Ministry of Education and Science, Youth and Sports of Ukraine

Economics and Management Department
Economic Research Centre
Sumy Local Youth NGO "Council of Young Scientists"

17th International Scientific Conference

"Economics for Ecology"
ISCS'2011

"Економіка для екології"

Матеріали
XVII Міжнародної наукової конференції

(Суми, Україна, 6-9 травня 2011 року)

Суми
Сумський державний університет
2011

17th INTERNATIONAL SCIENTIFIC CONFERENCE

"ECONOMICS FOR ECOLOGY"

(ISCS'2011)

May 6-9, 2011, Sumy, Ukraine

The conference organizers:	• Sumy State University (Economic and Management Department) • Economic Research Centre • Sumy Local Youth NGO "Council of Young Scientists"
Support	• Political party "Ukraine of the Future"
The topics of the conference:	• State Environmental Policy • Problems of Education, Ecological Education • Rational Economics and Saving Technologies • Informational Economics • Greening Economy, Greening People • The Mechanisms to Reach Sustainable Development • Regional Ecology • Ecological Economics and Marketing in the Context of Globalization • Interrelation of Economy and Culture • The Role of NGOs on the Way towards Sustainable Development
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 17th International scientific conference "Economics for ecology" (ISCS 2011)

Friday, May 6	***Arrivals, Opening & Plenary session***
08:00 – 11:45	Registration of the participants
12:00 – 13:30	Official conference opening
14:00 - 14:40	Lunch
15:00 – 17:45	Plenary session
18:00 - 19:00	Departure to the recreation center for settlement
19:00 – 19:30	Accommodation
20:00 – 20:30	Dinner
21:00 – 23:00	Ukrainian party
Saturay, May 7	***Conference Working Day***
09:00 – 09:45	Breakfast
10:00 – 11:30	Workshops
11:30 – 12:00	Coffee Break
12:00 – 14:00	Workshops
14:00 – 15:00	Lunch
15:00 – 17:00	Debates
17:00 – 17:30	Coffee Break
17:30 – 19:00	Conclusions of the workshops
19:00 – 20:00	Dinner
20:30 – 23:00	International party
Sunday, May 8	***Excursion Day***
08:00 – 08:45	Breakfast
09:00 – 18:00	Excursion (Sumy region)
19:00 – 19:30	Dinner
21:00 – 23:00	Farewell party
Saturday, May 9	***Departure***
08:00 – 09:00	Breakfast
09:30	Departure to Sumy

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ACTUAL ECONOMIC PROBLEMS OF THE ENVIRONMENTAL AIR POLLUTION

Saady M. Abaas, Thareef J.Mohammed Althabhawi
Sumy State University, Sumy, Ukraine

Air pollution - smoke and other airborne particles - has accompanied the growth of industrialization since its early days and courses damage and distress upon human, animal, and plant life. The salient economic consequence of this is that pure or relatively unpolluted air is no longer a free good; it costs money to go where air is relatively cleaner, it costs money to trap pollutants before they escape into the air. Yet, by and large, those who are responsible for pollution do not bear the cost of the pollution they create; it is an "external" cost of production and consumption.

Born of this condition, the economics of air pollution is mainly directed to measuring the costs to individuals and society at large of the diffusive despoiling of the atmosphere (for evaluation of the advantages of various ways of it cleaning up) and determining economic measures to stimulate and coerce polluters to eliminate or at least cut down their emissions of dangerous and disruptive gases and smokes.

The purpose of our research is to survey and evaluate the situation in these two broad directions of interest outlined above. We have focused our attention on evaluating the central problems economists have encountered in attempting to develop measures and tools to cope with the growing costs to society of air pollution. Here is a summary of our principal conclusions and suggestions for directions in which we might focus our efforts:

1. Current assessment of total damage coursed by air pollution are totally unreliable and most experts working on this problem are pessimistic in their prognosis for more acceptable estimates: this would not be an insurmountable difficulty for policy makers if there were a simple relation between the level of pollution and the costs of control. But, it is more likely that they are nonlinear. We suggest, therefore, that effective policy determination requires serious and substantially supported efforts to evaluate the costs of air pollution and the benefits of abatement over a range of pollution levels.

2. The very complexity of this task, a difficulty stemming from the paucity of data and the primitive state of pollution measurement and control technology, suggests the need to introduce alternative methods of studying control costs.

3. Air pollution cannot be studied and controlled in isolation; for it is one of a number of interrelated problems affecting the quality of the environment. As a consequence, significant economies would be possible if policies for the control of air pollution were to be treated as part of overall research and of planning for improvement of the quality of the environment and conservation of our scarce resources including clean air. Expenditures on roads, tunnels, air travel, conservation, mass transportation, urban development, recreational facilities, and industrial development must be guided by research and policies which take into account their interdependencies.

4. There is no consensus on what kinds of economic measures should be taken to reproduction of the environment and control pollution. The range of choices is between the market mechanism with schemes of effluent fees, at the one side, and the complete reliance on government fiat with or without different forms of subsidies, at the other one. We have asserted that the indeterminativeness of the market, the possibility of

discrimination, and serious questions about its interpretation of business behavior raise serious questions about the former. Therefore, the solution may lie in between the two extremes, with some combination of regulatory setting of standards, and supplemental market incentives. But only further research and continuous experimentation can lead to optimal solutions.

Leader: Makarov A.V.

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CONCEPTUAL FOUNDATIONS OF MANAGEMENT BY ECOLOGICAL, SOCIAL AND ECONOMIC RISKS IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

Yu. Alibekova

Sumy State University, Ukraine

In the process of socio-economic development in magnitude becomes revealing of the contradictions between economic system and state of the environment. These contradictions include the potential ecological danger, and that causes the necessity and importance of taking into account the probability of its occurrence, determination of economic losses from its realization and implementation of preventive measures to achieve the optimal level of ecological and economic risks. This will become the basis of realization of sustainable development concept.

At this time there is not sustainability in terms of ecological and economic definition of risk, so it deserves special attention specificity of approaches to determining the ecological and economic risks, their classification and incorporation of the widest possible number of factors during determining the content of risk.

Based on analysis, synthesis of existing approaches to determining the ecological and economic risks and systematization of the factors of risk we have deepened their content, revealed their essence, types and proposed of the ecological and economic risks management concept.

Ecological, social and economic risk is the potential danger of environmental degradation, social and economic systems as well in their relationship, that courses further environmental degradation of the environment, increase morbidity and mortality rates, when significant material losses, such potential danger takes place in the course of nature in all its revealing and consequences.

Signs of risk classification, in our opinion, are the following: the level of risk revealing, the sphere of the risk consequences revealing, the subjects of perception of risk factors, the potential of existence and implementation.

To manage by environmental and economic risks effectively it is necessary to expand the number of identified risk factors. With increasing numbers of discounted factors increases the depth of the term risk.

We have identified aspects of the risks revealing, such as ecological, economic, social, technical, technological, organizational, legal, political and spiritual. On the basis of identified aspects of revealing of ecological and economic risks as appropriate, in our view, distinguish the occurrence of risk factors and measures to neutralize them.

Based on the above mentioned concepts, factors, types of ecological and economic risks, we have defined conceptual basis of ecological and economic risks management to achieve their optimal level, consisting of the following statements.

Analysis of the activities should be conducted in terms of potential and real ecological and economic risks. It is necessary to systematize the factors of risk for the magnitude of their revealing, the level of controllability, their forms, sources of origin. This is a potential risk of economic and social losses as a result of ecological dangers.

It is necessary to consider factors related to major factors of realization and proliferation the impact of risk occurrence. It is a real risk. On the basis of factor analysis there is necessity to develop indicators of real and potential risks. It is necessary to develop the method of their calculation, the order of their introduction to accounting and reporting systems at local, regional and national levels. An important task faces the information providing for their determination, and their normative values. In our opinion, there is a need to develop a classificatory standard of risk factors in terms of ecological, economic and social aspects of its subsequent update in accordance with the pace of scientific and technical progress. Thus it is possible to represent an essence foundations of ecological, social and economic risk factor in its structure.

At first it is necessary to analyze the components of risk, identify and quantify the factors of their occurrence and relations between them, and identify quality forms of the risks revealing.

The next position is the identification and specification of objects at risk. Then, quantitative assessment of the degree of negative impact is realized in terms of individual subjects of perception of the risk consequences. Based on the synthesis of negative effects on all subjects of perception is developed integral index of negative impact.

The next step is for a balanced risk optimization, which is to develop a set of measures reduce the potential risks and negative effects of its implementation. After this important task is the implementation of the complex organizational arrangements. The final component of risk management is the monitoring, analysis, forecasting and modeling the probability of occurrence of environmental hazards. This process of risk management is a recurring character.

Fundamental principles of ecological and economic risks management are:

1) risk analysis in terms of the unity of their ecological, economic and social components;

2) evaluation of the impact of risks on the population, economic system and the environment on levels of detail aspects of the risks revealing;

3) consideration of possible qualitative forms of the risks revealing;

4) scientific and methodological bases of assessment of integrated and individual levels of risk;

5) development of measures of optimization of ecological and economic risks level in the direction of balanced environmental, economic and social development.

Considering the above conceptual foundations and principles of ecological, social and economic risks management will ensure its optimum level in terms of ecological state, social tension and economic development.

IMPORTANT ASPECTS OF WATER MANAGEMENT IN IRAQ

Thareef J.Mohammed Althabhawi, Saady M. Abaas, Sanaa J. Mohammed*, Dijla J. Mohammed*

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Kufa University, Iraq*

The purposes of our research are to evaluate the present situation in water management in Iraq and to determine most important directions for its development.

Indicator of water availability per capita in countries of Arab region is the lowest in the world. About 95% of them is considered as arid or semi arid. This rarity of precipitation combined with high variability and frequent drought events places stress on available water resources. Some 66% of the region's water flows across international borders (shared rivers), further complicating the resource management challenge. The availability of adequate water resources and its rational utilization is emerging as a major issue in the development activity in the region. Per capita water availability have fallen from 3600 m3/year in 1960 to about 1000 m3 in 2000 and will fall by half by 2025 [1].

Most of the region's countries cannot meet current water demand, and many already face serious challenges. These challenges appears likely to escalate, as the region's population continues to grow, as the region's economies and population structures change over the next few decades, demands for water supply and irrigation services will change accordingly, as will the need to address industrial and urban pollution . All of this will have short and long-term effects on economic growth and poverty, will exacerbate tensions within and between communities, and will put increasing pressure on public budgets. The increasing cost of water development, compound by increasing cross – sectoral demand on the limited water resources is forcing policy makers in the region to focus on the economic of water and its efficient use and allocation among competing users .The economics of water is now considered one important aspect of water management.

Dealing with water has always been considered and by far in water scarce regions, as a sensitive issue for political and social factors .The common perception, for long time, has been that water is a free natural commodity since it is vital for life. Due to increasing water scarcity this perception has progressively changed for a new

economic vision .The value of a commodity arises from the benefit accruing from its use.

Across the region, agriculture, which consumes more than 85 percent of the region's water, is using water and capital investment inefficiently. The added value from using this huge volume of water is very low. Farmers in the Arab region, use water from publicly funded irrigation networks to grow low-value crops, often with low yields, rather than specializing in high value crops for which water needs remain unmet. Low water use efficiency in agriculture, characterize almost all the countries of the region. In fact every country of the region, therefore, has sufficient water to supply its population with drinking water, even given burgeoning urban populations. This is true in case of raising irrigation efficiency to 70 % or 80%, which is a reasonable goal that can be achieved [2]. The saved water can be used either for meeting drinking water demand or theoretically can increase the irrigated areas by about 50% and consequently reduce the deficit in the water budget [3].

The heart of the water management challenge in the Arab region is to reduce water consumption to a level consistent with long-term availability and sustainable environmental management, and to distribute it fairly and efficiently, so as not to suppress economic growth. The approach of securing supply is reaching its physical and financial limits and a switch toward water management is needed. A series of technical and policy changes to the water sector in most region countries is needed if the countries are to accelerate their progress and avoid the economic and social hardships that might otherwise occur. The changes include planning that integrates water quality and quantity and considers the entire water system; promotion of demand management using economic instruments to allocate water according to principles of economic efficiency and developing systems that have built-in flexibility to manage variations in supply and demand; tariff reform for water supply, sanitation, and irrigation; strengthening of government agencies. International experience indicates pricing mechanisms can be effective at reducing urban demand but does not work in irrigation. To affect demand, the price of irrigation water would have to increase to levels far above the cost of providing the service [4]. One study estimates that the price required to induce a 15 percent decrease in demand for water in Egypt would be equivalent to 25 percent of average net farm income, which would be politically infeasible. A study in Mexico suggests that to reduce demand to sustainable levels, the water tariffs would have to increase more than fivefold. International experience indicates that the solution inevitably requires stable and well-specified access rights to water, in combination with institutions that have the capacity to manage the water access regime, and cost recovery sufficiently to ensure the long term operation of the infrastructure. A new approach is now under discussion to allow users to trade water, which could help reallocate water to the highest-value use. In fact this case is well developed in several Arab countries when the owner of a borehole is selling water for others, either for drinking water or irrigation at a high tariff [5]. This issue should be determined by technical and legal specifications and can not be left as it is. Economic diversification and growth could lead to more employment opportunities outside agriculture, and allow the region's farmers to consolidate and concentrate on high-value crops.

