as actors in social practices, institutions may be thought of as the rules of the game that determine the character of these practices [4].

Conversely, institutions often figure prominently in efforts to solve or manage environmental problems. The top priorities for institutional change should be the next:

1. shifting responsibilities for environmental management from central to local authorities;
2. increasing coordination among ministries on environmental issues;
3. improving the functional capacity of the environmental ministries.

The key priorities:

- A clear government commitment and environmental objectives set in the context of a broad participatory approach is a fundamental prerequisite for longer-term successful environmental policy.

- Donors should make greater use of local expertise. Not only would this help to develop local skills, it can also provide a better understanding of local circumstances and be more cost-effective than using experts from donor countries. Donors should address the problem of tied aid.

- Environmental objectives should be based on realistic assumption about availability of financial and human resources.

- Much more emphasis should be placed on the front-end of the project cycle: 1) establishing objectives; 2) identifying efficient solutions among a range of institutional, policy and technological options; 3) and identifying what is needed for successful implementation.

- Be cautious in developing comprehensive environmental laws; the rapid political and economic changes may make them difficult to implement.

- Integrate environmental concerns in the economic reform laws wherever possible [2].

CEE countries should design and implement educational training programs for high-level decision-makers at national and local levels, in close cooperation with local institutions. Training programs could be supported by voluntary contributions from donors. CEE countries should establish a network of national institutions involved in environmental training. They should extend monitoring networks, comparability and reliability of the data collected. The purpose of the network would be to promote exchange of information between those institutions and their counter-parts in other countries, and with external financial partners.

Voluntary environmental agreements as much as public authorities also may speed up the achievement of established goals in a way other approaches cannot [3]. The role of organizations of public society is especially important in advancement ecologically effective strategies of development. It's really important to encourage authorities and business to recognize the role of environmental NGOs as full participants in the public debate about sustainable development and the formulation and implementation of practical policies. An ecological management is frequently attended with the «descending streams» of external effects, and such organizations often give knowledge and provide the contacts between people from different areas of the country [5]. Environmental NGOs raise public awareness, stimulate changes in public attitudes and policies, put forward viable alternatives and often implement them to set an example. Such a co-operation can give really a positive effect as public more sharply feel and react on environmental problems and is able to see the future perspective not being burdened by existing legislation doctrines.

In CEE countries the role of NGOs is even more important than in the West, for the following reasons:

- a strong environmental movement ensures that environmental issues remain on the political agenda;

- the transition period in principle provides a unique opportunity to establish the basis for sustainable development, by avoiding the mistakes of the West. Environmental NGOs can play an important role in this regard, drawing in part on the information available to them from colleagues in the West;

- environmental NGOs can contribute substantially to strengthening the fabric of society. They can mobilize the population and motivate people to take on special responsibilities [2].

For these purposes NGOs should be invited to the relevant advisory boards, delegations, negotiations, etc. It's necessary to consider providing financial support

to NGOs. This should not be restricted to pure environmental and nature conservation issues, but extended to all the areas that are related, especially economic questions. Environmental NGOs basically rely on volunteers, but the economic situation in CEE countries has made voluntary work difficult. In any case, environmental organizations need a professional nucleus and financial resources. They are unlikely, at least in the short term, to build a strong financial base from membership and individual donations. Governments could consider financial support to such NGOs in order assist them to play necessary roles described above.

Thus, transition to sustainable development requires forming of the ecological-oriented way of thinking and way of life, and also requires institutional changes, to what the deep analysis of public, economic and ecological intercommunications must precede. And until institutions will not attain success in the division of power and in giving a part of power to public authorities to make them able to participate in the process of taking decisions, an environment and natural resources will carry damage and there will be further facilitation of environmental crisis.

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INFORMATION INFRASTRUCTURE'S RELATIONSHIP TO TRANSACTION COSTS

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In modern economies transaction costs have become equally (and perhaps more) important as production costs. In economics and related disciplines, a transaction cost is a cost incurred in making an economic exchange. They include:

- *Search and information costs* are costs such as those incurred in determining that the required good is available on the market, who has the lowest price, etc.

- *Bargaining costs* are the costs required to come to an acceptable agreement with the other party to the transaction, drawing up an appropriate contract and so on.
- *Policing and enforcement costs* are the costs of making sure the other party sticks to the terms of the contract, and taking appropriate action if this turns out not to be the case.

Implementing a new information technology (IT) is generally seen as a means for reducing the transaction costs of an organisation. However, in practice, implementing a new IT often results in higher transaction costs. This is because the amount of information that need to be processed by the organisation increases. This can result in information overload. The cost of processing this information is calls coordination cost. If these costs exceed the benefits of IT, then the implementation becomes something negative and expensive.

To reduce coordination costs, organisations can do one of two things:

1. Improve information processing capabilities. This can be done either through implementing new information systems or creating lateral relations.
2. Use IT to reduce the need for coordination through increased slack resources (which reduces the need for extreme precision) or increased reliance on self-contained tasks which provides more of the information to a single point of contact rather than requiring communications and coordination among multiple units. The decreased amount of information to process means lower coordination costs and lower transaction costs.

Firms develop and become larger along time, using more and more computers to work. This growth in the number of computers leads to a growth of software use (operating systems and their applications, for example) and, as a result, to the growth in the number of software use/access licenses to be purchased and managed.

CLEAN CRNEC–EVERYTHING CLEAR

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Environmental issues. Main causes for opening this issue were tendencies of our municipality to make an application for building nuclear waste storage, which would increase municipality’s budget. The topic is still actual and it caused very hot polemics. The other cause was increased pollution of the brook Crnec, which also provides the drinking water out of some its wellsprings. The level of pollution exceed the acceptable standards, so the water isn’t drinkable any more. The youth wants to make a plan, with which we would show, that for better tomorrow we are able to make a perspective plan.

Municipality Velika Polana is located on swampy land, which was pretty dried up in the past in order to increase agricultural surface. Though Velika Polana

swanks with title “European village of storks”, has the biggest “black alder” forest in Europe and some very rare animal and vegetal species, the intensive farming and reclamation of land by drainage heavily loads the ecosystem.

“Clean Crnec – everything clear” program

The base of our program is ensuring the clean water in brook Crnec, which is being polluted by uncontrolled sewage, use of aspergillums and artificial manures. And after that: the redirection to eco farming. This would be really necessary; because Pomurje region (most North-Eastern region of Slovenia) used to have Hungarian principle of inheritance (this means that every son/daughter inherited some of the land), so the fields are splitted among many farmers which won’t be able to endure the market rivalry against big farmers...

We have developed our program into 3 categories:

Project 1: Cleaning

- Ensuring the clean water that flows into homes by achieving the agreements of acceptable swill level in neighbor villages
- Improving the ability of self-cleaning the brook
- Improving the self-cleaning of the nature in general

Project 2: maintenance of cleanliness

- Building the vegetal purifying plant for decomposition nitrites an phosphates and enlarging the swamp, because the excessive drying was harmful to the nature
- Prohibition of toxic substances and absolute conversion to eco farming or at least making a zone of strict eco farming

Project 3: marketing

The Prekmurje (Pomurje) and Koroska regions have the highest % of unemployment in Slovenia, and yet it is increasing. Although they are geographically totally different areas, the main reasons for the high unemployment are the big factories without perspective. In the near past people have occupied themselves with farming, but these days it doesn’t pay off any more, because low produce (which is the cause of aforementioned Hungarian inherit law). We would like to awake the farming in this region, but on very other way at it was known so far.

Citizens an farmers needs to be educated, and show them different approach to farming. There is much brighter future in growing the vegetables and fruits for little farmers, than grain, corn etc., which dominates these days. And what is more: our vision is in growing vegetables and fruits which are resistant to diseases, unlike the new sorts are. These sorts have grown already in our places, but the farmers have replaced them in order to grow more. With appropriate selection of sorts we will achieve, that use of aspergillums and artificial manures won’t be necessary any more. In the long term we will lower the production costs and we are expecting that our products will reach up to 5-times bigger value, than wholesale products. For selling these product we will engage the cooperative society “Pomelaj”, which is non-profit organization, with headquarters in Velika Polana which is already

launching similar program (with authentic Pomurje products in general). Pomelaj will have to found “eco farming section”, and employ an inspector which will have to watch for quality standards.

In the summer time when rainless period occurs, most neighbor towns and villages have problems with sources of drinking water, therefore is an interest to build a common aqueduct in every municipality in those two areas (Koroska and Pomurje). If Velika Polana (which is located in Pomurje) will achieve a goal to have faultless water in wellsprings of Crnec (because we will lower the pollution) and will gain a concession to supply water for other municipalities in dry period, we would gain a lot of money in our municipality budget.

There is also a big perspective for tourism (we had also very known writer Misko Kranjec, realism) and forming a park “Genetic bank” where we could present a lot of authentic species that have already extinct elsewhere.

INFLUENCE OF GLOBALISATION ON UKRAINIAN ECONOMY.

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Globalization is a process that takes place nowadays, and the only thing we can do about it is to describe it, make some estimation and participate in it. One of the simplest definitions of globalization – is a creation of the whole world supermarket with its owners, managers, suppliers and guards. Every country has its own specific role, rights and duties, which are not equal for people and for nations. How every one is affected by globalization depends on such interesting factors such as gender, nationality, religion and education.

Globalization benefits are: (i) a very fast progress and a high inventions level in some specific areas very closely related to globalization; (ii) the rapid technological advances, particularly in the areas of transportation and information technology, coming from contemporary approach to the economy based on knowledge; (iii) trade, easier financial transactions, cultural and information exchanges, international meetings and ideas-experience sharing events. In other words, the distance is not a problem as many things can be done immediately due to Internet, a rush life-style, broadening outlooks and open-minds.

Problems. 1) The unsatisfactory level of FDI. 2) The risks of oscillations in trade liberalization. 3) Migration trouble to the majority of developed countries. 4) Illegal work, smuggling through “free borders”, stealing intellect property rights. 5) Different conditions for entrepreneurs to compete in different countries (not similar living conditions and social policies).

Serious changes related to globalization much more exceed the ability to adjust these changes.

Ukraine having open economy with potentially high integration opportunities is still a resource appendix of developed countries. Only 5% of production commodities are high technology goods. International investors have badly estimated basic preconditions of making business in the country. According to the business index among 155 countries Ukraine occupies 124 places. Those conditions bring only negative influence on Ukrainian economy. So new estimation approaches are needed.

Deriving from the necessity to turn to sustainable development model is expedient to add "The Concept of National Security of Ukraine" with the new approaches to ensuring military, economical and environmental security and safety issues. When doing so it is important: to review the existing and potential internal threats to national security; to develop measures aiming at achieving the necessary parameters of economic development and environmental conditions; to identify the characteristics of national economy and environment being adequate to the national security level required and providing sustainable development, normal operation of the vital branches of industry and social sphere; and to improve the living standards all these factors affect economic development.

As for Ukraine's entering international organizations and communities it is required to fundamentally analyze strong and weak points of its economy.

POSITION OF ECOSYSTEM MANAGEMENT IN SUSTAINABLE DEVELOPMENT

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In recent years, sustainability has become an explicitly stated, goal of natural resource management agencies. In practice, however, management approaches have often focused on maximizing short-term economic gain rather than long-term sustainability. Several obstacles contribute to this disparity, including:

1. inadequate information on the biological diversity of environments;
2. widespread ignorance of the function and dynamics of ecosystems;
3. the openness and interconnectedness of ecosystems on scales that transcend management boundaries;
4. a prevailing public perception that the immediate economic and social value of supposedly renewable resources outweighs the risk of future ecosystem damage or the benefits of alternative management approaches.

A century ago, only a few prescient individuals were concerned about the sustainability of the variety of ecosystems that provide the commodities and services upon which humans depend.

Ecosystem management is as concerned with managing human activities as with managing lands and waters. There is little doubt that the resources upon which

humans depend are delivered from ecosystems in finite quantity. Even more daunting is the fact that the delivery capacity of these resources is not distributed uniformly across the globe or in patterns that necessarily correlate with human demand.

Ecosystem management is management driven by explicit goals, executed by policies, protocols, and practices, and made adaptable by monitoring and research based on our best understanding of the ecological interactions and processes necessary to sustain ecosystem composition, structure, and function.

Ecosystem management requires application of ecological science to natural resource actions. Moving from concepts to practice is a daunting challenge and will require the following steps and actions.

This kind of management recognizes that in order to meet resource demands sustainably, we must value our ecosystems for more than economically important goods and services. Sustainable strategies for the provision of ecosystem goods and services cannot take as their starting points statements of need or want such as mandated timber supply, water demand, or arbitrarily set harvests of shrimp or fish. Rather, sustainability must be the primary objective, and levels of commodity and amenity provision must be adjusted to meet that goal.

However good our intentions, management that focuses on commodity resources alone, that does not acknowledge the importance of diversity and complexity, that is not aware of influences of and impacts on surrounding areas, and that concerns itself with short time frames is not likely to be sustainable in the long term.

Ecosystem management includes the following elements: sustainability, goals, sound ecological models and understanding, complexity and connectedness, the dynamic character of ecosystems, context and scale, humans as ecosystem components, adaptability and accountability.

Broadly speaking the shift that is occurring is taking chronic and indirect effects of urban water management practices into account, as well as acute and direct effects. In this context articulating ecosystem management strategies makes sense because:

1. an ecosystem management strategy provides a relatively solid foundation upon which to devise urban water management strategies, and
2. an ecosystem management strategy is a powerful way of showing that changes to urban water cycle management are legitimate.

Successful ecosystem management requires institutions that are adaptable to changes in ecosystem characteristics and in our knowledge base. But to view management as experimental is not to advocate capricious implementation of untried or avant garde actions. It is rather to acknowledge the limits of our understanding of even conventional management procedures to the complex array of ecosystem components necessary for sustained functioning.

Ecosystem management is not a rejection of an anthropocentric for a totally biocentric worldview. Rather it is management that acknowledges the importance

of human needs while at the same time confronting the reality that the capacity of our world to meet those needs in perpetuity has limits and depends on the functioning of ecosystems.

There is clearly a need for additional education if successful adaptive management systems are to be developed. Managers have much to learn with regard to the setting of goals and expectations, monitoring, and data handling, and scientists require greater understanding of the priorities of and challenges to ecosystem managers. However, public education is critical. The limited public understanding of how science is done, much less the nuances of specific scientific issues, presents special challenges to adaptive management. Public expectations of both managers and scientists are often unrealistically high, a situation that is sometimes fostered by actions and statements of managers and scientists. It will be unlikely that society will accept "science as a model for ecosystem management" in the absence of a clearer understanding of the importance of uncertainty to both science and management.

MECHANISMS OF REGULATION OF ECOLOGICAL STATE OF LAND RESOURCES

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In modern conditions ecologization of habitability of the person becomes more and more essential necessity in sphere of wildlife management, and in particular of land tenure. Irrational use of land influences negative on person's health, confines social and economic progressing of the country, results to degradation of environment.

Ecologization of agricultural land tenure is especially actual for Ukraine today. Imperfection of system of land tenure, which has developed in agriculture in the prereform period, is called among principal causes of significant degradation of land in Ukraine and communal negative influencing of production on environment. At the same time, it is necessary to ascertain with trouble, that for years of realization of land reform in Ukraine the basic lacks in system of use and protection of the grounds of agricultural assigning are not liquidated, and these problems have become even more sharpened. Appreciably such situation is conditioned by considerably decreasing of the role of the state in conducting the basic kinds of land surveying works for last decade.

The ecological state of land resources in Ukraine causes necessity of creation of motivational and stimulated base for implementation of ecologically focused land tenure. It is necessary, in our opinion, for a transitive stage to market economy create the system of new economical regulators of ecological improvement of land tenure.

Allowing foreign experience of stimulating of the ecology-balanced land tenure and modern social and economic and ecological conditions of land tenure, it is necessary to enter different kinds of tax privileges in boundaries of tax and credit, and financial policies for using innovational and investment activity of commodity producers concerning of applying modern scientific and technical achievements in soil-protective, resource saved technologies of using of land resources.

Activating of investment activity of subjects of land tenure is carried out on the basis of implementation of an economical revolution of the ground and conformity of its legislative supply; decreases of tax profit for the sum, which is equivalent to expenses for purchase of the applicable special antierosion technique; drops of tax bets or dismissal on determined time from payment of taxes (the period of procreation of improving of ecological state of land resources), grantings of target tax privileges.

The important tool of ecological regulation of land tenure may be different kinds of the soft loan for financial support of commodity producers, which enter saving and nature protection actions. As specialists assert, granting of long-term credits with low interests to the enterprises for purchasing the applicable agricultural machinery is the most effective mechanism, which one stimulates investments on the nature protection goal. And application for the specified credits may be carried out only at the state support.

As domestic scientists in Ukraine point it is necessary scientifically prove and lead reform of pricing according to a modern ecologo-economical situation. As foreign expertise makes sure, in the countries where the differentiation of the prices is carried out paying attention of ecological factors, the state of environment is considerably improved. By establishing of surcharges or discounts of the prices, production of non-polluting commodity is stimulated, than concessionary terms for it in the market are constructed.

Allowing for complication and relevance of problem of pricing as one of a priority direction of urging of production of non-polluting commodity in general ecologically secure land tenure in Ukraine, it is necessary to enter the applicable monitoring or the account of ecological expenses on production and in land tenure.

It is necessary to solve the broad audience of problems - legislative, financial, organizational, statistical, that carries out positive going variations in the ecologo-economical mechanism of land tenure in Ukraine. It demands the coordination of such laws of Ukraine: "About a payment for the land", "Land", "Wood", and "Aqueous" codes; "About protection of an environmental habitat", "About protection of the land", "About land management", "About an estimation of the land", "About nature reserved fund of Ukraine" to pass laws of Ukraine "About the market of the land", "About the state land cadastre".

It will allow to enter such system of ecologo-economical mechanisms of protecting of the land from degradative processes in the shortest terms, which one would provide encouraging and enforcements of land owners and land users to realize nature protection and resource saved actions, namely, compulsorily -

restrictive and stimulated - compensating land tenure. It will be economically favourable and ecologically expedient, that is simultaneously economically and ecologically effective and respond the international standards of sustainable, ecologically balanced development of society.

ECONOMIC-ECOLOGICAL INTERCONNECTION. EDUCATIONAL BACKGROUND

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First and foremost, I find it necessary to mention that the very approach towards making economics' progress fit environmental rules and requirements doesn't only bear the vital importance for people within, but may also appear to be the primary occupation of humanity in future.

According to my personal vision of "economics for ecology" on the whole and educational problems of this approach in particular, I have quite a long ago realized, that success of implementation of this phenomena into life is inseparably linked with the reformation of educational system in this very direction.

On the school level, this actually means the introduction of economics as a school subject simultaneously with environmental studies. Such a tendency is caused by the present leading role of this scientific direction, which covers the main types of human activity in conditions of today's enormously competitive world. At this juncture, it is necessary to define in which dimension may economics appear on this level, which aspects may be useful and accessible. A special stress must be set on understanding and presentation of economics not as a subject, which consists of peculiar mathematical calculations, theories and rules but as a way of life arrangement which presupposes reaching the major economic goal – getting maximum of profit with minimum of expenses. This approach is to be implemented in every sphere of occupation of people, starting from household economy and finishing with successful strategy at work.

It is evident and nevertheless should be once again reminded, that economical studies are to be inseparably linked with ecological education and vice a versa. This interdependence is purely explained by the integral part and defining role and influence of nature conditions and resources on the development of humanity and thus on its economic activity. Being conscious that a human-being is at any rate a part of nature, its most prodigious part, it would be rather logical to build up a future upon strong and inevitable interrelations between the development of mankind and nature processes, principles and rules.

Formation of ecologically oriented perception of reality has already had its start at the end of 20th century. Upon evident reasons and with the aim of formation of ecological consciousness of future life makers, ecological education has been

made to be obedient since 70th of 20th century. Further to 90th it becomes systematical covering such major directions as rational nature management, nature defence and so on. At present, this educational branch is presupposed to get much deeper so that to be realized in basic human values, such as ecological outlook, culture, moral and so on. In case of success of the mentioned above realization, people are to develop and build up their lives upon strong consideration of the outcomes and consequences of their activity in reference to the natural aspect.

At the same time, such an educational basis is highly required in economical sphere. Here, first of all, people should learn how to get any necessary kind of profit out of what they're occupied with considering all possible outcomes and effects, including usage of natural resources and pollution. The last factors are to be perceived as investment targets, a careful attention to which brings reduction of expenses on operational level as well as strong strategic advantages.

At present, people get faced with these aspects already on practical level, when they either have over expenditures on resources or face the law-based pollution restrictions. In both cases such or similar practical manifestations of economic-ecological interconnection seem to play the role of unnecessary obstacle, which are easier to be ignored or avoided by any means (harmful extraction, cheap old technologies, various kinds of pollution) than to be solved by means of new technical equipment and technologies of extraction, processing and production, that in their turn presuppose reduction of pollution. Is there any opportunity to consider ecological culture and moral as well as ecologically oriented economic behaviour in such conditions? There appears a gap in the theoretical-practical circle concerning economics and ecology. This gap should be filled first of all by means of correct educational process system which will find its realization in raising of ecologically and life oriented people, businessmen and manufacturers in particular, who will channel their energy and potential to the search for new healthy technologies, resources and alternatives. Human's present day activity and general conditions of environment push us to recon with ecological primary role in economy which becomes the base for the future well-being of next generations of people and general state of Earth.

ECOLOGICAL PUBLIC RELATION AS A WAY OF PROJECTING POSITIVE IMAGE OF ENTERPRISE

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Nowadays priority problems of society become problems of environmental protection, ecology of individual regions and the whole world as main factors, which determine our future well-being.

That's why one of the important part of enterprise strategy become taking into account ecological aspects of business. In 1980th marketing concept was get rich by system of ecological estimation. Businessmen paid their attention that consumers not only wanted to satisfy their needs but also they wanted to include factors of life quality increase. This concept not include only sufficiency and adequacy of high quality goods and services but even improvement of the human environment.

And it is very important to analyze and take into consideration this need of human being in ecological safety (first of all his right to clean health and favourable for living environment).

Enterprises began to develop and realize programs of processing of wastes, recycling of wastes, implantation new wasteless and energy-saving technologies, etc. Nowadays green marketing is used by most forward looking companies and firms.

One of the priority guidelines of enterprise evolution is ensuring an openness of this firm, which undoubtedly make more reliable and trustworthy positive back relationship with consumers. When producer honestly and professionally tells about his production, he will provide with adequate information to his clients and community as a whole.

If there is a shortage of information, negative information could be spread, consumers will not buy production of this firm, firm's reputation suffer from this and a company position in a market will be become weaker.

And just that's why ecological public relation must become one of the components of enterprise activity.

Ecological public relation is cooperation with community in a way of research social opinion and coordination organization activity with common interests in a field of environment.

The main goal of ecological public relation is to attract attention of large sections of the public to ecological problems both global and local for providing sustainable development of society.

We should to note that ecological public relation activities can't happen themselves only to attract attention. If after advancing a slogan during such actions people will not see concrete effects it could lead to danger situation for organization and in future bring it negative fatal consequences.

It's not enough only to do something well (different nature-conservative measures, charitable actions) and tell people about it. A complete responsible public relation has to pose following problems:

- tell what you are doing;
- ask others if they agree with your dealing;
- explain others your motivation to do just in such way;
- take into consideration others interests in making decision.

The main tools of ecological public relation are:

- announcement for mass-media;
- information for workers;

- ecological report;
- ecological charity;
- specialist work in this field of study;
- working with inhabitants of a region – neighbors of organizations;
- etc.

Ecological public relation is a factor of socially oriented relationship. It is a model of two-way communication. He appeared as reaction of entrepreneur structure on changing common interests. A final goal of ecological public relation becomes accordance between public and individual enterprise concerns.

Ecological public relation just are in progress, but it will become essential part of eco-buisness and green tourism, because of new task of environmental policy is no confrontation but cooperation ecological public movement with business.

COMMON PRINCIPLES OF ENVIRONMENT PROTECTION. THE WTO INFLUENCE

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Starting in the mid-90s, the US Congress created a pollution control system based on risk assessments and “end of pipe” regulations. As evidence of harm accumulated the government conducted risk assessments to decide how much toxic pollution was acceptable. Corporations then added filters and scrubbers to reduce their harmful discharges to “acceptable” levels.

As the number of regulations multiplied, large polluters hired staffs of lawyers and engineers who did nothing but worry about the regulations. They learned to live with this system. In fact they even turned it into a competitive advantage.

Under the end-of-pipe, risk-based regulatory system, regulations were always a compromise between what the scientific data indicated and what the corporate polluters were willing to accept. Such a system could never fully protect public health or the environment.

During three decades of environmental protection based on risk assessments and end-of-pipe regulations, the entire planet became contaminated with low levels of industrial poisons. Persistent organic pollutants like DDT, PCBs, and synthetic compounds of lead and mercury found their way to the deepest parts of the oceans, to the highest mountaintops and to the most inaccessible reaches of the poles. As these exotic poisons entered food chains, they collected in the bodies of the largest predators, chief among them humans.

The incidence of childhood cancers increased at the rate of about 1% per year. Immune system disorders in children, such as asthma, increased even more rapidly. Many observers believed that the new principles of environment protection should be invented.

In the early 1960s, the US banned above-ground nuclear weapons tests to eliminate radioactive fallout. By the mid-1970s, the atomic fallout precedent was being applied to banning DDT, PCBs, leaded gasoline and several other dangerous toxicants. Bans are the essence of pollution prevention and they leave no wiggle room for the polluters.

In 1976, the US Congress voted against a proposal to create a supersonic transport airplane (the SST). Based on evidence suggesting that the SST might harm the upper atmosphere and might lay down a swath of “sonic booms” everywhere it flew, Congress took precautionary action and voted down the SST proposal. The precautionary principle moves the burden of proof of safety onto the proponents of a new project, a new technology or a new chemical. Now the polluters have to convince the public and the government that their next innovation will be acceptably safe.

Now many products in the grocery store say “organically grown”, “dolphin-safe” or “recycled”. Such labels empower people with information so they can vote with their money to protect the things they value. Eco-labeling says people have a right to know the effects of their purchases on the natural environment.

Thus all three of modern principles are unsatisfactory from the viewpoint of large corporations because they shift the advantage to the public in protection health and environment.

To get rid of these troublesome new principles and to force the world back to end-of-pipe regulatory controls, corporations have now created the WTO. In only five years of operation the WTO has gone a long way toward declaring each of these three principles illegal.

WTO rules say that the method of production cannot be used as a basis for discrimination against a product. The WTO has formally established this principle in several decisions. When the US refused to allow the importation of tuna fish caught in nets that needlessly killed millions of dolphins, Mexico took it to the GATT (the predecessor of the WTO) and won. The ruling said it was not legal to discriminate against canned tuna based on the methods by which the tuna was produced. Since then, the WTO has reaffirmed this principle several times.

Restrictions on goods must be the least-trade-restrictive possible and the restrictions must be “necessary”. To prove that a regulation is “necessary”, a country must prove that there is a world-wide scientific consensus on the danger, and a WTO tribunal of corporate lawyers must agree that the proposed regulation is a reasonable to the danger.

Labeling – even voluntary labeling – is on the way out. It appears to be only a matter of time before WTO will rule that “eco-labels” are illegal. The Clinton\Gore administration has said formally that labeling food containing genetically modified organisms is an illegal restraint of trade because there is no significant differences between normal food and genetically modified food. It even officially argues that “country of origin” labels are WTO-illegal because they allow consumers to discriminate against certain countries.

It seems like, according to current WTO rules, the only legal system for pollution control is old end-of-pipe system based on risk assessment. In effect the WTO has erased 30 years of work by environmental activists and thinkers.

CONSUMER PROMOTION OF ECOLOGICALLY DANGEROUS GOODS AND SERVICES

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Today the problem of protecting environment and improvement the state of people's health requires the primary decision. In the developed countries more people are ready to pay an additional price for ecologically safe products. But, unfortunately, in Ukraine the demand for ecological goods (works and services) is considerably below and determines the proper supply.

To solve this problem it is necessary to develop the market of ecological goods and services and to form advantages for consumers to motivate the consumption of ecologically safe products and to reduce the consumption of ecologically dangerous ones. In everyday life we mainly understand tobacco and alcohol as ecologically dangerous products, and also we understand as dangerous ones the goods which do not correspond to the ecological requirements and can bring harm to the people's health and environment. Trying to increase incomes and to raise the level of sales, producers use the various methods and receptions of influence on consumers, among which sales promotions occupies a considerable place.

In Ukraine we can see a lot of advertisements and promo-actions of alcoholic drinks and cigarettes. Besides lots of products which are advertised actually are not such as said. So the publicity reports about cigarettes must in all respects correspond to the norms of legislation. They also must be regulated by the additional norms set on the agreement between tobacco manufacturers. As for example in Great Britain to detail these additional limitations, consultation about acceptability of one or another publicity report can be got in "Tobacco Advisol Committee" in London.