One of the reasons that reforms have often not led to the expected improvements in the Arab countries, is that some of the most important factors that affect water outcomes are outside irrigation, water resource management, and water supply and

sanitation. Policies that deal with agriculture, trade, energy, real estate, finance, and social protection, and that affect overall economic diversification may have more impact on water management than many policies championed and implemented by water-related ministries. For example, cropping choices are a key determinant of water use in agriculture and they are affected far more by the price the farmer can get for those crops than by the price of irrigation services, which is typically a very small share of a farmer's costs. The price of agricultural commodities is, in turn, determined by a range of non water policies such as trade, transport, land, and finance.

There is no doubt that implementing the sound water policy requires the allocation of the necessary funds. Since it has become difficult for the Arab countries to provide adequate funds for the implementation of water and agricultural projects whose implementation requires huge sum of money, therefore, the new principle of private sector participation in various water projects, such as implementing, upgrading and managing drinking water networks, sewage system , building treatment plants and irrigation systems has emerged. The public sector in any Arab country, regardless of its potential financial capabilities, and due to the current conditions of the world economy, is no longer able to provide the necessary financial resources to invest in the water.

Therefore, it was necessary for the public sector to abandon (even if partially) his monopoly on the water sector giving chance for the private sector to contribute to financing water projects under the supervision and the control of the governmental institutions. For example, the World Bank estimates the investments required for the water sector in the Arab region for the next ten years to be from 45 to 60 billion dollars [6]. A number of countries have started already implementing this experiment as is the case in Morocco, Tunisia, Jordan. Saudi Arabia has started considering involving the private sector in building water desalination units.

The cooperation between the public and private sectors not only raises the economic efficiency of water services, but also increases the speed of accomplishing various water projects which will help in raising the sanitary and environmental level of the community. However, to maintain such cooperation, the presence of good institutional structures and trained cadres capable of monitoring and following up recent technological developments are indispensable. There is no doubt that to guarantee the success of these experiments, the participation of water users is highly required due to the great role they play in the success of the projects that they take part in their planning and implementation. So the participation of private sector should not be considered as a target goal but as a mean for increasing economic efficiency and ameliorating the service level.

The adoption of a new water strategy, which takes into consideration the economic implications of declining water resources and how to maximize the benefits of water under condition of increasing scarcity became a necessity for Arab region. Allocating water to the most beneficial use is considered one of the basic elements of this strategy.

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THE ENVIRONMENTAL PROTECTION AND THE ECONOMICAL MECHANISMS OF ITS REGULATION

Indria Andriani
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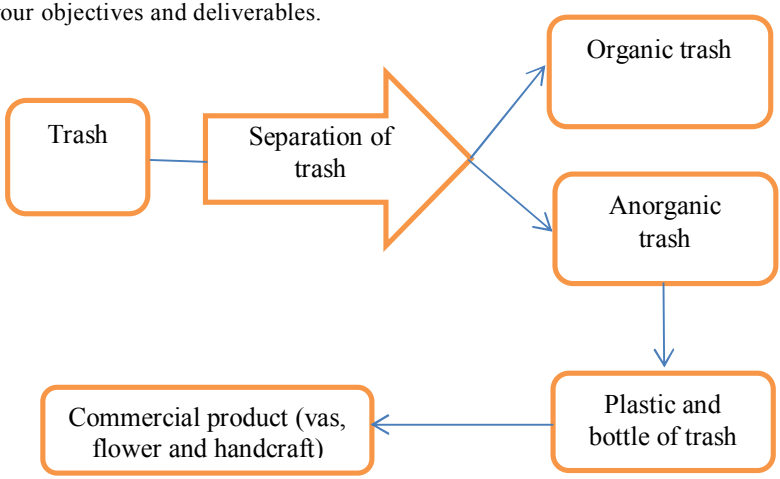
The consumption of community at bandung city always increase every years. Impact from this activity is increase of plastic garbage. This is not appropriate with image of bandung city. Image of bandung city is "kota bunga". This is not appropriate with that's slogan because we can find some place which has a lot of garbage at bandung city. The location is near from ITB (Institut Teknologi Bandung) much people through this way because this way is one of central ways at bandung. But, in this way we can see a lot of heap garbage

Name a few practical solutions to the problem that either government/industry/NGOs or your school/community has so far carried out.

"Utilization of plastic and bottle of trash to be a commercial product with recycle method"

Draw up a personal project you intend to do to help alleviate this problem, and state your objectives and deliverables.



Indicate resource requirements like budget, manpower, facilities, as well as institutions/groups involved, making sure that all necessary resources are within your reach. Compare resources and costs with the benefits you expect to gain.

This project doesn't need much money because we can get plastic and bottle from trash at bandung city as unripe material

This project take some labour from local community. We give training for them. So, their softskill will be used as optimal as possible

Production cost

Equipment	Quantity	Cost	Total cost
Bottle	2	free	-
Key	2	free	-
Straw	10 pac	Rp 1.000	Rp 10.000
Plastic	1m	Rp 5.000	Rp 5.000
cutter	2	Rp 3.000	Rp 6.000
Total cost			Rp 21.000

Revenue / sales

1 item (vas and flower) = Rp 15.000

2 item (vas and flower) = Rp 30.000

Profit = Rp 30.000 – Rp 21.000 = Rp 9.000/ 2items

Profit Rp 4.500 / product

In no more than 200 words, say how this project can be beneficial for both the economy and the environment. Explain also why your environmental project makes economic sense.

Consumption of community always increase every years. It make a problem for environement. One of the problem is "garbage". Garbage at bandung city was pile up. Stack of trash make a problem for local community and another people. One of them is smell and much mosquito.

One of trash which can't be shattered at soil. And the trash is plastic and bottle. With this project we can reduce the impact of garbage because we use bottle and plastic from garbage and this is very important for our environment. Because, by this project, we use recycle method for plastic and bottle of trash. So, we can get money without high capital to do it and with automatically, we will save our environment and make a new skill for local community.

THE ECONOMIC AND ENVIRONMENTAL BENEFITS OF USING OF THE "GREEN OFFICE" PRINCIPLES AT THE UNIVERSITIES

Helen Anokolova
Sumy State University, Ukraine

Why can't the humanity still understand − the more active and irrational the consumption of the resources and goods is, the more critical environmental situation become. Today with the acceleration of scientific and technological progress the management of nature continues to increase. Not thinking about what damage we do to the environment, we do more harm to ourselves. Thant's why every organization (size

and economic activity don't matter) should reduce the negative human impact on the environment by using the principals of the "green office" at their offices.

The "Green Office" (GO) is the conception of management that helps the company to reduce the negative impact on the environment by efficient using and maximum conservation of energy and resources. The companies that are ruled by the GO recommendations create the atmosphere of responsible and friendly treatment to the environment.

There is no need in spending too much time and money, applying the GO principles. On the contrary, you can even save them. Following the simple recommendations helps not only to save the energy, heat, paper etc., but change usual careless workers` attitude to the common resources.

General principles of the "Green Office":

I. The buying. The possibility of environmentally friendly using and utilization depends on the system of buying. The main thing is to follow the standards of ecological marking and buy energy-efficient equipment. It's advisable to buy the goods of domestic producer.

II. Use.

1. Switch the office equipment off outside working hours.

2. Switch off all electrical appliances or, where appropriate, switch them to the energy-saving mode when not in use.

3. Share the resources with your colleagues (use the equipment and tools such as scanner, printer, fax, stapler etc. together).

4. Before using the consumables e.g. printing paper make sure that it's really necessary.

5. Secure the instant repair of damaged sanitary engineering.

III. Utilization. It's advisable to use the 3R conception talking about the waste. 3R means Reduce, Reuse, Recycle.

The research focused on the paper saving by the students was done to demonstrate and convince of the efficiency of GO principles in practice. The authoress counted up the economy of paper by her own example using the principles of GO conception.

The research involves the following steps:

1. A number of pages of different undergraduate thesis, reports, papers, tests etc. that have been made by the authoress for about 2,5 years is 298 sheets (the electronic versions).

2. After the changes (1.0 interval for lines, from above - 1, form below 1, inside - 1, outside – 1) we have gotten 211 pages.

3. The difference before and after changes makes 87 pages.

4. 87 pages multiplied by 41 persons (the amount of students of M-81, M-82 group, Sumy State University) makes 3567 sheets of paper saving.

5. One normal or office stationery ream includes 500 sheets of paper. It costs approximately 40 hryvnas. Thus 3567 sheets of paper is 7.134 reams and 285, 36 UAH.

6. If we would print double-sided, then we had 633.04 UAH (298sheets – 211/2 = 193sheets * 41 persons = 7913 sheets * 0,08UAH = =633, 04 UAH).

7. It is known that 1 sheet of A4 paper weighs 5 grams. That's why 3567 sheets of paper weigh 3567*5=17835 g. that equals to 0, 0177835 ton. It's also known that it takes 17 trees to manufacture one ton of paper. 0,017835 ton multiply by 17 trees is 0,3

tree. In other words we will save almost one thirds tree. But this is the calculation only for 41 persons and for the period of approximately 0.5 year.

8. Let's assume that all of the students that studies at the Department of Economics and Management (1000persons) uses the paper in such a way as the authoress. At that time the saving will be 87 sheets*1000 persons = 87 000 sheets = 174 reams = 6 960 UAH. 1 sheet of paper = 5g, so 87 000 sheets = 87000 * 5 = 435 000 g = 0,435 tons. 1 ton of paper = 17 trees, so 0,435 ton of paper = 0,435*17 = 7,395 trees. Hereby 1000 students will save 7 trees, that is really appreciable.

9. If we would print double-sided, the economy made by 1000 students was15 440 UAH and 16.405 trees.

10. It's also known that it takes 227 tons of water to produce 1 ton of paper. In that case 1000 students can save 98.745 tons of water (single-sided printing) or 219,055 tons of water (double-sided printing).

In such a manner, counting up the savings of trees, money and water, we can noticeably perceive the efficiency of the "Green Office" principles in practice. To underline the effect some more we should remember the fact that to grow a tree it needs 50-60 years, but to cut down – only one minute. So thanks to the "Green Office" companies not only demonstrate their ecological responsibility, reducing the amount of consuming resources and environment pollution, but get the practical benefits such as reducing the costs of the office maintenance and the improvement of the company image. Making your office a "green" one will involve your staff in doing something good for the environment. Knowing that their actions can really make a difference will enhance a natural motivation to act in an environmentally responsible way. Making your office an energy-efficient, environmentally friendly place reduces air and water pollution, keeps more trees in the ground

THE ROLE OF THE HOLY BOOK OF AL QURAN IN PROTECTING ENVIRONMENT

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Chairman of the Board of Founders Society of Indonesian Environmental Scholar, Professor Emil Salim, wrote that economicinterests have been damaging to the environment. This wasbecause the businessmen are only concerned with profit withoutthinking about anything else, especially the preservation of nature.To protect nature, we must instill new values, for example, love the environment.

Indonesia is a country whose inhabitants are predominantly Muslim. Therefore they believe the holy book Quran as one of the guidelines of their lives. Al Quran wrote about the importance of protecting the environment on the Muslims, "has been visible damage on land and at sea caused by human actions, that God may feel to them some of the (result of) their deeds, so that theycome back (to the right path). Say: Hold the trip Show on Earth andhow the end of those who had. Most of them are people whoassociate (GOD). " (Surah Ar-Rome: 41-42).

Holy book Quran we can use to instill new values about the importance of loving the environment. Islamic religious scholarshave more deeply studied the Qur'an for synthesizing the teachings of the Quran on the importance of protecting the environment. Finally, the teachings of the holy book Quran is the basis of moralimportance in the economic activities of Muslims.

After that, the Islamic religious scholars (Ulama) have to spread the values of the Qur'an in protecting the environment throughout the world. This method can be one powerful way to protect the environment for Muslims

UTILIZATION OF MAHOGANY LEATHER FLOWERS AS AN ALTERNATIVE FURNITURE AND CRAFT MATERIAL WITH ECO-DESIGN APPROACH

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Industries-based creativity are a combination of natural resources-based industries (SDA), human resources (HR), and technology. Then packed in the concept of developing innovations in science that produced, distributed and consumed with the concept of creativity. This is an industrial transformation in the global economy.

In Indonesia, the creative industry trends emerged in recent years, through the innovations. The contribution of creative industries in Indonesia in terms of total Gross Domestic Product (GDP) generated was in seventh ranked, the condition is very good compared to some sub-sectors and other sectors.

Ministry of Commerce Indonesia gruped the creative industry as follows: 1) advertising 2) architecture 3) art market and Antic 4) crafts 5) design 6) fashion 7) video, film and photography 8) interactive game 9) Music 10) performing arts 11) publishing and printing 12) computer services and software 13) television and radio 14) research and development.

Overall the number of businesses engaged in the creative industry sub-sector in Indonesia totaled 3,001,635 units, or approximately 6.4% of all businesses in Indonesia. Of the 3,001,635 units sub sector in Indonesia, the highest number of business units and so on are;

One of the creative industry is quite developed is a craft. as many as 1,055,466 units (35.16%), handicraft ranks second in Indonesia. The development is very

significant. Creativity of our nation. In fact, not a few crafts that come from regular used items are considered trash.

Future Fleur Furniture is a unique craft products that interest Mahogany leather. National craft product range type. Starting from a variety of household furniture to marchandise beautiful and quirky. By utilizing the basic ingredients that have been received less attention, such as leather flower Mahogany, this product is Expected to be able to expand the list of creative industries is increasingly encouraged by the national government of Indonesia.

The idea of making this innovative product begins with craft work, students of Industrial Product Design Institute of Technology. A course which requires students who are required to innovate to create new, quality product and sell in the market. In exploration, we found innovation alternative furniture material. That is a unique blend of Mahogany wood and leather flower that has been underutilized and many scattered in the forest.

Benefits in this paper is to develop alternative materials for furniture and a variety of home furnishings. Besides as an alternative material, leather mahogany flowers are also able to increase the aesthetic value of a product.

In the development of alternative materials, it is expected to become an eco-friendly product design environment. Where this product will become a small substitution of wood use, other than as an aesthetic element of a furniture and craft products. Such as stand lamp.

To further improve the attractiveness, the webbing was added paint varnish. So, it looks more shiny and attractive. Average crafts are sold in the market with prices ranging from Rp 150 thousand to 5 million. Depending on the size and level of difficulty woven goods. This is a golden opportunity for the development of creative industries.

SOCIO-ECO-ECONOMIC ASPECTS OF RESOURCE RECYCLE IN UKRAINE: THE CASE OF FLUORESCENT LAMPS UTILIZATION

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Due to the energy saving technologies implementation for the apartment lighting, inhabitants and organizations more and more use fluorescent (energy-saving) lamps, which allow economizing electric power to a great extent. Ukrainian government even forbid budget organizations to buy incandescent lamps making them use energy saving lighting tools this way.

At the same time some dangers caused by such implementations should be mentioned. For example, every fluorescent lamp contains certain amount of mercury – toxic metal, one of the waste products of the first class of danger with special

requirements for utilization. But producers and medical researchers assure that everyday use of such lamps is quite safe due to the insignificance of mercury amount revealed even in case of broken lamp bulb. Simple cleaning and ventilation can solve the problem here.

Another thing with utilization of great number of used lamps. Experts calculated the expected number of more than 500 kilograms of mercury reaching Ukrainian rubbish heaps every year. It is extremely dangerous because even barely noticeable doses of mercury in environment are enough to result in acute physical and psychical disorders.

Most frequently worked out lamps are thrown away with the solid everyday domestic waste. Public just not informed well enough about the harm of such lamps for environment after their exploitation. Most of the producers of energy saving lamps do not follow the requirements and do not inform their customers about danger of toxic gas vapors in their products.

In general Ukraine does not have developed enough conditions for management mechanism related to collecting and recycle of fluorescent lamps used by inhabitants. State administrations and private firms are obliged to return worked out lamps for utilization. The penalty for not doing this is up to 25 not-taxed minimums but inspections are held only twice a year and it is hard to control all the violations. Also the responsibility of producer and importer of mercury-containing lamps is absent in Ukraine.

We may use the international experience related to such utilization problem. The main two aspects here are the possibility for everyone to return dangerous waste for utilization and motivation for all stakeholders in this situation (producers, importers, sellers, customers, state and local administrations) for such possibility implementation and use. Our suggestion is to include some deposit to the price of the lamp that can be returned in exchange to the worked out bulb. This mechanism works in the best way only if public can get such deposits in the closest supermarket in their neighborhood. In other cases additional educational work (along with great penalties for violations of rules) can be used for motivation.

DEVELOPMENT AND MARKET IMPLANTATION ASPECTS OF INFORMATIONAL PRODUCT

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Informational product – result of intellectual labor, creativity, information organization and any information refine presented in material or immaterial form. The product created for the satisfaction of individual or collective need in particular part of this product or the product as a whole. Utility, economical interest, profit or any other useful effect from the product may vary depending of conditions of application, terms and technical level of deployment.

Informational good – market form of informational product.

Identity aspects of informational product:

- Minimal unit weight of material component in the price of the product. Usually the price of the material component is near to the cost price of the information carrier;
- Most part in product life cycle belongs to concept formation, demand analysis, presale debugging, refinement, market plantation;
- Most part of production price is formed by qualified personal salary;
- Informational product as a rule is an object of copyright;
- Orientation on the final consumer. Presale development and post-sale support and development passing with close cooperation with end user;
- Can be presented in the form of lasting service, not in the form of finished good;
- Utility of the product may wary depending of time, location, qualification of the end user.

Table 1- Main ways of optimization and development of the informational product.

	Producer	Consumer
Effect on the market counteragents	Get the maximum feedback from the end user to optimize the product the best possible way and to maximize its utility for the users; Search for the optimal market segment and target group of consumers.	Get maximum control on the process of product development and creation; Maximization of potential producers or suppliers.
Effect on the informational product	Get the maximum feedback from the end user and from the product itself; Maximum service and support possibilities, development and correction possibility; Minimization of production, supply and support costs.	Require the best possible satisfaction of primary qualities of the product; Maximum service and support possibilities, development and correction possibility; Possibility of product recycling and second-use.

Forms of informational product:

- Documented reference and supplemental information in all fields and spheres of activity, knowledge bases and data bases;
- Scientific researches, applied studies, “know-how“;
- Analytics and expert opinions;
- Informational product of massmedia and informational branches of economics – commercial advertising, PR products;
- Educational services and attached goods;
- Software of all kinds and types;
- Pieces of art, presented in material or immaterial culture;
- Online services and websites of any kind.

Success of the product of any kind depends on its utility for the consumer and its profitability for the producer. Types and kinds of promotion or market strategy are based on the balance between the boundaries of market parties. Both market parties (producers and consumers) are forming the market behavior strategy for the

information products. Market behavior strategy, tools and methods for the product optimization are formed on the two main roots:
1. Interaction between market participants – consumers and producers;
2. Market participants attitude to the product.
Methods of promotion for the informational products:

1. From the position of the producer – maxim optimization for the specific target group.
2. From the position of end user – direct participation in the product development, testing, production and marketing.

To the end users can be applied such instruments:

- Consumer should feel his own importance and involvement in the process of creation of the product, which will be consumed by the consumer himself;
- Product should be firstly created and put on the position as the "social product", the commercial nature of the product should appear on the later stages of product life cycle;
- On the stage of product's maturity it should take the position as the integral part of consumers' life style.

COMPETITIVENESS OF INDUSTRIAL ENTERPRISES IN THE LIGHT OF THE SOCIAL UTILITY CONCEPT

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The problem of enhancing industrial enterprises competitiveness is one of the main in management theory as its solution ensures the successful operation of business and competitiveness of the state. The category of "competitiveness" is linked with a number of factors for long-term and short-term economic development, such as: the spatial orientation of the enterprise; dynamic; systematic; self-sufficiency; uniqueness; hierarchic so on. However, the current stage of human development is characterized by significant sharpening contradictions between the laws of ecosystem evolution and features of economic systems operation of different hierarchical levels. Therefore, the factors that determine the competitiveness of enterprises should include environmental safety factor, which directly or indirectly linked with all functioning processes of the enterprise, and then – with all processes of its competitiveness providing. Achieving environmental safety is a priority of the national security policy.

In our view, competitiveness has an internal origin and is characterized as the naturally conditioned enterprise state and its development trend. As a result of the logical trajectory of development realization is formed backup power with respect to the enterprise potential. Backup power is the basis of competitiveness as a form of showing of the logical state of the enterprise at some stage of development in the external operating conditions. The main objective of the competitiveness providing process in view of environmental factors is creating an integral environmentally oriented system integrated into time and space, which requires the formation of conceptual components of competitiveness. In our opinion, the conceptual components of the enterprise competitiveness are its ontogenesis conditions and potentials for each life cycle stages of the enterprise. It is necessary to achieve research-based property

values of social and economic systems for the enterprise development. It is necessary to consider and explore the basic laws of organization to achieve these properties, their integration and synthesis into complex property of social and economic system – the competitiveness. Taking into account the above statements, the task of the enterprises competitiveness providing is transformed in providing of their viability as the ability to achieve a qualitatively new basis for long-term development based on the reproduction cycle of "environmental safety – competitiveness – economic security – long-term development – complex security". The enterprise is competitive in the long run if it provides for the formation of a qualitatively new value, which is a social utility. Social utility has two components: competitive product and size of unrealized environmental and economic loss.

To form external stable basis of competitiveness as part of the social utility concept, from our point of view, it is necessary to provide the complex business processes ecologization. As a result of ecologization will take place removed ecological and economic loss. Removed ecological and economic loss consists of the value of economy of materials, raw materials, energy, unrealized amount of externalities (emissions, discharges of pollutants into water, solid waste placement), the volume of waste products. This unrealized loss is formed in the production and utilization spheres. In the process of product consumption is essential its quality, efficiency, consumer safety, optimal price and an adequate level of service. If the above priorities in the sphere of consumption are realized at equilibrium conditions on the market, such products are competitive, and there is value. Based on the considered part of social utility, its value can be determined by the formula, which is the target function of ecologization model of enterprises in the context of their competitiveness:

$$S_{value} = f(\sum_{i=1}^{N}(x_i * p_1)) + f(\sum_{j=1}^{M}(y_j * p_2)) \longrightarrow \max$$

where S_{value} – the size of social utility, uan.

x_i, i = 1, ..., N – factors of unrealized ecological and economic loss, condition units;

y_j, j = 1, ..., M – factors of product competitiveness, conditions units;

p_1-cost equivalent of loss factors;

p_2-cost equivalent of product competitiveness factors.

The concept of social utility provides ecologization of value chain. Below is presented the sequence of steps of value chain ecologization: 1) presentation and justification of innovative product life cycle concept, analysis of the possibility of environmental factors taking into account on the stages of production, consumption and utilization; 2) inventory of all parts of internal business processes and infrastructure for their implementation criteria of direct and indirect impact on the environment; 3) initiating of technologies registry based on ecological passport of the enterprise and environmental analysis of technologies, their components as well; 4) assessment of technological effects (productivity) by the amount of potential danger (unrealized, potential, disposed of environmental loss), evaluation of dispersion of such influence. It is also important to evaluate feedback and indirect impacts; 5) detection of all conditions that characterize the possibility of realization of identified potential environmental hazards, identification and assessment of operation risks in terms of three main aspects: environmental, social and economic; 6) extent of risk, strategic analysis ─ "benefit- costs" and register all the technologies that can reduce environmental risk to an acceptable level. Optimal choice technologies; 7) formation a

set of technical and technological, organizational, economic, technical and ecological, social and economic measures in accordance with prescribed and regulated by the state level of acceptable risk.

Thus, the result of the realization of ecologization process of the value chain the enterprise creates social utility, which maximizes individual and social utility. The new concept of value is fundamental in achieving industrial enterprises competitiveness, taking into account environmental factors.

SUSTAINABLE DEVELOPMENT IN INFORMATION ECONOMY

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One of the first apologists of the Sustainable Development (SD) conception Herman E. Daily defines the term of "sustainable development" as harmonic, balanced, non-conflict progress of whole Earth civilization, group of countries, regions, as well as separate countries of our planet according to scientifically reasoned plans (methods of the system approach), when during steady innovative intensive (not extensive) economic development of countries are simultaneously positively solved the issues about environment protection, reduction of exploitation, poverty, and discrimination of both individuals and whole nations or ethnic, racial, gender minorities. [1]. Sustainable development is managed development. The basis for its management is system approach and modern informational technologies, which allow modeling of the different variants of development directions, predict their consequences and choose the most optimal. However, because extreme complexity of socioecological system and lots of uncertain parameters it is hard to conduct optimal management. It needs significant intellectual efforts of scientific community. Nevertheless, there are few complex programs in this direction; more attention is paid to concrete problems, which solution doesn't influence the main task of management of social parameters in order to reach sustainable development. It could be conceded that such kind of research is hindered by uninterested financial-industrial groups.

One of the interpretations of economic theory is the science, which aims to achieve a balance between the ever-increasing human needs and limited natural resources. As we see here the concept of sustainable development is close to the classical definition of the economy. It is just supplemented by the goal of environmental protection. Closer to the SD is the concept of sustainable economic growth.

Although there are two contraversional approaches in economic dynamic researches – linear (progress, stadial development) and cyclic (progress-regress, development-crises) ones – in this discourse economic development can be analyzed as an ascending phase of cycle, desired future state of human needs satisfaction with minimization of next crises. The main engine of economic progress (as a phase of the cycle) is to intensify the areas that currently dominates (eg, manufacturing). That is probably why the stresses are put on information production extensifications, which

dominates in modern economic theory concept of information economy. Strict scientific definition of this concept does not exist, so we propose the following: Information economy - is the economy in which most of the GDP is provided by producing, processing, saving and distribution of the information and knowledges, and more than half of employees participate in this economic activity. The question is whether information economy can resolve the issue of sustainable (equitable harmonious) development. The answer lies in the direction of produced information to be correlated with a vector of sustainable development. After all, there is another, less stressed side of information medal such as growing inequality (whereby not only economic but also environmental one, when, for instance, toxic materials production is located in the less developed countries etc.), toxins from information producing, saving and accumulation equipments, manipulative political ideologies (including possibly the Kyoto Protocol), the cultural alienation of whole societies, the families disintegration, psychological disorders of children, etc.

There is one more approach – The Knowledge Economy (Bazhal) [2]. If this area dominated (even at the stage of wild accumulation) it might intensify previous (informational) sphere (due to conception of technological waves by Toffler, Khmelko [3] and many others). If the production and quality of new product – the Knowledge – increases (due to the competitive environment), it will be able to reduce the extensification of this toxic pollution, which are the integral part of modern today information economy!

In addition to the balance of consumption-production (when production is viewed not as an economic aim in itself, and meets the required satisfaction of needs), the concept of sustainable development should also take into account the general balance of all economic sectors including regionally balanced context. If the need in information becomes socially dominant one, it does not mean that other human needs disappear. It can only shows that the share of social time spending on their satisfaction decreased, so people can use this technologically economized time to satisfy higher needs (due to Maslow pyramid of needs) - "spiritual" ones: cognitive, esteem, self-actualization, cultural. Here “information age" can be seen as the initial stage, the beginning of the ascending phase of the new "spiritual”, social and cultural ideational (not sensate) cycle (in terms of P. Sorokin) [4] ,when the material sphere ceases to dominate in future society.