As an example in the field of adjusting and control marketing communications such as advertisement and sales promotion, it is possible to use Great Britain experience with its system of self-regulation. In the UK, the British Code of Advertising, Sales Promotion and Direct Marketing (the Code) is the rule book for non-broadcast advertisements, sales promotions and direct marketing (marketing communications). The sales promotion rules are designed primarily to protect the public but they also apply to trade promotions and incentive schemes and to the promotional elements of sponsorships.

If we speak about ecologically dangerous goods or services, in the process of sales promotion a large role will be played by the government. The hard regulation foresees state interference and legal responsibility. This type of regulation is characterized by the presence of laws in sales promotion relations. But we consider the necessary presence of self-regulation system as one of the indexes of market development, when relations which arise up in the process of marketing communication activity are regulated without bringing in of extraneous mechanisms.

ECONOMICS FOR ECOLOGY

Yemba Lomango
Congo

The republic democratic of Congo have a vast potential of nature resources and mineral wealth, yet the economy of the DR-cong has decided drastically since the mid –1980s Agriculture is the mainstay of the economy, accounting for 57,9% GDP in 1997 etc..

Industry especially mining remains a great potential source of wealth for DR-Congo in 1997 industry accounted for 16,9% of GDP.

Despite the country's vast potential under the President Mobutu regime widespread corruption economic controls, and the diversion of the public resources for personal gain thwarted economic growth.

Rainforests in the central and Northern regions of the DR-Congo occupy more than half of the country's total area of nearly one million square miles. These rainforests represent 82% of the country original forest cover about 47% dense tropical forest and 6% of the planets forest are in the DRC . As a result of the long distances between CDRs forests and commercial harbors, as well as a political crisis and armed conflicts in the region during the 1990s ,most of the country forest remain relatively untouched. The DRC are also the long-term ecological effects of the strife in the DRC. The Virunga National Park is the world's largest habitat of mountain gorilla, an endangered species.

Recent refugee movements brought hundreds of families into the park where they burned down forest to allow their cattle to graze.

Rebuilding a country that has been steeped in conflict for such a protracted period is a daunting task indeed. When Belgium granted independence in 1960,by one account there were only 17 university graduates in the entire country. Most people had only a fourth grade education. There are literally hundreds of ethnic groups inhabiting the Congo's vast territory.

ECONOMIC ASPECTS IN ENVIRONMENTAL EDUCATION

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1. Introduction. Ecology and Economics as sciences. Their connection and interaction.

- Ecology is a science of co-operation between organisms and environment.

- Economics is a totality of social-economic relations, conditioned by history, which can characterized economical development of society, its basis...=>

- If we can't support our legislation of protection of environment, development of this field of state economy on the enough level, we'll never have high (or enough[⊗]) developed economics.

Because 'ab ovo', in our case, is from the cleanliness and order in all, what is connected with urban places.

2. 2. Real situation, which formed in all Eastern Ukraine and, for example, in Kharkov for young specialists.

- Each year two hundred (only state order) trained specialists graduated from 20 institutes, which have graduate programs in environmental sciences.

- Survey of 2005: in Kharkiv academy of Municipal Economy in 1994-2004 25% of young people are unemployed, 40% - worked in the fields related to the environmental Engineering and Management, the rest worked at state (or private) enterprises dealing nothing with the Environment.

- the most part of students, who is studying now, do not have any ideas where to apply their skills.

3. Ways of co-operation and forming successful projects, business-plans in the field of Environment. (in our Academy they are following)

- Project Tempus-Tacis
- HELMET
- SEPS
- 'Green' Private business

4. Our suggestion.

1-st step: Promotion (interest young people and investors)

2-nd step: Attract of investments

3-rd step: Forming budget and cost breakdown.

4-th step: Using of students' course papers, graduation works in projects.

Monitoring and evaluation of them.

5-th step: The most profitable of them put into practice.

5. Expected results.

- Elimination of the negative results of human activity (overcover cutting, rubbish, waste)

- Creation of new 'rest territories', utilization of builders' and other refuse.

- 'Ecological pathes' as a support of connection 'Human-Environment' in society's mind.
- Attraction of young active students and supply graduates with working places.

The aim of our work was to show possibilities of direct participation of students in projects, which further the development of personality and career.

This, in it's turn, will gave good push to economical development of different branches:environmental engineering and managment.

We also have tables and schemes, which can present, if you'll give this opportunity to us. We'll tell all in details about our project with pleasure.

ABSTRACT ECONOMICS FOR ECOLOGY

*Macumu
Burundi*

1. General information

Bujumbura is the capital of Burundi, the total population is 60825.000,density persons per sq km 2003 245,life expectancy 42, population change average % per annum 2000-2005 3.1,urban population % 2002 (10).

Area sq km 27835, forest sq km 2000 1,adult literacy % 2002 (50.4)

2. The Economics for ecology

Burundi is a landlocked resource-poor country with an underdevelopmentd manufacturing section.the mainstay of the Burundian economy is agriculture,accounting for 58% of GDP in 1997. Agriculture supports more than 90% of the labour force,the majority of whom are subsistence farmers.

Although Burundi is potentially self-sufficient in food production, the ongoing civil war,overpopulation and soil erosion have contributed to the contraction of the subsistence economy by 25% in recent years.

Large numbers of internally displaced persons have been unable to produce their own food and importer with food accounting for 17% of imports in 1997.

The main cash crop is coffee which accounted for 78.5% of exports in 1997.This dependence of coffee has increased Burundi's vulnerability to seasonal yields and international coffee prices.coffee is the largest state-owned enterprise.

The total forest area in Burundi is 152,000ha of land area 5.9% poor,the trees for fuelwood coupled with agricultural clearing and grazing lands has resulted in nearly complete deforestation of the country. Massive ethnic civil war and the subsequent collapse of government conservation efforts further reduced forest areas and resulted in increased poaching of wildlife. Before the savage civil war, high population density (450 people per square kilometer) on mountain slopes resulted in heavy soil loss and damage to agriculture.

Due to habitat destruction, gorillas and elephants are extinct in Burundi and virtually all wildlife is threatened.

On paper, just 5.4 percent of Burundi's land mass is under any form of protection. In 2005, the government of Burundi announced a ban on the harvesting of natural Christmas trees in an effort to slow deforestation. Since the Christmas trees are an introduced plantation species, the ban had little effect on the country's biodiversity. Overall, Burundi was once home to 2,500 species of plants, 597 birds, 26 amphibians, 80 mammals, and 116 reptiles.

ECONOMIC STRATEGIES OF ECOLOGICAL POLICY

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To become a creator of the future, one has to comprehend natural features of changers, which society will come up with in further. Only such approach gives for country opportunities not to move forwards society development passively, but influence on its major events actively, becoming a leader of social progress.

Harmonic cohabitation of the nature and deeply technically equipped society is possible due to scientifically based compromise between nature development laws and humanity development laws with its range of needs and achievements. Responsibility for waited order and harmony in men's house lies on rationally ecological management systems.

The main trends of economic mechanisms of ecological management are current regulators modernization, which is realized with simultaneous development and implementation of new market instruments into practice. World experience shows that ecological management system depends on economic mechanism of environmental management effectiveness, which is based on a balanced combination of force-limited regulators, which, in its turn, can provide more favorable conditions for ecologically safety technologies implementation.

The major trends of society ecologization can be the next:

1. Products need decreasing (it means input of material per unit of production of consumer demand decreasing; withdrawal from ecologically unfavorable goods or shifting them into more pure ones, which will decrease input of material per unit of production and energy intensity of products; consumption structure improvement; refusal from goods, which are not vitally necessary for humanity).

2. Products changing (ecologization of production, which provides recourses perversity decreasing).

3. Products usage changing (ecologization of consumption is connected with any kind of changing concerning production usage or waste utilization, which decreases influence of ecodestructive processes and implements ecologically safety

ways of products usage; limitation of unsafe products usage in the spheres, where it can course especially unsafe ecological consequences).

One of the examples is improving of ecologically safety utilization level of products wastes.

Intermediate strategies can be based on these three basic strategies combination.

Substrategy 1+2: products changing (living cycle prolongation).

Substrategy 2+3: products construction improvement concerning their ecological usage characteristics (this direction includes decisions, which can facilitate wastes utilization after living cycle ending).

Substrategy 1+3: increasing of products usage effectiveness (implementation of savings regimes and rational exploitation of goods; products recycling).

Humanity came up to natural materially-energetic limits of influence on the Earth ecosystem.

Ecological limits have become huge obstacles concerning material production development.

It courses prospects of ecological goods production development. Herewith notion of these goods will be constantly changed: from environmental constructions and recourses safety technologies to informative goods, services and favorable living complexes building. As local ecosystems and living communities have its own peculiarities, globalization and standardization has to be connected with regionalization, which means development of ecological, social and economic constructions diversity.

In this way a motto “Think globally – act locally!” will be realized.

INSTITUTIONAL BASICS OF SUSTAINABLE DEVELOPMENT

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The problem dealing with providing sustainable development lies on the plane of three basic elements: social, economic, and ecological one.

Protection perspectives of human beings (as biological species) and their progressive development (as unique natures) are at the heart of the concept of sustainable development.

It may be affirmed that the development has two vectors: in space, or intra-generational equity (geographical or social differentiation), and in time, or inter-generational equity.

The first tendency deals with politics. “Intra-generational equity” means international equality.

The second tendency includes social institutions. Institutions are the complex of norms regulating the stable actions in the process of social sphere.

There are three types of institutions:

- decision-making systems (market, democracy, hierarchy, a system of negotiations);
- norms, traditions, habits;
- organizations (state, corporation, family).

Cumulative effect of social institutions impact is obvious. For instance, a long-term democracy leads to a better today's democracy.

Institutional factor plays a considerable role in transitional process on the way to sustainable type of economic development.

State's interference into environmental problem solving, as well as aims, principles, and economic mechanisms of such interference are being established by environmental state policy and are being approved in environmental protection laws.

Associations, firms, families set contract rules signing private treaties keeping within the frames of legislation.

Corporations and export-oriented firms are making their inner environmental policy, connected with their purposes with respect to natural resources protection and reducing negative influence on the environment.

However, institutional development is not any more the power-accumulating process for only social institutions (which are intensified by a state-dominating society and the weakness of social role). This means the development of private sector and non-government organizations.

The way towards sustainable development requires environmental thinking, new approaches to creating social-economic strategy and the state policy, based on target-points - indicators.

Among the institutional indicators there are:

- management and planning for sustainable development with respect to environmental and development problems;
- national mechanisms and international cooperation for creating sustainable development potential in developing countries;
- international institutional order;
- international law mechanisms;
- information for decision making;
- strengthening the community's role.

It is necessary to know to what extent people are able to change the main way of their development and provide sustainable future in the condition of globalization, which today is not a predictable and uncontrolled process.

FINANCIAL MANAGEMENT: MAKE POLLUTION PREVENTION PAY

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The financial management of a company, including financial and accounting rules, can have a major impact on corporate performance in terms of growth and survival and of pollution and environmental impact. Environmental management can and does produce financial benefits, but these may only occur in the longer term. The pressure of meeting quarterly profit targets can jeopardize future growth and the ultimate survival of an enterprise. It can also jeopardize the future prospects of the enterprise in taking proper account of its environmental responsibilities. In summary, prevention is better than cure and early investment in clean technology can avoid later environmental problems and enhance profitable performance.

A financial manager could agree with this last statement but would certainly like to calculate the degree to which pollution prevention pays. That may not be so difficult in the case of investing in a new furnace which consumes 20 per cent less energy than the existing one. It may be rather more difficult, however, in the case of a new product that causes a complete change to the product mix.

Due to the dynamics of a business, calculating whether pollution prevention pays is not an easy task. After the strategic reorientation of an enterprise to Greener products it is normally impossible to calculate what the results would have been if the change had not taken place. Better sales figures could be attributed to the new strategy without an unequivocal cause-effect relation.

As environmental regulations are undergoing dynamic development in many countries, an investment today will have to rely on a number of assumptions concerning, for example, pollution charges and environmental taxes or emission rights which will affect cost-benefit calculations. Financing costs (interest rates, credit lines) is another factor which determines whether pollution prevention pays. As a positive development, some banks provide more attractive financing conditions for Green investments compared with others. Legal provisions may also grant shorter depreciation periods for environment-related investments.

Remembering that in private enterprise the objective of financial management is to maximize returns on capital invested, a short-term view of finance puts particular emphasis on the validity of such tools as discounted cash flow. Discounted cash flow has many valid applications, but, used nonselectively, it will always recommend minimizing expenditure in the short term, even though greater expenditure might then be necessary in the longer term. The long-term expenses will be discounted away, while the short-term expenditures will be predominant. There will always be an argument against spending money now to save money in the future on water, energy, raw materials and pollution control. The choice of discount rate is fundamental to calculations of present value of investment, and it is

rare for the corporate discount rate to be the same as the social discount rate. While current and short-term returns are valued highly, society may have a longer-term perspective, valuing future returns more highly than corporations. The core of calculating returns on environmental investments is reconciling conflicting discount rates.

Controlling is perhaps the most effective function in monitoring and enforcing environmental targets in the enterprise in terms of input-output or cost-benefit indicators. The task of environmental controlling is to base its actions on a set of indicators relevant to the environment. The selections of meaningful indicators for environmental performance is a particular challenge.

Financial and accounting managers should be made aware of the external, community and economic effects of pollution and environmental degradation, and to consider the implications for national economic growth as well as for the growth of their enterprise and the specific financial implications of waste.

Data on environmental economics in general, and the internalization of environmental costs, together with information on damage costs, cost benefit analysis and the result of cost benefit studies, will show how the total benefits of a clean environment outweigh the costs of achieving that clean environment. A primary aim would be to establish a closer working relationship between financial managers and accountants, on the one hand, and project and environmental engineers within the corporation, on the other.

ECONOMIC SYSTEM'S SELF-ORGANIZATION AS A MOVING FACTOR OF ITS SUSTAINABLE DEVELOPMENT

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Any systems and economic systems as well are divided into three levels: self-organizing, self-studying and systems without firm stabilizing links.

Among the systems that are related to the processes of regulation, self-organizing systems are on the highest level, and then come self-studying and the lowest level is for systems without any firm stabilizing links. Unfortunately, today our economic system can be considered as a system without any firm stabilizing links. Planning and instructions formulate system's management. It means strict programmes, which do not allow any operative changes in case of any external changes in the environment. Stabilizing feedback mechanisms are either alien to the system or rather firm. In any case any chaos is caused by the lack of relevant feedback mechanisms. The level of entropy (chaos, indefiniteness and disorder) in such system is rather high. It is characteristic of the system with weak regulating impact. Today any economic system must be open. It must react to the environment and export its inner entropy in it, with the increase of free energy.

It is necessary for any economic system to accumulate free energy for extended transformation and reproduction, which means the highest homeostasis level. To achieve these goals it is vital to subdue entropy, which depends on systems information level. In this case entropy is as a result of these or that professional decisions that mean indefiniteness of the situation for any enterprise. Only information can eliminate indefiniteness. Lets consider the case with the following results x_1, x_2, \dots, x_n with the probability of

$$p_1, p_2, \dots, p_n; p_i \geq 0; \sum p_i = 1.$$

In 1948 an American engineer C. Shannon introduced the concept of information entropy H that characterizes the indefiniteness of the results of the experiment,

$$H = -\sum p_i \log_2 p_i.$$

In case of a reliable result, when $p_1=1, p_2=p_3=\dots=p_n=0$, then $H=0$. It means that there is no any indefiniteness. Maximum value of H is reached when all results are equally possible.

In reality for any enterprise it means entropy $H(A, B)$ or entropy of related systems.

Economic system exists only supporting metabolism with the environment. It has clients, suppliers, consumers of goods and services, companions. The law regulates the relationships between them. These relationships can be described with the help of enterprise's entropy.

Lets consider two systems A and B . The entropy of the joint system A, B is equal to absolute entropy of one of them plus conditional entropy of the other in relation to the former one.

On the way to scientific progress the countries, which faster react to the changes in the environment, are among the leading ones. These indicates that previous experience helps to change tactics and structure of an enterprise. This is the concept of a self-organizing economic system.

Sustainable development in market economy depends on the retaining and increase of the market sector. The system needs self-organization oriented for consumers. Only in this case stability and sustainability can be achieved. The following condition must be observed:

$$H(A, B) \rightarrow 0$$

Thus sustainable development of any economic system can depend on some regulating parameters:

- maximum accumulation of free energy;
- minimum of entropy in an enterprise;

- the volume of sales for a definite period of time;
- the medium interval of time T_m from the moment of information access about the state of the object of management till the management decision;

The system must be functional. Then with the help of feedback mechanisms it can minimize the time of reaction to the changes in the environment.

DYNAMICS OF OPEN ECONOMIC SYSTEMS SUSTAINABLE DEVELOPMENT

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Economic system as any system that develops needs to be open. It must have information, energy and entropy exchange with the environment. In practice sustainable development can be treated as a dynamic process. Under dynamics we understand economic system's transformation into more effective state. This dynamics can be temporarily digressing in terms of management.

The moving factor in economic systems (firms) development is reproduction, for example, reproduction of fixed assets on an enlarged scale.

Lately the level of effective reproduction processes in different spheres of Ukrainian industry is very low. Coefficient of renewal and removal of machinery and equipment, the most effective part of fixed assets in industrial firms, is about 5–6 and 2–3 % of their total volume and the coefficient of economic wear is 50–55% of their total value. The third part of the current industrial equipment is worn. This explains the need for effective reproduction of fixed assets, as well as the increase in technological innovations and use of labor means.

The lack of investments speaks for the current state of affairs and inability to manage Ukrainian economy.

Synergetic effect of emergency can compensate the lack of investments. For the first time the effect of economic synergy was thoroughly described by I. Ansoff, when he investigated corporative strategy of holdings. In economics synergetic effect is connected with the combined use of some commonly agreed strategies, which turn to be more useful than an isolated introduction of one strategy. Under such condition different factors influence each other so much that their common effect is much greater than their separate application. Thanks to this effect a firm can increase its effectiveness.

Every firm is interested in the increase of its own free energy. For this purpose more output as well as its realization is needed. Famous German firms such as “Bayer”, “Bosch”, “Mannensmann”, “Siemens” etc. can get free energy from the use of unconventional organization methods. They, for example, form the so-called Venture Capital Clubs for the sake of getting investments. Investments also stimulate research and industrial development. It is necessary to consider demand

for goods as well. If there is no demand then the firm must modernize its production, produce and advertise new goods applying new technology.

Nowadays investments are the most important means of structural changes in economy. The greater investments flows are the faster reproduction processes occur. The synergy of investments must be taken into account. This is the multiplier effect of any firm's investments.

Any firm as an open economic system must take into account the emergency effect in its activity. It is necessary for industrial transformations (reproduction of fixed assets on an enlarged scale and the reach of new homeostasis level).

THE DYNAMIC CAPABILITIES FOR MANAGING ECOLOGICAL INNOVATIONS

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There are two research approaches towards studying the question of how ecological and social impacts become relevant to business success. Drawing on industrial organization economics, one stream of scholars uses the structure-conduct-performance (SCP) paradigm to explain how firms can use environmental innovations to generate business opportunities. Dyllick, for example, argues that competitive advantages from environmental strategies are contingent on ecological transformation of market structures. Only if transformation mechanisms such as market prices, policymaking, and public concern change the competitive field will ecological strategies be successful. The "logic of ecological transformation" suggests under which market structures environmental strategies should focus on risk management, cost reduction, or innovation. Among other things it has been used to investigate under which conditions ecological and social innovations can move from market niches into mass markets. Studies include a review of the green energy, the organic food market, and ecological. From these findings a theory of ecological mass markets has emerged, which draws widely on the SCP paradigm.

A second line of scholars has used the resource-conduct-paradigm to study when and why ecological strategies offer competitive. They argue that a firm's capacity to manage sustainability challenges is a valuable resource in itself. At the same time this approach suggests that a successful sustainability strategy requires the presence of complementary resources in order to be successful. Several authors have applied resource-based perspectives to sustainable innovations. Some have, for example, studied the interplay of knowledge management and environmental competencies in product development. Meyer uses a resource perspective to analyze how ecological textiles could find a way out of their current niche markets.

Although they might seem to be opposing alternatives, both paradigms are actually complementary. Applied to the case of sustainability innovations, the first

focuses on changes in the competitive market environment over time and the impact this has on the performance of such innovations. The latter looks inside a firm at the competencies required to make ecological and social innovation a success.

Bringing together the RBV with innovation theory, one can see that one aspect particularly stands out. Competence-destroying innovation can reduce the value of resources very quickly. This is particularly true in highly dynamic markets. In some cases a changing environment can turn formerly valuable capabilities into organizational rigidities and liabilities although the underlying resource has not changed. Firms are thus permanently held to "leverage" their resources by managing and improving their resource base if they want to maintain a competitive advantage. Abilities that allow firms to do so successfully are usually referred to as dynamic capabilities.

Dynamic capabilities are the firm's processes that use resources – specifically the processes to integrate, reconfigure, gain and release resources – to match and even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die.

The application of dynamic capabilities in organizational life is infrequent. In stable environments resource combinations may very well remain constant over long periods.

However, when change occurs, then the reconfiguration of assets stock becomes consequential to an organization's ability to maintain their competitive advantage. Dynamic capabilities are particularly relevant in environments subject to frequent radical change. Such organizational settings are characterized by periodic fundamental alterations in the way competitive advantage is generated and maintained.

The dynamic capability literature is valuable because it opens up the question of how resources and core competencies are developed and maintained. Zollo and Winter extend this logic by asking in turn where dynamic capabilities come from, and identifying the organizational learning cycle (variation, selection, replication, and retention) as its source. It will suffice to note that by destroying the value of existing competences innovation requires firms to either generate new resources and competences or rejuvenate them. The organizational and strategic routines (i.e. "dynamic capabilities") can help firms to do so.

Sustainable competitive advantages (i.e. such as differentiation or cost advantages) are derived from a firm's core competencies, which are made up of valuable assets (intangible and tangible resources). Through its dynamic capabilities a firm accumulates, maintains, and recombines valuable assets so as to permanently renew a firm's core capabilities. The generation of dynamic capabilities relies on a firm's organizational learning processes. An organization's ability to learn (or its inability to do so) is in turn impacted by its organizational rigidities, which stem from current competencies, assets, and capabilities.

SUSTAINABILITY AS A DRIVER FOR ECOLOGICAL INNOVATIONS

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Over the past three decades sustainability, i.e. an ecologically, economically, and socially balanced development, has become the mantra of global and local policy making. As the term has infused political discourse it has also been taken up by an increasing number of managers and researchers who are interested in the impact sustainability will have on business strategy.

Traditionally the focus of such publications has been on managing the existing product lines of large corporations in terms of risks, cost, reputation and differentiation deriving from sustainable development. To a lesser extent has the focus come to rest on the potential of innovations and entrepreneurial start-ups. Recently, however, ecological and social innovations have been proposed as a driver for business opportunities. They have been described as a source for "environmentally benign growth", as a "source of creative destruction", as well as the beginning of the "next industrial revolution".

When taking a closer look at the case examples given in books such as *Factor 4* by Von Weizsäcker, it becomes apparent that they are either prototypes, such as the hypercar or the FRIA refrigerator or have become relevant only to a small market niche, such as energy efficient housing or local food markets. Summing up the problem one might ask the rhetorical question: "If all this is so smart, then why hasn't it already happened, with a whole raft of billionaires to boot"? Obviously, the mere technical feasibility of a sustainability-related innovation is not sufficient. If they want to move from the informal sector into mainstream markets sustainability start-ups need to undergo a number of transformations.

Corporate sustainability is essentially about change and how firms can derive benefits from this change. The notion that *sustainable development drives disruptive innovations*, which in turn offer opportunities for innovative firms, thus has come quite naturally to the sustainability debate. Ecological innovations have been proposed as a source for "environmentally benign growth, as a "breakthrough discipline for innovation", as a "source of creative destruction", as well as the beginning of the "next industrial revolution".

Sustainability innovation will be defined as follows: *sustainability innovation* is any process of social change which increases the proceeds derived from current natural, social, and economic capital, while at the same time protecting and enhancing the underlying capital stock.

The changes stimulated by sustainability innovations can in turn lead to business opportunities. Some authors, for example, argue that sustainability-related innovations are supposed to generate important new business opportunities by cutting in half resource consumption while doubling quality of life at the same time.

There is a large number of publications advancing one tool or another for sustainability innovations. These publications have been complemented by only a small number of empirically grounded studies on sustainability innovation.

In their study of 150 German and British pharmaceutical companies Blum-Kusterer and Hussain find that regulation and technological progress are the two main drivers for sustainability innovations. They observed that the lure of emerging market niches was no important motivator for the firms studied. These findings are supported by a study of nine UK manufacturing companies by Foster and Green in which they conclude that in general customers are not actively seeking out green innovations if these are more expensive. In his seminal book on Eco-Innovation Fussler agrees that a majority of today's firms is not actively pursuing eco-innovations as a strategy to create market share. However, he does not believe that this "innovation lethargy" will persist in the years to come. Using a number of anecdotal case studies he shows that innovative firms can succeed in driving ecological innovation profitably, not by following current customer demand but by creating future market space. This notion that firms can actively transform market structures so that they better support ecological innovations is also proposed by Dyllick.

One of the earliest studies analyzing the antecedents of ecological innovations was carried out by Seidl. She examined the role corporate culture plays in supporting or hindering the development of ecological innovations through an in-depth case study in the agrochemical industry. Seidl developed propositions on how firms can further a climate supportive of ecological innovations through organizational development and improved communication. The role of cultural identity has also been identified as a key issue by Blättel-Mink in her analysis of ecological innovation in six German companies. Both studies hint at the relevance internal skills and resources have for successful sustainability innovations, a theme that will be discussed further on in more detail.

The studies discussed so far have taken a firm-level approach in studying sustainability innovations. By studying industry-level dynamics a research team at the University St. Gallen has investigated under which conditions ecological and social innovations move from market niches into mass markets. Studies include a review of the green energy market, the organic food, and ecological textiles. From these findings a theory of ecological mass markets has emerged.

Villiger concludes that the success of eco-innovations relies strongly on the specific dynamics within an industry sector as well as pressures from regulatory and public players. They urge innovators to use the whole "map of the ecological mass market". Rather than aiming only at the high price/high ecology niche they suggest that innovative firms should also consider the middle segments of only modest ecological innovation but a larger market share.

ECOLOGY AND LAW: THE HUMAN RIGHTS CASE

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1. On the beginning of the new millennium manhood decided to consider seriously the problem 'ecology and health'. Environmental health research and management both require multidisciplinary approaches. U.S. experience shows that implementation of risk assessment and risk management methodology in environmental decision-making process has been very successful.

2. According to the obligations taken at the conference of the World Organization for Health, held in Helsinki in 1994, all European countries must prepare national programs and plans for supporting clean environment. They also must start to realize these programs.

3. As is known, Ukraine has serious problems with the health of her population, owing to the pollution of the environment, man-caused catastrophes, changes in ecosystems, urbanization, etc. The importance of state environmental policy is reflected in the Constitution of Ukraine in the following way: To live and be healthy a human being has the right for safe environment as well as for the reimbursement of the losses incurred under the neglect of the right. Each person has the right to have the free access to the information about the conditions of the environment, quality of the goods and has the right to spread it. Nobody can make the information a secret. But environmental defence was and is a very pioneering and necessary job in Ukraine, which has become an independent state and started to create a Rule of Law society, respecting the court system as an independent branch of power. The environmental awareness of the population and of lawyers, including judges, remains very low.

4. The goal, priorities, mechanisms of the environmental policies and the ways of their harmonisation with the European environmental process have been formulated in detail in the following conception prepared by the Ministry on the Environment and Natural Resources of Ukraine 'Basic directions of state environmental policy, the use of natural resources and guaranteeing of nuclear safety.'

5. Thus, the goal of the environmental activities is to reach the best balance between the negative to the environment consequences that follow the development of the society with the potential capacities of natural resources to selfrestoring.

6. We are sure that positive shifts in the improvement of ecology will become possible only if the wide public will be sufficiently informed and will participate in monitoring the current processes. In order to protect one's rights, one must know them well enough. The right of citizens of Ukraine for life in the healthy environment is fixed in the corresponding articles of the Constitution of Ukraine, in the law 'On protection of the environment', in other laws on protecting health, in

state building standards, etc. Nonetheless, all these laws have an important drawback: no control mechanism on the side of the public is stipulated. In the Ukrainian legislation some public control is stipulated only in the law 'On ecological expertise', but even in this law public control and monitoring are sketchy and not obligatory.

7. On 5 December 2000 the parliamentary hearings on the closure of the Chernobyl atomic electric station (ChAES) was held, and on 15 December the station was ordered to be closed. On this day you must recollect what was the Chernobyl catastrophe for the entire planet and especially for us living in the vicinity of Chernobyl. Recollect that the reason of the catastrophe was a chain of slight and grave violations of the operating laws, as well as the violation of instructions, norms and standards. Try to understand whether it is possible to violate the safety rules in the atomic power engineering, in particular when atomic stations are widened, as in the case of Khmelnytsky and Rivno stations. Lately we happen to hear the opinions of some MPs concerning the opportunity of shifting the term of the closure of the ChAES. These opinions cause an extreme worry if the Ukrainian and international public. Any speeches and actions concerning the atomic energy production must be regarded firstly from the viewpoint of safety. The safety of the atomic power production must be a top priority goal and internal need that will force everyone to self-control all the works concerning this safety.