It because information in its pure form (not as material mediator, or saver) has a great ability when dividing. If an apple or a piece of wood is splited, for example, 5 parts - each will receive according to 1 / 5 of an apple or a wood. But if information (for instance music or “It will be raining tomorrow”) is devided into 5 people, then each of them will get 1 (whole part). And this revolutionary aspect should be the main accent although it does not fit the traditional interpretation of economics. Real essence of the information society requires to be latently reunderstood (in T. Parsons’ AGIL scheme conception [5]) and the Sustainable Development approach should be transformed into Knowledge Economy sphere.

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ENVIRONMENTAL COMPONENT OF THE MARKET VALUE ESTIMATION MODEL

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In recent years business increasingly has been viewed as a major cause of social, environmental, and economic problems. Companies are widely perceived to be prospering at the expense of the broader community. Even worse, the more business has begun to embrace corporate responsibility, the more it has been blamed for society's failures. A big part of the problem lies with companies themselves, which remain trapped in an outdated approach to value creation that has emerged over the past few decades.

Companies must take the lead in bringing business and environment back together. The recognition is there among sophisticated business and thought leaders, and promising elements of a new model are emerging.

The solution lies in the principle of shared value of business, which involves creating economic value in a way that also creates value for society by addressing its needs and challenges. Businesses must reconnect company success with its influence for environment.

More and more companies are discovering that proactive environmental programs make significant contributions to profitability and competitiveness. So, business value should include environmental component.

To start with, we investigated relation between the multipliers “market value / book value” (MV/BV). To our point of view, this multiplier is the best for our model.

Multiplier “market value / book value” (MV/BV) is affected mostly by the following variables:

- *Own business profitability;*
- *Financing ratio;*
- *Current liquidity ratio;*
- *Assets rotation ratio.*

In particular, increase of Current Liquidity Ratio affects negatively on the “market value/ book value ratio” (MV/BV). Other variables’ increase affects positively on the MV/BV ratio.

The variables that are used in the model of the market value estimation of business according to the market approach.

1. *Own business profitability.*

$$Pob = \frac{NI}{OE},$$

where *NI* – net income of enterprise;
OE – owners equity of enterprise.

This financial index is the main criterion, which reflects the profitability of the enterprise. The P_{ob} index is very important, because this criterion shows how efficiently a company uses its own capital.

2. *Financing ratio.*

$$FR = \frac{DC}{OE},$$

where *DC* – debt capital of enterprise;
OE – owners equity of enterprise.

This ratio reflects financial risks that arise at the enterprise. Financing ratio shows what part of enterprise activities is financed by own funds, and which - through borrowing.

3. *Current liquidity ratio*

$$CR = \frac{CA}{CL},$$

where *CA* – current assets of enterprise;
CL – current liabilities of enterprise.

Current liquidity ratio characterizes the sufficiency of working assets and financial stability of the company (determines short-term risk).

4. *Assets rotation ratio*

$$ARR = \frac{NP}{AAV},$$

where *NP* – net profit of enterprise;
AAV – average assets value of enterprise.

Assets rotation ratio characterizes the effectiveness of using all existing resources and reflects how many times a year a full cycle of production and circulation is done or how many product units are brought by each unit of assets.

The OLS model of the market value estimation of business according to the market approach:

$$MV/BV = a_1 \times CR + a_2 \times ARR + a_3 \times FR + a_4 \times Pob$$

For practical implementation of the model we choose engineering industry enterprises according following criteria:

- Area of activity – engineering;
- Annual net income is more than 1.5 billion UAH;
- Profitable activity during certain period;
- Ownership - Open Joint Stock Company.

So, the next step for our research will be the comparison of multiplier "market value / book value" according to our model with spending on environment. The result we are looking for is the positive correlation between two indicators. In this case it will be possible to implement our model not only for market value estimation, but also for ecological-economic grounding of engineering industry enterprises activity.

ENVIRONMENTAL IMPACTS OF RESOURCE USE PATTERNS AND WASTE MANAGEMENT IN THE EUROPEAN UNION

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The EU Member States depend strongly on natural resources to fuel their economic development. Past and current production and consumption patterns have underpinned substantial growth in wealth across Europe. However, concerns about the sustainability of these patterns are mounting, particularly regarding the implications related to resource use and over-use.

In the EU resource use and waste generation continue to rise. However, there are considerable national differences in per person resource use and waste generation, driven mainly by varying social and economic conditions as well as different levels of environmental awareness. While resource extraction within Member States has been stable over the past decade, dependence on imports is rapidly increasing.

Environmental problems associated with the extraction and processing of many materials and natural resources are shifting from Europe to the respective exporting countries. Consequently, the impacts of consumption and resource use from European region on the global environment are increasing. As resource use in Europe exceeds local availability, Europe's dependence on resources from elsewhere in the world raises questions about security in the supply of resources for the EU in the long term. It also carries a potential for future conflicts.

European economies are creating more and more wealth from the resources used. Resource efficiency in the EU Member States has improved over the past two decades through the use of more eco-efficient technologies, the transition to service-based economies and an increased share of imports.

However, differences in resource efficiency across Europe are substantial, with a factor of almost ten between the most and least resource-efficient EU economies. Factors that affect resource efficiency include the technological level of production and consumption, the share of services and heavy industry, regulatory and tax systems and the share of imports in total resource use.

The magnitude of the differences between countries points to significant potential for improvement. For example, resource efficiency in EU-12 is only about 45% of that in the EU-15. The ratio has changed little over the past two decades, besides, improvements in the EU-12 were mostly recorded before 2000.

The growth in the productivity of resources over the past forty years has been significantly slower than that in the productivity of labour (and sometimes of energy too). While partly this is a result of the restructuring of economies, with a growing share of services, it also reflects the fact that labour has become relatively more costly compared with energy and materials, partly as a result of prevailing tax regimes.

Addressing resource productivity and energy efficiency, substituting non-renewable with renewable resources, and addressing resource efficiency gaps between EU-15 and EU-12 Member States can provide opportunities for increasing European competitiveness globally.

Waste management has been a focus of EU environmental policies since the 1970s. Such policies, which increasingly require the reduction, reuse and recycling of

waste, are contributing to closing the loop of material use throughout the economy by providing waste-derived materials as inputs for production.

More recently, life-cycle thinking has been introduced as a guiding principle of resource management. Environmental impacts are considered across the whole life cycle of products and services to avoid or minimise shifting the environmental burden between different phases of the life cycle and from one country to another, using market-based instruments where possible. Life-cycle thinking affects not only environmental, but also most sectoral policies - by making use of materials and energy from waste, decreasing emissions, and re-using already developed land.

European waste management builds on the principles of a waste hierarchy: preventing waste; reusing products; recycling; recovering (including energy through incineration); and finally disposal. Waste is therefore increasingly also seen as a production resource and a source of energy. However, depending on regional and local conditions, these different waste management activities may have differing environmental impacts.

The EU is committed to reducing waste generation, but is not succeeding. Trends for those waste streams for which data are available indicate the need to reduce the generation of waste in absolute terms to ensure further reduction of environmental impacts.

Good waste management reduces environmental impacts and offers economic opportunities. It has been estimated that about 0,75% of EU GDP corresponds to waste management and recycling. The recycling sector has an estimated turnover of EUR 24 billion and employs about half a million persons. The EU has around 30% of world share of eco-industries and 50% of the waste and recycling industries.

A life-cycle perspective on natural resources addresses several environmental concerns related to production and consumption, and ties together the use of resources and the generation of waste. While both resource use and waste generation have distinct environmental impacts, the two issues share many of the same driving forces - largely related to how and where goods are produced and consumed.

The EU brings together waste and resource use policies through the Thematic Strategy on the prevention and recycling of waste and the Thematic Strategy on the sustainable use of natural resources. Furthermore, the EU has set itself a strategic goal of moving towards more sustainable patterns of consumption and production, with a view to decoupling resource use and waste generation from the associated negative environmental impacts and becoming the world's most resource-efficient economy (6th Environmental Action Programme).

INSTITUTIONAL ASPECTS OF INNOVATIVE SUSTAINABLE DEVELOPMENT

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This research aims to define the main factors of social capital intellectualization and to find possible ways to verify their influence on sustainable innovative development of society towards Knowledge Economy formation at state level. Our main hypotheses are the following. Firstly, current Innovation situation in the country

may be explained by its Research and Development expenditures in the past. Secondly, increase of R&D expenditures does not result in proportional increase even in future innovation result. Thus, governmental support of fundamental R&D activity is essential for future innovation on the regular bases.

For the practical support of our hypothesis about intellectual institutions development the Ordinary OLS regression was chosen due to its simplicity. Different research and development teams and organization plays the role of innovative institutions representatives here. So, expenses on R&D on the state level can be used as macroeconomic indicator of their activity (independent variable). Results of such innovative projects (dependent variable) to our opinion for the Knowledge Economy may be presented by the Innovation component of Knowledge Economy Index, calculated according to the methodology of Knowledge for the Development project of the World Bank.

Data related to state level expenses on R&D research and development in 34 European countries (in % of GDP) was taken from the Science and technology component of World Development Indicators 2010 [1]. Information about innovation situation indicators was taken from international data surveys of Knowledge Economy Index evaluation of the International Bank for Reconstruction and Development [2].

The main selection was made between function types of correlation: linear, logarithmic, power function or exponential. Coefficient of determination (R^2) was chosen as the main criterion. Due to gathered data we compared different variants of pair correlation and gave the preference to the one with the greatest R^2. So, among all the variants we decided to use the power function type of correlation. As a result, we obtained the following data distribution (see Figure 1) and following power function type regression equation:

$$I_{KEI} = 7,3761(F_{R\&D})^{0,2434} \quad (1)$$

where I_{KEI} is the Innovation component of Knowledge Economy Index; $F_{R\&D}$ – state level expenses on Research and Development (% of GDP) during the 2000-2007 period ; a, b – regression coefficients.

With Coefficient of Determination $R^2 = 0,8046$ we may say that correlation is sufficient and first part of our hypothesis is supported by data. The following model and results obtained from practical data of European countries allows making the following conclusions.

First of all, $R^2 = 0,8046$ means that about 80% of nowadays situation with royalty payments and receipts (measured in US$ per person), technical journal articles (per million people), patents granted to nationals by the U.S. Patent and Trademark Office (per million people) may be explained by the state aggregate expenses on R&D (% of GDP) of the previous period (in this case 2000-2007).

Second, due to the data distribution on the graph and character of obtained equation – regression is positive but not linear. So increase in research expenses does not result in proportional increase of KEI Innovation component.

Third, due to the power function type of obtained regression equation and the value of its regression coefficient b = 0,2434 we can see that 1% relative percentage increase of the aggregate expenses on R&D level has constantly low effectiveness of 0,24% respective increase of percentage change in KEI Innovation component level. At the same time the absolute increase of aggregate expenses on R&D (still in % of GDP)

is more effective in the area from 0% to 1% of GDP and becomes lover on greater levels of 1% - 4% among real-life observations.

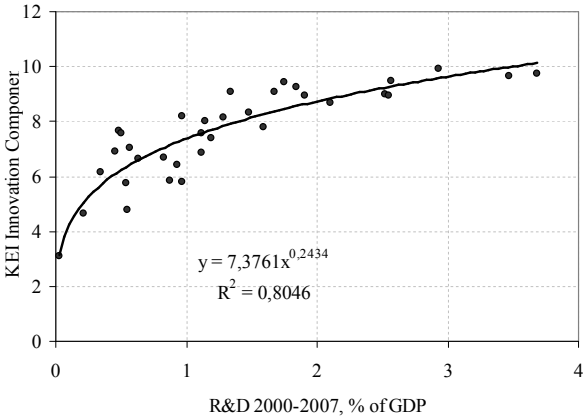

Figure 1 - Influense of 2000-2007 R&D Fuding on KEI Innovation Component of 2009

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LAND POLLUTION: CAUSES AND WAYS OUT

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Land pollution is the degradation of Earth's land surfaces often caused by human activities and their misuse of land resources.

Tones of domestic wastes are dumped every day. Since people do not follow proper methods for the disposal of such wastes, it leaves the places look dirty and makes them unhealthy.

There are several causes of land pollution:

- increase in urbanization;
- increase in agricultural land;
- domestic waste;
- agricultural activities;
- industrial activities.

Land pollution results in harmful effects on people, animals and plants. It indirectly affects the respiratory system of human beings. Breathing in polluted dust or particle can result in a number of health problems related to the respiratory system.

Skin problems are often diagnosed due to land pollution. Land pollution has been found as one of the leading causes for birth defects. Pregnant women living in unhealthy and dirty environment can incur breathing problems and a number of diseases, which may affect the health of the baby as well. Land pollution has serious effect on wildlife. Flora, which provides food and shelter to wildlife, are destroyed. Land pollution often disrupts the balance of nature, causing human fatalities.

The main effects of land pollution are as follows:

- exterminates wild life;
- acid rain kills trees and other plants;
- vegetation that provides food and shelter is destroyed;
- it can seriously disrupt the balance of nature, and, in extreme cases, can cause human fatalities;
- pesticides can damage crops; kill vegetation; and poison birds, animals, and fish. Most pesticides kill or damage life forms other than those intended. Some life forms develop immunity to pesticides used to destroy them.

To reduce land pollution the next steps are to be taken:

- Government should provide waste disposal system especially for toxic wastes.
- We need to encourage organic farming.
- Proper garbage disposal should be organized.
- We need to encourage efficient utilization of resources and reducing wastage.
- We need to recycle garbage.
- We need to reduce usage of herbicides and pesticides.
- We need to avoid over packaged items.

THE IMPORTANT ROLE OF ENVIRONMENTAL PROTECTION

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It is very obvious to everyone that the above topic has been grimy in diverse ways such as water pollution, deforestation etc due to negative externalities which gravely calls for apprehension.

Equally, as a result of this distress, the call to environmental protection is of paramount importance. Man need to come out with swift and outstanding proposed solutions and device measures on how these proposed solutions can be achieved on protecting the environment.

We firmly believe the companies that manufacture products containing dangerous ingredients have a responsibility to develop environmentally safe products. Yes it may be difficult and expensive, but not impossible. Weather-Bos™ is one example of a manufacturer that chooses to use environmentally safe ingredients, regardless of the additional cost.

We do not envy the E.P.A.'s job of monitoring manufacturing, sale, use and disposal of the thousands of products society uses. Yet every year thousands of products are registered with the E.P.A. that contain dangerous ingredients which are then sold and used, ultimately ending up in local disposal sites. I believe the E.P.A. must take a closer look at products which are not environmentally safe.

There currently exists an unfair economic advantage for the companies who use dangerous ingredients in their products. For it is often less expensive to manufacture a product using inferior ingredients while achieving minimum results to that of a more superior, but environmentally safe product. The E.P.A. has a responsibility to either force these companies to produce environmentally safe products, or TAKE THEM OFF THE MARKET! Otherwise, the manufacturers who responsibly choose to spend the extra money and develop safe products are at an enormous disadvantage. (It is interesting to note that in our industry, the products which use the most dangerous poisons often enjoy the highest profit levels.)

Finally we are reminded that ultimately it will be we, the consumers, who decide to solve this problem. As a market-driven economy, there can be no supply without demand. By simply refusing to purchase and use the products that contain dangerous ingredients, we, the buying public, can force these companies to develop products that are environmentally safe and thus avoid the toxic dumps of the future. This will not come easy, nor will it be cheap, for it is often more expensive to make an environmentally safe product. However, we as a society must be willing to pay the extra price to ensure the safety of our families, communities and our land.

No matter how long it takes, no matter how great the cost - we, the people along with the governmental agencies - have no choice but to mandate the solutions needed or they will continue to poison the beautiful land we live on. Eliminate the toxic dumps!

As a final point, I am equally a protagonist to this call because to me, environmental protection is more important than anything else. While there, I will present research documents on how the situation can be arrested as part of my own contribution to the above hazard.

METHODS OF ENVIRONMENTAL PERFORMANCE STIMULATION

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Management is the social phenomenon for all spheres of human life. People have already got used, that it is possible to use mind, technological developments, other people or natural resources to achieve the aims. It very comfortable, because, firstly, scientists proved that human brain is able to generate ideas actively, secondly, technologies are actively developing, thirdly, population of the Earth is increasing too fast, and natural resources are too expensive, and that's why they are inaccessible for a lot number of people.

Scientists have estimated that for the most pessimistic forecasts the oil left for 20 years, gas and coal for 200 years, but for the most optimistic - 50, 70 and 400 years. Today the deficit of water in Ukraine is 4 billion m3. Over the past 100 years anthropogenic activity has caused great damage to animals and plants. Today the "Red Book" of Ukraine is included more than 800 species of plants and animals threatened with extinction or destruction.

At the UN Conference "Environment and Development" in Rio de Janeiro, Ukraine was signed the Convention about the conservation of biological diversity. The Law of Ukraine "On the guard of natural environment" will largely assist the implementation of requirements of this Convention. However, despite the existence of

environmental regulations, companies do not want to use them because they are not advantageous. This is the major problem. Another reasons is the difference between the time of the contamination and the moment of reimbursement of losses. For example, over-fishing or excessive felling of wood will strongestly affect economy of industry in the future, but this year may even give a profit. Contamination of air, water and foodstuffs can affects our health in a few years or decadec. But people worry about present day, than about future.

To solve this problem, it's advisable to such conditions for enterprises when they would be forced to engage the nature protection or financially interested in the implementation of the measures in this field. It can be done by establishment of new punishments from reprimand to imprisonment or removal the leaders from work and payment of fines by an enterprise. However, this way is expensive and ineffective, as requires the permanent control and the significant number of controllers. Besides the administration is unconnected with the material personal interest and can't make the enterprise behave constantly, effectively and with care to the environment. Considerably more effective is a method of economic stimulation. The state by the various levers (prices, payments, tax deductions and punishments) makes observance of nature protection legislation more advantageous materially and profitable, than it's violation. However the economic methods are not increased by a direct compulsion in the most essential ecological problems and that's why not always provide necessary quality level and the terms of realization of nature protection activity.

Therefore, best results can be achieved with reasonable combination of economic interest and strict control.

PROTECTION OF EXCESSIVE EXPLOITATION

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The environmental problems seem to be key challenges of the XXIst century. In the previous years the world politics and every person in general was occupied with politics and wars. But with the development of new technologies, with the increasing number of plants and factories all kind of manufacturing in general, a huge shift was made towards the environmental issues. The terrestrial, freshwater and marine environments have declined in virtually all aspects. New developments in industry and manufacturing were root causes of environmental degradation over the past three decades. The rapid growth of population, urbanization and globalization are the driving force of the environmental problems. However, the challenge is extremely high not only for the well-developed regions, but in poor parts of the world as well. Such environmental problems as land degradation, deforestation, declining of marine resources and water scarcity of deteriorating of water and air quality are on the priority list in Africa. Despite, Africa possesses wealthy natural resources many Africans live in poverty unable to benefit from the African wealth because of uneven distribution across the continent and partly because of African complicated history over the past 50 years after the decolonization. Africa has a vast majority of poor states and regions, and poverty is a major reason and consequence of the environmental degradation. The present paper ascertains the small research on the environmental issues in Africa. In the

work I will analyze one Africa region, demonstrating its problems in the environment. At the end I will point out the root cause of these problems and suggest possible ways out, if there are any.

In general a vast majority of countries in Africa depend more on their natural resource base for economic and social needs than any other region in the world. Thus, two-thirds of sub-Saharan Africa's people live in rural areas and rely on agriculture and other natural.

In today's environment Palm Beach County alone faces many environmental problems, which can turn disastrous if not taken care of. Included in these problems are air pollution, water

Contamination and urban explosion. Air pollution is a major factor threatening our health and our environment. Due to the pollutants that circulate in the air, many people can come into contact with cancer causing gases. Atmospheric contaminants are derived from human practices, such as gas from automobiles, factories, and even chimneys. Pollutants do not only cause damage to our health, but they cause damage to the health of plants and animals as well. Sulfur dioxide and nitrogen oxide cause damage to leaves of crop plants and trees when they enter leaf pores. Exposure of leaves to air pollutants can also break down the waxy coating that helps prevent excessive water loss and damage from diseases, pests, drought, and frost.

THE ROLE OF YOUTH IN SUSTAINABLE DEVELOPMENT

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Changes in world trade and economics have had major impact on the lives of the citizens of the Caribbean Community. Some of these changes have resulted in the erosion of trade preferences, loss of assured markets (both domestic and foreign) and invasion of cultural forces. To that extent the Caribbean has received increased pressure to compete in all productive sectors and diversify its economies. As these unprecedented challenges of globalisation confront the region, it is becoming increasingly urgent to intensify the integration process in order to achieve sustainable development and an improved standard of living for all its peoples.

The effects of globalisation have created a consciousness of the need to deepen the active participation of the Region's population and the Diaspora in regional integration efforts. In this regard, the governments of the Caribbean Community in 1992 adopted a Charter of Civil Society to assist in elevating the goals of and commitment to the principles guiding the Community. The Charter recognizes the need to include Civil Society in the decision-making and implementation of the regional integration process. The adoption, made at aSpecial Meeting in Port of Spain of the Heads of Government of the Caribbean Community, in 1992, was in response to a recommendation from the West Indian Commission in its Report, "A Time For Action".

The voice of the youth has thus been recognized as an important dynamic in the evolution of these regional strategies and youth involvement in the process of seeking solutions is increasingly considered vital because the decisions made now will have an effect on the decisions of the future leaders. Viewed as catalysts of the development

potential of the Caribbean, youth participation has been increasingly reiterated as critical in the discourse on unity amongst

Caribbean countries. The CYA Programme envisions that in ten years it will be widely recognized for advocating for and advancing CARICOM goals of sustainable regional development and Caribbean unity at the national, regional and international levels.

A STEP TOWARD LINKING ECOLOGY AND ECONOMICS

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Economics and ecology are often presented as opposing disciplines. Both fields have strengths and weaknesses. A new transdisciplinary field, ecological economics, attempts to bring together the strengths of both disciplines with a vision for a sustainable future. In this paper, we focus on one particular concept championed by ecological economists, natural capital. In particular, our interest is on the institutionalization of this concept through the United Nation's Satellite System for Integrated Environmental and Economic Accounting (SEEA).

SEEA is an international convention that incorporates natural resource accounting as a complement to the traditional System of National Accounts (SNA). In the case of boreal forests, the stocks and flows of forest resources can be assessed to determine prospects for sustainability. To provide a context for how natural resource accounting may be applied to boreal forests, we review the origin and purpose of natural resource accounting, summarize several cases in which natural resource accounting has been applied, and present an example of stocks and flows from Michigan's (United States) boreal forest resources.

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 it is synonymous with finance. That is, financial decisions (i.e., profit, the "bottom line", etc.) are confused with the much broader equity and efficiency concerns that provide the theoretical underpinning for economics.

Natural resource accounting is being adopted in many countries; some progress has been made in the United States, but there is significant Congressional resistance (United States Department of Commerce, Bureau of Economic Analysis 1994, Rylander 1996). There is growing recognition of the role of natural systems in providing consumptive natural resources, providing nonconsumptive natural resources, and assimilating waste material. However, the latter two roles receive little attention in aggregate measures of a nation's wealth (e.g., gross domestic product). In recent years, we have increased the monitoring of human use of natural systems, and we are now starting to institutionalize the monitoring into our accounting systems.

Ecological economics is distinguishable from neoclassical economics primarily by its assertion that the economy is embedded within an environmental system.

Ecology deals with the energy and matter transactions of life and the Earth, and the human economy is by definition contained within this system. Ecological economists argue that neoclassical economics has ignored the environment, at best considering it to be a subset of the human economy.The neoclassical view ignores much of what the natural sciences have taught us about the contributions of nature to the creation of wealth e.g., the planetary endowment of scarce matter and energy, along with the complex and biologically diverse ecosystems that provide goods and ecosystem services directly to human communities: micro- and macro-climate regulation, water recycling, water purification, storm water regulation, waste absorption, food and medicine production, pollination, protection from solar and cosmic radiation, the view of a starry night sky, etc.

There has then been a move to regard such things as natural capital and ecosystems functions as goods and services.However, this is far from uncontroversial within ecology or ecological economics due to the potential for narrowing down values to those found in mainstream economics and the danger of merely regarding Nature as a commodity. This has been referred to as ecologists 'selling out on Nature.There is then a concern that ecological economics has failed to learn from the extensive literature in environmental ethics about how to structure a plural value system.

Ecologists and economists work together to identify and place values on such services for society. Where multiple management and conservation actions are being considered, economic expertise helps to identify the approach that achieves desired conservation and management goals while minimizing societal costs. Alternatively, economics provides a decision-making framework within which to maximize conservation benefits of an environmental policy given a fixed allocation of resources.

The current SNA does not adequately reflect the depletion and degradation of natural resources and the environment. For example, defensive expenditures incurred by industry are treated as intermediate expenditures, whereas those undertaken by households and governments are generally treated as final expenditures. In this latter context, defensive expenditures are treated as economic growth. Although depreciation of human-made capital is deducted from gross national product to arrive at net national product, no allowance is made for the depletion or degradation of natural resources and the environment (El Serafy and Lutz 1989). Part of this may be conceptually viewed as the depreciation of natural capital. Finally, many of the goods and services provided by the environment and natural resources are not traded in the markets, and therefore are not reflected in the SNA.

As we have shown, the NRA framework has potential for use in ex post and ex ante analyses. Ex post analysis is consistent with the monitoring/accounting approach proposed by SEEA. However, where threats of depletion are a concern (as may be the case for some boreal forest resources) and inventories are infrequent, ex ante analyses such as the one presented for Michigan may be appropriate. Moreover, NRA refocuses our traditional analyses to place more emphasis on the condition of our stock, our natural capital. As a result, NRA helps to bridge the gap between economics and ecology.

INNOVATIVE RABBIT BREEDING IN THE CONCEPT OF SUSTAINABLE DEVELOPMENT IN UKRAINE

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Today the importance of economic development under the concept of sustainable development is the matter of world's concern. The concept of sustainable development is guided by many principles, but in our view the fundamental principle is the quality of life, where food security plays an enormous role.

In Ukraine there are many problems associated with food security. Ukraine had to face a number of great problems trying to provide the food security during the transitional period. Due to the research done the main problems in Ukrainian agricultural development are unbalanced production structure of agricultural goods, inefficient production, inelastic demand on food products, great number of adjoined to the house farms. The matter is that Ukraine has huge agricultural potential in many spheres and it's not normal that only some of them are developing while others are underdeveloped such as animal breeding. As the result Ukrainians suffer much from consuming less meat than it's required by health physiological norms. This happens because of low income of Ukrainians and they just can't afford quality meat products.

Though bird meat is cheap it can't fulfill the need of quality animal protein of a person. Beef or pork are expensive; the major volume of this types of meat are imported to Ukraine while the cattle stocks decrease; and even investments in this field couldn't provide the result needed because that would require a lot of time and money invested in inefficient production.