8. Meanwhile the Orhus (Aarhus) Convention devoted to problems of informing the population about ecology, about the participation of the public in the decisions, which are taken by the government on problems of ecology, on the opportunity of court protection, was signed by Ukraine in June 1998. The Supreme Rada must be interested to ratify this Convention; NGOs and individual citizens must support the ratification. Alas, the mentality of our citizens is such that only 4% of the adult population believe that they can influence politic events in the country. Only 2% of the population believe that they must take on themselves some responsibility for the degradation of the environment and the nation's health. The totalitarian regime suppressed the population for many decades, which resulted in an almost complete atrophy of the public initiative. In the post-totalitarian countries the civil society is very weak, the power is strong, and there are very few people with an active citizen's position.

9. In May 2002 the first steps to create a public information centre and library in the office of The Ministry of the Environment and Natural Resources have been taken in Ukraine - a homepage about the Orhus (Aarhus) Convention has been established.

DEVELOPMENT OF KLAIPEDA PORT AND MAIN SOCIAL AND NATURAL CONFLICTS

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Port of Klaipeda is the only one port in Lithuania. It is Lithuanian transit center connecting the main transportation corridors between the East and West via sea routes. In order to improve its economy and to expand East-West sea trade Lithuania has to develop the port Klaipeda, maintaining its competitive ability with other Baltic ports. Klaipeda port extends on a north-south axis along a long and narrow band over 10 km in length lying mostly adjacent to the urban area of Klaipeda city. The water area of the port is a natural channel connecting Curonian lagoon and Baltic Sea. The west bank of the channel is the coast of Curonian spit and is designated as a National Park.

From the East Baltic ports in the year of 2004 the higher cargo handling was in St.Petersburgs, Primorskas(Baltiysk),Tallinn, Ventspils Ryga. Even if the existing port is fully renovated, the traffic demand would exceed the existing port capacity by around 2015 to 2017. To cope with the anticipated capacity shortage and to meet the shipping needs based on Klaipeda port being able to receive Baltmax-type vessels, Klaipeda port should be expanded beyond the existing port territory.

Klaipeda port is a very important in the economy of the country and a major influence on the life of the city, and is also in an area of considerable environmental importance and sensitivity. The key features are at first the Curonian Spit in the west, which has internationally important landscapes, culture and ecology, and is designated as National park and World Heritage Site. Then the channel between the Spit and the Port, through which commercially exploited and rare fish and internationally important birds migrate each year. Also the village of Melnrage and the Baltic coast in the north, which are used for recreation and tourism by local people and visitors.

The port is therefore surrounded on all sides by areas and features that are of local, national and international importance, which are sensitive in different ways and to varying degrees to damage and disturbance. Proposals to expand the port therefore need to be developed and implemented with a great deal of sensitivity to environmental considerations to prevent damage and disturbance to important assets.

In the south of the Port, many physical constrains exist to port expansion, including the existence of conservation areas for fresh water intakes and shortages. Conversely, the sea basin to the east of the existing sea channel and of the Melnrage beach can provide a large open space for outer port expansion. It is necessary to expand outside the existing port.

The environmental problems would be the negative impact of landscape by converting an area of natural coast used for recreation by local people into large industrial port. Also the outer-port will be visible in Melnrage, on beaches of the north, and on the Curonian Spit, an area which has been designated as a national Park and UNESCO World Heritage Site because of its landscape beauty.

Nevertheless there would be some outer port benefits. Firstly, new port could bring, by increasing trade and government revenue, which could improve social and economic conditions throughout the country. A new port would also generate employment locally, which could improve social conditions and stimulate the economy of Klaipeda.

The main conflicts of the development sea port are: oil mining in the Baltic sea, coasts protection from erosion, deepening and cleaning, ground digging and dumping, the reconstruction of the port entrance and others.

To ensure successful development of the port it is very important define collaboration between stakeholders.

Stakeholders:

- The Government of Republic of Lithuania
- Ministry of Transport and Communications of Republic of Lithuania;
- Klaipėda State Sea Port Authority (KSSA)

Interested parts:

- Klaipeda city Municipality
- Klaipėda district Municipality
- Kursiu Nerija National Park Directorate
- Seaside regional park Directorate
- Citizens of village Melnragės
- Coastal and Curonian lagoon fishermen
- Public

Other responsible institutions:

- Ministry of Environment
- Klaipeda County head Administration
- Klaipėda public health center
- Fire safety guard Priešgaisrinė gelbėjimo tarnyba
- Culture heritage protection department

So, for successful out-port development KSSA should make efforts in preparatory works, port development project, combining city's needs and consulting with environmental organizations as well as with local community. Also the environmental procedures, recommended at EIA studies should be made. The level of environmental tools must be concerted with a common city plan. Contacts with all EIA stakeholders and public has to be made at the early stage that all parts were informed and would participate in the process from the beginning.

AGRI-ENVIRONMENTAL AND FOREST-ENVIRONMENTAL SCHEMES: FIRST STEPS OF EUROPEAN UNION POLICY IN CZECH REPUBLIC

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Introduction

The Czech Republic joined the European Union (EU) on 1.5.2004. The membership in the EU is associated with participation in the Common Agriculture Policy. As a member of the EU the Czech Republic adopted various policies that reflect the EU concern for environmental issues. A potentially important economic tool that seeks to implement the EU policies are agri- and forest environmental programs.

These schemes (or programs) are a set of active or restrictive measures that farmers or foresters accept voluntarily. Farmers or foresters agree to carry-out a specific activity, or to refrain from a specified action for a certain period of years. In return, the government pays a certain sum of money (a subsidy) to the farmers or foresters. These programs are financed mostly from the common budget of the European Union, and partially from domestic funds. Currently, in the Czech republic, all farmers are entitled to receive subsidies from agri-environmental programs upon meeting certain conditions. The agri-environmental programs are not selective such as traditional nature conservation programs. The forest-environmental programs have much shorter history than the agri-environmental programs, and will offer their funds to foresters beginning the year 2007.

The objectives of agri- and forest-environmental schemes are:

- to establish farming and forestry practices that respect the increasing concern for water and soil protection,
- to protect wildlife habitats and endangered species of fauna and flora on farm and forest land,
- to produce quality and safe food, as well as a renewable resource – wood, in an environmentally friendly and sustainable manner.
- d) to provide additional income in rural areas

Goal and method of research

The goal of this study was to evaluate the initial experience with agri-environmental programs in the Czech Republic, as well as to consider the future expectations from the forest-environmental programs. Through collection of mostly unpublished information, including document analysis, we attempt to determine the current status, the initial results and to estimate the future development. We deal with policy research which differs on methodology from the standard scientific research (such as in biology, econometrics, physics). The key term in policy research is “policy evaluation.” Through policy evaluation we determine how the goals of the policy were met, or, in some cases, evaluate the goals themselves.

Therefore, we have to differentiate between “policy formulation” and “policy implementation”. In our case, we do not evaluate the policy formulation on the EU level, we seek to evaluate the implementation (realization) of the policy in the Czech Republic.

Since one of the stated goals of agri- and forest- environmental measures is protection, and possibly improvement of wildlife habitats (biodiversity), we have to find out whether objective criteria for meeting these goals are a part of the obligatory policy evaluation document¹. We can quantify the maintenance or change in biodiversity through biodiversity indicators. As far as the evaluation of different agri- (or forest) environmental measures, we can evaluate:

- the up-take of the measure against expectations (the “popularity” of the particular measure with farmers and foresters
- the effectiveness of the measure (whether the measure is reaching its goals, ie. biodiversity increase or maintenance measured through a biodiversity indicator),
- the efficiency of the measure (compare costs with effects, include various alternatives of reaching the same goal, ie. certain level of biodiversity increase or maintenance)

Agri-environmental measures in czech republic

The agri-environmental programs are a part of European Union agricultural and rural development policies. Every EU member state is obliged to introduce an agri-environmental program. However, member countries are independent to a large degree to design the particular measures of the program. The current subsidy titles of the Czech agri-environmental measures:

1. 1. Organic farming,
2. 2. Grassland maintenance
3. Conversion of arable land into grassland
4. Grass belts on slopes
5. Growing of catch crops (intercrops)
6. Bio-belts
7. Permanently water-logged meadows and peat meadows
8. Bird habitats on grassland (wadens, corn crake)
9. Crop procedures in cave protection zones
10. Integrated fruit and vineyard production

Evaluation results:

It is evident from the document analysis that only up-take evaluation² takes place by the Czech administration. There is no systematic evaluation of

¹ Policy evaluation (ex-ante, interim, and ex-post) is a compulsory part of EU system of public expense programs.

² “up-take evaluation” means that the expectation of participation is stated in an official government document (usually in ha of land that is expected to participate in a given measure). After a period of time, we can compare the resulting interest (in ha of land that farmers claimed subsidies for the measure)

effectiveness as far as biodiversity increase and maintenance is concerned. The evaluation of economic efficiency of biodiversity maintenance and improvement measures is totally missing. The possible reasons are: the relatively short history of agri- environmental schemes, the methodological difficulty and high costs of efficiency evaluations, non-interest of some stakeholders in effectiveness and efficiency evaluations.

If we synthesise the results of the up-take evaluations, we find out that: Farmers prefer relatively simple measures that can be carried-out by large scale mechanization (*grassland maintenance* - periodical grass mowing³), and measures that do not differ substantially from usual practices (*growing of intercrops*). Almost 90% of agri-envi subsidies were paid out to the two above mentioned measures only, and the *growing of intercrops* title had even to be closed during the evaluation period⁴ due to disproportionally high demand. On the other hand, measures demanding manual labor, even though with higher subsidies, or measures differing from usual current farm practices did not meet stated expectations. For instance, the participation in bird habitats title was about 50% of the official expectations.

Forest-environmental measures in czech republic

The Czech forestry has a relatively good track as far as sustainability of wood production is concerned (in comparison with, for instance, some Mediterranean countries) . However, the current political demand, especially in publicly owned forests, stresses the ecological significance of the forest⁵. Forest-environmental measures are at the planning stage only. The planned measures are: 1) leaving of old trees and deadwood⁶ , and 2) improvement of structure⁷ and species composition of the forest. The total amount of forest subsidies is to be substantially lower than the total amount of agriculture subsidies.

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³ since there is little use for grass in the Czech countryside under current system of agriculture, the farmers get paid/subsidized for mowing of meadows (which is considered to be important for nature and landscape protection) often without really using the grass on the farm.

⁴ the evaluation period was the first year of Czech membership in the EU (1.5. 2004-31.12. 2004)

⁵ Czech forests exhibit a low level of biodiversity due to prevalence of artificial spruce monocultures

⁶ leaving of old trees and deadwood is very important for biodiversity. Deadwood is important also for soil nutrient replenishment.

⁷ “structure” means space structure and age structure. Spruce monocultures tend be of the same age which means low biodiversity. “Species composition improvement” means usually planting some native deciduous trees among spruce (Lat.: *Picea abies*) trees.

GLOBALIZATION AND SUSTAINABILITY

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The advocates of globalization inevitability may argue that the movement towards a greater international specialization, i.e. to an economic globalization, which can be defined here as the greater international flows of trade, capital, and people, is a historically driven process with objective economic background and foundation. There are two major considerations, falling into the discussion framework of the present paper.

One argument is that economic globalization creates many opportunities to improve the material well-being of poor people, but may be politically unsustainable. This is especially true of the integrated supply-chain type of trade that is leading to unprecedented specialization of production.

The second argument is that terrorism so increases the potential costs and vulnerabilities of globalization that it may, by itself, change attitudes towards this greater international specialization. Thus, it is argued, there is a likelihood that the current episode of globalization will exhaust itself well before it delivers many of the benefits that might flow from its fuller implementation.

It is not necessary to recount fully here the sometimes productive debate among those who support, support with reservations, or oppose globalization. There have been plenty of speculative debates concerning the benefits and costs of globalization, and we shall not trace back to all of the possible pro and contra. One thing remains clear: globalization has highly diverse and contradictory impacts on the countries across the globe, with very few of the nations really deriving gains from the process.

Obviously, most poor nations have not grown as fast as the rich ones in per capita terms in the last few decades. This can be partially attributed to geography, as well as to a set of more variable factors specific to the less developed nations, such as bad governance, corruption, war, or other kinds of predatory behavior, which often stems from economic transition. But the crash of Argentina's economy, the frequent Latin American financial crises, and the Asian Crisis of 1997 - affecting even several better performing economies - do suggest something more systemic at work. Globalization in its current form seems to do well for rather few countries and bring scarcely any benefits to countries of Africa, Central Asia and - to a great extent - of Latin America.

After acknowledging the many poor policy choices made by developing nations, there are legitimate points to be made about the basic rules of the game. Most rich nations do not want and will not allow legal immigration in any quantity from poor nations. Many immigrants who are economic migrants have to present themselves as refugees, or slip in illegally and live without legal protections and

services. This restraint on the freer movement of people, some skilled professions aside, results in slower equalization of incomes, lower flows of remittances, and much less of a buildup in skills from returning workers. If the argument is freer movement of goods and capital, why not people? The reason is that no important interest group in the rich nations argues for this, and there is little popular support for immigration in the rich nations. Nations with high minimum wage levels and welfare payments are especially reluctant, as integration of less-skilled migrants is more difficult. But in all rich nations, migration aggravates the impact of technology, which is already reducing the demand for less educated labor.

Let's consider another argument proposed in this paper – a possible impact of terrorism. For this purpose let us introduce a rough sketch of the latter. A society under attack of this kind will tend to emphasize safety. Risk taking would be discouraged. Trade and travel would certainly diminish, and with that incomes and production would drop. The public would accept greater intrusions on privacy and freedom in a quest for security.

With some examples of terrorism and virtually all cases of reduced trade, a great deal of harm would be done to developing nations. These include India and especially China, which have increasingly chosen to integrate into the global economic system, but many other nations could be placed with them.

Summarizing everything aforementioned, the issue comes down to the following: it may be that an economically efficient solution is not politically or socially viable, if at all feasible. If this is so, it means that those able to decide such things will need to rethink the way production is organized, especially if we want our systems to be robust as well as efficient and our lives to be secure as well as opulent. This problem remains yet to be solved in the future.

ECOLOGIC AND PSYCHOLOGIC APPROACH TO THE ENVIRONMENTAL EDUCATION AND UPBRINGING

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There are many dangers in the modern world which are left out of sight of people due to daily routine. Science developments and new achievements of humanity blunt the psychological sense of fear before the dangerous factors. Particularly dangerous are those factors consequences of which come after some time has passed. They do not draw sufficient attention of the humanity now and do not bring the psychological condition to cause activity.

This issue becomes acute when disciplines connected with economics, ecology, human biology, natural history, nature management, health bases, valeology etc are taught. The theoretical information being vague and not practically grounded, does not have relevant psychological effect on pupils.

Therefore it is neglected and regarded neither as an action plan nor as important information.

There is a way out of this problem. For this purpose a psychological condition of a human at a global catastrophe should be explored. Its consequences can be observed when the catastrophe arises (time span between threat arising and its consequences is little).

Let's take the Chernobyl catastrophe as an example.

The Chernobyl accident in 1986 caused an extreme environmental situation and shocked the psychological condition of the population. It demanded urgent actions to wind up the catastrophe consequences. The humanity experienced the catastrophe in a second and understood all the danger and responsibility when handling the nuclear energy. The psychological condition of a human tells that he or she will never experiment on the dangerous object, use it not again or anticipate all possible dangers and create as safe exploitation conditions as possible.

The main reason for such psychological condition is an ability to see immediately the initial income status (utilization of dangerous objects or acting) and the end result (catastrophe, ruining, degradation, losses etc).

It is possible to design person's psychological condition on the basis of global events (catastrophes) and use designing for modeling person's psychological condition for less extreme situations, strengthening it when needed. Therefore it is possible to achieve high psychological perception towards even less extreme situations, conditions of which being known after some time.

It plays a very important role in the environmental education for pupils and students, i.e. young people who are not fully aware of consequences of smaller extreme situations and those consequences of which can be known only after some time.

Modeling a certain situation and demonstrating the final result with indicating possible losses and results can help achieve deep psychological perception and worries which can lead towards acts of anticipating the consequences or abandoning the harmful activity of an object.

Similar approaches have been long used in the World, one of them known as "shock commercial". It is enough to show a smoker lungs of a person who has been smoking long, the shock from seeing this, deep psychological perception and worries will be the best stimuli to give up smoking.

Similar psychological condition can be modeled for such situations as cutting down the wood, creating water reserves (watering the territory respectively), destroying certain kinds of plants, flies, animals etc.

For the disciplines composing the environmental education should not remain another casual, boring subject in a pupil's schedule, it is necessary to employ psychology in full on the basis of curriculum psychology.

THEORY AND PRACTICE OF ENVIRONMENTAL EDUCATION

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Probably there will be no person who disagrees that relevant environmental education is required for environmental economy formation. There are a variety of disciplines, which compose environmental education, there are a number of issues that are understood by pupils.

Theoretical understanding and environmental education implementation programs have quite different practical applications which are much different from the theoretically planned ones. There is worse introduction of environmental education in the rural areas, i.e. beyond the city and information centres.

Environmental education implementation surveys and immediate participation in the implementation allow us to identify issues and remove them. This encourages environmental education proliferation in Ukraine.

Personal scholastic experience allows to identify the following problems:

1. Absence of information: the information does not exchange amongst specialists, information dissemination is not encouraged at the local level, availability of much essential but suppressed for the public access information, provision of incomplete information, incompetence of experts providing the information, lack of responsibilities for having provided no information or false one; ignorance of official duties, absence of sufficient contact with environment in cities which is a key element to understanding the basics of environmental education, lack of interest in the environment as a source of information about the outer world. Moral, intellectual, and physical degradation of population comes in consequences.

2. Absence of skilled labour: good experts capable of providing the proper level of education) stay in cities (information centres), social and household conditions of the rural areas do not enable to do researches (due to the lack of strength, time, investments in researches). Often there are no objective living conditions (it disables doing researches). There are no like-minded people and qualified ones to unify and implement new ideas, projects, participation in grants etc;

3. Management does not help: officials are not interesting attracting new staff because it is viewed as a threat (competition among new specialists), there are no incentives on the part of the management to unify to realize certain projects;

4. Low funding of educational sphere and political speculation disables from implementing the environmental education;

5. Financing is scarce and there are no ways to earn money on personal knowledge or during projects implementation (on environmental education or social and economical projects), absence of information on projects, grants, ways or directions of environmental education implementation;

6. Destroying the interest: ban to introduce new technologies, lack of humble stimuli, lack of opportunities to explore new ideas (destroying by management or staff leads to disbalance).

There are many problems listed above, but the list is incomplete. There are certain ways to tackle the problems and their solutions allow to improve the environmental situation in Ukraine.

Environmental education is a strategically important direction because its consequences are much prolonged in time. The current education can yield results in 20-30 years, therefore finding solutions to the problems is urgent and crucial for the future of Ukraine.

RECOURSES OF ECONOMY DEVELOPMENT AS MEANS TO SOLVE ENVIRONMENTAL ISSUES

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Natural resources that exists in the environment are a part of an economy. Although the economy is located in the environment, the latter doesn't use economy as a resource. Therefore an economy has a privilege in solving issues including environmental ones. Economy is a mean of solving environmental issues, the environment is a source of economy existence.

Economic wealth was considered to entail environmental degradation. On this basis there were slogans to stop the economic growth using administrative but not economic leverages of influence on economic subjects. Conventional ideas about economic development are based on the traditional knowledge, using traditional resources, technologies etc.

Contemporary knowledge allow us to alter the conventional ideas about the sources for the economic wealth growth, enable us to utilize new resources and technologies. It allows to reach the same level of economic wealth with a smaller impact on the environment.

The economic literature on economic development with respect to the least effect on the environment often sets only two resources necessary for that: information and capital.

Information (in the wide meaning of the notion) allows to optimize resource expenditures, accept an optimal solution with low probability of risk. It is essential because mistakes made when utilizing resources are inadmissible. Such mistakes lead to local or global ecologic catastrophes, expenditures on dealing with the consequences of catastrophes being so enormous that they are impossible to realize. In most cases mistakes can not be corrected at all because the effect is much prolonged in time and it is impossible to reach the initial stage as all other factors

have irreversibly changed. Thus information is the vital resource of economic development with low effect on the environment.

Capital plays an important role too as it lets get technology (selected by information). Availability of capital defines a technology which receives investments. The more capital available the more perfect technology can be chosen.

Capital can be invested in technology, personnel education, certain resource types, peculiar production and consumption conditions, utilization of consumed goods and designing new products, technologies, knowledge etc.

Theoretical framework of economy development on the basis of optimal utilization of two resource types requires practical implementation.

How can one get information? Information can be obtained through: 1) gaining necessary education, relevant knowledge; 2) keeping in touch with those who have necessary knowledge, education (e.g. scientists of higher educational establishments, information centres etc); 3) creating an information network to get necessary information from; 4) announce trends for modern informational support of a certain product; 5) holding conferences (round table discussions, debates) on a certain topic. This will encourage thorough and deep discussions and information sharing on a certain point, direction and inspire ideas exchange etc.

How can one get capital? Getting capital is closely linked with profitability of a project where the funds are invested. If a project profitability is as high as average in the economy and it is possible to attract funds, then one should identify such ways of getting capital as: 1) own, saves capital which can be invested; 2) borrowed capital that can be retrieved in a bank or any other borrower; 3) issuing securities that enable for project management or profit distribution and don't require return or reimbursement; 4) attracting foreign investors to fund a project etc.

Information and capital unification plays a crucial role for the economy development as well as unification of people with different knowledge. This being out the way, no knowledge or capital alone can yield economic development. Only combining constituent components gives development a go.

Therefore creating conditions for the economy with minimum natural resources utilization and respectively small effect on the environment it is possible to avoid a lot of environmental issues and tackle current problems with economic but not administrative methods.

AGROECOLOGICAL MONITORING OF INNOVATIONAL PROCESSES

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While Ukraine is attempting to join WTO and become a powerful member of the world community it faces serious challenges in all spheres of the economy. One

of the less protected branches of production is agriculture. Historically it used to be most traditional and thus less developed.

At the same time nowadays situation may give us new market chances while European Union is going to reduce subsidies to the domestic agrarian producers and amount of production and its supply to the world market is predicted to reduce.

To use this chance our producers should make few important steps:

- enlarge the amount of production;
- adjust the quality of the products up to the world standards (including ecological characteristics);
- renovate and create new facilities in the infrastructure of farming (transporting, storage facilities, elevators, customs, ports);
- produce a good image of the Ukrainian producers;
- establish reliable international relations with the world community.

Now it is a necessity to make revolutionary changes in the Ukrainian agriculture on the innovational basis, implement new products, new technologies new methods of organization.

Besides it is necessary to use new environmental standards while Ukrainian quality standards are not any way corresponding with the European ones. In such situation big agroindustrial corporations get additional advantages because they have enough facilities to adjust their products to the necessary requirements and can therefore make some exporting operations.

This can be easily observed on the example of Polish companies. Most farm products are first bought by bigger companies and then sold abroad.

Poland is very much concerned with the innovational processes in every sphere of production, they make permanent monitoring and supply data to all users in the form of innovation surveys annually while in Ukraine they just making some attempts to observe the situation. According to the recent data in 2004 only 2.7% (31 enterprises) of all farms in Sumy region did some innovational activity, and the amount of all innovational product was only 0.1% of the total turnover.

We find it necessary to work out an efficient program of permanent monitoring of innovational processes in agriculture, pay attention to the ecological characteristics of goods and processes and stimulate implementing new technologies with higher ecological characteristics using common measures: direct and indirect subsidies, subsidized capital inputs, reduced taxing and informational support. It is also important to establish closer connections between business and scientific research centers to implement new technologies in production more quickly.

ENVIROMENTAL ECONOMICS AND SUSTAINABLE DEVELOPMENT

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Before I embark on my lecture, I will like to take a preamble on defining the definition of Economics. According to many school of thoughts, various definitions were given to Economics as a subjects, but, credit was given to the definition provided by Lord Robbins, of which he defined Economics as a social science which studies human behaviors as a relationship between ends and scarce means, which have alternative means

As an Environmentalist, I will like to emphasize on Environmental Economics and sustainable development,

What makes Economics important as a subjects is the ability to use the limited scarce resources that we have. One essential steps towards achieving sustainable development is the economical efficient management of natural recourses, since many of these recourses are non-renewable and limited in supply. My paper will explains the key roles of environmental economics in facilitating the more effective incorporation of environmental concerns into development decision making, traditionally, the economic analysis of projects and policies(including the techniques of shadow pricing) has been developed to make countries make more efficient use of scarce resources. However, externally, mainly those arising from adverse environmental consequences, often have been neglected in the past. it is also very important to recognize the social and ecological objectives that are part of sustainable development, and to reconcile these concepts and operationalise them within the economic framework

My paper reviews the concepts and techniques for valuation of environmental imparts that enables such environmental consideration to be explicitly considered in the conventional cost-benefits

There are increase numbers of attempts both to improve and make use of economic techniques to value environmental assets in developing countries.

SAFETY ASSESSMENT FOR PREVENTION OF HEAVY DISASTERS ON THE PLANT.

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Man-made disasters cost the most in terms of human suffering, loss of life and long-term damage to a country's economy and productive capacity. The last decade has seen a marked increase in what are known as "complex emergencies" -

complex because war and internal conflict lead to the breakdown and collapse of social, political and economic structures. Sometimes these emergencies are accompanied by natural disasters, which compound their complexity. Inevitably agriculture and food production are major casualties.

Safety assessment is the systematic process that is carried out throughout the design process to ensure that all the relevant safety requirements are met by the proposed design of the plant. This would include also the requirements set by the operating organization and the regulators. Safety assessment includes, but is not limited to, the formal safety analysis. The design and the safety assessment are part of the same iterative process conducted by the plant designer which continues until a design solution which meets all the safety requirements, which may also include those developed during the course of the design, has been reached.

The safety analysis should assess the performance of the plant against a broad range of operating conditions, disasters (many of which may never be observed in actual plant operation), in order to obtain a complete understanding of how the plant is expected to perform in these situations. The safety analysis should also demonstrate that the plant can be kept within the safe operating regimes established by the designer.

The safety analysis should formally assess the performance of the plant under various operational and accident conditions, against goals or criteria for safety as may have been established by the operating organization, the regulatory body, or other national or international authorities, as applicable to the plant.

The safety analysis should identify potential weaknesses in the design, evaluate

proposed design improvements and provide a demonstration that safety requirements are met and the risk from the plant is acceptably low. This should involve a comparison with risk criteria where they have been defined.

The safety analysis should assess whether:

- Sufficient defence in depth has been provided and the levels of defence are preserved in that potential accident sequences are arrested as early as possible.
- The plant can withstand the physical and environmental conditions it would experience. This would include extremes of environmental and other conditions.
- Human factors and human performance issues have been adequately addressed.
- Long term ageing mechanisms that could detract from the plant's reliability over the plant life are identified, monitored and managed (i.e. by upgrade, refurbishment or replacement) so that safety is not affected and risk does not increase.

The safety analysis process should be highly credible, with sufficient scope, quality, completeness and accuracy to engender the confidence of the designer, the regulator, the operating organization and the public in the safety of a plant's design.

The results of the safety analysis will ensure with a high level of confidence that the plant will perform as designed and that it will meet all design acceptance criteria at commissioning and over the life of the plant.

The achievement of a high level of safety should be demonstrated primarily in a deterministic way. However, the safety analysis should incorporate both deterministic and probabilistic approaches. These approaches have been shown to complement each other and both should be used in the decision making process on the safety and ability of the plant to be licensed. The probabilistic approach provides insights into plant performance, defence in depth and risk that are not available in the deterministic approach. Probabilistic safety analysis provides a comprehensive, structured approach to identifying accident scenarios and deriving numerical estimates of risks.

The safety analysis should establish the conditions and limitations for safe operation. This would include items such as:

- Safety limits and control and other engineered safety systems,
- Operational limits and reference settings for the control system,
- Procedural constraints for operational control of processes,
- Identification of the allowable operating configurations.

The safety analysis should aim to quantify a plant safety margin and demonstrate that a degree of defence in depth is provided for this class of accidents. This would include such measures where reasonably achievable:

- To prevent the escalation of events into severe accidents, control the progression of severe accidents and limit the releases of radioactive material through the provision of additional equipment and accident management procedures.

- To mitigate the radiological consequences that might occur through the
- Provision of plans for on-site and off-site emergency response.

The results of the severe accident analysis should be used to identify source terms which could be used as a basis for off-site emergency planning.

COMPARATIVE ANALYZE OF DIFFERENT KINDS OF SORBENTS FOR CLEANING WATER SURFACES FROM OIL SPILLS: EVALUATION OF ENVIRONMENTAL AND ECONOMICAL BENEFITS

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Using of sorbents is one of the most effective methods for oil and petroleum spills cleanup operations, because of its high cleaning degree (more than 99%). Another advantage of sorbents is that they does not contaminate environment, like

chemical or thermal methods. Sorbents used as main method for cleanup of small spills or for final cleanup of large spills.