So the best way to help in solving these problems in Ukraine is to imply different kinds of production projects of agricultural goods and to improve the situation with agricultural infrastructure all over the country. These productions projects must be effective, environmentally friendly, must require small incremental investment, and considerably rapid payback that is most appropriate for investors in unstable conditions of the investment climate in Ukraine, and must offer the product that is not widely presented in the Ukrainian market.

The project that meets all the requirements of sustainable development and ones, that is listed above is the project of innovative rabbit breeding.

The proposed project regard production of rabbit meat and fur, as well as selling of delicacy liver, by-products, biohumus and breeding livestock by improved and optimized technology of acceleration rabbit, that provides a return on more than 200% for the 7 years, that is significantly higher than the profitability of existing techniques.

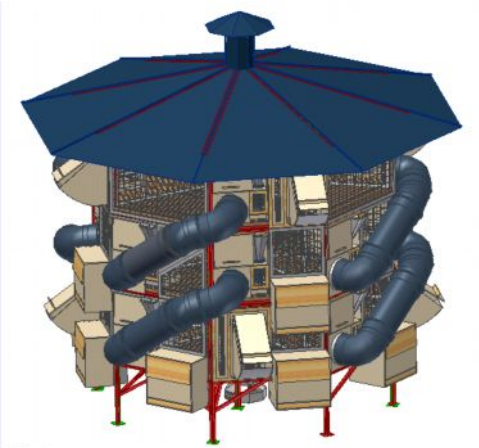
By offered technology rabbits are grown in purely ecological conditions without any bio-additives and hormonal growth stimulants. So the consumption of such "pure" meat can considerably improve health, immunity, enhance vitality, and the level of life of population consequently. And this is a waste free production.

Rabbit breeding is a promising branch of animal industry. Rabbits differ in multiple pregnancy and early maturity. The main difference from conventional livestock - is the simplicity of use and high profits.

At the moment the market of rabbit meat and by-products is on the stage of developing. The Ukrainian market is occupied by only 15-20 per cent. Due to its

qualitative characteristics rabbit meat have high demand but low supply. For example, in neighboring Russia, government program of supporting the rabbit production.

Acceleration rabbit breeding is the upgraded technology of growing rabbits in special conditions. Main differences of accelerated rabbit from the ordinary are next: he does not get sick, it is rapidly growing and very prolific, he has fur, which is called mikraksel, that is highly valued, he has no odor, accelerated rabbit meats taste like deli, environmentally friendly and has healing properties.



Pic.1 Complete view of the innovative mini-farm

We propose to breed accelerative rabbit race in an innovative mini-farms on adjoined to the house farmland (pic.1). Mini-farms takes into account the physiological needs of rabbits in the best way, creating ideal conditions for their growth.

It is highly useful point in Ukraine where the cost of labor is low is that the mini-farm does not require high material costs, but require greater complexity comparing with the industrial plant.

Proposed construction of a farm is similar to Mikhailov's mini-farms at the general points but at the same time proposed project has innovative technological and organizational improvements over the classic accelerated rabbit breeding in Mikhailov's mini-farm. Proposed enhancements will allow:

- to reduce the complexity of the production;
- to reduce the cost of building a mini-farm and to use land much more efficient (round-shaped farm, giving more space at less material costs);
- to increase the number of cycles of growing rabbits, and, accordingly, the turnover of funds;
- to improve conditions of rabbits detention;
- to enable active movement of fattening rabbits between the storeys, which allows to gain muscular and not fat mass, thus improving the quality features of both meat and the total weight of rabbit;
- improving the design of the breed sheds (rabbits are hiding so that the doe rabbit while getting into the breed sheds is unable to trample animal yield, which significantly reduces the risk of mortality).

Calculation showed that if implying these technology in the complex of 8 mini-farms on the adjoined to the house land we'll need 88000UAH, 13.5 month of implementation period, payback of the project 18.5 months at a price of realization 70 UAH (which is the market price on rabbit meat) and 3.2 years at a price of 30 UAH (which is socially aimed price).

So project shows good financial stability and implementation of the proposed technology can improve the critical situation in Ukrainian agriculture and create jobs.

ENVIRONMENTAL AND ECONOMIC SECURITY IN A NATIONAL PERSPECTIVE

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Research advisor – Yulia Polikarpova

The independence of Ukraine and building of an open democratic society and market economy have revealed importance of the national security of Ukraine. National security is generally defined as government protection of vital interests of individuals, society and the state from internal and external threats; a condition essential for preserving and enhancing the spiritual and material values.

A key component of the national security of Ukraine is economic security. If economic security is provided, the state has a possibility of creating and developing conditions for substantial development, decent life and welfare of its residents. Most scholars consider that the components of economic security are foreign-trade, scientific, technical, financial, social, ecological, industrial, energetic, population, food, and criminal ones. In our opinion, current ecological situation in Ukraine makes us change such attitude. Environmental and economic security should be seen as equally important.

Environmental security is defined as ecological conditions that guarantee prevention of environmental degradation and various risks to human health.

The objective of this research is to analyze interdependency of environmental and economic security of a country.

On the one hand, ecological condition of the environment directly depends on economy. In solving the problem of environmental security economic component is extremely important.

Many environmentalists state that economic growth causes environment pollution. It happens because production process can only transform the natural resources; it can't utilize them completely, because a substantial part of them returns to the nature in the form of wastes. The higher is the level of economic development the more wastes and trash the environment will have to swallow down and decompose. Due to developed industry (for example, in such regions of Ukraine as Donetsk, Dnipropetrovsk, Kyiv, Lugansk and Zaporizhzhia) the anthropogenic pressure on the environment increases. In order to overcome consequences of environmental disasters huge amounts of money are spent, but they could be used for investment purposes and economic development.

The society where consumption has become a key value means satisfying inessential needs and unnecessary wants. It does not matter what economic growth is achieved, if this is done by wasting natural resources, polluting the environment and causing global changes in climate. That's why not only environmentalists, but even some economists believe that economic growth should be limited to some extent.

Although, it can't be considered to be the only way to solve the problem. Ukrainian reality proves that slump in production is not always accompanied by similar reduction of volume of harmful emissions in the environment. Moreover, in crisis conditions the Ukrainian enterprises tend to save money on the expenses of environmental protective measures.

But on the other hand, the environment can have a critical and direct impact on economic development, as well as social and political stability, and security. Natural disasters (such as the earthquake that caused explosions at the nuclear power plants in Japan) throw countries with well-developed economies far behind the ones with better conditions of ecological safety.

While economy is grounded on the natural resources and tends to spend them (extract, process, produce goods, sell them and receive the profit), ecology is trying to preserve them by means of defining the safe quota of their usage as well as limit the profit. In most cases economy will have to accept the rules dictated by the ecological imperative.

The contradiction of interrelationships between economy and ecology mean that economy strives to growth and further development, but this may cause harmful consequences to the nature. But this contradiction is not a dilemma of choosing economic development or environmental security ("Economic security or environmental destruction?"). It should be seen as strive to a common goal: to provide such level of economic development that would grant not only production of material welfare, but provision of ecological security for people living on the planet Earth. Consequently, the concept of Environmental Security proposes that we work to enhance environmental awareness and strive to develop a common understanding of the threats to environmental security.

The essence of environment preservation consists in a finding of a rational parity of the society's ecological interests a in a pure, healthy and highly productive environment with its economic interests defined by satisfaction of material needs of people.

So, the conclusion can be made that environmental safety and economic security are interdependent and should be considered the key elements of the national security of Ukraine.

AROMATHERAPY MASK AS A SOLUTION FOR VEHICLE EXHAUST EMISSION MOTORCYCLIST POLLUTION

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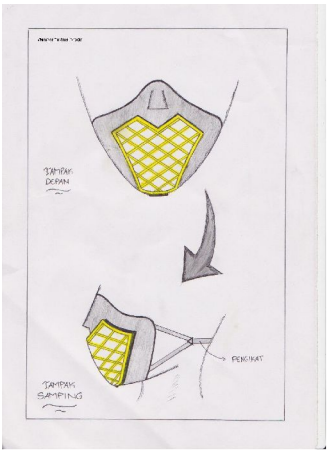
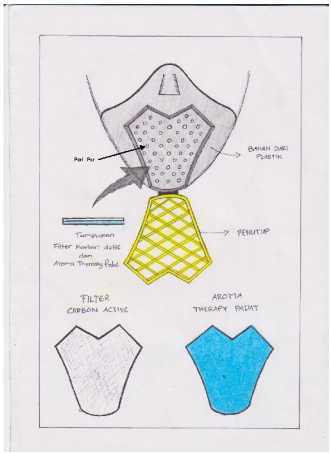
Situations and Problems of air pollution in Jakarta

I have stayed in Jakarta for more than seventen years and I have been a motorcyclist for almost seven years. Jakarta is a metropolitan city and the things that exist in Jakarta continue and are going to grow starting from the construction of infrastructure, population density, to the increase number of vehicles which cause the increase of traffic congestion and pollution from vehicle exhaust emissions and riding motorcycle is the largest contributor to the air pollution. Air pollution (CO, NOx, Pb, SOx, and dust) is a serious problem since it can cause lower IQ levels (especially children), nasal olfactory nerve disorders, and other health problems. Government has tried to solve air pollution problem, one with the regulation of 3 in 1 on certain roads with hope it can reduce vehicle exhaust emissions. However, it does not give a satisfactory result, so we need another solution to overcome the pollution problem.

As motorcyclist, I also feel the impact of vehicle exhaust emission pollution, especially when I am stuck in traffic and my position is right behind the car's exhaust. I feel very uncomfortable because I inhale that fumes directly. So it is crucial to find a solution to solve the problem of vehicle exhaust emissions so that motorcyclist can drive comfortably.

Exhaust emission pollution and the traffic situation in Jakarta





Aromatherapy mask design and its various components

Activated carbon

Forms dense aromatherapy

Proposed Solutions

I am as deeply concerned with other motorcyclists so they can drive comfortably and I want to find the solution to drive comfortably, safely, and healthily. I see a lot of motorcyclists using masks, but the masks are only used to cover the nose. Therefore, I found an idea to create an aromatherapy mask. This mask has a filter which can filter the air pollution by using active carbon as a filter and solid aromatherapy of essential oils that are packed in such a way so those materials are able to combine between the mask and active carbon. So while they are driving, motorcyclists can feel comfortable,

safe and healthy by using the mask that equipped with active carbon filter facilities and aromatherapy. Although they are trapped in the position with face to face to automobile exhaust, they will still feel the fresh air and the smell of aromatherapy. Even this can be the media to relax while they are driving. I introduce this simple project in a scientific forum (FORCES), blocks, facebook, community motorcyclist, IPB, forestry research institute, and the Jakarta government to realize this innovation.

Strength and Facilities

This aromatherapy mask would be a great solution to drive comfortably. Motorcyclists do not have to worry anymore with diseases that are caused by pollution exhaust emission. There is an advice that says: "Healthy is Expensive." It is a term that tells us to be grateful with our health so we have to keep our health. With this solution, it is expected to motorcyclists to be the healthy riders that can prevent such diseases from air pollution, such as lowered IQ, neurological disorders, cancer of the lung, stomach cancer, and diseases of the throat that are acute or chronic.

THE PROSPECTS FOR ENVIRONMENT-FRIENDLY WORLD TRADE LIBERALIZATION

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The problem of ecological economic well-being in the process of world trade liberalization exists in two dimensions - environmental and economic. To tackle the problem we should identify the main threats to the environment at this stage of human development and in the future. We have then to take into account these threats while building our economic system. In most cases trade in this context doesn't influence ecological economic system directly, its ecological economic consequences depend on the environment, i.e. between which ecological economic systems trade is concluded and on adopted international regulations.

First of all let us consider causal ecological economic linkages between trade and environment. Openness usually increases real income per capita, output and consumption:

- Increased production contributes to higher pollution through physical scale of production;
- Higher income per capita increases the demand for environmental quality. Provided appropriate institutions are in place the demand is transformed into environmental regulations, which in turn contribute to cleaner environment;
- The relationship between income per capita and some types of pollution follows environmental Kuznets curve;
- Higher income means more consumption and consequently more consumption pollution.

Effects of openness on the environment for a fixed level of income:

- Race to the bottom hypothesis. Countries tend to lower their environmental standards because of the risk of losing international competitiveness;
- Benefits from trade hypothesis. Trade allows countries to get more of the same goods, including environmental goods. Even with the stable level of income

environmental quality may increase due to international trend to implement higher environmental standards, technological and managerial innovations;

- Pollution havens hypothesis. Developing countries with usually lax environmental regulations receive a comparative advantage due to lower environmental standards and specialize in polluting production, while developed countries specialize on cleaner production;

- Porter hypothesis. According to the hypothesis increased environmental regulations stimulate technological innovations and thus positively affects the economy and the environment;

- Factor hypothesis. It claims that harmful capital intensive production as a result of trade liberalization will move to relatively capital abundant developed countries;

- Tragedy of the commons hypothesis (by Garrett Hardin). If the country has competitive advantage in resource sector without appropriate property rights in the context of trade liberalization it will cause resource depletion, deforestation, over-fishing etc;

- Contamination during transportation.

According to Herman Daly, the country should be able to implement trading mechanisms to protect their effective internalization of externalities. Free trade would not be feasible for a stable state economy, as producers in these economies have to transfer considerable sums on the environment, while producers in countries where there is a growth economy are not paying money for sustainability. So in the case of free trade the first group of countries will lose their competitive edge. This point of view may be feasible to tackle a number of local environmental problems. However, many environmental problems extend beyond a single country, let alone global threats such as global warming. In this case an effective national system of internalization of externalities will not suffice.