Sorbents can be synthetic materials such as plastic, organic materials such as peat moss, or inorganic materials such as clay. The main demands to them are:

1. High sorption capacities;
2. Oleophilic (oil-attracting) and hydrophobic (water-repelling) settings - the ability of the material to preferentially absorb oil rather than water.
3. Ability for regeneration and reuse;
4. Simple technology for spreading on spill surface and extracting of saturated sorbent;
5. Low cost.

The aim of present work was to investigate sorption capacities of different kinds of sorbents that are commonly used during oil spills cleanup operations in Ukraine.

The next five types of sorbents were investigated:

1. Activated fossil carbon;
2. Exfoliated graphite. Exfoliated graphite is preparing from thin graphite flakes by oxidation with sulphuric acid and thermal treatment at temperatures of 800 – 1200 °C.

3. Expanded perlite. Perlite is the name of class of natural silicate rocks that has volcanic origin. During fast heating at 900 – 1100 °C its increase his volume 20 times and transform into white porous granules with size of 1 – 10 mm and density 75 – 150 kg/m³. Expanded perlite has a high porosity which increases sorption capacity. To increase sorption selectiveness perlite additionally treated with polysilicone.

4. “Ecolan”. This sorbent belongs to biodegradable sorbents. Prepared from pyrolyzed wood it localizes oil spills and destroy adsorbed oil with microorganisms which use hydrocarbons as source of energy.

5. Polypropylene. This sorbent belongs to synthetic sorbents and created from polypropylene sheets. The distinction from other sorbents is that porous and capillary structure represented by chemical fibers.

During investigations two different types of oil transported through the territory of Ukraine by oil pipelines “Druzhba” were involved:

- Caspian CTC (Caspian Transport Consortium) – this oil transported from countries of Caspian region and belongs to light oils with high content of volatile compounds, has petroleum odour and yellow-brown colour;
- Russian URALS (United Russian Oils) – this oil transported from Western Siberia region and belongs to heavy oils with significant content of non-volatile compounds, has dark-brown colour.

The results of investigations represented in table 1.

Table 1

Sorbent type	Sorption capacity of URALS, kg/kg	Sorption capacity of CTC, kg/kg
Exfoliated graphite	<i>22,71</i>	<i>20,75</i>
“Ecolan”	<i>1,76</i>	<i>1,63</i>
Activated fossil carbon	<i>1,0</i>	<i>1,2</i>
Expanded perlite	<i>3,8</i>	<i>2,9</i>
Polypropylene	<i>12,12</i>	<i>11,33</i>

We can see that the best sorption capacity has exfoliated graphite and polypropylene. Moreover, they have quite high potential for recovering and reuse, especially in case of polypropylene. Oil can be extracted by simple pressing without considerable losing of sorption capacities and changes in oil composition.

From *economical point of view* sorbents implementation can bring significantly reduce amounts of payment that should be paid for oil and petroleum contamination. According to Ukrainian legislation for every kilogram of oil spilled on water surface should be paid **329 USD**. To calculate economical benefit we have compare sorbents expenditures for extracting one ton of spilled oil with payments for contamination. The results are listed in table 2.

Table 2

Sorbent type	Sorption capacity, kg/kg	Price, USD/kg	Expenditures for collection 1 ton of oil, USD	Payments for 1 ton of spilled oil, USD
Exfoliated graphite	<i>22,71</i>	<i>12</i>	<i>528</i>	329 000
“Ecolan”	<i>1,76</i>	<i>2,05</i>	<i>1 164</i>	
Activated fossil carbon	<i>1,0</i>	<i>1,4</i>	<i>1 400</i>	
Expanded perlite	<i>3,8</i>	<i>0,57</i>	<i>150</i>	
Polypropylene	<i>12,12</i>	<i>15</i>	<i>1 237</i>	

So, we can consider that sorbents implementation is profitable not only from environmental but also from economical side. In case of polypropylene and exfoliated graphite additional benefit can be obtained from oil extracting. Extracted oil can be used in the same way that origin one.

METHOD OF CLASSIFICATION OF INTEGUMENTARY ELEMENTS OF LANDSCAPE

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The article behaves to ecology and touches the problems of development of method of creation of thematic card of landscapes elements from data of the remote sensing of Earth which kennel maximally formalized and accessible for the wide circle of users.

Most works from researches of elements of landscape on a base information of the remote sensing classifications of landscape of concrete geographical area are devoted or one of objects of landscape - delta of the rivers, coastline, preserve and others like that. Among methods classifications are used mainly traditional methods of the controlled classification, and in for some time past - method of neurons networks. But overwhelming part of works carries author character which limits the effective use of method to other operators. That is why a task becomes actual to do her by maximally formalized and accessible for the use by the wide circle of users.

A method is given intended for the selection of scopes and quantitative estimation of areas which are busy at the separate integumentary elements of earthly surface and is used with a purpose:

- forming of base thematic space card of territory of Ukraine of scale earthly to the surface 1: 100000, actualization for the term of supervision;
- estimation of dynamics of separate integumentary elements of earthly surface;
- subsequent thematic classification and decoding within the limits of separate integumentary elements of earthly surface.

The finished informative good (STACKS) is the thematic card of integumentary elements of earthly surface of scale 1: 100000.

A thematic card includes such elements: waters objects; long-term vegetation (forests and beams); agricultural lands on the stage of vegetation; agricultural lands under **пaпoм** and soils which are not covered by the vegetation; elements of city building.

Method of classification: the data processing is executed by the controlled classification, or classification with studies [5].

Classification is controlled is process of grouping of pixels to the classes which answer some educational plurals, by a certain operator. Educational plurals are determined by the so-called regions of interest, which get out on the image interactively and must be the homogeneous groupments of pixels. Before to execute the controlled classification, it is necessary to define and estimate distribution of the created educational plurals. For this purpose there are two procedures: the calculation of matrix of **пoз** of divisibility is that visualization by the export of certain regions of interest to **n** - measurable visualizasion, which allows to estimate grouping of every regions of interest and ceiling of educational plurals between itself.

Multispectral information of optical apparatus must be given in green, red and fellow creature ranges of electromagnetic spectrum. Entrances information must be radiometry and geometrically normalized and not must need operations of removal of hindrances. The visual control of quality of entrances information is executed

during the revision on a display. Farther the control of quality of entrances information can be executed after the relation «signal/noise» by procedure of smoothing of remain. Procedure expects statistical descriptions of entrances information, executes the selection of pixels of hindrances on the image and noise.

The controlled classification is the method of the data processing. An operator executes classification with studies after one of decided rules. Follows to remind that classification can require conducting of a few iteratsiy, if the results of estimation of its quality will appear unsatisfactory. An operator must execute the followings operations:

- to define signatyre, or educational information;
- to estimate their statistics and distributing;
- to execute classification and conduct the estimation of its exactness;
- to withdraw single pixels from classes, using a post sifting classifications to the operation and clamping, operations of analysis of majority;
- to calculate statistics of classes (on an area).

Control of quality and interpretation of results of the data processing: for the estimation of quality of classification the special raster layer which characterizes distance of every pixel to the cent of his class can be created. Thereon image and more bright pixels have the greater removal from the center of class and with greater probability can be subsumed the unclassified objects, more dark - form group round the center of class.

For an estimation qualities of classification are used ground given to the test as the image which was got before and has the plural of certain classes in the set, or given to the test, got the field way with the use of co-ordinate attachment and confirmation of information on locality.

For an estimation qualities of classification are used also GPS is surveys with the purpose of determination of co-ordinates on localities and visual control with the purpose of determination of scopes and presence of the classes of information got as a result of thematic treatment.

Creation of thematic card of elements of landscape from data of cosmofoto will give possibility of creation of information after separate masks, for example by the masks of agricultural. Exception or vice versa, including in treatment of the territory disguised thus on the basis of the next controlled from distance information (subject to the condition exact attachment) will enable their subsequent detailed decoding after a select subject.

USING ECOLOGICAL RISKS ASSESSMENT WITH A VIEW TO IMPROVE DRINKING WATER-SUPPLY IN ODESSA

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The most perspective choice of principal ways of environmental policy aimed to reduce danger of unfavorable environmental factors for human health is based on the scientific analysis of bonds between state of environment and health in the specific conditions of a region or a city. One of the most effective present-day approaches to determination of such bonds is a methodology of risk assessment.

US EPA (United States Environmental Protection Agency) has determined the risk assessment as an assessment of toxicity of a substance and of conditions of exposure for determining the rate and characteristics of its harmful effect for human health. Risk is a probability of a harmful effect. Exposure of toxic chemical pollutants may cause a wide range of changes in human organism. Such changes may vary from biochemical, physiological and pathological changes to fatal outcome.

It is possible to evaluate risk numerically (in a value from 0 to 1) or qualitatively (low, average or high risk level). When assessing significance of an ecological problem individual risk is multiplied by quantity of people who are exposed to the specific pollutant.

When determining the method of risk assessment one usually choose a special methodic developed by United States Environmental Protection Agency or its modifications. Under this method four stages of risk assessment are determined:

1. *Determination (identification) of a danger.* This stage means assessing of available proof of presence and danger of pollutants that can cause harmful effects.

2. *Evaluation of "dose-response" dependence* which determines the rate of influence of various doses. This dependence varies for carcinogenic and toxic effects. It is supposed that carcinogenic effect can be caused by any dose of a hazardous substance, whereas toxic effect becomes evident only if dose exceeds some threshold level called the referent dose.

3. *Evaluation of exposure.* This stage supposes the definition of the value, duration and frequency of exposure of a human with the determined pollutant and the number of people who are exposed to the effect of hazardous substance in various ways.

4. *Risk characteristics.* This means connecting the information obtained from identification of danger, evaluation of "dose-response" dependence and evaluation of exposure for assessment of the risk related to each of scenarios of concerned effect and representation of information about uncertainties or assumptions during realization of analysis.

Effects of substances which are polluting the environment on human health can be realized in various ways. This causes serious difficulties for risk analysis. When researching risks caused by drinking of contaminated water one consider peroral way of inflow.

There are two widespread sources of drinking water in Odessa. They are the system of centralized supply (aqueduct) and the network of city well-rooms. Water supplied into the city aqueduct is taken from the Dniestr River. The water intake is situated on a distance of forty kilometers away from Odessa in Belyaevka.

The existing system of water supply from Dniestr was built 133 years ago (in 1873). Nowadays the spread of aqueduct network is 1600 kilometers. Some parts of this network especially in the central part of the city are in critical situation. This is caused with the fact that some parts of the conduit haven't been repaired since they were built in the 19th century.

To neutralize substances which can contaminate water on its way from water intake to consumer method of chlorination is used for city aqueduct water. Particularly this method is used for water disinfection and for preventing reproduction of pathogenic bacteria in drinking water. Residual quantities of chlorine cause the most negative effect, thus it is the primary pollutant of the aqueduct water. Besides water supplied from the Dniestr River has rather high level of mineralization, particularly hardness.

The main alternative for city aqueduct water is water that citizens can take from the network of city well-rooms. This is deep-well water pumped out from the depth of 130 meters. It is possible to get 15-20 tons of water per day from each well-room. In each of 14 functioning well-rooms water treatment and purification are provided. In such sources water is disinfected using ozone as alternative for chlorine. In that way the same effect as if using chlorination is achieved with much less contamination or even without contaminating water with reagent. Besides deep-well water is much better comparing with water from Dniestr in nearly all sanitary-hygienic characteristics. Research has shown that water pumped out from 130 meter depth has some medicinal properties.

In addition to foregoing chlorine the most essential pollutants of drinking water are suspended matters, mineral salts and pathogenic bacteria, particularly colibacillus. They are taken as primary pollutants in ecological risk assessment.

Using EPA methodic of risk assessment is congenial for selecting substances which cause more negative effects. This methodic gives an opportunity to range all the components of drinking water depending on the level of risk to experience negative effects caused with inflow of hazardous substances into organism by means of drinking contaminated water. Such list of priority substances shows which of them should be removed from water before usage and which can not cause any harmful effects. This conclusion about danger of each water component can be a base for working out, planning and adoption of water purification and protection measures.

If saying about Odessa city aqueduct the primary measure should be taken is its major repair for preventing contamination.

USAGE OF CONVERTER SLAG IN BLAST-CUPOLA

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Metallurgical slags are important primary products for building materials manufacture.

However now these material resources are used insufficiently. Every year in our country the amount of slag increases, but only 12 % of steel-smelting slags are used.

Conversion and usage of slags not only enlarge a source of raw materials of building material manufacture, but also use as raw materials.

The slags make 70-85 % of all iron and steel melting wastes. Its conversion allows to increase an economic efficiency of metal manufacture and to save fluxes.

Converter slag contains more than 80 % of useful components and it is also an important material for a metal conversion.

Nowadays, the usage of converter slag for remelting of cast iron in blast cupola is important foundry industry. A slag-making in blast cupola is an inevitable and technically indispensable process for obtaining high-quality metal. In metallurgy the different fluxes are applied for creating of a specified slag conditions. Limestone, containing 49-52 % CaO, is used as a flux for remelting of cast iron in blast cupola.

We have conducted commercial researches concerning the usage of Enakievo Metallurgical Plant converter slags at Makeevka Tube-casting Plant.

There were 3 working blast cupolas at this plant. Limestone with fraction 30-90 mm and fluor-spar were used as fluxes.

Stone rate was 4-5 % of loading weight. Cast iron and pig iron, ferrosilicon, ferromanganese, ferrophosphorus, scrap have been used as charge. Foundry coke has been used as fuel.

Chemical composition of limestone was the following: 1,43 SiO₂; 2,32 Al₂O₃; 51,62 CaO; 0,63 MgO; 0,055 P; 0,01 S; 0,26 Fe.

At the time of our researches we were testing cupola slag and cast iron during usage of limestone and converter slag. The conducted researches have shown that during usage of converter slag the melting operation became hotter, the temperature of cast iron and cupola slag increased and it became more free-running.

In the metallurgy the heat balance of the process becomes better in a case of replacement limestone by converter slag.

The results of calculated heat balance are the following:

- heat consumption for limestone heating up to the dissociation temperature is 1752.3 kJ;
- heat consumption for CaCO₃ dissolution is 996.8 kJ;
- heat consumption for CaO heating up to the temperature 1573 K is 142.8 kJ;
- quantity of heat evolved from 0.44 kg of CO₂ is 359.5 kJ.

The total quantity of heat consumption for 1 kg of limestone is 3251.4 kJ/kg.

The quantity of heat for converter slag heating up to the temperature 1573 K is 1928.3 kJ/kg.

This calculation shows that usage of converter slag is more profitable than usage of limestone because of less heat consumption.

The researches at Makeevka Tube-casting Plant have shown that percentage of CaO in limestone and converter slag is almost the same. However, converter slag contains useful components for fusion such as MgO, MnO, Al₂O₃, CaF₂, Fe. Therefore converter slag is a complex flux for blast cupolas.

In a case of replacement limestone by converter slag we reduce a price of production and introduce resource-saving technology. It will have a positive influence on environment and will reduce the quantity of converter slag wastes.

Heat balance of melting confirms it.

We would recommend this technology to the foundries where the blast cupolas are used.

THEORY OF SECURITY: THE CASE OF ECOLOGY

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1. During the Cold War, a small number of scholars argued that the concept of security should encompass more than military threats and associated vulnerabilities. These scholars were concerned about the volume of public resources being devoted to a very narrow, military understanding of security, in comparison to what was being targeted to address other types of insecurity. Given the experience of two world wars, it is not surprising that preventing nuclear war was generally seen to be far more urgent and important than anything else one might do to promote security at home or abroad. But, this handful of thinkers argued, we inhabit a world increasingly characterized by transnational, interconnected, non-military problems, such as the rapid expansion and movement of populations, the grinding poverty affecting billions of individuals, an explosion of new and resurgent infectious diseases, and diverse forms of environmental degradation. These threats to human welfare, social stability and progress deserve attention as issues of national and international security.

2. Since the late 1980s the discussion of environmental security has continued apace with conceptual arguments intersecting regularly with both empirical research and policy advice. While there is agreement in most of the literature that environmental changes are unlikely to directly cause inter-state warfare, there remains considerable discussion about the likely trajectories of environmental change causing state “failures” and the likely disruptions that might result. Likewise there is considerable discussion of the appropriate policies to anticipate such failures and the possibilities of aid packages as preventative interventions. Not surprisingly the main focus in many of these discussions is on states, their performance, interactions and capabilities. In so far as the conclusion

that states are unlikely to go to war as a result of environmental scarcities or changes holds, the question then becomes in what way is this a matter for detailed attention by international relations scholars and especially those interested in security studies.

3. The end of the 1990s has seen a flood of books on the theme of rethinking security, many of which adopt or at least include an environmental perspective. The problem they raise - a lot of people are threatened by an astonishing and growing array of interconnected, transnational forces against which strong militaries may not have the day--is a valid and even urgent one. In light of the billions of people who live on the threshold of starvation, around the corner from a war zone, or in the heart of a disease curtain, one hopes that efforts to reduce their insecurity will continue to attract the attention of diverse and thoughtful scholars, policymakers and activists. One suspects, however, that for much of humankind the next century will hold its full share of threat.

4. The significance of technology and technical innovation for social change is widely recognised in different disciplines. Francis Fukuyama, has argued that there is no significant political innovation since the French Revolution and that this has been confirmed in the triumph of liberal democracy and liberal economy in the Cold War: the 11th of September and the events following it provide no reasons to change this view, but, the bio-technical innovation will lead to significant changes in politics, in the way human beings see themselves and their relation to the Nature and, thus, in the world in general. There is an argument that we need to regulate the innovations smartly, or, we face the post-human future in which we enter far beyond the limits of our knowledge and abilities to manage the risks and be ethically and legally responsible for our actions. Innovations and their use being increasingly subject to international free trade, the regulatory exercise becomes the challenge of the international economic law and governance.

5. In the paradigmatic stage, the contribution of the concept may emerge from contrasting some of the basic principles in the worldview of Western modernity, e.g. those related to globalisation, competition and economic growth. In the practice stage, industrial ecology suggests local/regional solutions that establish networks of companies that cooperate in material and energy flow management, and by doing this, complements the existing product, process or company-based approaches and tools commonly used in current environmental policy and management.

THE BOUNDARY BETWEEN ORGANIZATIONS AND MARKETS: DIFFERENT APPROACHES WITHIN ORGANZATIONAL ECONOMICS

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Since Coase (1937) in the classic article “The Nature of the Firm” raised questions of why does a firm emerge at all in a market economy, and why some transactions are organized within a firm rather than being handled in the market, a number of theories and conceptions within organizational economics try to determine what the organization is and what distinguishes the organization from the market.

The definition of the boundary between the organization and the market (or the proof of its absence) is a conceptual thing that is one of the main research questions within organizational economics. Moreover, the definition of the terms “organization” and “market” and the definition of the boundary between them allows maintaining the research progress within institutional economics, in general, and within organizational economics, in particular.

Several points of view on markets and organizations and on the boundary between them have been developed within organizational economics. C. Menard (1995) argues that such important concepts as “institutions”, “markets” and “organizations” have ambiguous meaning and it undermines the progress of research not only within organizational economics but within any research program that intended to deal with these conceptions widely. The author states that these three concepts are mixed between each other (for instance, the author offers different research when as organization it is understood firm, institution or institutional arrangement, variant of market activity; market sometimes is described as specific organizational form, as institution, as a type of governance structure). The author supports the point that both organizations and markets can be viewed as institutional arrangements and develops the definitions of each of these three categories – institutions, markets and organizations – through the term “institutional arrangement”.

The term “market” C. Menard defines as an institutional arrangement consisting of rules and conventions that make possible a large number of voluntarily transfers of property rights regularly, these transfers enforced through a specific mechanism of regulation – the competitive price system. The “organization” is defined as an institutional arrangement that exists in order to make possible the conscious and deliberate coordination of activities within determined boundaries, in which members interact on a regular basis through a set of agreements and aimed on common purpose of creating or allocating resources and capabilities by cooperation.

Another point of view on organizations and markets has been presented by A.A Alchian and H. Demsetz (1972). The authors state that firms, households and markets are nongovernmental organizations and that any organization, no matter be it the market or the firm, exists for the allocation of rewards to resources in accord to their productivity. Further, the economic organization at the article is described as such a mechanism through which the owners of inputs cooperate in order to use better their comparative advantages for receiving gains according to the productivity of factors owned by them. The authors describe both markets and

organizations as the types of cooperative production at the economy. The firm as organization is aimed on the gathering, collating and selling input information and is served as a highly specialized privately owned surrogate of market that compete with an ordinary market which is considered as a public or communal market.

H.H. Baligh (1986) offers to describe organizations and markets as the sets of people who are connected together by the logical orders of decision rule and transaction respectively. The nature of connections (“wires”) between any two persons in a set, as the author states, determines whether the wired set is an organization, a market, an economy and so on. From this point of view the essence of market and organization is different. The author points out that the organization as a set of people can be determined by decision rules which are defined as the logical orders (the basis of an arrangement of people) that arrange people and consist of functions, relations, goals and so on. A market is defined in terms of the concept of the transaction. Two economic agents may be ordered by the transaction or the exchange of goods or services between them. A market contains transactions between person and person, person and organization, organization and organization. Organizations are arrangements of persons while markets are arrangements of organizations and persons.

The analysis of different points of view allows to state that a boundary between the organization and the market exists. First, it should be considered that the organization performs different from the market functions. The main function of the market is the realization of exchange while the organization is actually operates in order to maintain the exchange on the market. Further, the organization is able to make transactions between economic agents with fewer costs in comparison with costs of these transactions at the market. For instance, huge transnational corporations organize the internal markets of resources in order to reduce costs: it can be cheaper to trade between different departments of one organization than between two different organizations (if we mean the firm under the term “organization”) or, even more generally, between two different nations (by the way, we can think about the nation as organization too).

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INFORMATIONAL TECHNOLOGIES IN CORPORATIVE MANAGEMENT

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Among a diversity of the programs for business under the term "the information technologies in corporate handle" traditionally understand "complex systems of a control automation". Their other names "scale system of firm", "corporative informational systems" (CIS), "corporative (or complex) management system" (CMS), and "automated management systems" (AMS) are known also. The fundamental nomination of corporative systems is the operative giving the noncontradictory, authentic and structured information for acceptance of the management decisions. Such systems organize the unified information space of all activity of enterprise which is provided with its appropriate divisions or separate people fulfilling defined functions. Among them - financial department, sales and supply, service of clients, warehouse economy and logistics; manufacturing divisions. Frequently staff departments, economical and contractual services of enterprise, clerical work, counting-house department etc. are added to them. The availability of a built-in means and mechanisms in corporative management systems allows the personification inspecting of executable operations, and also access to the information and its usage. The complex management systems have, as a rule, several categories of the users. First it's so-called end users and system administrators and systems analysts also. In many firms these categories of the users frequently are united in one or several persons fulfilling all functions at once, what contradicts to rational organization of work and in the total increases the expenses. Though the majority of the developers names the software products administrative (management of enterprise, warehouse, finance etc.), in effect, practically all software used in corporative management, represent the registration facts and documents of financial-economic activity, discount systems with the possibility of construction of the reports and certificates` in sections premised by analytical characteristics. That is that the structured information is inserted in a data base. This structure is mortgaged by the directories, classifiers, parameters and forms of type documents connected among themselves in a different degree. Using the information available in the data base, so-called "section" is "created", "holded out", "gathered" with tools. Having received the reports and certificates, frequently called analytical, on the basis of such data the leadership can take the decisions. The type concept and type technology of work with systems of the considered class is such.

The enterprises put forward such hard and diverse requirements to the means of corporative management, that there is a necessity of their multilevel construction. Usually the system kernel is central and contains only program codes. The following conceptually important element is the built-in directions of a system,

permitting as a minimum to carry out its attuning on work places, not changing the program codes, to realize concrete operations, to insert new forms and change the available forms of usual ones and of account documents, and to involve the other means of parametrical attuning. More advanced systems have the built-in means for creation of various enterprise models: informational, organizational, functional and other. And at last data base.

About the application of advanced technologies promoting the perfecting of corporative management is known much less in our country. Among that, in The Wall Street Journal opinion, the given sector of the market of the applied business-programs becomes one of most dynamical recently. In its basis the number of the important factors lays: the transformation of strategic knowledge in a key resource of successful development of modern joint-stock companies, the lessons of the recent corporative scandals which have revealed the urgent necessity of boosting of inside control efficiency, the aggravation of a competition in the market of capitals and problems of social responsibility of the company. As a result the requirements to IT-provision of the following processes in the sphere of corporative management are boosted:

1. the directors council members and top-managers cooperating during the realization of the joint-stock company strategy;
2. the accomplishment of the supreme official's functions of a system management of the inside control (current leadership provided with the top-managers, and supervision realized by the directors council members);
3. the company interaction with the shareholders, other contractors and interested sides.

All chiefs of joint-stock company should regularly receive the special selection of objective, correlative reports capable of creating clear and colorful picture of the situation, in which the company is. For providing the generation of such reports by a corporative IT-system it should solve four important tasks successfully:

1. the reaching of the inside unanimity of used indexes;
2. providing of the maximum actuality of the information;
3. personalizing the reports according to the concrete users needs and competence;
4. using the basic set of efficiency indicators which covers the most important constituents of a corporative business-briefcase. Now it's possible to allocate three the most important directions, according to which the IT-instruments are developed which are used by the top-managers and the director council members for the management in the field of the inside control. The risk management, information security management compliance management are attributed to them.

ECONOMIC INSTRUMENTS FOR WASTE MANAGEMENT

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Waste, to reduce its volume and dangerousness, is processed before its final disposal. The processes can include such options as incineration, composting, hydrolysis, and sorting, etc. These processes guarantee reaching the desired goals, but at the high economic, social, and environmental costs. Technology has yet to provide the ultimate answer to the problem of waste; presently, it can only reduce its magnitude. Technical solutions to the problem of waste are typical examples of "end of the pipe technologies." Realizing that "the pipe" does start somewhere, however, it is useful to examine how we can affect behavior at the front end of the "waste production line."

The concept of sustainable development for solid waste management requires this waste handling hierarchy:

- avoidance
- minimization
- reuse
- recycling
- treatment with energy recovery
- safe disposal

This approach is reflected in international documents such as the Rio Declaration in which one chapter is devoted to solid waste problems, and the European Union directive for 1989 which also uses the same philosophy.

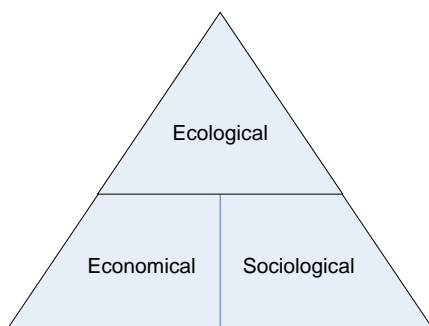


Chart. Hierarchy of the sustainable development values

As economic analysis indicates, this hierarchical approach should be seen far more as a rule of thumb than a binding standard. Nevertheless, it requires and puts the highest pressure on the avoidance and minimization of waste generation. This cannot be achieved by any of the techniques of waste disposal. To obtain these

goals the governments must use administrative and economic tools that address the problem at its source, at the point where waste is generated. Generally, these tools are based on the Polluter Pays Principle (PPP), and their goal is to encourage or enforce the potential waste producers to develop and implement procedures that will result in the generation of a smaller amount of or higher quality waste.

According to the PPP definition by OECD "the polluter should bear the expenses of carrying out the measures which encourage rational use of scarce environmental resources and to avoid distortion in the international trade." If the polluter (waste generator) must pay the full price for the waste disposal, such a price must be proportional to the amount of generated waste, and nuisance it causes. Unfortunately, it is very seldom that residents' payments for waste disposal depend on these factors. Payments almost never depend on waste type, and are often made in the form of a constant fee; sometimes waste disposal is even free of charge. In such cases where waste disposal is free, the cost of disposals hidden in the local tax system, providing residents with absolutely no incentive to reduce the volume of waste they generate.

Introduction of the "pay by bag" system is in line with the PPP. This system requires that residents buy special garbage bins, or buy stickers to place on their own bags. An analysis of this system in 29 US cities showed that the amount of waste generated per capita in the towns with this system was less than half the amount of wastes that other towns discarded. The management costs of "pay by bag" systems are also found to be lower. The drawback of this scheme is that it provides an incentive for midnight dumping or backyard trash burning, phenomena observed in towns where the pay by bag system was introduced. Because the introduction of the "pay by bag" system is not always compensated by tax cuts, it is seen by communities as a cryptic way of increasing taxes, affecting mainly poor communities. The same concept, but on far more technologically advanced level, was tested in the region of Hoyersweda, in Germany. The residents there needed magnetic cards to access their own containers. Such locks were installed to prevent the use of a third party. An even more technologically advanced version of this system uses an identification chip on the magnetic card, which both open the container and identifies the amount of waste disposed by each household. In this scheme every household pays for its own waste on a volume basis (Warmer 1999).

Another important element of the "pay by bag" system is that the fee charged should cover the full cost of disposal; this includes operating cost, plus the cost of building the disposal facility, post-closure maintenance, risk to water and air, soil contamination, and compensation for land degradation, etc.

Under the "pay by bag" system polluters pays for waste volume, not weight, which leads to waste compacting at the source. Such compacting can easily be obtained in a garbage truck, so the environmental profit from such behavior is minimal. To avoid this problem, and to promote waste avoidance instead of compaction, some communities (Seattle, Durham, N.C., Farmington, MN, USA) started exploring weight-based systems. In this system the garbage truck weights

garbage at the kerb and records the amount discarded by each household. The cost of the equipment is 5 000 to 10 000 USD per truck, but expected to decrease if such systems become widespread.

The "pay by bag" scheme is only one example of one group (disposal charges) of economic instruments. The full spectrum includes levies, taxes, deposits, refunds, and charges.

A material levy is an example of an input tax, and would be imposed on the raw materials used to manufacture packaging, with due account being taken of existing rates of recycling and reuse. The size of the levy needs to be related directly to the environmental damage done by the production and consumption of the packaging, plus any scarcity premium, if relevant. However, where existing legislation covers environmental impacts from earlier stages of the life-cycle, a levy may need to reflect only the MSW environmental costs. "The carbon tax" levied on fuels proportionally to its carbon content aims to rationalize its use and reduce the emissions causing the global warming effect.

A product tax is, contrary to the material levy, an output tax. The tax would be related to the potential waste disposal and pollution impact. Green tax levied on gas is the example of this tool.

Waste disposal charge is based on the assumption that each consumer pays all of the social costs of disposal of each item. This system, if fully implemented, would require an extensive monitoring and enforcement system. In reality, the communities that introduce this system charge the clients proportionally to the volume of waste, and more seldom proportionally to the weight. They also apply different charges depending of the waste type (e.g. sorted, not sorted, construction material, with or without organic compound, etc.)

A deposit-refund system (DRS) is essentially a combination of a tax and subsidy. The consumer of package/container is given a right to a refund if the waste product is returned to the seller or authorized recycling/reuse point. To gain the right the consumer may have to pay a formal deposit at the time of the purchase, or pay a higher price. The deposits can cover a whole spectrum of commodities, from disposable cameras, to car batteries, to entire car bodies. The most common deposit system is for beverage containers (glass and plastic bottles, and aluminum cans). The system is very efficient particularly in case of the cans due to the high value of the material. The return rate in the States is between 72 and 98 percent.

Tax credits and financial bonuses. Literature discusses the possibility of giving tax credits or bonuses that take steps to reduce waste at the source. The credits can be given for investing in the equipment needed to switch from disposables to reusable such as dishwashers and washing machines. Credit can be given to businesses that buy waste-reducing equipment such as double-sided copy machines, reusable tableware in cafeterias, and plain paper fax machines. Bonuses to the communities that reduce the amount of waste they bring to dispose is also discussed. For example state of Montana gives 25% income tax credit and tax deduction for purchasing recycling goods. Table presents the example of

application of the use of economic instruments in the management of packaging waste.

Table. Economic instruments in management of packaging waste

Country	Type of economic instrument	Application: in use (u) under study/proposed (p)
Austria	deposit/refund	refillable plastic beverage containers subject to mandatory deposit of OS 4(u)
Belgium	waste charges (incentives)	MSW (u)
Canada	deposit/refund waste charge	beer and soft drink containers non-refillable containers
Denmark	deposit/refund	refillable beer and soft drink containers, beverage containers, pesticides in small containers (u)
Finland	product charges	non-returnable beverage (carbonated) containers (u)
France	waste charges (incentives)	MSW (p)
Germany	deposit/refund	plastic beverage containers (u) extension to other packaging
Italy	product charge	non-biodegradable plastic bags (u)
Norway	product charge	disposable carbonated drinks containers (u) refillable beverage containers (u)
Poland	waste charge (incentive) deposit/refund	MSW (u) refillable plastic/glass containers (u)
Portugal	deposit/refund	metal (p)
Sweden	product charge deposit/refund waste charge (incentive)	beverage containers (u) aluminium cans (u) not-specified
Switzerland	product charge	disposable beverage containers (p)
UK	recycling credits	MSW (u)
USA	deposit/refund marketable permits waste charges	beverage containers (u) newsprint (p) unseparated waste (u)

ECOLOGICALLY INNOVATIVE MARKET FOUNDATION IN UKRAINIAN CONDITIONS

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Global ecological problem is not a subjective willing or requirement of separated men group. This is an objective process of current society development stage, which is coursed by men activities.

Current ecological situation analysis shows that there is an over limited exploitation of natural environment, which has become more and more technogenic.

New unspecified external factors, which influences on humans, have appeared as a result: urbanization, agricultural chemization and industrialization – they cause the same ecological problems.

That's why development and implementation of high ecological and economical technologies is a base of getting out of the difficulty.

It is necessary to transfer economy to innovative model in market conditions to provide economic independence of a country and economic growth.

Transfer need of a country forwards innovative ecological development is defined by the next premises:

In first, orientation forwards innovative way allows national business to occupy good market positions even during business changing and work more effective in comparison with traditions methods.

In second, traditional tools of natural environment safety are not enough effective, what necessitates new ideas, principles and revolution changing search.

In third, analysis of Ukrainian situation shows that backlog between highly developed counties has increased, which can cause system crash of national economy because of technological and socially-cultural inconsistency, low capability of national economy to attract investments and innovations. If we loss the time, it will be too hard to overcome the lag in the future.

One can come to conclusions that development of Ukrainian economy and existing problems solving have to be based on ecologically oriented innovative activity.

Innovative activity is firstly oriented to ecological needs satisfaction, which has the next evolution stages:

1. Production and realization of safety environmental tools from nature's pollution (natural breaking down).

2. Shifting of ecologically unfavorable goods and services into more improved or those, which can decrease specific consumption of production or energy intensity.

Nowadays environmental entrepreneurship is developed in such specified directions:

- production, setting and exploitation of ecologically pure technologies,
- development and implementation of ecologically pure technologies,
- conversion, transportation and liquidation of waste,
- ecological technologies, goods and waste trading,
- energy saving, lands recourses saving,
- water-, aircontrol, ecoauditing, ecoexpert operation,
- ecotourism, ecological medicine and professional safety,
- informative technologies.

Hereupon Ukraine has all opportunities for ecologically innovative market foundation.

ECONOMIC AND ENVIRONMENTAL ISSUES OF GLOBALIZATION

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Attention to elaboration of globalization problems has been a typical feature of the economic development during last two. There are a lot of definitions of this term but the most exact of them was created by the professor of Paris Institute for Political Investigations Doctor Bill Bady. He proposed three main characteristics, which specified the term “globalization”:

- it is a historical process changing during centuries;
- it means world uniformity of the life according to single principles, orientation on single values, observance of single habits and behaviour, tendency to universalize everything;
- it is as far as higher mutual dependence, the main result of which is destruction of national state sovereignty under the influence of global firms, religion organization and TNK.

Globalization includes all spheres of society life: economy, politics, social relations, culture, ideology and sphere of relations dealing with mankind and environmental surrounding.

Here we will discuss economic and environmental issues of globalization. They are interdependent. Among the economic aspects stressed in globalization are trade, investment and migration. The globalization of trade entails that human beings have greater access to a big variety of goods and services never seen before in human history. The globalization of investment takes place through Foreign Direct Investment (FDI), where multinational companies directly invest assets in foreign countries or it's shown by indirect investment where individuals and institutions purchase and other countries sell financial assets. Free migration allows individuals to find employment in jurisdiction where there are labour shortages.

And what about ecological problems of globalization? For millennia man had to struggle against nature in order to survive and develop. He grew so strong that called himself as “king of nature”. In his conquer of nature man became so great that his economic achievements affected negatively on nature. Thinking only about technological progress, economic growth and our own profit we forget about ecosystem. Modern science is so inventive that it will probably succeed in providing mankind with technologies to compensate natural resources destruction. Thus, already back in the 1930s V.I. Vernadsky who developed the conception of noosphere reached a radical conclusion about current activities of mankind and warned that, unless a society would developed on a basis of reasonable principles, the destruction of all life on Earth was imminent. He was right. Huge natural resources use, the threats to health, the annihilation of nature - all this is different aspects of the environmental problems in the modern world.

The solution to the collisions between man's demand on the one hand and the environment on the other is in the change in our philosophy. The philosophy has to be changed starting from our attitude to the environment as to the resources to use in a short-time period to our attitude to the ecological way of living.

NATIONAL NATURAL PARK “SVYATIE GORY” IS A PERSPECTIVE DESTINATION FOR THE DEVELOPMENT OF RECREATION AND ECOTOURISM.

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The National Natural Park (NNP) “Svyatie Gory” (“Saint Mountains”) was created by the Decree of the President of Ukraine on February 13th, 1997 in order to protect, restore and use rationally the landscapes of the Donetsk region with unique natural complexes that have important scientific, recreational, religious and cultural significance. The NNP is situated in the middle flow of the Donets river's on the territories of Slavyansk, Artymovsk, Krasnolimansk and the town of Slavyanogorsk, Donetsk region. The total area of the park is 40589 hectares; including 11878 hectares that are given to permanent usage, and 28711 – grounds of other users. The territory of the park has the following structure: 39585 hectares (97,5%) – forest grounds of Slavyansk and Krasnolimansk; 967 hectares (2,4%) – grounds of Slavyanogorsk; 37 hectares (0,1%) – water territories.

The flora and fauna of the NNP are rich and various. According to the scientific data there are 943 kinds of plants and 48 of them are in the Red Book of Ukraine, 12 of them are protected at the international level. The territory of the park provides necessary conditions for existence of 2000 kinds of species. 50 of them are in the Red Book and 12 are in the European Red List.

The NNP is famous for its rich historical and cultural heritage. 129 objects and 73 historical monuments are situated on its territory. Svyato-Yspenskaya Lavra with its churches is known all over the world. Up to 21 historical and architectural monuments can be found among the unique beauty of the NNP. The NNP “Svyatie Gori” is known as a standard of harmonious combination of cultural and natural heritage among the parks of Ukraine. The UNESKO experts have admitted that the natural, cultural and historical heritage of the NNP fit the main requirements to the objects that have world importance.

The NNP is rich in climate, forest and water resources. Special microclimate is created by chalk hills as high as 120 meters, which protect the valley of the river Donets from blowing winds. Picturesque forests, rivers, numerous lakes, convenient geographical location of the park, cure conditions give the park high recreational and tourist potential. The ecotourism can be developed here.

№	The notion of ecotourism	Main factors	
		resources	influence on the nature
1	Watching untouched parts of nature or “communication” with wild nature.	+	-
2	Ecotourism or sustainable tourism that uses technologies making the minimal influence on the environment.	-	+
3	Natural tourism that includes walking tours, tours by bikes, horses, boats.	+	+
4	Specific market for ecologically conscious tourists enjoying to watch the nature	+	-
5	Responsible trips which help to save natural and cultural heritage and bring profit to the local population	-	+
6	Tourism that has technological and management decisions that let use natural resources and conditions together with protection of nature	+	+

The basic forms and kinds of recreation on the territory of the park are as follows:

- walking recreation – walking, health improvement, cognitive, picnic;
- sports and physical recreation – organization of sports and health improvement activities;
- extraction recreation – gathering the forest products for private consumption (mushrooms, berries), fishing;
- cure-healthy (climate) in sanatoriums, health children camps;

Uncontrolled tourism can damage the natural complexes of the National Natural Park. The amount of holidaymakers reaches 1100 people per hectare at the comfortable time of the day, that is considerably over the acceptable recreational loading. This situation causes the degradation of natural resources.

In order to save the National Natural Park the following tasks should be solved:

- to arrange the whole territory of the recreational zones of the NNP;
- to open new ecological paths and tourists’ routes;
- to implement payment for recreational and excursion activities on the territory of the park;
- to control groups of people travelling by themselves and holidaymakers in order to prevent degradation of the nature;
- to set up recreational and informational centers, museum of nature, advertising materials, to held excursion and ecological entertainments;
- to work out and make true long-term program which provides effective usage of the recreational and natural resources of the NNP and its safety;

The NNP “Svyatye Gory” is naturally protected, recreational, cultural, religious and scientific establishment, which possesses rich recreational resources with high recreational potential that makes it a perspective destination for the development of recreation and ecotourism.

ENVIRONMENTAL PRESERVATION OR ECONOMIC DEVELOPMENT?

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In the end of 20th century the mankind has faced serious global environmental problems. Ozone layer depletion, global warming, wildlife extinction are obviously caused by uncontrolled economic development. However, economic development has a different meaning for rich countries and those, which we usually call the 'Third world'. A farmer from Germany can destroy his crop because it is cheaper than to pay taxes. At the same time a Chinese farmer can not afford more than a cup of rice daily for himself. In this respect economic development is a question of survival for poor countries. The question is whether such development is possible without impact on environment.

From the beginning of industrial age in late 19th century economic growth was always causing pollution. Almost every new technology invented from automobile to nuclear power plant was followed by massive destruction of the nature. However, many modern technologies are more environmentally friendly. For example, computer software production does not need any natural resources (except the electric power) and cause no pollution at all. Informational technology production increases rapidly, though it does not cause an impact on the environment.

Natural resources exhaustion is one of the most important global problems of economic development. It is known that in the nearest fifty years almost all natural resources will be used to produce energy. Then further economic development will be impossible. Though the resources of fossil fuel are quite limited, there is still a way for producing energy from the so-called renewable sources such as wind or sun power. Another way to produce energy without fossil fuel is energy efficiency. For example in Ukraine, which has a transitional economy, it is possible to save up to sixty per cent of all consumed electricity by introducing more efficient technologies. Thus, development of more efficient technologies will help to preserve the environment and at the same time it will create more working places and thus lead to economic growth.

In the last decades we can see a new phenomenon in the economic structure of the world. Multi-national corporations have aggressively invaded the international market. Their main policies are very aggressive advertising aimed at consumption raising and a careless attitude towards the environment. Multinationals are often using environmentally 'dirty' technologies. Though these corporations cannot be banned, it is possible to fight with them with their own weapon – take the economic measures to protect the environment. Introduction of special taxes could be a good solution. Several years ago such taxes were introduced in Lviv region, Ukraine, to recycle the plastic package which was mostly produced by Coca-Cola. As a result, local authorities limited the single-use package production and instead encourage

the production of more environmental friendly package that can be used several times. Though it is not possible to prohibit the activity of the multinationals, the policies of these corporations can be changed by local communities.

Though most big ecological disasters have happened in well-developed countries, a country in transition can hardly protect itself from the consequences of such a disaster. In the last year the case with the Tysa river pollution we can see that neither Romania which caused the catastrophe nor the neighboring countries of the region could effectively solve the problem. For the nearest years the Tysa will stay lifeless. Aside from environmental pollution the so-called 'third world' countries are facing numerous other problems like famine or massive disease outbreaks. Of course, the international community always tries to deliver humanitarian aid and medicine to suffering regions but this is only a temporary solution. The best way to help the poor countries to survive is to develop their economies. This will be the most effective solution to prevent famine and epidemics.

Countries in transition need further economic development. This is the question of survival for them. However, the uncontrolled economy growth may cause massive pollution and even global ecological disasters. Thus, the development of industry in future should be followed by certain measures like special taxes aimed to protect the environment. The development of modern environmentally friendly technologies and renewable energy production can help to avoid global problems in future. In fact, the future of the world depends on a way of economic growth that will be chosen by developing countries.

WORLD ENERGY CONSUMPTION AND CARBON DIOXIDE PROBLEMS

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Energy plays the dominant role in determining the quality of our environment, the prevention of disease, and so on, down the entire list of global concerns. In short, energy is the single most important factor that impacts the prosperity of any society. But there are a lot of problems related to consumption of energy. Ecological problems associated with energy problems are central for sustainable development.

World energy consumption is projected to increase by 57 percent from 2002 to 2025. Much of the growth in worldwide energy use is expected in the countries with emerging economies. In contrast to the emerging economies, increases in energy consumption for the mature market economies and transitional economies are projected to be more modest. In the Eastern Europe and the former Soviet Union (EE/FSU) transitional economies, energy demand in the industrial and

transportation sectors is projected to grow on average by 1.6 percent per year from 2002 to 2025.

Carbon dioxide is one of the most prevalent greenhouse gases in the atmosphere. Anthropogenic emissions of carbon dioxide result primarily from the combustion of fossil fuels for energy, and as a result world energy use has emerged at the center of the climate change debate.

World carbon dioxide emissions from the consumption of fossil fuels are expected to grow at an average rate of 2.0 percent per year from 2002 to 2025. Emissions in 2025 are projected to total 38,790 million metric tons, exceeding 1990 levels by 81 percent. Combustion of petroleum products contributes 5,454 million metric tons to the projected increase from 2002, coal 5,353 million metric tons, and natural gas 3,540 million metric tons.

The mature market economies, for the most part, are growing more slowly than the emerging economies, and their growth tends to be in less energy-intensive sectors. As a result, carbon dioxide emissions from the mature market economies are projected to grow by 1.1 percent per year from 2002 to 2025, absent binding constraints.

Carbon dioxide emissions in the Eastern Europe and the former Soviet Union region are projected to increase on average by 1.5 percent per year, to 3,937 million metric tons in 2015 and 4,386 million metric tons in 2025. The transitional economies are dominated by Russia, the region's largest economy, which accounts for 51 percent of its energy consumption and 45 percent of related carbon dioxide emissions.

Carbon dioxide emissions in the emerging economies are projected to grow at twice the rate projected for the transitional economies and almost three times the rate for the mature market economies, averaging 3.2 percent per year from 2002 to 2025. The most rapid increases in carbon dioxide emissions are projected for the nations of emerging Asia.

So, in the coming decades, responses to environmental issues could affect patterns of energy use around the world. Actions to limit greenhouse gas emissions could alter the level and composition of energy-related carbon dioxide emissions by energy source.

THE ECOLOGICAL HOUSE IS A KEY TO THE FUTURE

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Energy Effective house

The urgency of a power problem. The ecological loss from power has complex character: air, water, ground, in a global section - acid rains, warming of the

climate, ozone gaps become soiled. The cardinal way for decision of environmental problems of power lays in curtailment of production and consumption of energy.

A successful project of the energy effective house is a good basis for designing ecological houses. The house represents uniform heat power system. The reduction of the heat losses is with a help of warming ("it is better to warm once than to heat all life"), the system of the heat regulation is instead of system of heating for indemnification during extremely cold periods, losses on ventilation will be reduced with application of artificial systems of ventilation with exchangers of heat or thermal pumps.

It is natural to use the energy of renewable sources (RSE) to supply by the energy of ecohouse - solar, wind, energy of a biomass, heat of the environment. In the view of an ecological component of cost RSE is more economic now than traditional and in a future this break will be only increased.

Saving-up-resources and few-wasting house

The nonaggressive to the environment house is should be resources effective as a whole. It is rational to submit the water to the house with a different degree of clarification for different kinds of its using. It is also expedient to make the individual installations of clearing of drains with the differentiation on different kinds of the polluted waters. The effective means of additional cleaning are special biological rates and platforms. It is stipulated applications of biotoilets for restoration of the ground fertility and reduction of quantity of household waste. It is the introduction of recycling household waste (their using as secondary raw material).

The bioclimatic house

It makes the harmonious merge of the ecological house to a landscape owing to modern saving-up-resources technical equipment which reduces pressure upon surrounding natural systems. Ecohouse is similar to an alive essence - reserves energy in the summer and exists due to it in winter months; ability to use a solar energy, etc.

The green house

Plants in the house can improve hygienic conditions, aesthetic qualities of habitation, fructify and bring a crop. Inside of the house are assumed the attached hothouse and a winter garden. Plants around of the house will improve quality of the environment of city and allow saving the city area due to some reduction of green plantings of common using.

The healthy house

From the point of view of influence on health a tree materials of a biogenic origin are the best building and finishing materials as a wood, straw etc., metals are the least desirable as a constructional material.

Cooking has to be doing using the renewed energy sources which minimally pollute and are corresponded to the healthy meal criteria's. Electromagnetic could, which source is electroposting and numerous electrodevice, can be significantly lowered with a help of a complex actions.

The safe house

Ecohouse is based on a natural infrastructure (the sun, a wind, fertility of the ground) which are difficult to switch-off, the inhabited formations of ecohouses will be in a high degree proof to the natural and technogenic cataclysms.

The creative house

In the individual house the person can be as the architect, the builder, the designer, the farmer etc. She has more than opportunities to be engaged in any creative kinds of activity.

Educational role of the ecohouse. Socially psychological aspects

For children the life in ecohouse will be natural technical and ecological university. Ecohouse can play a huge role in ecological education of the population.

The information house

The high complexity of engineering systems of ecohouse demands the developing control systems. The priority at their designing and a choice of programs of management will be given to the problems to achieve high hygiene, saving-up-energy and saving-up-resources technology.

Conclusions

To talk about an economic acceptability or unacceptability of the ecohouse is the same as to think: "is the lifebuoy ring not too expensive for drowning". Nevertheless, discussion of its profitability allows estimating soberly immediate prospects, rates and tactics of transition to it.

Now the separate ecological house will be more expensive than the similar house executed on traditional schemes. Houses of transitive type which contain separate lucky finds in construction of effective houses can be cheaper than usual already now. Thus it is necessary to mean still the cost of reduction of ecological damage not considered in the price at operation of transitive houses.

All advantages of ecohouse will be shown at their mass construction. It will be also reduction in price of construction and operation of residential areas in connection with sharp reduction of a necessary engineering industrial infrastructure and more rational use of territories and improvement of ecological conditions, numerous social benefits, etc.

ORGANIC FARMING POLICY IN POLAND

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Introduction

Organic farming rules consist of: not using GMO, chemical fertilizers, chemical plant protection means, chemical food and feed additives; preference of prevention and natural treatment rather than allopathic products including antibiotics in animal husbandry; maintenance and improvement of soil fertility and

biodiversity on the farm; preference of regionalism. As results, organic farming provides many benefits to the environment: protection of natural resource, prevention of land, water and air pollution from agriculture, maintenance biodiversity and landscape. As organic farming is relatively new system it needs special treatment and support from the state for the appropriate development. The support of organic farming can be divided into three groups: regulation, institutionalization and financial subsidies.

Regulation

After early pioneers, organic farming movement in Poland started at the end of 80'ies. Standards of EKOLAND (Organic Food Producers Association) published in middle 90'ies based on the IFOAM outlines were the first private rules of organic farming in Poland. First national administrative regulation was established in 2001 Law on organic farming of 16th March 2001 (Dz.U. 2001 no 30, item 452). Organic farming became regulated by law due to pressure of organic producer and enthusiasts. Recently, European Union regulations related to organic farming get in force within accession of Poland to EU. European regulations EEC 2092/91, EEC 94/92, EC 1788/2001 and EC 1452/2003 were introduced by national Law on organic farming of 20th April 2004 (Dz.U. 2004 no 93, item 898). In many terms law of European Union regulates many fields in organic farming in Poland. Another example is European Action Plan for Organic Food and Farming established in 2004.

Institutionalization

Organic farming like general agriculture needs proper administration. Organic farming is the subject of operation of and is recognized by the Ministry of Agriculture and Rural Development in broader extent than other Ministries. As special rules are applied to organic farming, it demands next to general also unique administration. Many institutions in general agriculture in Poland already are forced by law to operate for organic farming. Among them are:

- Agricultural and Food Quality Inspection Service – authority in the control and certification system;
- The Institute of Soil Science and Plant Cultivation – authority for fertilizers organic farming
- Institute of Plant Protection in Poznań - authority for plant protection means in organic farming;
- State Plant Health and Seed Inspection Service – authority for seeds, reproducing materials in organic farming;
- Station for Soil Analysis – payment agency for subsidies of control costs;
- Agency of Restructuring and Modernization of Agriculture – payment agency for subsidies within agro-environment programs of Rural Development Plan.

The unique administration in organic farming is the system of control and certification. All producer (farmer, processors), units placing products on the market, importer and exporter are controlled at least once a year. In Poland whole system of control of organic farming and food production consist of the Ministry of

Agriculture and Rural Development, Agricultural and Food Quality Inspection Service and private or state own control bodies. It was established in the force of first law legislation.

Another important institution which operates for organic farming is national advisory. Whole state system consists of Agricultural Advisory Centre in Brwinów and the network of Agricultural Advisory Centres. Agricultural Advisory Centre in Brwinów, with 4 brunches, is financed by national budget. Its main role is coordination and development of agriculture advisory in Poland. The network of Agricultural Advisory Centres in Poland, which consists of main units in all provinces, has offices in all counties. This network is financed by budget of provinces. Within this network system of agricultural advisory systems there are advisors working for organic farming and Rural Development Plan; however they are providing advisory also in other issues. Organic farming advisory is only part of their specialization. There are around 400 such people in the Polish advisory system in 2005.

National organic farming advisory is located within this national advisory system. National Centre for Organic Farming was established in Radom in 2003 and after the structural changes it alters into the brunch of Agricultural Advisory Centres in Brwinów. It coordinates the advisory in organic farming. Important outcome of his activity is 32 publications on animal and plant organic production, organic processing and marketing as materials for advisors' and farmers' education and internet portal for organic producers.

At the regional level organic farming in Poland is recognized in different extent by the local governments. Only in few provinces, some counties and communes organic farming is supported by regional project and plans of organic farming development.

Subsidies

Subsidies are very often are important part of policy. Organic farming is also supported by subsidies due to additional costs of producers' control, equalization of lost profits and as payment for environmental benefits organic farming is providing. Organic farming subsidies in Poland were introduced in 1998 as payment to control costs for farmers and as area payment in 1999. Level of area payments were changing during 1999-2003 due to national budget limitation (See table 1).

Area payments introduced in 2004 after accession of Poland into European Union within Rural Development Plan are more than doubled. Area payments have limitation: in 1999, 2002, 2003 for each hectare up to 50 ha 100% payment, between 50-100 ha 50% and no payment over 100 ha; in 2000, 2001 - 100% up to 100 ha, 50% between 100-300 ha and no payment over 300ha; in 2004 (in Rural Development Plan) - 100% up to 100 ha, 50% between 100-300 ha and 10% over 300ha. Main reason of introduction of this limitation is decreasing the level of payment paid for one farm. Payments for costs of farm control of organic standards compliance covers almost all farmers' expenses and were reduced in 2005 (See table 2). There are other subsidies related to farm control in Poland. They are

subsidies to costs of residues analysis of plant protection means in samples collected by control bodies.

Additionally the support of research in organic were introduced in 2004 by the Ministry of Agriculture and Rural Development.

Table 1 Level of subsidies to ecological farming in Poland 1999-2006 (in PLN)

	in conversion	converted	in conversion	converted	in conversion	converted	in conversion	converted	in conversion	converted
	Horticultural crop		Arable crop		Orchards		Berries plantation		Pastures and meadows	
1999	200	150	150	120	220	180	230	200	75	50
2000	600	450	450	360	660	540	690	600	150	120
2001	600	450	450	360	660	540	690	600	150	120
2002	500	400	200	150	550	450	550	500	80	50
2003	500	400	300	250	600	500	550	500	100	80
2004-2006	980	940	680	600	1800	1540	1800	1540	330	240

1 PLN = 0,22-0,25 €

Table 2 Level of subsidies (in PLN) to costs of farm controls concerning the compliances with ecological agriculture criteria in Poland 1998-2005 (in PLN)

Farm size (agricultural land)	up to 5 ha	5—10 ha	10—20 ha	20—50 ha	50—100 ha	over 100 ha
1998	75	100	125	150	175	300
1999	100	130	150	180	200	350
2000	300	350	400	450	500	600
2001	300	350	400	450	500	600
2002	300	350	400	450	500	600
2003	400	450	550	650	700	800
2004	600	750	800	900	1000	1100
2005	450	500	550	600	650	700

1 PLN = 0,22-0,25 €

Development and state of organic farming in Poland

In 1990 organic farming in Poland started with 27 farms and at the beginning it has been developing slowly as the movement of farmers, hotheads and enthusiasts. The after introduction of subsidies to organic farming resulted bigger number of farmers starting farms' conversion into organic production. As a result number of organic farming increased more than double in 2000. (See figure 1).

Second significant increase is observed in 2004 and 2005 when farmers were encouraged by higher level of payments introduced after EU accession within agro-environmental programmes of Rural Development Plan.

Newly published data show that there were 7183 farms with 167 740 ha in Poland in 2005. According expectations of The Ministry of Agriculture and Rural Development, number of organic farms will increased up to 15 000 and organic area up to 300 000 ha in 2010. This foresees is underestimated as in 2005 in total 7183 farms certified farms exist in comparison to 6000 estimated (IJHARS 2006).