We believe that environmental safety of trade ought to occur within the framework of WTO. When a country unilaterally introduces environmental restrictions it suffers economic losses. If such implementation were harmonized with other countries, the losses could be avoided. Cooperation within the WTO is beneficial for the country, because it helps to reduce the uncertainty in international trade. It has to be a mutually beneficial system, under which countries agree to follow certain rules and obligations to one another. It is an example of "prisoner dilemma" from the game theory when arrangement will benefit both parties. However, there is a temptation to win at the expense of the other side, to find a way to protect domestic producers. This often means using hidden environmental regulations and restrictions. Therefore it is important for WTO to be cautious in this area. On the other hand ecological economists warn that sometimes GATT/WTO rules oblige countries to facilitate degradation of the environment providing a market for goods produced by environmentally harmful way.

Guidelines for “ecolomically” balanced liberalization of world trade:

- to prohibit trade in some goods (extremely polluting goods, rare species);

- to include environmental damage price in the world market price of traded commodity (internalization of externalities);

- to certificate goods according to the place and process of manufacturing;

- to create a free market for environmentally friendly goods and environmental technologies;

- to ensure optimal distribution of global production;

- to reduce dependence on natural resources exploitation in developing countries by providing them access to world market;
- to make sure that trade liberalization does not undermine international and national efforts to preserve the environment;
- to use profits from trade liberalization adequately, particularly to compensate environmental damage from the liberalization;
- to consider the difference in a relative cost of environmental measures in developed and developing countries.

ECONOMICS, ECOLOGY, & ETHICS

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Economics, ecology and ethics are inextricably linked. Many of the worst global environmental problems we are experiencing right now are the result of ignoring this fundamental relationship. As we use up natural resources, the need to understand and take care of the Earth must be addressed.

This lesson lays the philosophical foundation for the rest of the activities in this curriculum. It makes clear that a shift to a sustainable economy is not a cosmetic transformation, but one that has deep cultural ramifications. It asks students to read and evaluate an article on economics, ecology and ethics. It then provides them with a story that allegorizes the meeting of these three branches of human thought and asks them to write their own conclusion to the story.

The words 'economics' and 'ecology' are both rooted in the Greek work 'oikos' which means home. Ecology literally means understanding home and economics means taking care of, or managing home. These two fields of human thought have been separated from one another in modern times and the ethical implications of each have been almost totally lost in the rising tide of one-sided individualism and self-centeredness. Now, when we think of economics, we think more about how to manage financial matters in order to take care of ourselves only! Further, we tend not to ask what is fair or reasonable, but rather, what we can get away with. In this curriculum, we hope to put the concept of 'home' (as in ecology) back in economics.

Modern industrial-capitalism is characterized by a society in which there is a disparity in the economic well-being of groups of citizens. While technological progress has brought a condition of health and financial security unparalleled in human history to many individuals, there still remains severe inequality in the distribution of the benefits of progress: poverty amidst great wealth. The Constitution offers rights and liberties to each citizen in order to promote economic and social opportunity. An emphasis on unfettered economic pursuit has characterized much of our nation's history. Does such an emphasis push individuals to respect others and the environment? This is an especially important consideration since individual actions have global repercussions.

At the time of the framing of the Constitution, as is true today, there was much debate over what elements would best allow economic and social opportunity and a relative equality of condition to coexist. Thomas Jefferson believed a good society should be largely agrarian; people tied to the land for their existence would be unlikely

to suffer a corruption of morals that would inevitably lead to disparity among individuals. Alexander Hamilton believed a good society should have a strong manufacturing base; such a society would be enriched and powerful beyond what it could otherwise become. Jefferson admitted some manufacturing was necessary to make the United States more self-sufficient. The lopsided distribution of the population into dense cities disconnected from an agriculture community, however, is far removed from the Jeffersonian agrarian ideal where individuals would better understand and care for each other and their 'home'.

In 1949, Aldo Leopold wrote his famous book, Sand County Almanac. In it he criticized the treatment of nature as a commodity. He spoke passionately of the need to develop a 'land ethic': a set of personal and cultural priorities rooted in a meaningful relationship with the environment. This lesson is designed not only to encourage students to see the theoretical connections between economics, ecology, and ethics, but to begin developing their own land ethic.

CONCESSION PROJECTS: PROBLEMS OF FINANCING AND EVALUATION

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An effective economy functioning requires providing of stable and balanced developing of all its parts. The mechanism of its achievements includes the creation of appropriate organizational and economic conditions, which allows combining effectively the processes of business entities self-regulation and macroeconomic regulation.

The important element of these conditions is the economic infrastructure, which is a combination of different functional subsystems guiding, the economic policy is implemented through. It should be noticed that the banking system, unlike other economic infrastructure subsystems that coordinate mainly industrial policy, has special meaning – the monetary regulation of a financial sphere and the real economy sector.

In the modern terms of providing competitiveness of the banking system taking into account the world tendencies of activation of intergovernmental integration processes on the basis of development of transborder cooperation. It opens through cooperation of contiguous territories of the neighbor states in terms of common solving socio-economic development problems. The solving this task means, in particular, introduction of the mutual favorable modes in relation to realization of transborder trade and capital flow, realization of general transregional investment projects in development of regional infrastructure (transport, custom, social and others like that). Naturally, these processes result in strengthening of international bank co-operation and creation of integrated financial market, and, thus, there is an objective necessity of development of financial mechanisms of effective functioning.

The specificity of transborder cooperation stipulates the necessity of systematization of substantial features of investment projects financing, which are enforced by his participants:

high level of government control of investment activity is predefined by international intergovernmental character of transborder relations;

the increased complication of development of investment projects is caused by necessity of the detailed explanation of financial viability and expected efficiency of project of transborder cooperation for his participants on all levels, – state, regional and microeconomic;

necessities of bringing in considerable volume of capital investments in development of existing and creation of new objects of a production, transport, social infrastructure and protracted period of recoupment.

In the course of analysis of the concession projects effectiveness considerable attention should be paid to evaluation of the environmental and social impacts of the project, and the degree of its impact on the environment and social sphere of country, region and city. Thus, complication in search of adequate forms of financing of projects of transborder cooperation is related to the necessity of meeting financial and economic interests of all participants in the best possible way.

World practice produced the mechanisms of state-private partnership. Among the existent models of state-private partnership a concession has most efficiency during realization of projects of transborder cooperation. A concession is the system of relations between the state (a koncedent) and private legal or physical person (a concessionaire) which arises up as a result of grant from the koncedent to concessionaire the rights for the use of public property on the basis of agreement, for a pay and on reverse basis, and also rights on realization of certain types of activity, which are the exceptional monopoly of the state. Transborder projects foresee the conclusion of multilateral concession treaty at participation at least two held on the side of the koncedent.

Depending on the authority of property, investment obligations of parties, principles of distribution of risks given to the private partners, to responsibility for realization of works, financing of projects of transborder cooperation can be carried out with the use of different types of concession agreements – BOT (Build, Operate, Transfer), ROT (Rehabilitate, Operate, Transfer), BTO (Build, Transfer, Operate), BOOT (Build, Own, Operate, Transfer), BOO (Build, Own, Operate), BOMT (Build, Operate, Maintain, Transfer), DBOOT (Design, Build, Own, Operate, Transfer), DBFO (Design, Build, Finance, Operate), BBO (Buy, Build, Operate).

International practice of realization of concession projects shows that maximally effective control of their realization is possible at bringing in the international banks of development. Their basic task is effective project organization, including bringing in the private financing. The international banks of development have the special status, which includes property and judicial immunity, tax, custom and credit preferences and advantages. They allow to hedge the most of financial and economical risks at financing projects of transborder cooperation. Such risks, caused by differences in legislations and bank regulations in countries-participants, are significant obstacle for effective work in the system of regular banks.

However, in the nowadays economy there is a set of limiting factors that measure banking investment of infrastructure in Ukraine. To our mind they are:

- the outflow of financial resources from the banking system, due to the rising of uncertainty of depositors, to their reliability in financial crisis conditions
- lack of banks resources base to match the investment needs mainly because of short-term character

- high risk level of investments to the infrastructure projects.

So, the banking system take a special place in the national economy structure, because banks as its parts are financial and credit service centres of serving the economic subjects system, by making involvement and investment of temporarily free resources.

ROUNDTABLE SUSTAINABLE PALM OIL (RSPO) AS AN ENVIRONMENTAL SOLUTION OF PROBLEMS IN NATIONAL INDUSTRIAL OIL PALM PLANTATION

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Crude Palm Oil (CPO) is one of the mainstay of Indonesia's export products. It's used as raw materials for oelo-based industrial products. Indonesia is the largest palm oil producing country in the world's(since 2006), followed by Malaysia (Oil World,2007). From the demand side, factors supporting rapid growth in palm oil industries, among others, due to the large potential market demand, both in domestic and international markets. So far, oil palm plantations have a strategic role in development in Indonesia. CPO export value increased to U.S. $ 400 million, from U.S.$ 3.1 billion in January to $ 3.5 billion in August 2006. In terms of state revenue / foreign exchange earnings in 2008 had reached U.S. $ 10.7 billion, 13.5 tiliun export levies, labor as much as 3.7 million people, and others. as much as 3.7 million people, and the others.

From the supply side, Indonesia the soil and climate conditions suitable for oil palm plantations on a large scale, although it appears to pro-cons, especially those relating to the preservation of natural resources and oil palm plantation area. Based on data from the Directorate General of Plantation and the Central Bureau of Statistics until 2008 CPO production reached 17.11 million tons of oil palm plantation covering an area of 6.61 million hectares, that is very large.

Performance in the Indonesian CPO industry can not always go well. Some time ago it was reported that happens the world rejection of the main products and derivative products are exported, especially to some countries in Europe, because almost all products exported CPO was not able to show certification of the RSPO (Roundtable on Sustainable Palm Oil). Until now palm oil development is often confronted with some negative issues. For example, the cause of environmental degradation and biodiversity, the causes of land degradation and deforestation, marginalization of local populations, and so many others that very harmfull.

In connection with the favorable prospects of the Indonesian CPO industry, the government is expected to support the establishment of certification mandatory for all products of CPO and its derivatives to guarantee the Indonesian products derived from sustainable plantation management (sustainable). It is necessary for products from Indonesia are not less competitive in export markets, especially Europe is very concerned with environmental issues, which accused the forest fires in Indonesia caused by the opening of oil palm plantations, and so forth.

The important of RSPO principles is the management of sustainable palm oil plantations to maintain soil fertility, concerned with environmental issues and socially acceptable, granting benefits to the community gardens, and the transfer of land use from the community to the company. On that basis, it is known that the implementation of RSPO principles and criteria will certainly provide additional cost to reach 50 percent at the opening of land for plantations. In addition, through the application of the RSPO is expected to bring additional consequences on the cost of palm oil production process into the core product and derivative products, and ultimately will reduce the amount of palm oil production itself. However, businesses are expected to get increased production and efficiency in the next few years after the RSPO principles and criteria are applied. Allegedly with the implementation of RSPO palm oil companies, then the production will fluctuate, in the early stages of production decline because there is an adjustment to the RSPO, but then again increase production if export markets have received back an environmentally friendly palm oil products (already implementing RSPO).

ECONOMIC ACTIVITIES AND THEIR RELATION WITH THE ENVIRONMENT

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All economic activities affect the environment in some way whether it is done intentionally or unintentionally. These could be positive or negative effects. Most of the time, they are negative. Most activities usually end up harming ecosystems or just polluting the environment. Economic activities can range from mining all the way to farming. This essay will discuss different types of economic activities and how they effect the environment.

Economic activities are the leading factors in deploying our environment; these factors contribute more that 50% in destruction of the environment. While other factors cover the rest of percentage. Mining , overgrazing, lumbering, cultivation, fishing, hunting and so on, are the kinds of economic activities which lead in this sphere.

Since ecology refers to the interdependence or interaction between man, other living organism and the environment. It is man economic activities which hinder the flourish of this great relation, if all included above could offer fair support to one another today's world could be better off than it is now.

Mining destructs environment by the pollution caused by this activity, while mining a lot of dust is emitted to the air and this cause air pollution and hence other living organisms survive difficultly in such polluted environment. Mining also can cause earthquakes, because the drilling disturbs the outer core and the inner core of the earth's surface, this activity leads to the generation of waves which is caused by trembling. The effects of earthquake are very bad both to the environment and living organism; massive loss of lives is among them for example in Japan, Physical property destruction and so on.

Overgrazing, this is mostly practiced in remote areas of the country where many people are farmers and animal keepers; the term refers to the tendency of keeping a large number of animals at one place. Animals like cows have calves which are very

hard and tend to slowly erode the earth's surface, so when many cows and other types of animals with this nature are kept together they can lead to soil erosion, disappearance of fauna and flora, and also diseases.

Lumbering, this refers to the act of cutting trees for timber, which has strong connection to deforestation where by people tend cut trees without planting them, areas which experience this are in a bad situation of turning into a desert, effects connected to this are drought which is due to lack of rain at those particular places, disappearance of fauna and flora because some people tend to cut trees even when they are not big enough to be harvested. If foresters are not careful, the harvesting of valued tree species will also become unsustainable. Forest trees take hundreds of years to mature, and with modern machinery, trees can be chopped down at a much faster rate than they can grow back.

Cultivation, poor methods of cultivation like intensive cultivation can lead to degradation of soil structure and hence lead to soil erosion, this erosion destructs sources of water and cause living organism to suffer the effect in very great bad way. Cultivation also has a strong connection with deforestation since in order to have a big plantation you must clear the place by cutting down trees, of which has a couple of effects as explained above.