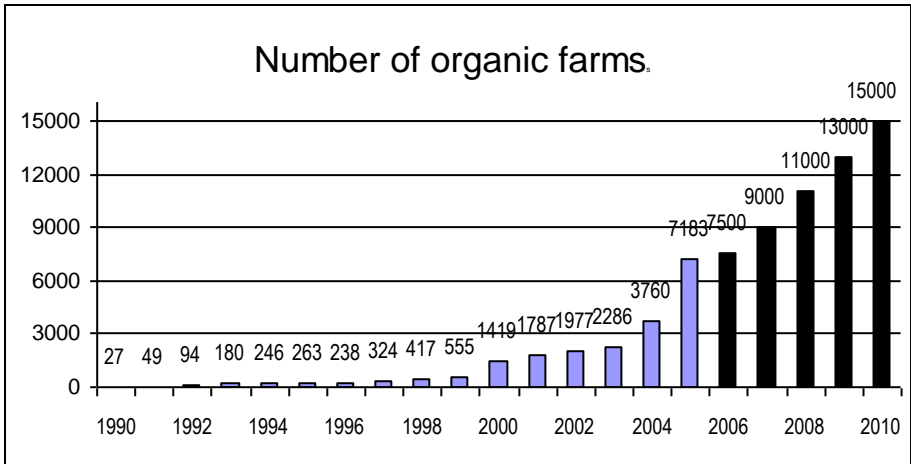


Figure 1 Development of organic farming in Poland

SECURING THE FUTURE OF GREEN CITIES UNDER THE LEADERSHIP OF UNEP

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Most of us have heard about United Nations peacekeeping and humanitarian assistance. But the many other ways the UN affects all over lives are not always so well -known. Cooperating in this effort are more than 30 affiliated organizations, known together as the UN system. Day in day out the UN and its family of organizations work to promote respect for human rights, fight decease and protect the environment. To your attention is Securing the future of GREEN CITIES under the leadership of the United Nations Environment Programme.

Because of the importance of urban issues to sustainable development and attaining the Millennium Development Goals, UNEP expanded its work in this area during 2005 with the creation of an Urban Environment Unit which launched a campaign to highlight the role of cities in global environmental issues such as climate change, biodiversity and pollution. Another UNEP priority is the Cities Alliance, which is supporting city development projects worldwide. UNEP is ensuring that environmental issues are fully integrated in Cities Alliance activities. Nearly half the world's population lives in towns and cities. Over the next quarter-century virtually all population growth will be in urban areas in less developed countries. The environmental consequences of urban growth are considerable. Cities are prolific users of natural resources and generators of waste. They produce most of the greenhouse gases that are causing global climate change. They often also degrade local water quality, pollute the marine environment, foul the air and consume the land.

The theme of World Environment Day 5 June 2005, 'Green Cities: Plan for the Planet!', highlighted the importance of addressing challenges presented by urbanization for sustainable development. For 2005, feedback was received from participating governments, businesses and communities in more than 100 countries.

UNEP's International Environmental Technology Centre (IETC), based in Japan, is working to provide improved sustainable access to safe drinking water and sanitation, promoting ETCs for converting waste into a valuable resource, in close association with ongoing international initiatives in Japan such as the 3-R (Reduce, Reuse, Recycle) initiative and the Eco-town initiative.

As part of the Eco-towns initiative, UNEP and the City of Kawasaki co-organized the First Asia-Pacific Eco-Business Forum in January 2005. The event, which brought together participants from Japan, China and the Philippines, resulted in a joint recommendation to develop guidelines for facilitating the implementation of the Eco-towns approach in other cities in the Asia-Pacific region based on the Kawasaki experience.

In Kenya, UNEP is working with the National Environmental Management Authority and the Kenya Association of Manufacturers on a project to tackle the growing challenge of plastic waste management. The Pilot project on Sustainable Management of Plastic Waste in Nairobi will identify key policy measures that need to be taken by local and national government, such as a levy on the thinnest plastic bags which are habitually used once and thrown away, polluting the environment and posing a considerable threat to domestic livestock and wildlife. The project will also provide technical assistance on cleaner production and sustainable consumption for the plastics industry and facilitate the establishment of community-based groups to engage in waste management.

Another major issue related to the urban environment is air quality related to vehicle exhaust emissions. UNEP hosts the Clearing House of the Partnership for Clean Fuels and Vehicles, a public private partnership established at the World Summit on Sustainable Development in 2002 to promote better air quality in

developing country cities, including supporting the phase-out of lead from petrol, the reduction of sulphur levels in fuels and the introduction of cleaner vehicles. on technology and knowledge exchange to support governments and their partners to remove lead from petrol. In 2005, the emphasis has been on technology and knowledge exchange to support governments and their partners to remove lead from petrol. Lead is a highly toxic element that has severe impacts on children's health and the environment. Most developed countries removed lead from petrol in the 1970s and 1980s. However, it has remained prevalent in petrol in developing countries. Through the Partnership for Clean Fuels and Vehicles, UNEP has helped raise awareness and develop policies in sub-Saharan Africa, with the result that, by 1 January 2006, the continent will no longer import or produce leaded petrol, resulting in a full phase-out during the year .UNEP is now starting a global campaign for the complete elimination of leaded petrol worldwide by 2008.

As an implementing agency of the Global Environment Facility (GEF), UNEP is also working with a number of municipalities worldwide to improve transport for a better local and global environment. Examples include work on public transport in Jakarta, Indonesia, and Istanbul, Turkey. In Latin America, cities are exchanging information and lessons learned on the topics of non-motorized transport, bus rapid transport and land management while implementing their city plans with the support of UNEP and the GEF. In Europe, UNEP joined forces with the International Association of Public Transport to produce a TV campaign promoting the environmental and life-style benefits of public transport to coincide with the coming into force of the Kyoto Protocol in February 2005.

Thus, the environmental consequences of urban growth are evident. We have failed to protect to protect our cities .It's very important to ensure pure air, land by improving technological progress, the quality of raw materials and fuel to do everything to protect people and nature. The only way to overcome the catastrophe is to put cities of the world under international control, perhaps under that of the United Nations.

WAYS OF ACHIEVING NULL WASTE POINT IN MUNICIPAL SOLID WASTE HANDLING

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The problem of municipal solid waste (MSW) is very actual as its solution connected with a necessity to guarantee the normal vital functions of population, sanitary city cleaning, environmental protection and saving of resources.

Incremental transition from polygon burying to industrial recycling is the basic tend of decision of the MSW problem in the world practice.

In the Odessa agglomeration 800 000 tons of solid waste are produced annually. Part of them is transported to the two city dumps. The term of exploitation of one of them has expired in 1979. That is why the solution of this problem should be found immediately and in the complex way.

As the expensive industrial recycling is the final stage in the general scheme of solid waste management and its efficiency depends on the organization of the process on the each of previous stages (collecting and transporting or removing MSW) the primary task in the MSW management for the nearest prospect is the optimization of their collection and removing

In accordance with the conception developed in the Odessa State Environmental University (Complex Approach to the Increasing of Efficiency of Solid Waste Handling) it is expedient to determine such streams of waste:

1. Organic substances that can easily decompose :food organics, leaves;
2. Inert mineral waste of large size: building waste;
3. Potential secondary mineral resources (SMR): old furniture, home electronics, container collection waste (literary garbage, metals, glass, rubber, leather, textiles);
4. Dangerous waste: medical waste, mercury lamps, accumulators, batteries.

Managing the stream of potential SMR must be built on the principle of economical expediency in the chain waste producer – waste sorter – SMR recycler. Realization of this principle is possible because activities in separate waste collection must stimulate subjects that produce it.

The system of separate waste collection is well developed in such European countries as Denmark, Netherlands, Germany. Variants of collecting secondary raw materials in different countries and territories may vary depending on local conditions: waste containers near the buildings, specialized centers of secondary raw materials collection, paid collection centers.

Forming the waste market and the market of waste-made products is very important. If there is no market of secondary raw materials the system of separate collecting will not develop and dumps will expand beyond the city boundaries.

Sorting of solid waste directly in its source eliminates the possibility of mixing the wastes and of destructive influence on the natural environment in the case of burying dangerous household waste at the polygon.

The alternative for dumps and combustion plants is the step-by-step formation of the system of primary garbage sorting beginning from collecting especially dangerous waste (mercury lamps, batteries, etc.) and finishing with refusal of using refuse chutes – the main source of unsorted waste. Presorting of garbage allows processing it directly in the city, to save valuable raw materials.

There are different modifications of waste separating technologies. Sometimes separate collecting in two containers is provided: one is for waste that can be used as the secondary raw materials and the second for all other waste. Then the potential SMR are transported to specialized plants where they are sorted for

categories: glass, paper, metal, plastic, etc. Such approach requires the participation of sociability.

Ideally waste should be separated (not mixed) by its “source” – population or the staff of organizations producing so-called “commercial waste”. No program of secondary raw materials collecting will work by itself without definite efforts of the local authority.

The simplest way to stimulate the secondary raw materials collecting is to equip the centre of such collecting. Such centre can be a kind of a stall with several containers where citizens should throw away definite materials (for example, a container for green glass, a container for paper, etc.)

Generally the dilemma of any secondary raw materials collecting program can be presented in such way: the more complex are requirements for citizens, the higher quality of collected materials, the less necessity in additional processing, the more probability of economical success of the program but the less level of citizens’ participation.

Important role may be played by an economical incentive – establishment of a differentiated payment for waste removal depending on its quantity. The other economical instrument of waste management should be mentioned – establishing the price for which one could return some of used materials. Such price is usually set for those kinds of production which are undesirable in the general waste stream (e.g. automobile accumulators). Such approach has also negative aspects, e.g. baseless high price can cause theft of accumulators. But if the price is set rationally this instrument can be very effective. One of the brightest examples is the soviet system of prices for returning glass bottles. This system has been working for many years in spite of changing of social order and economical conditions.

The existing state of the problem of municipal solid waste in Odessa agglomeration is very close to a critical situation. It is essential to take immediate measures for decreasing quantity of waste which are accumulating on the existing dumps and on the new ones. This goal can be achieved in the way of organizing a rational system of separate waste collecting and further processing with extraction of valuable components of potential secondary mineral resources. The only one requirement to this system – it should be elaborate.

ECOTOURISM IN THE ODESSA REGION AS A MANAGEMENT OBJECT

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The nature's resource potential of the Odessa region is rich in unique natural landscapes, variety of steppe flora and fauna. It is especially desirable to mark the

uniqueness of estuaries, not a single other region of Ukraine can boast by such amount of fresh and salt estuaries.

For example, the Kuyalnitskiy estuary is known on an entire country and after its limits by the medical dirt and medical water. But there are other estuaries rich by medical resources. Shabolatskiy behaves to such estuaries. Population resident on territory at an estuary already a long ago cure the ailments by healthful dirt, but these dirt do not have the certificate. For the receipt of such certificate it is necessary to conduct examination, but, unfortunately, not local authorities do not select not private structures the finances for the given measure.

Enormous amount of different types of animals and plants, including vanishing kinds, dwell on territory of estuaries. Their uniqueness is explained, that they can be looked after exceptionally on the given locality and anymore nowhere.

The local population does not appreciate a flora and fauna surrounding them. It is therefore necessary to develop the administrative system, which would be able to provide safety of natural landscapes and attract the population resident in these corners of nature to the guard of natural environment. One of administrative decisions in the aspect of the given problem is organization of ecological tourist activity in the Odessa region.

Ecotourism in modern presentation in recreational attractive regions, not enough broken by human activity, saving the traditional way of life of local population. The wide spectrum of types of tourism, for example water, equestrian, pedestrian, mountain and etc, behaves to ecological. Such types of tourism are interlinked and not harmed to the natural environment. Ecotourism in 1990 Got official status and right of convocation of the own annual international symposium "Annual World Congress on Adventure Travel & Ecotourism".

The experts of The World Trade organization defined some operating conditions of the ecological tourism's market:

- Providing of transport availability of the ecological tourism's objects;
- Presence of unique and attractive objects not for only strictly specialized ecotourists, but also for ordinary temporal visitors;
- Pursuing a reasonable price policy;
- Good, comfort organization of journeys.

The origin and development of ecotourism is interlinked with history of selection of natural territories especially attractive with aesthetic and recreational points of view and development of norms of their guard. Presently many developed and developing countries quickly select the vast areas of the territory under preserves and national parks, the special organizational structures are created, to attract tourists, and with them and their capitals. For example, Costa-Rika declared 30% of the territory by a nature protection area. Tourism in this country becomes the leading source of profit.

Development of ecological tourism in a greater measure is linked and even determined by worsening of quality of environment. The anthropogenic loadings

being necessary investigation of life in large modern town form aspiration to «break forth on nature» at their inhabitants.

It ensues from foregoing, that the main incentive of growth of interest to ecological tourism is the steady worsening of quality of natural environment.

Sustainable development of the territories engaged in the sphere of ecological tourism is provided by creation of tourist infrastructure, by organization of new workings of places, by involving of local population in the sphere of service, what the standard of life of local population rises because of, there is its fixing on territory.

The nature protection character of ecotourism consists in the obligatory saving of variety of flora and fauna of recreational regions. For achievement of this target the nature protection technologies, produced by practice of ecological tourism, and also scientific recommendations of the applied science fundamental and, are used. Large part in renewal of recreational territories is acted by finances, acting from tourists and selected different federal, regional, private, and also international organizations.

The ecological world view of population of recreational territories is formed by their involving in the process of maintenance of tourist routes, where local habitants come forward as explorers and instructors, animators, participants of folklore ensembles, janitors of territory and etc Here at the local population, understanding is formed, that the inefficient use of natural resources can show their territory out of sphere of the recreational use. It is a stimulus and the main incentive to protect the natural environment which surrounds them.

MEDICAL HERBS AND THE THREAT OF THEIR DESTRUCTION

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Ukraine is very rich in natural resources of valuable plant species, including medicinal herbs. However, the resource potential of numerous valuable species is limited, so identification of potential resources of valuable species and development of principles for their sustainable use are of national significance.

Exhaustion of natural phytoresources of many valuable species growing in Ukraine may be explained by a lack of adequate coordination between the main ministries and other central government bodies responsible for the resources in question, procurement organizations and the pharmacological industry. Out of 1,075 species of vascular plants with medicinal properties, 386 species are biologically linked with forest phytocenosis, though the number of tree species is inconsiderable (56 species). About 40 species are bushes and subshrubs, the rest are grasses. 312 species are typical representatives of meadow-swamp, meadow-steppe, meadows, and areas near water, while 377 species constitute a group of synantropic

species, which actively penetrate into damaged areas of any phytocenosis, including forest ones.

Natural species of medicinal herbs are harvested by branches of the Ukrainian Wholesale Union, the Limited Liability Company "Liktravy" and the State Consortium "Urkphytotherapy". The absence of coordinated activities of these organizations cause difficulties in the development and implementation of programmes to provide for national production of medical herb preparations, sustainable use of natural phytoresources, and regeneration of such resources. The results of research on vascular plants have shown that out of 5,100 species, 535 species should be protected; 439 species are in the Red Data Book of Ukraine, 73 of them being valuable medicinal herbs. About 1,200 species of vascular plants have medicinal properties.

Before the collapse of the USSR (1991) the pharmacological industry and practical medicine in Ukraine made use of 170 species of medicinal herbs. At present the number of officially registered natural medicinal herbs has decreased (about 40 species), which has resulted mostly from the economic crises, the absence of state contracts for medicinal herb resources, as well as a complicated and expensive procedure for official registration of medicinal herbs. A general resource analysis of 1,075 species of vascular plants described in the directory "Flora of medicinal herbs in Ukraine" has shown that resources for 631 species are not enough for commercial harvesting, for 354 species they are sufficient, while 90 species are subject to protection since their stock is very small.

An inventory of natural flora resources with medicinal properties shows that out of 170 species suitable for production of medicines or for direct treatment of some diseases, 103 species of vascular plants have a sufficient resource potential to meet the demand. First of all this concerns tree species (pine and birch buds, fruits of rowan tree and others). Synantropic plants constitute a major portion among these species (knot grass, horse tail, cornflower, chamomile and others). Limited phytoresources of 21 species of medicinal herbs require a strict control of use. This concerns medicinal herbs whose resource potential is large; however, substantial demand may cause an exhaustion of the national resources (*Hypericum* L., *Helichrysum arenarium*, L. Moench, *Origanum vulgare*, *Convallaria majolis*, buckthorn and others). This group also includes phytoresources whose quantity was reduced considerably because of radioactive contamination of natural areas after the Chernobyl catastrophe (*Ledum marsh* T., rowan, *Potentilla erecta* and others).

Phytoresources of 23 species of valuable medicinal herbs which until recently were used by practical medicine are on the verge of exhaustion. This situation is a result of changes of ecological conditions and of excessive use of these species.

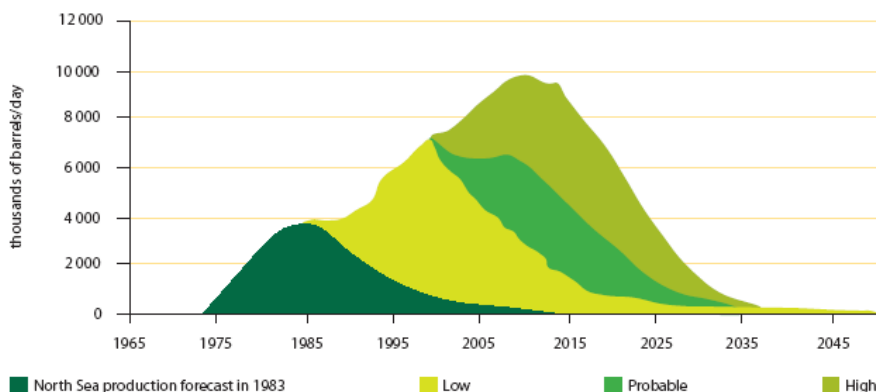
According to the analysis, commercial resources of 23 species of medicinal herbs have been totally exhausted. It is important to develop and introduce methods of their regeneration. Twenty-four species of medicinal herbs are cultivated in specialized enterprises. At present it is very important to optimize the use of the

available resources and to look for potential reserves in ecologically clean regions. This is an issue of national significance.

DEVELOPING THE ENERGY INDEPENDENCE FOR UKRAINE: MYTHS AND REALITIES

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Ukraine is consuming more and more energy and importing more and more energy products. Community production is insufficient for the Ukrainian energy requirements. As a result, external dependence for energy on JSC “RosUkrEnergO” is constantly increasing. The dramatic rise in natural gas prices and ambiguous future of the prices can undermine the recovery of the Ukrainian economy, caused by the fact that the price of natural gas has doubled since January, 1 2006, once again reveals the Ukrainian structural weaknesses regarding energy supply, namely Ukrainian growing dependence on energy, the role of gas as the governing factor in the price of energy and the disappointing results of policies to control consumption. Without an active energy policy, long-term action plan Ukraine will not be able to free itself from its increasing energy dependence and bring its energy markets to liberalization.[2]



Graph – Oil production forecast. Three scenario comparison

Diversification of Supply

Enhanced diversification is a repeated theme throughout responses. Diversification is approached from various angles: diversification in energy sources (including whether this should include nuclear and whether growing gas demand is harming diversity); diversification in supply mechanisms (balancing imported and indigenous supplies, grid networks and local generation); and diversification in suppliers (the growing reliance on OPEC (oil) and Russia, Kazakhstan (gas) was frequently remarked upon). Increasing diversification is seen as a crucial element for improving energy supply prospects.[1]

The exploitation of renewable energy is almost universally seen as fundamental to diversifying supplies and improving energy supply security. However, there is less agreement about their likely potential, the timescale and the required funding and support framework. In terms of actions, some responses would limit support to public funding for pre-market technologies, while others see the need for fundamental changes to land use planning, taxation and education.

Biofuels and alternative transport fuels attract considerable attention from the environmental and security of supply viewpoints.

There is considerable interest in hydrogen and fuel cells, although some question how the hydrogen would be produced. There is a high level of interest in biomass generally, whether in combination or not with conventional fuels. As far as conventional fuels are concerned, the possibilities offered by heavy oil, gas to liquids, tar sand are mentioned. Many respondents welcome the approach to the nuclear question in the Green Paper, partly because it presents an integral picture of energy supply, partly because, by concentrating on facts, it de-emotionalises the issue. Views on the role of nuclear diverge from assuming a nuclear component of at least its present share, to outright rejection.

As far as energy technology is concerned, Community support for technology development is generally welcomed. Many responses recommend increased Community funding for photovoltaic, other renewable energy sources and clean coal technologies. Some criticise the lack of investment in technology development for the exploitation of indigenous fossil fuel reserves. Reserves are expressed at the level of Community investment in fusion technology. Some suggest withdrawing this funding altogether in favour of renewable energy development.

Reference

1. Progress report on the response to the Green Paper "Towards the European Strategy for the security of energy Supply" December 2004
2. GREEN PAPER Towards a European strategy for the security of energy supply, 2001

ALTERNATIVE SOURCES OF ENERGY. WIND-POWER ENGINEERING

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Every day electricity demand increases. Within the next 10 years we will feel the scarcity of oil. This will, very likely, push up the prices of all energy carriers, especially of oil.

Thus we have to develop alternative energy sources, but which of them is better, cheaper, the most opportune is the question.

We settled on the wind energy. It is inexhaustible and absolutely ecological. An important point is that wind energy can be taken easier than solar, because angle is not of such importance, though it is very important too.

Europe already began to work in this course. The European Wind Energy Association (EWEA) has extensive plans to make wind-generating capacity 75.000 megawatts in 2010 and 180.000 megawatts in 2020. Just 14 years from now, wind generated electricity is projected to satisfy the needs of 195 million Europeans, half of the region's population!

In Ukraine we've just began to develop the wind-power engineering. There is a huge space for research. The territory of Ukraine can be virtually divided into 3 parts according to their yearly average wind speed. The first and the second parts are not suitable and relatively-suitable for getting wind energy. The third part (west and east of Crimea, south of Donetsk, Nikolaev, Zaporozhye, and Kherson regions) has a yearly average wind speed more than 5 m/s – it is enough for the wind-power engineering to be profitable. This can be achieved by concentrating the generative machines and making them more powerful and by reservation of powers depending on the demand.

There are other ways of development: we can build smaller (medium) wind turbines on the high places. The higher the place is the stronger is the wind, the better results we can get. Only in Donetsk region there are some 400 waste banks about 100 meters high. It is an ideal place for a medium wind turbine.

But the most profitable are the shelf turbines. They already work generate energy in Denmark, France, Germany, etc. Crimea perfectly suits all the needs of the wind engineering. And if we put all the machines on the shelf – they will not occupy territory and disturb people.

Undoubtedly, building such sets is rather expensive, but after they need almost no money, no raw materials and make absolutely no damage to nature.

TAX INFLUENCE AT INFORMATION AND COMMUNICATION TECHNOLOGY

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Like most technology-driven industries, the communication sector has been characterized by steady growth punctuated by an occasional leap forward. In the twentieth century, the arrival of two major innovations — mobile phones and the Internet — not only changed the face of communications, but also gave fresh impetus for economic growth. The two industries have exhibited remarkably similar growth patterns since the start of the 1990s, but with a lag of about two years. The level of penetration of the Internet at the end of 2001 (8.2 users for every 100 inhabitants, worldwide) is almost identical to the penetration of mobile phones at

the end of 1999. This two year lag might be explained by the fact that the formative moments in the growth of these industries occurred just under two years apart: digital cellphones were launched commercially on 1 July 1991, while graphical web browsers were launched commercially in April 1993.

Now the telecommunication development is faced to the problem of the digital divide. It can be easily explained by the steady advance of information and communication technologies in the developed world threatening to widen the economic gap between rich and poor countries. While people in the developed world enjoy easy access to information through the Internet, email and telephony, billions in the developing world do not.

The lowering of cost barriers such as the cost of handsets, services and taxes are measures that will provide a sustainable pathway to eliminating the digital divide.

The taxation study aims to raise awareness of what policy makers can do to increase the use of mobiles and stimulate their economies, based on the assumption that a reduction in taxes will be translated into lower retail prices by mobile service providers and handset retailers. This in turn leads to improved affordability of mobile services, growth in the sales of legitimate handsets and ultimately, long-term benefits to the overall economy. To understand the full extent to which taxation has a direct impact on affordability, this independent study across 50 developing countries was commissioned.

The results are surprising in terms of the degree to which taxation acts as a barrier for users, preventing potentially hundreds of millions of people from affording mobile communications, and holding back economic growth and social development in many countries. The study's key findings are:

1. Taxes are disproportionately high in many developing countries
 - In 16 of the 50 developing countries in the study, taxes on mobile phones and services represent more than 20% of the total cost of ownership. In these 16 countries, which are home to hundreds of millions of people, the annual cost of taxes ranges from an average of US\$24 to US\$179 per mobile phone user.
 - Nineteen countries even levy additional taxes, on top of standard sales taxes on mobile phone users. Some of these additional taxes are telecom specific, such as service activation taxes. These special taxes, average US\$13 per annum per subscriber.
2. The black market in handsets is booming as users try to avoid high taxes
 - 39% of all handsets sold in the 50 countries in the study in 2004 were via the black market, representing a loss of US\$2.7 billion in tax revenues.
3. Cutting taxes on mobile handsets and services attracts new users
 - If low-cost handsets were made exempt from import duties and sales taxes, up to 930 million additional low-cost handsets could be sold by 2010 in the 50 countries in the study, leading to an increase in mobile phone penetration and a rise in total tax revenues in some countries.

- If a government lowered taxes on mobile usage by *just one* percentage point, that could boost the number of mobile users in that country by more than 2% by 2010.

- Eliminating the special taxes could boost the numbers of mobile users in the 19 affected countries by 34 million (or 8%) by 2010.

- The removal of all sales and customs taxes on mobile handsets and services could prompt an increase in mobile penetration of up to 20 percentage points.

4. Lower taxes mean greater revenue opportunities for governments in the long term

- Cutting taxes on handsets would attract new mobile users. If taxes on usage remained the same, each new user could yield additional service tax revenues of US\$25 per year.

Russia and the Ukraine have the largest share of black market sales: 90% and 85% respectively. Improved enforcement and GDP growth are likely to be the ultimate solutions to this problem.

The Russian, CIS and Central & Eastern European regional sample had the second highest average tax share of 17.2% in 2004, mostly due to high taxes in Ukraine and Turkey, the latter with the highest tax burden in the world. Out of the total regional end-user revenue of US\$29.5 billion in 2004, just over US\$5 billion of tax was collected. Of this, 80% were taxes from mobile services, with the remainder comprising taxes from handsets.

One of the markets where the cost of tax in the total cost of ownership is the highest is Ukraine, because Ukraine charge variable special taxes.

The study shows the restrictive nature of such measures on mobile development, and reviews alternative tax policies that could relieve the tax burden on low-income groups and increase mobile service affordability.

The reduction of telecom-specific/special taxes, which create the highest tax burden in the total cost of mobile ownership, has been found to result in the highest positive changes in penetration and usage. The reduction of customs and sales taxes on all low-cost handsets can bring the benefits of tax cuts to the segments of the population that most need it.

The tax changes come at a cost of short-term revenue loss, but when results are extended to a single market, tax revenue changes will be neutral and even positive, if price elasticities are higher than in the global economy. Provided that the tax reduction is passed through to the consumer, the decrease in price stimulates additional demand for telecommunications through increased affordability.

Additional demand for telecommunications services brought about by tariff decreases will increase the level of network build-out, leading to indirect benefits. Telecommunications investment has long been positively associated with economic development. Studies by the United Nations, ITU and World Bank all attest to a modern telecoms sector being an essential element of a country's infrastructure and a precursor to economic growth. The economic benefits of investment in the sector

are far larger than the returns on the investment itself due to significant positive spill-over effects. A recent study suggests that both fixed and mobile penetration rates are positively linked to foreign direct investment (FDI). In many emerging markets, capital is scarce and foreign direct investment provides an important source of essential capital. Therefore, the long-term positive impact of telecoms development should also be considered when assessing the impact of tax reductions.

Our further analysis is driven by the hypothesis that cutting certain categories of taxes will improve the affordability of mobiles for the low-income population segments, at the same time benefiting overall economies through increased foreign direct investment (FDI) and growing investment in infrastructure. To assess the affordability of mobiles in each market, we require a detailed income breakdown for each market, which is outside the scope of this report. Instead, we focused on the analysis of total cost of mobile ownership:

Total cost of mobile ownership (TCMO) = *cost of handset* ÷ 3 + *one-off subscription fee* ÷ 3 + *total annual cost of mobile usage (calculated as effective per minute price x monthly minutes of users x 12)*.

Decreasing the total cost of ownership for prepaid subscriber segments is key to improving mobile affordability and ownership in the emerging markets. It is worth noting that service providers and handset distributors are exploring different options of lowering barriers to subscriber acquisition through offering alternative payment mechanisms, such as micro-credit. While these are valuable measures, their overall impact in the emerging markets is limited to the growth in mobile subscriptions and sales of handsets, leaving out any impact on mobile usage.

Mobile communications and the Internet were the two major demand drivers for telecommunication services in the last decade of the twentieth century. Combine the two -mobile Internet - and this may suggest the major demand driver of the first decades of the twenty-first century. It is easy to envision a migration of traditional PSTNs to combined mobile and IP-based networks, and the potential integration of telecommunications, broadcasting, publishing and other media functions into these networks.

CHOICE IN THE DECISION OF ECONOMIC PROBLEMS: NESHA'S BALANCE OR PARETO'S OPTIMALITY?

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Application of the Games Theory in economic researches when the optimum choice in the decision of a problem depends not only on is considered what alternatives are chosen by one of participants, but also from what alternatives are chosen by other participants of process. If prizes of players will be asymmetrical,

i.e. the prize of one not necessarily represents loss of another at a choice of strategy inevitably there are elements of cooperation.

Let's consider a problem about transactions which shows so important role of cooperation. In a matrix kind a problem about transactions we shall present the table:

	B_1	B_2
A_1	0,0	0,-1
A_2	1,0	-1,3

Classical consideration of this problem on search of Nash's balance at the mixed strategy will lead to the following algorithm:

function of a prize of the player A looks like:

$$U_p = (1-p) \cdot q - (1-p) \cdot (1-q),$$

And the player B:

$$U_q = -p \cdot (1-q) + 3 \cdot (1-p) \cdot (1-q), \text{ where}$$

p - probability of application by the player A strategy A_1 ,

q - probability of application by the player B strategy B_1 /

Nash's balance at the mixed strategy - such balance in which each player chooses optimum frequency of playing of the strategy at the set frequency of playing of the chosen strategy by other player. We shall receive the decision:

$p = 3/4, q = 1/2$. At such decision it is received: $U_p = 0, U_q = 0$.

Let's consider the same problem from a position of an Pareto's optimality (fig. 1).

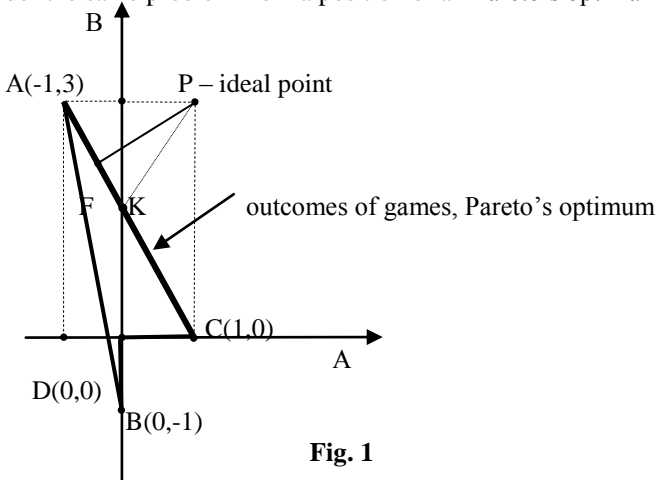


Fig. 1

Pareto's optimality - the nearest point on set of points of a piece AC - point F. But it results in result:

$$p = 0, q = 12/39. \text{ This implies, that: } U_p = -15/39, U_q = 81/39.$$

Certainly the player B will receive the maximal prize, but the player A already will be in loss in comparison with Nash's balance. Overcoming of bad result for the player A is a cooperation with player B. If the player B can agree with the player A that, playing on his rules, the player A can receive even small "+", that, for example p.K (see fig. 1) already results to $U_p = 0, U_q = 3/2$.

Hence the concession to the player A in a small prize, even 0,2-0,3 (as will agree) will lead to positive prizes as one, and other participant of economic process. All site KC the direct AC is treaty provisions.

ENVIRONMENTAL-ECONOMIC ANALYSIS OF SPATIAL DEVELOPMENT OF ECONOMIC SYSTEMS

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The environmental problems facing to the whole mankind and to the concrete countries, regions, cities and branches require immediate and resolute actions for solving them. One of methodical approaches to sustainable development of socioeconomic system include the creation and realization of system methodology which will provide a general purposes and possible scripts of development, selection criteria for the most suitable of them, and the realization sequence of management operations leading to achievement the purposes and scripts admitting updating in its development.

Decision-making management of environmental-economic systems earlier was carried out on simple algorithm: the information - action - result, today's representation about a problem and modern administrative concepts transform it to the closed cycle: the information - action - result - the new information leading due to permanent analyzing to more productive action.

In general, the analysis is a method of scientific research of the phenomena and processes based on studying components and elements of investigated system. The analysis is an initial starting point of forecasting, planning, management of objects and processes proceeding in them. In economy the analysis is applied with the purpose of revealing essence, laws, tendencies of economic and social processes, economic activities at all levels (in the country, branch, region, at the enterprise, in business) and in different spheres of economy (industrial, social).

Thus, the economic analysis should prove from scientific positions of the decision and action in economic systems, a socioeconomic policy, to promote a choice of the best variants of actions. The macroeconomic analysis covers a

national economy or even economic, the whole branches and social sphere. The microeconomic analysis is distributed to separate objects and processes, takes place in the form of the analysis of financial and economic activity of the enterprises, firms, including the analysis of volumes of manufacture, costs, profitableness more often. The retrospective analysis represents studying tendencies developed in the past. The perspective analysis is directed on studying of the future. The environmental analysis represents definition of scales and levels of influences of anthropogenous activity on an environment, an estimation of an acceptability of concrete decisions from the ecological point of view.

Then the environmental-economic analysis processes of sustainable development maintenance is the method of research giving representation about quantitative and qualitative characteristics of environmental and economic processes, and also their interrelations within the framework of the chosen spatial object (the state, region, branch, etc.) at aspiration of the last to stability. The environmental-economic analysis is carried out on micro and macro levels, however the requirement of stability of development dictates necessity to combine the retrospective and perspective analysis. There are basic methods of the analysis can be used at all objective levels of research: a statistical method, mathematical modeling, "a tree of the purposes" method and a method of expert estimations. There are also other methods of the analysis, but these are most frequently used and seem to us the most perspective in a context of an environmental-economic direction of the analysis.

At the same time, modern understanding of sustainable development and processes in the world dictated the new idea of it and demanded the renovation the methods of analysis. We thought that modern conception of stable movement toward the future is the spatial sustainable development of economic system. Underline, that incorrect associated the concept of space of the country only with its geographical characteristics; in fact there are also sociological, economic, cultural and other spaces. The geographical space is that constant basis for development of any economic system (region, the country). The socioeconomic space is under construction in view of this "basis", on its basis and at it the most an effective utilization.

Today's perception world as the two-regularity space does not correspond with the globalization and transformation processes occurring in a society. Modern tendencies such as deleting borders, economic cooperation and an openness demand new approaches to consideration of spatial development, comprehension of unity of its integrity and divisibility. I.e. everyone under-space is complete in relation to set of elements of its components and simultaneously to be part of space of higher order.

The character and model of spatial development is determined by a set of the basic subjects of this development and type of relations between them that in the same time predetermines the purposes and the basic directions of this development. The choice of relations between subjects of spatial development renders serious

influence on character of the organization of the communications between them, generating this or that political, welfare both economic program and design filling of space.

Thus, stability of economic systems can be examined and analyzed now only from positions of the spatial approach which allows most full and objective take into account all processes and interrelations at different levels and adequately to estimate their importance for achievement of the general sustainability. Break of connections, impossibility of interaction, infringement of integrity of each separate element conducts to decrease of all space sustainability. The account of oscillatory dynamics of stability and life cycle environmental-socioeconomic systems provides a correctness of methodological approaches to research and analysis of all types of economic systems. For this reason the spatial vector of development demands the profound studying of a problem of sustainability at all hierarchical levels in view of influence of internal and external factors and system integrity.

THE CONCEPT OF GREEN MARKETING

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Definition of Green Marketing

The concept of green marketing was developed in the late 1980s and early 1990s. Yet defining green marketing is not a simple task. Indeed the terminology used in this area has varied, it includes: Green Marketing, Environmental Marketing and Ecological Marketing.

Green or Environmental Marketing consists of all activities designed to generate and facilitate any exchanges intended to satisfy human needs or wants, such that the satisfaction of these needs and wants occurs, with minimal detrimental impact on the natural environment.

Importance of Green Marketing

The question of why green marketing has increased in importance is quite simple and relies on the basic definition of Economics: "Economics is the study of how people use their limited resources to try to satisfy unlimited wants". Green marketing looks at how marketing activities utilize these limited resources, while satisfying consumers wants, both of individuals and industry, as well as achieving the selling organization's objectives.

Reasons of using Green Marketing

Possible reasons for firms increased use of green marketing are:

- Organizations perceive environmental marketing to be an opportunity that can be used to achieve its objectives;
- Organizations believe they have a moral obligation to be more socially responsible;

- Governmental bodies are forcing firms to become more responsible;
- Competitors environmental activities pressure firms to change their environmental marketing activities;
- Cost factors associated with waste disposal, or reductions in material usage forces firms to modify their behavior.

Sustainable Marketing

Green marketing is characterised by a focus on environmental issues, and by an emphasis on reducing environmental damage. Sustainable marketing is the next natural step forwards, with an emphasis on progress towards greater sustainability. Sustainable marketing is the process of planning, implementing, and controlling the development, pricing, promotion, and distribution of products in a manner that satisfies three criteria: 1) customer needs are met, 2) organizational goals are attained, and 3) the process is compatible with the ecosystem.

Special topic of the conference:

Ukrainian enterprises' problems of transition to economic development on the base of resource saving technologies

The publications were prepared due to the President grant with the financial help of the State Fundamental Research Fund of Ukraine "Problems of transition of Ukrainian Enterprises to Economic Development on the bases of Resource saving Technologies".

ENERGY MANAGEMENT AS CONSTITUENT OF ENERGY SAVING

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The increase of power efficiency in some joint-stock company is a key moment in the decline of unit, modernization of production and diminishment of the negative influencing of activity of industrial enterprise cost on a surrounding atmosphere.

It is needed to manage by energy saving, as well as some other technological process. A power management answers this purpose.

Energy management, it is determined, how integration process, by which the professionally prepared specialists of energy form and manage on an enterprise activity of different structures with the purpose of optimization of acquisition and use of power resources. A power management is component part of general management in the general structure of management by an enterprise. Such statement of a question speaks about what this touches all links of enterprise.

One of above all directions in this work is achievement of control above energy consumption and financial means directed on the purchase of energy resources on the basis of budget (budgeting). Introduction of this principle on an enterprise will allow on an early stage to expose the untaken into account charges and adopt necessary facilities to their removal, set the current type of energy consumption, define periods, when a type changes, in number to estimate the economy attained due to energy saving measures and great deal other.

A budget on the expense of power mediums must be set both on a factory on the whole and for separate subsections, that through budgeting must be carried out. A weekly power report is the analysis of energy using for previous weeks shows deviation from the information stopped up in a budget. Analytical information appears as diagrams, graphs, tables which show a difference between operating and expected energy consumption.

On enterprises subsections are created, activity of which consists in drafting of energy balance, conducting of FEATHERS of measuring necessary for the analysis

of efficiency of energy consumption, and also in development and introduction of energy saving measures.

From energy saving realization of Energy management for the cutback of spending of enterprise on making of products through the cost cutting on power resources is the above all task of subsection

Thus such saving of energy resources on an enterprise in a main measure depends on activity of subsections which carry out a Energy management policy.

DEVELOPMENT WITH EQUITY (TENTATIVE)

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In the Philippines, many are excluded from social and economic development because of their disadvantage in terms of income, assets, access to services and infrastructure, participation and influence. Thus, the need for Development with Equity, which means reducing inequality in order to provide greater opportunities to those with the least resources.

Expanding access to affordable, reliable, efficient and clean energy services empowers people to take a giant step out of poverty into a better future. Access to energy? for lighting, cooking, refrigeration, heating and transportation, cooking and heating? empowers people to take a giant step out of poverty into a better future. Access to energy increases economic growth, employment opportunities, private sector investment, and competitiveness, improves quality of life by enabling better health care, education and access to clean water; and promotes environmental stewardship.

GREENER LOGISTICS

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‘Logistics’ is the term used to describe the management of the entire materials supply chain, from cradle to grave. Logistics management is one of the important behind-the-scenes processes that will come under scrutiny as not just products, but companies’ entire approaches are bought by the consumer.

Logistics managers are beginning to realize that the environment is becoming an issue of competitive advantage. The movement of goods impacts on everybody’s life, and so is highly visible. Pressure is beginning to bear on the industry to ‘clean up its act’ and look on means of accomplishing this.

Logistics has important consequences for the environment. Vehicle emissions are a major source of pollution in the most European countries. Road traffic noise is experienced by 89% of the population and is cited as the worst form of noise disturbance by 16%.

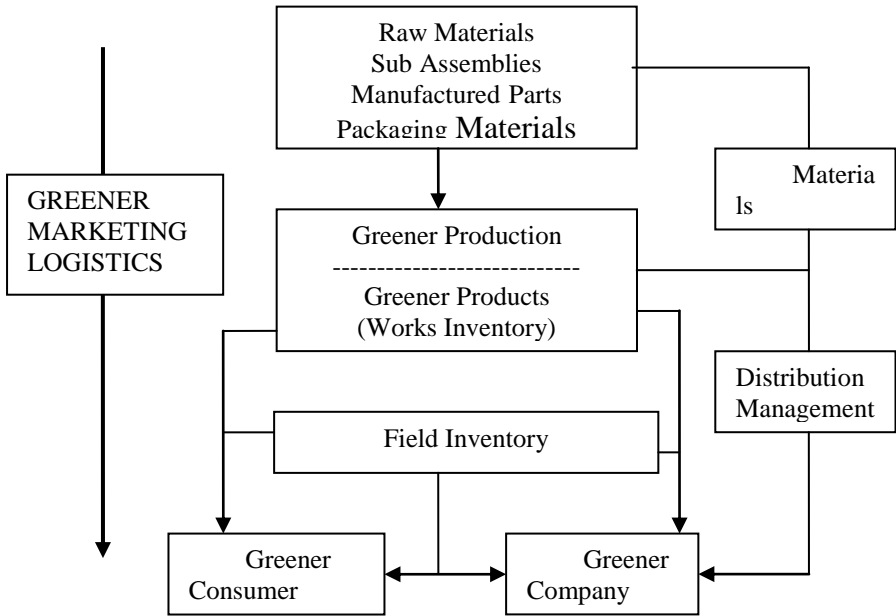


Figure 1 The Greener Logistics System

The decisions made in one area can have environmental repercussions in another, but most logistics decisions will have some impact on the environment. There are several ways in which logistics can affect the environment:

- Transport management
- Materials handling
- Warehousing
- Management of human resources.

Companies must develop coordinated greener logistics strategies for the short, medium and longer term. The emphasis in the short term is to maximize the efficiency of the existing logistics system, while in the long term companies should plan to adopt more efficient and less environmentally damaging logistics operations as technology develops (see figure 1).

The logistics manager has a variety of distribution modes at his or her disposal. Consideration of the environmental impact on transport strategies and

their effect on stakeholder relations must be integrated into the decision-making process.

The logistics function plays an essential role in the economy, and has a major impact on the environment. The increasing emphasis on cradle to grave analysis will place greater pressure on the materials supply chain, but there is no ‘quick fix’ for environmental problems. This applies to logistics as to any other aspect of Greener Marketing.

The greener of logistics will need to be integrated into and coordinated within the Greener Marketing strategy if the company needs to maintain or improve market position in a more socially and environmentally aware world.

ENERGY INFORMATIONAL BALANCE OF ENTERPRISE

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Introduction

On the border of the third millennium the mankind has met a problem of a global changing of world ideology which was prepared by revolution in the field of the communication and information which has reached such scales that predecessor couldn't even image them. The mass computerization, introduction and development of the heaviest informational technology has brought to the impression jerk in future in fields of education, business, industrial production, scientific researches and social life. The information was changed into global basically inexhaustible resource of the mankind which has entered the new epoch of development of the civilization – epoch of intensive mastering of this informative resource.

Conception about informative economy

The growing dependence of the industrially developed countries from the resources of the information-technical, economical, political, military, and also from the level of development and efficacy of using of remedies of her broad cost and processing has brought to appearing of new conception on the border of the eightieth years – “national information resources”.

Certainly, information was gathered and valued always. The is a new impetus growth of the economic sense of informative resources in the industrially developed countries during les decades.

Energy informational unity

Between information and energy, as two essential beginnings, there is a dialectic unity. The information is born from energy. Exactly, from difference of energy potentials, which find different natural essences. In this sense the energy can be considered as means of production of information. The energy potential are formed owing to informatively organized activity of separate part of the scheme. At

the expense of it the metabolism is carried out and the free energy is extracted from an environment. The increase of an energy potential of system can be reached only as a result of its perfecting and increase of efficiency of activity of its subsystem.

That's why we can speak about energy-informational unity of processes of development of a system and evolution of the nature.

Energy informational balance of the enterprise as open stationary system.

The enterprises make up functions which are in the social-economic systems slimmer with living organisms which are in the ecosystems. The main function of these is a production and concentration of a free energy in the system.

The enterprise is one of the kinds of open stationary systems. Its development submits to all regularities which is peculiar to this class of systems.

One of the fundamental laws of nature, where is the development of any open stationary system is the law of conservation of energy. It can be formulated next: any material system can not develop or operate, not consuming a free energy (E_g), which is spent for changing internal energy of system (ΔU), on scattering of energy in an environment (E_d), and on making of work (W):

$$E_g = \Delta U + E_d + W, \quad (1)$$

The system must use up energy for making up a work on enumerating direction. It carries on that three powerful components appears in the balance of system: E_e , E_c and E_t (life providing, compensative and transformative).

Thus, we can show the formula of the powerful balance of open stationary system in final form:

$$E_f = \Delta U + E_d + E_l + E_c + E_t, \quad (2)$$

Where ΔU - changing of an internal energy of system.

The peculiar equivalents of life providing components of energy balance (E_l) is conditioned by basic technological kinds of costs on producing of production (as a first approximation is an average reminder of circulating assets at the enterprise minus overhead consumptions)

The compensative component of balance (E_c) is formed by consumption connecting with an acquisitions and containing of a passive part of basic capital (buildings, structures, transmission devices, force machines and equipment, etc.), containing of administrative and auxiliary personnel, and other kind of an overhead consumptions. Only they are called up to realize the function of negative feedback mechanism holding equilibrium (balance) condition of the enterprise within limits of the reached nomenclature of producing production, which one, in the end, defines also homeostasis of the enterprise.

Any deviation from a condition of a homeostasis causes increase of compensative component (E_c) on neutralizing of these deviations.

In particular, changing of traditional supplies and consumers of production causes growth of the transport costs and marketing costs.

For economic system, as well as for their physical analogs, it is extremely important to maintain a difference of the potentials with an environment, where

system extracts "free energy". With reference to the enterprise peculiar analog of "free energy" is volume of received profit.

Thus in accordance with forming the bases of informative society, unprecedented in the dynamism, трансформационные processes at the enterprise, which one early were only episode in their life, should become the basis of its activity. Just they ensure to firm safe function in a modern world and are the lien of stable development on the basis of constant increase of efficiency.

ENERGY ECOLOGICAL PROBLEM AND ITS SOLUTION

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The world community has two important problems – ecology and energy and their relation. The first problem is exhaustion of traditional natural energy resources of ears. The second problem is ecological disturbance. This problem is conditioned of need for production rise and energy consumption for development of civilization.

This problems can be combine into one energy ecological problem of human. It is the major scientific and technological sum of contemporaneity. And new perspective of development of civilization depend on solution of this problem.

Modern world community organize confronting relation between energy and ecology. Power industries work for fast profits, that is why ecology question to take up second place. But government and community put limits on unecological work of power industries using various methods. There are power engineering specialist and ecologist have been had different purpose for this time. Almost always power industries was culprit of ecology problem which is not has been solving or will not be solve ever. The result of solve of energy ecological problem is exception of disparity between problems(ecological and energetic) but certainly not define more priority one. Heart of the problem is find general solve of energy ecological sum for all human “all nations all federations all planets and all world!”

Energoecology is the global problem which must be solved complexly. It is one of priority problems of modern generation which would be solved the nearest 30-50 years. Today it is possible to define the purposes of energoecology. First of all, it is the development of energysaving approach and introduction of this approach in economy, technics, culture. The energy potential of the Earth is limited. Mineral resources will suffice for a short period. And losses of these resources are catastrophic. Energy losses and harmful troop landings strike blows on world ecology and economy. Thus, it is the most important modern problem which must be solved.

With the development of our society it become necessary to increase the efficiency of use natural resources. It is necessary to take new untraditional decisions. This decisions must solve the problem of energy shortage in short period

and with the minimal expenses. Also it is necessary to modernize energetic, according to requirements of XXI century. The priority of modernization of energetic must be the introduction of energy efficacious technologies and development of renewable energy sources. This situation will stimulate the development of energy machine-building enterprises. The enterprises can realize new ecology energetic technologies, lead these innovations to potential customers. Today innovative activity of these enterprises is very important.

In conclusion it was desirable to say that the decision of energy ecological problem depends on understanding of this problem and desire to solve it.

UTILIZATION OF ZINC BEARING STEELMAKING DUST AND SLUDGE

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Ferrous metallurgy is very important for our country. It creates 27 % of a gross internal product and provides 47 % of currency receipts.

The metallurgical industry consumes a broad gamma of mineral resources. The efficiency of using of these resources determines level of the cost price of metallurgical production and degree of influence on environment.

Production of ferrous metals is attended by generation of much quantity of dispersion waste products with high content of iron. These are dust and sludge, which are caught in gas cleaning systems. The iron bearing sludge of gas cleaning systems of steel-smelting furnaces is the least utilized group of solid waste and is mostly stored in catching basins and pollutes the natural systems. The problem of steel-smelting dust and sludge utilization is connected to increasing the contents of zinc and other non-ferrous metals, owing to a decreasing cast iron part and increasing zinc-coated scrap in a steelmaking. Annually 7 thousand t of zinc passes up to dust and sludge at full development of powers of steelmaking furnaces. On metallurgical mills of Ukraine the zinc bearing steel-smelting sludge is dumped in catching basins or, if there is agglomerative factory, particulate is utilized by addition to sintering charging after some preparation.

At processing of sludge with the high contents of zinc at usual sintering technology zinc practically does not delete. Charge of such agglomerate in the blast furnace will be accumulating zinc in furnace. The circulation of zinc in blast furnace conducts to serious breaches of smelting technology: skull formation and even a gap of a cover. At utilization such sludge in the building industry, in cement production conducts irretrievable losses of valuable components keeping in its. A perspective direction is the making from sludge, which has dehydrated on the traditional scheme, pellets, which will metallize, unburned pellets or briquettes. At processing of metallized pellets from iron bearing sludge and dust is deleted 75-

99 % of zinc and lead, 40-77 % of oxide of sodium and 60-85 % of oxide of potassium. The combinations of these metals, which are caught from waste gas, could be a charge for non-ferrous metallurgy.

Some industrial processes of metallization of pellets are invented. General for these processes is usage for the metallization aggregate of pellets a rotated tube-type furnace. These processes differ one from other by technology of preparation of charge, and also availability or absence of a fire grate for a heating and hardening of pellets. These processes are very material-consuming and power-consuming.

Obtained unburned pellets or briquettes can be used in a steelmelting furnaces as a substitute of scrap metal. At repeated returning of preparing sludge in steelmelting furnaces there will be an accumulation of zinc in sludge.

For processing of enriched dust or sludge at plants of non-ferrous metallurgy it is enough to have the contents 12 - 15 % of zinc. However the problem of usage of iron bearing part is not decided. Therefore it is offered to realize the recycling of dust or sludge to content of zinc 12-15 %, further to make processing of sludge with humidity 6-8 % by fluid steelmelting slag. Thus we will receive the products of zinc sublimation, which are charge for non-ferrous metallurgy and slag iron enriched and it can be used in charge for blast furnace. At usage of such lumpy product in the blast furnace will economize agglomerate, limestone, the manganese ore, and coke. Thus at usage of one ton of such product will be economize more than 60\$.

Thus for a solution of a problem of utilization of zinc bearing dust and sludge there is a potential in steelmaking production. Offered technology will permit to utilize all valuable components keeping in dust and sludge of steel-smelting furnaces.

INFORMATION AS ONE OF THE FACTORS OF ECONOMY- ECOLOGICAL SYSTEMS' EFFECTIVENESS

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Humanity is now on the stage of its development which is called information society. Its main descriptions are computer revolution and exponential growing of information flow.

Some resources are renewable (wood, water, agricultural production), but some are not (oil, coal), but information – is the only one kind of resources, which grows as fast, as much it is being used.

Thanks to information any enterprise is able not only to save its money, but don't make harm to the environment.

Our knowledges, skills become old very quickly. Continually changing life expects new ways, methods, new life style. To pass ahead of time, we should pass ahead of entropy, using information resources.

Economy-ecological systems exchange matter, energy, entropy and information with surroundings. It is suggested to increase part of exchanging information and in such way to compensate another components. At the same time of course the effectiveness of economy-ecological system's activity will grow. To value generalized criterion of the effectiveness it is suggested to compare the real system's effectiveness E_r with effectiveness of systems whose activity is completely based on nonwaste production E_b with using of modern informational systems :

$$E = \frac{E_r}{E_b}$$

In this case effectiveness includes informational measure of system and expenditures which are bound up with integral entropy (inside system's entropy and entropy of interaction).

To increase the informational level of enterprise we need to use:

- high level of scientific and technological development and to realize it in practice;
- cybernation and informatization of national economy and culture;
- mass application of electronic means;
- advancement informational resources to the first place in front of material-energetic resources.

PROBLEM OF HARD DOMESTIC WASTES IN TOWNS

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Local authorities of entire countries everywhere try to find the best method for utilization of wastes of the citizens. Especially sharply this problem stands in the industrially developed countries, because the state of environment shuts out the use of traditional places of upcast. More and more wastes is taken out on distant distances in the sanitary areas of upcast, where it is assorted for extraction of valuable materials for the further processing and is burned in the special stoves intended for producing energy.

Processing of wastes gives to society everywhere to «deceive» the problem of their utilization and, consequently, due to expenses on processing to facilitate ecological stresses. Processing of metallic, paper, glass, plastic and organic wastes diminishes necessities in energy and raw material. So, in production of aluminum from a crow-bar in stead of expense of energy and contamination of air diminish on 95 %. Production of paper from literary garbage in stead of wood not only rescues valuable forests from felling but also on three fourths abbreviates the expense of energy on production of 1 ton of paper, requires the halves of volume of the water consumed at the use of arboreal raw material only. Expenses of energy and

materials, common contamination can be radically reduced on condition of reduction of amount of wastes, by means of encouragement of the complete use of raw material and processing, by transformation of wastes in new products.

Part of plastic in packing from an insignificant volume in sixtieth years grew especially quickly. Drinks, vegetable oils cleaning facilities, perfumery, now have the plastic packing. Tins banks become the next purpose of producers of plastic. Thus, not only a packing amount grows but also the materials used in its production change. The part of plastics grows in general mass of wastes, and it is not simple to utilize them from themes to use anew.

FUEL CELLS: EVOLUTION IN DESIGN

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The history of the fuel cell can be traced back to the 20th Century, yet in spite I of this fact and several decades of intense development, fuel cell technology still seems a long way from commercialization. Fuel cell manufacturers believed that 2003-2005 would be when commercial production of their units for various applications would start, but the latter half of the decade is a more realistic prospect.

Nevertheless, development continues because fuel cells have considerable potential in a wide range of applications. In the power industry, their efficiency and emissions-free characteristics make them suitable for a wide range of applications: combined heat and power, distributed generation, storage and back-up applications, and powering the home. Their widespread commercial use is held back by two key factors: cost and reliability.

An innovation by a UK-based company promises to help overcome these obstacles, however. Morgan Fuel Cells (MFC) has announced a technology breakthrough that will boost the power output of fuel cells and at the same time cut manufacturing costs. The development brings forward the day when fuel cells will be commercially viable for mass-market automotive and general power applications.

The breakthrough is in the design of the bipolar plates that are a key component of fuel cells. Drawing its inspiration from the natural world, MFC has developed a 'bio-mimetic' bipolar plate, the design of which mimics the structures seen in plant tissues and animal lungs. The design results in more efficient and even distribution of gases, resulting in greater efficiencies, higher power outputs and greater reliability than ever seen before in fuel cells. MFC says that it has already achieved increased power outputs of 16 per cent, and believes that more can be achieved.

Fuel cells generate electricity through a simple electrochemical reaction between the fuel - hydrogen - and oxygen from the atmosphere. Heat and water are

the only byproducts. There are several different types of fuel cell but they are all based around the same basic design consisting of two electrodes separated by a solid or liquid electrolyte. A proton exchange membrane (PEM) cell typically used in power generation and vehicle applications uses a polymeric membrane as the electrolyte with carbon supported platinum electrodes. A single cell produces between 0.6 and 0.7 V, so a fuel cell 'engine' for a stationary power plant has to be built up from several hundred PEM cells stacked together.

Bipolar plates have two key roles in fuel cells. Firstly they are the method of introducing the gases into the fuel cell and ensuring that the electrodes are adequately supplied with reactants. On the cathode (positive electrode) side they supply air (or oxygen) and on the anode (negative electrode) side they provide the delivery of hydrogen (or fuel). The second function they play is to act as a conductor for the electrical energy, thereby allowing the current to flow from cell to cell through the stack.

The thing about bipolar plates is that they have to be resilient to any of the chemical reactions that are going on. So you have a very strong oxidising side of the plate and a very strong reducing side. You therefore need a material that is good in both of those areas.

Because of the way that operates, the machine likes to have long, straight tracks and you therefore end up with a serpentine design, i.e. a long straight track going up one side of the plate, then turning and going back down again. It's like a snake twisted over the full width of the plate to deliver the gas uniformly across the plate.

Although widely used in the fuel cell industry, this design brings a number of problems. A great deal of pressure is needed to blow the gas through the flow field channels because it has to travel anywhere from eight to 20 times the length of the plate, depending on how many turns there are. This high backpressure is achieved through the use of fans. In addition, because the gas travels such a long way, there can be a significant reduction in gas concentration from the inlet to the outlet.

The Oxford English Dictionary defines 'biomimetic' as "mimicking a biochemical process". In addressing the problems associated with serpentine designs, MFC took its lead from nature, which provides a perfect example through animal lungs and plant leaves.

A biomimetic plate is a flow field design that uses biological principles to diffuse the gas. If you look at any natural system, the way that gases or reactants are distributed over a large area is via a large central channel which then branches off into smaller and smaller vessels. That is a very efficient way of designing a gas delivery system and those are the types of designs that we have been able to develop and fabricate. MFC's biomimetic design is much more complex than the standard serpentine design. The key advantage of the biomimetic plates is that the gas has to travel a much shorter distance and the pressures required are therefore lower. We can reduce the backpressure, a shorter distance across the plate. Nature

doesn't use any pumps or compressors to distribute gas, so it's a very efficient way of delivering the gas.

If you reduce the back pressure you reduce the fan power requirements so your parasitic load is lower and you get more power out of the stack. There is a knock-on effect of having a very efficient gas delivery system and that is that you don't need as much balance of plant to get the fuel cell to run. This improvement in efficiency and power output was a key selling point.

The fact that the gases have to travel shorter distances in biomimetic plates compared to serpentine plates also results in more even gas distribution and therefore an even distribution of current across the plate. This in turn helps to eliminate cold and hot spots, which results in improved reliability in the fuel cell.

If you take away the mechanical failure mechanisms - for example these cells tend to be clamped very tightly together and can break - one of the biggest failure routes is the fact that you get this unevenness across the membrane which over time means that parts of the membrane cease to operate effectively and this gradually magnifies into complete failure. If the membrane is too hot it is prone to drying out and if it gets too dry it won't work. Similarly if the membrane gets too wet then it floods and it also won't work. So a fine balance must be achieved to keep the central membrane conductive and the fuel cell working.

ENVIRONMENTAL AND ECONOMIC ASPECTS OF WATER METERING IMPLEMENTATION (KHARKIV REGION)

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Inconstant water supplying and rising of ground water level on considerable territories are actual question for the Kharkiv on last years.

Floating occupy area are near 10 000 hectares in Kharkiv. Considerable development of the process of floating acquires in steppe zone of Kharkiv region.

For reveal real volume water use of urban population from municipal centralize water supply system, social research was conducted in different district of Kharkiv and data of flat which arrange water metering was collected. Also have been calculated the number of people who are real live in flat and have a pet.

After research, calculation shows that a lot of surplus water in water supply system of Kharkiv and leads to the high level leakages run out and additional supply of underground water. Thus, as a result we have large float area.

All populations of Kharkiv (about 1.4 mln) get drink water from water supply system, but from water supply system run out more than 5 million square meters of water per month.

This quantity of water can replenish level of underground water, and can influence on condition of floated area.

Also was calculating financial losses of urban population that don't use water metering, they pay for water they don't use, and they overpay more than in two-three times (results of the research in the table).

Table - Economic indexes of water use from municipal water supply system with water metering implementation (tariff 0,95 hrv/ m³)

№	Water use period, months	Family respondents	Cost of water use according to water metering indicators, hrv.	Cost of water use according to normative, hrv.	Difference, Δhrv.
1.	21	2	7,5/3,75	21,1/10,55	-13,6/6,8
2.	6	4	14,24/3,56	42,2/10,55	-27,96/6,99
3.	18	4	8,92/2,23	42,2/10,55	-33,28/8,32
4.	54	4	4,84/1,21	42,2/10,55	-37,36/9,34
5.	28	3	4,1/1,37	31,65/10,55	-27,55/9,18
6.	36	4	6,92/1,73	42,2/10,55	-35,98/8,82
7.	24	3	6,27/2,09	31,65/10,55	-25,38/8,46
8.	18	4	9,76/2,44	42,2/10,55	-32,44/8,11
9.	29	5	19/3,8	52,75/10,55	-33,75/6,75
10.	16	3	7,74/2,58	31,65/10,55	-23,91/7,97

HOW TO REDUCE ENTERPRISE ECOLOGICAL PAYMENTS AND TO SAVE NATURE

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Today any enterprise that contaminates the environment pays a certain sum of money as compensation. Of course, the contamination of the environment must be limited. There are fixed limits of every contaminating substance for each enterprise particularly. It is also known, that if these limits are exceeded the enterprise payment is five times higher.

The JSC "Sumykhimprom" is a vivid example of such an environment polluting plant. The real discharge of water contaminating substances and the limits set for them are represented in a Table 1.

This analysis shows that 45% of discharge exceeds the limits less than 1,5 times. That's why we suggest that measures for discharge reduction should be conducted in a definite sequence. First of all we should reduce the discharge of the contaminating substances marked by one asterisk; second – by two asterisks; third – by three.

Table 1 – The analysis of limit exceeding degrees

Year contaminating substances	1999		2000		2001		2002		2003	
	fact	lim	fact	Lim	fact	lim	fact	lim	fact	lim
DPK	** 2,88	** 0,93	* 1,38	* 0,93	*** 8,00	*** 0,70	6,45	14,21	5,17	15,41
Fluorine	9,38	44,90	7,64	44,90	7,84	20,55	* 9,24	* 8,26	4,72	6,91
Suspended substances	-	-	-	-	* 18,58	* 14,70	12,5	42,29	6,36	45,86
Nitrates	0,60	3,57	** 8,27	** 3,57	7,39	8,58	4,98	21,07	10,34	24,10
Arsenic	*** 0,12	*** 0,02	*** 0,15	*** 0,02	0,12	0,26	0,08	0,17	0,07	0,19
Phosphates	6,49	87,13	18,93	87,13	* 37,49	* 33,87	23,55	24,5	* 19,91	* 18,60

Explanation:

* – the real discharge exceeds limits 1,5 times and less

** – the real discharge exceeds limits more than 1,5 times but less than 5 times

*** – the real discharge exceeds limits 5 times and more

This choice is explained as follows:

1. To eliminate the first-group pollutants does not require significant expenses.

2. This sequence allows to do away with limit exceeding and as a result to prevent fines, what means saving money.

3. At the same time, it provides for solving the problem of reducing the contaminating substances discharge, thus taking care of ecological situation.

Today most nature protection measures of the JSC “Sumykhimprom” do not have an ecological orientation, and are planned only for the sake of running equipment repair. Therefore, instead of paying fines, it is necessary to determine the “weak places” and to make a real program of nature protection measures which will allow to gradually reduce the discharge of contaminating substances, bringing their values down to the norm.

So, today more and more enterprises contaminate the environment and use compensation payments to hide increasing pollution of the environment. The proposed approach gives an opportunity to the analysis of limit exceeding degrees and to define the sequence of carry out the nature protections measures, which enables us to reduce enterprise ecological payments and at the same time to save our nature.

DISTRICT HEATING SYSTEM ENERGY EFFECTIVENESS INCREASE AS A MEASURE OF IMPROVEMENT OF ECOLOGICAL AND ECONOMICAL SITUATION IN SUMY

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Heating system is an essential part of municipal economy. In Sumy the provision of heating and hot water-supply are basically carried out through district heating systems.

District heating systems are a potentially energy efficient and cost-effective way to supply heat and hot water. However due largely to the lack of maintenance and capital repairs in recent years, this branch in Ukraine is plagued by a high level of energy inputs and excessive technological distribution losses. Heating systems are also a significant source of the greenhouse gas emissions. Therefore the question of heating systems energy effectiveness increase is of great importance for the environmental improvement.

Ukraine's 70,000 high-rise residential buildings alone consume approximately 40% of all of the country's heat energy resources. In Sumy particularly there is one heat and power plant, one powerful boiler-house and 44 medium boiler-houses for non-industry purpose with total heat capacity of 1112.8 gigacalorie per hour. Almost 80% of residential buildings and social objects are provided with heat by these enterprises. There are basically obsolete powerful boilers with normative efficiency 0.82–0.95 there. Actual efficiency of more than 45% of boilers is 0.70–0.80 (against 0.92–0.94 for modern boilers). Operation life of the majority of boilers is irregular. 14.6% of functioning boilers have been being operated for more than 10 years, 33% — for more than 20 years, 40.4% — for more than 30 years, 11% — for more than 40 years. The majority of boilers is depreciated and obsolete. Boiler-houses' equipment is not used at full capacity, for instance 37.8% of boiler-houses are only used at 11-50% of their prescribed capacity. All these negative factors result in 50% fuel over-use during heat generation.

Heating system energy effectiveness depends on effective work of all its components. In particular, the problem of heat and hot water distribution networks efficiency is of great importance. District heating distribution networks in Ukraine are typically outdated and poorly insulated. Heat loss during transmission between the point of production and the end-user may range from 8% to 25%, depending on the length of the system. Switching to modern methods of laying and insulating pipe could result in fuel savings of up to 22%, and conformably significant greenhouse gas emission reductions.

In Sumy the spread of heat distribution networks is 346.7 km. 45% of distribution networks have been being run for more than 25 years. Only 25.1% of distribution networks have been being run within normative 15 years. As specialists

predict, practically 70% of the operating networks will be in accident condition in 2010.

Factors affecting heat distribution efficiency include pipe insulation and network design. For old systems requiring rehabilitation, improvements will generally focus on improving pipe insulation. In Sumy one of the main causes of heat loss during transmission between the point of production and the end-user is the use of mineral and glass wool for thermal insulation of underground heating networks. The drawback of this insulation type is its leaking and instability to humid soil. This results in gradual moisture saturation of the insulation layer and in the loss of more than 50% of its heat-insulated characteristics. There have been many advances in insulation technology in recent years, and installation of pre-insulated pipe has become an attractive option in many situations. For newer systems, in addition to pipe insulation, important efficiency considerations include pipeline length, type, and installation method. It is also important to carry out the measures of increasing the efficiency at the consumer level. Some of them are installing of heat meters in buildings and individual apartments; replacing or heat insulation of windows; renovating or replacing building exterior doors; installing or replacing pipe, basement and roof insulation etc.

Thus, in this stage heat-and-power engineering is in difficult situation in Ukraine as a whole and in Sumy, particularly. Its significant technological lag results in negative impact on environment such as greenhouse gas emissions and fuel and energy resources over-use. Heating system needs an urgent complex technical reequipment, implementation of energy-saving projects based on up-to-date technologies, management and technologies investment.

District heating systems energy effectiveness increase at the production, distribution, and consumption stages can result in significant energy cost savings and reduce greenhouse gas emissions.

THE PROPRIETOR CHANGE AS THE FACTOR OF DESTABILIZATION OF RESOURCE SAVING ACTIVITY AT UKRAINIAN INDUSTRIAL ENTERPRISES⁸

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Growth of industrial resources value, which are mostly bought by the Ukrainian industry from foreign suppliers under the world prices, dictates more rigid requirements to the resource efficiency of national industrial sector, updating resource saving processes. However at the present stage in the industry of Ukraine

⁸ The publication is prepared within the framework of the grant of the President of Ukraine at financial support of the State Fund of Fundamental Researches of Ukraine

the resource saving measures activation is interfered by a number of barriers, such as informative, social - psychological, administrative - legal, organizational - economic, financial and technical-technological. The most significant group among the specified barriers is organizational - economic, closely connected with legal and financial. The barrier of this group getting recently the increasing influence on resource saving processes in the national industrial sector, is the factor of enterprises' proprietor change.

In spite of the fact that privatization processes in Ukraine have begun at the beginning of 90th years of the last century, till now the significant part of the Ukrainian industrial enterprises from time to time changes their proprietors. On the one hand, repartition of the property is an objective process in the market economy, directed on search of more effective owner; on another hand, it is a change of the certain settled productive relations at the enterprise, accompanying with a stressful situation for labour collective and administration.

As a rule, practically the repartition of the industrial property "in Ukrainian" is always accompanied by change of the enterprise's top management. Thus, the labour collective should master productive "game rules" anew. The process of workers' adaptation to the new conditions occupies a long time that is not good for the enterprise, at least, in the first months of work at «a new mode». But especially perniciously these circumstances affect on innovative resource saving processes started at the enterprise.

The last years-experience of change of the proprietor and accordingly, administrations of the Ukrainian industrial enterprises testifies, that, as a rule, three basic variants of the events' development take place, which are negatively influencing on the further resource saving prospects on manufacture.

Firstly, frequently the policy of new enterprise's proprietors is directed not on the activation of the enterprise activity, but on the maximal pumping out of means from it. At such position of the proprietor (so administrations as the spokesman of his interests too), resource saving processes on the manufacture, meaning additional charges, cannot be realized.

Secondly, frequently the proprietor's change occurs at the Ukrainian industrial enterprises having serious financial problems. As a rule, in this situation the most popular recipe of treatment from the side of coming new team of managers is the staff reduction in spite of the fact that mostly the problem of inefficient manufacture is covered not so much in the great wage fund, but in irrational using of available material and energy resources. For many managers to fire the worker, explaining this by industrial necessity, is much easier and even sometimes more cheaply, than to implement expensive resource saving technologies, the effect from which should be expected through the certain time. So resource saving as the perspective direction of manufacture revival passes in the category of unpromising.

Thirdly, the arrival of the new managers' team on the enterprise means full revision of industrial policy priorities. First of all, it concerns the innovative resource saving processes started by the previous managers at the enterprise. Mostly

such processes are connected to a great risk and demand considerable expenses, so a first step of the new managers' team, as a rule, becomes the analysis of expediency of means' expenditure for these directions of enterprise activity. Aspiration of new administration to recommend itself before the proprietor from the best side as soon as possible having found short-term profit increases reserves, causes the reduction of resource saving measures financing frequently.

In our opinion, the decision of the problem of resource saving processes stimulation at the Ukrainian industrial enterprises which have replaced the proprietor consists in the state role activation in order to forming the steady interest of enterprises' new proprietors and administration in resource saving. On the one hand this can be the direct state intervention in processes of the property repartition by obliging the new proprietor to carry out the resource saving measures on manufacture, that is expedient at enterprises' privatization. On another hand, it must be the activation of macroeconomic stimulation of resource saving processes in order to transformate resource saving into a priority sphere of activity for the Ukrainian industrial enterprise irrespective of who is its proprietor at the moment.

ASPECTS OF RATIONALIZING OF AGRICULTURAL LAND TENURE

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Land resources – are one of unique natural resources, on which one agricultural activity of the person is based. Despite of high potential of land resources of Ukraine, social and economic, and environmental problems of rural territories remain sharp. One of controlling factor of such unsatisfactory situation is degradation the grounds that introduces a severe ecologo-economical problem of nation-wide weightiness. In particular it concerns conservation of fertility of soils and purities of waters quality, which substantially is influenced with aqueous erosion of a soil overlying strata. Erodibility of agricultural land has already reached 40 % in Ukraine.

Today there is a problem of rational land tenure, which would allow to satisfy needs of people in association with protection and procreation of natural fertility of soils, as if the soil forms as a base for reception of a crop of agricultural crops, that is the primary source of all material benefits.

The reason of quick paces of degradation of the grounds, including the accelerated erosion of soils that conducts to loss of their fertility, is irrational use of ground resources. The basic lacks of such use is: excessive land development, first of all inclined, which was tracked by unreasonable destruction of natural landscapes, uncontrolled cutting down of woods; wrong methods of agriculture, the wrong organization of territory of the agricultural grounds in erosive dangerous

agro landscape; excessive grazing of cattle; omit of agroclimatic, soil and relief conditions of territory; non-observance of scientifically proved alternation of cultures, in particular absence of soil-protective crop rotations.

Impairment of ecological situation in modern land tenure makes the full account of ecological requirements of progressing of the agricultural production at the state level, namely: development and realization of a complex of actions on optimization of pattern of land tenure and creation of effective system of use and protection of the grounds, which would be based on the generalized results of scientific studies in the field of economy, law and land management.

Theoretical paths of ecologization of land tenure point directions, for which it should be realised. Ecologization of agricultural productions with its economic benefit - the uneasy task, the decision of which in land surveyor projects may be resolved in proved scientific and methodical developments.

Ecologization of land tenure has a number of aspects, which assist this process: optimization of pattern of land and forming high capacity ecologically balanced landscapes with a following proportion: arable lands up to 50 %, natural feed land up to 30 %, covered by forest to 20 %; complex of actions on prevention and the termination of a soil erosion, including the contour-meliorative organization of territory, implementation of actions of constant meliorative operating, field-protecting of forestation, the minimal treating of soil; conservation of humus in soil due to use of mass of the nutritious and vegetative rests and green manure crop, applying of the crop rotations adapted to conditions of economy, depositing of organic fertilizers; applying of mineral fertilizers with severe observance of scientifically proved norms; control for withdraw of the agricultural grounds for not agricultural purposes.

With the purpose of encouraging proprietors of the ground and land users to carry out an agricultural production with observance of nature protection and soil-protective requirements, to improve state regulation of ground relations, namely: to carry out monitoring behind use of land resources; to design in boundaries of rural councils plans of territorial landscape planning of using of the grounds; to implant tax privileges for realization of ecologically focused kinds of activity (the antierosion organization of territory of landscapes, ecological advancing of pattern of landscapes, work on support of biological variety of territory), on production of non-polluting agricultural commodity, on the investment of ecological assigning; to carry out penal sanctions for non-observance of the ecological legislation in the country; to give grants for realization of nature protection programs, which have nation-wide value (rational use, conservation and the expanded procreation of land resources, gardening of territory, conservation of natural objects); to conduct compensation of losses at withdrawal from agricultural use degradative and unproductive grounds.

SUSTAINABLE CRITERIA OF WATER MINIMIZATION

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Ukraine is one of Europe's countries with shortage of water resources. The average year availability of water resources is 1700 m³ per person, for example, such indicator for France is 4570 m³ per person, for Sweden it is 24000 m³ per person. At that time, the daily water consumption on urban territory more than 350 liters per person and water leakage during the water transportation are more than 2 km³ per year. Also, more than 10500 km³ per year of wastewaters polluted surface water resources in Ukraine. At present time water quality in the all rivers are not corresponding with Ukrainian Water Sanitation Standards by such indicators as ammonium, oil products, phenol, nitrates, nitrites, copper, total-iron, zinc.

Today, households, office and resident building are the major consumers of water, accounting for about 75% of water resources to supply by municipal water company and correspond to 375 liters per capita per day. Such high level of water consumption in the city with water scarcity leads to different environmental problems.

One of the ways to predict the water crisis is based on the development of the precautionary measures to reduce level of water use of powerful water consumers. The implementation of such measures should be support by decision-making tools to include sustainable indicators and criteria.

Sustainable criteria are defined as the set of factors that may be used to assess the range of options, in this case to analyze the current situation of water use and proposed the minimization of water use to base on the sustainable development principles. The concept of Sustainable Water industry Asset Resource decision (SWARD) is developed in United Kingdom as the result of the semi-named project. The principle objectives of the concept are to facilitate the inclusion of sustainability in the decision-making processes for water services asset planning and to provide the means whereby the relative sustainability of each of the options under investigation can be compared. It proposed to use the primary and secondary criteria to classify by four groups: economic, environment, technical and social, according to the main principles of sustainable development concept.

Options for dealing with water minimization for Kharkiv City Municipality was generated with use of such approaches as human behaviour changes (A), water control implementation (B) and water saving technologies introduction (C). Also it is estimated the situation as doing nothing (D).

Criteria were generated by the results of future research of environmental, economical, technical and social factors of water minimization (table 1).

The sustainable criteria were developed for proposed options to estimate the real condition of water minimization management providing in the municipal economy of Kharkiv city.

Table 1 - Water minimization criteria

Primary criteria	Secondary criteria	Indicator
<i>Economic criteria</i>		
Water service costs	Capital costs: investment Operational costs Maintenance costs Repair costs Municipal bill	total \$ \$/year \$/year \$/year \$/year
Financial risk	Risk of capital investment	qualitative
<i>Environmental criteria</i>		
Resource utilization	Water resource extraction Leakage rate Energy/fuel use for water services Energy/fuel use for heat production Material use Chemical use	cub.m/year cub.m/year kWh(t,cub.m)/ye kWh(t,cub.m)/ye t/year t(l)/year
Environmental impact	Impact on water: -water polluters discharge Impact on air: -CO ₂ , SO ₂ , NO _x emission	t/year t/year
<i>Social criteria</i>		
Responsibility	Participation in change behavior	% of people to pay in time/catchment people
Family budget affordability	Volume of water bill	% of average family budget
Acceptability	Acceptability	Average acceptability (score)
<i>Technical criteria</i>		
Adaptability	Costs of adding systems Costs of removal from the system	total \$ total \$
Reliability	Risk of failure	qualitative

The decision making system also will be developed to base on the criteria.

THE NECESSITY OF THE ECOLOGICAL AUDIT IMPLEMENTATION IN THE MODERN ENTERPRISE

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The condition of the environment is a very important issue primarily for the population. We have the right to have true information about the activities of the enterprises and its influence on the environment. The problem is that many producers cannot or do not want to give detailed information about this or that sphere of their activity. Up to present large and small enterprises haven't been

guided by the basic principles of the rational use of the environment, but have been only striving to achieve an economic effect in their everyday work. In other words, a modern company cares only about current needs and doesn't meet the main requirements of the ecological safety aiming at income maximization. Such carelessness can be explained by the absence of strict general laws concerning environmental protection, which would regulate activities of specific subjects and make them observe mentioned rules and standards.

As a rule, an enterprise doesn't include data concerning the exploitation of natural resources and impact on the environment in its annual financial report. Such a conclusion was made by experts, participants of a number of world conferences in which the majority of the UN countries' representatives took part. During the conference in Rio-de-Zaneiro the question about the capacity of the information given by the enterprise about its environmental activities was discussed. The questioning was held among 100 enterprises, which were chosen at random. It was discovered that the majority of enterprises in their annual report gave only general information about the influence on the environment; more so, such information had a discriptional character and took only few sheets of paper. In developing countries many producers, using gaps in the legislative base, don't carry out the activities connected with the decrease of the environmental pollution and don't invest money in the ecological equilibrium provision. At the same time it is worth mentioning that in of advanced countries (mainly in Germany, Norway and the USA) managers of enterprises made a breakthrough and give the information about responsibilities in the ecological sector, investments in the development of environmentally friendly technologies, results of work done and financial expenses on the activities aimed to decrease the negative influence on the environment. Such a "judgement and responsibility" can be explained by the ecological policy of the government (in Germany and Switzerland governments have worked out the recommendations of the ecological planning and audit conduct), and a high social activity of the population that makes the producer look for a compromise and think about social interests.

But despite some positive trends, experts have to admit that today the society doesn't have a powerful and obligatory system of rules and standards concerning the control over the enterprise's activities and influence on the environment. Managerial decisions about the ecological aspects always have the subjective nature and do not count with the citizens' interests. Under such tense conditions a question of creation of the universal control system over the enterprise's activities in the ecological sector emerges, so we can speak about the introduction and implementation of the ecological audit within the enterprise.

The term "ecological audit" should be viewed in a broader sense than simple monitoring activities. It's common practice, that calculation of expenses and responsibilities dealing with the environment will help provide interested persons with true and update information, and the enterprise will gain the opportunity to determine the guidelines in the ecological sector. But we should

view this not only as the source of information. Implementation of the strict system of monitoring and regulation of nature/enterprise interaction is based on the necessity to achieve general equilibrium and stability. That means that the way of management should provide conditions and possibilities for resource renewal in the process of consumption. That will allow to keep ecologically safe areas untouched and to renew already polluted, because these criteria determine the directions of the sustainable development and priorities of the ecological and economic policy.

In future ecological audit thanks to its universality will help match consumer - producer interests, because as a matter of fact both of them are interested in the ecological safety and productivity. It is necessary to stimulate the producer to implement the system of the ecological audit in the enterprise. Today the Norwegian managers proved that the use of environmental friendly materials and systems allows to increase the productivity and to get higher profit. Having systematized data related to the influence of the enterprise on the environment, the manager will acquire the possibility to control all expenses connected with the environment preserving activities and carrying out the obligations, to plan further strategy in this sphere and, in future, to reduce the expenses on the neutralization of its activities negative consequences and environment improvement. More so, investors pay much attention not only to the financial conditions of the enterprise/business, but also require information about the production environment interaction with the. It's obvious that nobody is willing to invest money in the development of ecological collapse.

Today ecological audit should be viewed as the main controller of the enterprise influence on the environment. Conducting this audit will guarantee the observation of all standards and rules on environment that will create all conditions for the ecosystem existence and development. To achieve the result in this sphere, firstly, we have to provide an active legislative base and develop the universal concept and recommendations for making ecological calculations. When the manager feels the pressure of the law, standards and rules, he will have to make decisions taking into consideration not only his own interests, but also other groups' of people and individuals'.

In conclusion we can state, that the main goal of the ecological audit introduction is to create conditions for the gradual ecologization of the production process, abandoning dangerous and harmful technologies, increasing population living standards and bringing the environment into a sound condition.

INNOVATION PERFORMANCE FOR ENVIRONMENTAL AND RESOURCE PRODUCTIVITY ESTIMATING

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Leading companies are to be innovative facing the . But the benefit from innovation performance must be always more essential than costs of new technology absorbing and exploiting process in order to provide sustainable success to any innovating company. Such economic effect analysis needs its specific range of managed factors and the clear criterias of estimating.

Innovation systems are a set of actors (e.g. firms), institutions, markets and networks which jointly and individually contribute to the development and diffusion of new technologies. And which provide the framework within which governments form and implement policies to influence the innovation process.

The performance of an innovation system can be assessed by its capacity to generate innovation and translate that innovation into economic growth. The system includes incentives provided by the economic and regulatory environment, access to critical inputs and the internal capacity to seize market and technological opportunities. Innovation systems do not usually coincide with national boundaries. They can exist in a variety of geographical settings. But national Governments have an impact on system performance through national policies. The main role for Government is to improve the efficiency of innovation systems and facilitate their formation.

To provide a structure for policy analysis a small number of critical success factors, determining the strength of innovation systems, have been identified. All are, to varying degrees, amenable to favourable Government influence. They are:

- **The capacity to absorb and exploit knowledge** defines a firm's ability to turn knowledge into profitable goods and services. Firm capacity depends on investments in human and physical capital and the flexibility of its strategy, culture and organisation in the face of change.

- **The regulatory framework** affects the possibilities and incentive structures for innovation.

- **The competition regime** can remove impediments to market entry. The degree, intensity and nature of competition decides which innovations will be successful in the market place. Levels of **entrepreneurship** help determine the intensity with which firms compete and the ability of firms to spot opportunities and manage risks.

- **Access to finance** because all investments in new products, services or processes have to be financed in advance of production.

- **Sources of new technological knowledge**, such as the Science and Engineering Base, and design, play an important role in shaping innovation systems.

- **Networks and Collaboration.** Firms rely on a variety of knowledge sources as inputs to the innovation process. Networks help them access these.

- **Customers and suppliers.** Demanding customers and suppliers put pressure on firms to deliver better quality goods and services.

It could be argued, with some truth, that a whole host of other factors (such as transport) affect productivity or innovation performance. But in any assessment of

this sort the difficulty lies in trying to keep its scope within manageable bounds. This has obviously constrained the choice of success factors, which have been selected on the basis that they seem to be the most important.

In the future, companies will have to compete more and more on the basis of unique and innovative products and services. This will require inspirational leadership, stronger management skills, a highly-trained and motivated workforce, a flexible labour market that promotes diversity and fair treatment, and workplaces that recognise environmental issues and the need for greater resource productivity.

The ability of companies to innovate and deliver high value products and services critically depends on a high level of management and technological skills.

The Small Business Service is seen as having a major role to play in raising the innovation performance of Small Mediumsized Enterprise's. Promoting innovation, skills and knowledge transfer will be made one of the key delivery themes for Business Link. Business Link will tailor assistance to a company's specific needs depending on its level of innovation capability and the stage it has reached in the product/service life cycle.

Design skills are vital to business innovation, but not enough companies use design to connect new ideas with market opportunities. So they need to be shown how innovation can be enhanced through the improved use of design in manufacturing, emerging technology and services businesses.

Innovation ultimately depends on the knowledge, skills and creativity of people at work. That's why industry, trade unions and employees are to supply the skills on which the development of high value-added strategies will depend.

Матеріали

ХІІ Міжнародної студентської конференції
"Економіка для екології"

м. Суми, Україна,
3-7 травня 2006 р.

Дизайн та комп'ютерна верстка
Олександр Косарев
Наталія Іщенко

Materials of

12th International Student Conference
"Economics for Ecology"

Sumy, Ukraine,
May 3-7, 2006

Design and desktop publishing by
Olexander Kosarev
Natalia Ishchenko

План 2006 р.

Обл.-вид. арк. 5,3

Підп. до друку

Формат 60x84x16

Умовн. друк. арк. 5,12

Наклад 100 прим.

Зам. №

Безкоштовно

Вид-во СумДУ. 40007, Суми, вул. Р.-Корсакова, 2

"Ризоцентр" СумДУ