Hunting occurs in many parts of the world to provide food and animal products. Among the many uses of animal products are skin and feathers fro clothing, ornaments and souvenirs. Sometimes animal body parts are used for making medicines. For many people, hunting is a sport, while others kill wild animals that are a threat to people or their crops and livestock. Some people who live a partly traditional lifestyle consider hunting an essential part of keeping their culture alive. Not all hunters kill the animals but some capture them for live sale which has the same effect of reducing the wild population.

Fishing provides an important food supply for many people, and is a popular sport and recreational pastime. The problem is that modern fishing involves technology that harvests the oceans so effectively that the number of species can reduce massively. Seventy percent of fish being harvested are being removed at a higher rate than at which they can reproduce. Fishing in this way is unsustainable, and other parts of the marine ecosystems are damaged as the food supply for some species is reduced.

Industrialization has been the hallmark of human progress. However, with industries have come a host of toxic gases that are being released into the atmosphere. The industries release gallons of liquid waste into the seas and rivers, this is the very great cause of deaths of marine organism, also the pollution of beaches can lead to spread of diseases to human being and hence humping life of many people. It is obvious, that in the bid to improve our lives, we have put our own survival to stake, is finally hitting us hard. when is it that we will understand that the well-being of the environment and our survival are intricately woven into each other.

Apart from many effects of human activities to the environment the biggest one is climate change which refers to change in average weather patterns and can be caused by both natural processes and human activities. In the past, the earth's climate has been affected by natural factors such as changes in solar output and the discharge of volcanic ash. In fact, the planet has been through many periods of cooling and warming. The last period of major cooling ended about 10,000 years ago.

The world's glaciers are retreating and disappearing, extreme weather is occurring more often now than in the past, the sea's level and temperature is on the rise

and it's becoming more acidic, increased evaporation is drying out the earth's supply of fresh water found in lakes and rivers, heat waves kill thousands in Europe, uncontrollable forests fires are destroying forests reserves in places like Australia and Africa, and increasing atmospheric temperature is raising the budget of many families in tropical countries use in cooling their homes. Climate change is the biggest challenge that we face in the world today. It is already leading to significant changes in the world's physical environment. Extreme weather events are becoming more frequent. Glaciers are melting. Sea ice and snow cover are declining. Animals and plants are responding to earlier seasons. Global warming has already driven up mean sea levels by 110-20 centimeters during the last 100 years, Water is essential to human life and many of life's activities, from direct issues such as drinking water and agriculture, to other essential modern activates such as industry and power generation. Nowadays, climate change has become a global issue. Many carbon dioxide emissions from cars and factories contribute a lot to this. Developing countries and developed countries both have responsibilities to manage the problem of climate change, especially to improve emission treatment systems in developing countries. carbon dioxide emission is the main reason that causes climate change.

Conclusively, all the economic activities explained above have the greater influence to the economies of many countries and on one way or another contribute to man's well being as living modern and standard life, activities like mining contribute a lot to the GDP of a country. Lumbering also is very important to man since it gives him building materials like timber, but man should be educated on the importance of trees and therefore encourage them to practice forestation. Avoiding intensive cultivation can strengthen the ecology, normal and good ways of farming should be taught to farmers in order to avoid this problem. Overgrazing should not be practiced instead keeping the number of animals which can be supported by the environment should be encouraged. Since all the economic activities have significant importance to man, they should not be stopped but regulated to a way that they can be friendly to environment, since money which comes from these activities is the one which is used to develop and implement strategies to keep the environment good. The regulation can be done by governments enacting strict laws to guide human beings.

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CLEAN ENERGY - EARTH'S ONLY CHANCE AGAINST GLOBAL WARMING

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Unfortunately for all of us, Earth is already faced with global warming because of dangerous greenhouse gases that are result of fossil fuels combustion. Oil, coal and natural gas are still something modern world can't live with and clean energy

(renewable energy sources) are still very negligible on global scale and are satisfying very small percentage of world's total energy need.

Fossil fuels are traditional and dominant in many countries and renewable energy sources which could provide clean energy that isn't harmful for environment are really lacking necessary attention of world's leading countries.

Not only our air is polluted but there's also the worst ecological problem in history of the mankind - global warming which is mainly caused by carbon dioxide that gets released into atmosphere during the fossil fuels burning. Earth's temperature increased significantly (this particularly refers to Antarctica), ice is melting and obvious signs of climate change already showed us what we could expect in years to come.

There's lot of talking about renewable energy sources and their researching is taking place in many countries, but the real question is do we have enough time to wait for these clean energy sources? As current situation points out fossil fuels will be dominant force in the next 50 years as well and since our population will grow, there'll be also increased need for energy so we could expect even more greenhouse gases in atmosphere in years to come.

Some countries, especially in Europe are doing its best, investing large funds in renewable energy sources and their progress is already remarkable (i.e. Germany and Scandinavian countries). On the other side there are countries that are reluctant to give major boost to clean energy sector because of its traditional dependence upon fossil fuels and very influential fossil fuels industry. We also have countries like China and India that are lately experiencing amazing economical growth and mainly because of its coal powered plants since coal is the cheapest (and also the dirtiest) fossil fuel and they lack necessary funds to invest in some other ecologically more acceptable energy sources.

This all means one big problem because efforts that some (smaller) countries put into their renewable energy sector are overshadowed by these big countries' dependence on fossil fuels, and there is really no exit from this enchanted circle. And it won't be until world's leading countries take this problem more seriously and what's more important start to do something noticeable about it. Only with clean energy sources we have a real chance stopping ever-increasing global warming levels and make safe future for our kids. So what are we waiting for?

POVERTY ALLEVIATION AND ENVIRONMENTAL EDUCATION TOWARD SUSTAINABLE DEVELOPMENT IN AFRICA

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Given the fact that African continent, is one among the poor continents in the world, the efforts of overcoming ecological problems is a little bit challenging due to the fact that people overuse their natural resources in their daily life in order to survive. On the other hand, lack of environmental education in many of the African communities also consequently lead to environmental destruction as people not knowingly acts on environment, may cause the harmful effects on the environment. I

will start my thesis by defining the key words of this thesis and which are Poverty Alleviation, Environmental Education and Sustainable Development.

Poverty alleviation- is any process which seeks to reduce the level of poverty in a community or amongst group of people or countries. This process may be also aimed at removing social and legal barriers to income growth among the poor. Some of the popular methods used in poverty alleviation are education, economic development, and income redistribution.

Environmental education- refers to curriculum and programs which aim to teach people about the natural world and particularly about ways in which eco-system works. The term is often used to imply education within the school system from primary to post secondary education, and sometimes it is used more broadly to include all efforts to educate the public and other audiences, including print materials, websites, media campaigns and so on.

Sustainable development- is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. This development takes the impact on the environment into account and tries to minimize environmental damage.

Given the above definitions, we can clearly see that, poverty alleviation and environmental education goes hand to hand with the efforts of environmental protection.

Poverty alleviation in Africa is vital if we want to fight environmental problems, without poverty alleviation a lot of people will still solely depend on their environment for their own survival, they will cut and burn down trees to get charcoal just because they cant afford a friendly energy source to the environment, they will use bad methods of fishing just because they cant afford to buy modern equipments for fishing, e.t.c. Some of the methods used to reduce poverty are education, economic development, and income redistribution.

Income redistribution is one of the effective method of poverty reduction in a society, a perfect income redistribution would mean that every one in a country has almost the same income and if there is a difference there shouldn't a very big difference between a person with higher income and a person with lower income and this implementation can be possible when most members of a society are educated.

Economic development as another method of poverty reduction, involves development of economic wealth of a country or region through adoption of new technology, transition from agriculture based to industry based economy and general improvement of living standards of people in that particular country which will lead to poverty reduction of that country.

On the other hand, provision of environmental education in a society is as important as poverty reduction in a society. African governments should make a great emphasis on environmental education due to the fact that, African continent is in increasing danger of facing environmental problems due to the majority of their people being uneducated.

Environmental education in Africa should be put in education curriculum, so that students from primary schools up to secondary schools can learn the importance of environmental protection, understand the ways in which eco-system work as well as developing skills that can help them work individually or collectively towards solutions of current environmental problems and prevention of the new ones.

The objectives of environmental education is creating awareness which will help students, social groups and individuals to increase sensitivity to the total environment and it's allied problems, provision of the basic knowledge of environmental protection, developing skills that will help students and individuals to identify and solve environmental problems, and lastly to increase participation of students and individuals so that they can be actively involved at all levels in working toward resolution of environmental problems.

In conclusion, environmental protection is not just the task of African governments, but is the war that every person should participate to win, because our lives and lives of the future generations depend on. With poverty alleviation and provision of environmental education, there is a great possibility to win this war.

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THE EFFECTS OF GLOBAL WARMING ON THE ECOSYSTEM

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GLOBAL WARMING: is when the earth heats up (the temperature rises). It happens when greenhouse gases (carbon dioxide, water vapor, nitrous oxide, and methane) trap heat and light from the sun in the earth's atmosphere, which increases the temperature. It is also an increase in the earths average atmospheric temperature that causes corresponding changes in climate and that may result from the greenhouse effect. As at Feb. 3 2011 the earth's average temperature was summed up to 15 degrees C, or 59 degrees F.

ECOSYSTEM: An ecosystem is a biological environment consisting of all the organisms living in a particular area, as well as all the nonliving, physical components of the environment with which the organisms interact, such as air, soil, water and sunlight. It is all the organisms in a given area, along with the nonliving (abiotic) factors with which they interact; a biological community and its physical environment.

CAUSES OF GLOBAL WARMING

CLIMATE CHANGE: Change in the climatic conditions has attributed as the major cause of global warming. The climate is changing. The earth is warming up, and there is now overwhelming scientific consensus that it is happening, and human-induced. With global warming on the increase and species and their habitats on the decrease, chances for ecosystems to adapt naturally are diminishing. Many are agreed that climate change may be one of the greatest threats facing the planet. Recent years show increasing temperatures in various regions, and/or increasing extremities in weather patterns.

. GREENHOUSE EFFECT: This is when Energy from the sun drives the earth's weather and climate, and heats the earth's surface In turn, the earth radiates energy back into space. Some atmospheric gases (water vapor, carbon dioxide, and other

gases) trap some of the outgoing energy, retaining heat somewhat like the glass panels of a greenhouse. These gases are therefore known as greenhouse gases. The greenhouse effect is the rise in temperature on Earth as certain gases in the atmosphere trap energy.

Six main greenhouse gases are carbon dioxide (CO_2), methane (CH_4) (which is 20 times as potent a greenhouse gas as carbon dioxide) and nitrous oxide (N_2O), plus three fluorinated industrial gases: hydro-fluorocarbons (HFCs), perfluorocarbons (PFCs) and Sulphur hexafluoride (SF_6). Water vapor is also considered a greenhouse gas .Many of these greenhouse gases are actually life-enabling, for without them, heat would escape back into space and the Earth's average temperature would be a lot colder.

However, if the greenhouse effect becomes stronger, then more heat gets trapped than needed, and the Earth might become less habitable for humans, plants and animals. Carbon dioxide, though not the most potent of greenhouse gases, is the most significant one. Human activity has caused an imbalance in the natural cycle of the greenhouse effect and related processes. NASA's Earth Observatory is worth quoting the effect human activity is having on the natural carbon cycle, for example. In addition to the natural fluxes of carbon through the Earth system, anthropogenic (human) activities, particularly fossil fuel burning and deforestation, are also releasing carbon dioxide into the atmosphere. When we mine coal and extract oil from the Earth's crust, and then burn these fossil fuels for transportation, heating, cooking, electricity, and manufacturing, we are effectively moving carbon more rapidly into the atmosphere than is being removed naturally through the sedimentation of carbon, ultimately causing atmospheric carbon dioxide concentrations to increase.

The result is that humans are adding ever-increasing amounts of extra carbon dioxide into the atmosphere. Because of this, atmospheric carbon dioxide concentrations are higher today than they have been over the last half-million years or longer. Another way of looking at this is with a simple analogy: consider salt and human health:

- A small amount of salt is essential for human life;
- Slightly more salt in our diet often makes food tastier;
- Too much salt can be harmful to our health.

In a similar way, greenhouse gases are essential for our planet; the planet may be able to deal with slightly increased levels of such gases, but too much will affect the health of the whole planet.

DEFORESTATION. Deforestation is the removal of a forest or stand of trees where the land is thereafter converted to a non- forest use. Another thing that contributes to global warming is when people cut down trees. Also, by clearing forests to support agriculture, we are transferring carbon from living biomass into the atmosphere (dry wood is about 50 percent carbon). Trees and other plants absorb carbon dioxide (CO_2), which is a greenhouse gas. Carbon dioxide is the air that our body lets out when we breathe. With fewer trees, it is harder for people to breathe because there is more CO_2 in the air, and we don't breathe CO_2, we breathe oxygen. Plants collect the CO_2 that we breathe out, and they give back oxygen that we breathe in. With fewer trees and other plants, such as algae, there is less air for us, and more greenhouse gases are sent into the air. This means that it is very important to protect our trees to stop the greenhouse effect, and also so we can breathe and live.

EFFECTS OF GLOBAL WARMING

ADAPTATION DIFFICULTIES FOR ECOSYSTEM: Rapid global warming can affect ecosystems chances to adapt naturally. The Arctic is very sensitive to climate change and already seeing lots of changes. Ocean biodiversity is already being affected as are other parts of the ecosystem. The link between climate change and biodiversity has long been established. Although throughout Earth's history the climate has always changed with ecosystems and species coming and going, rapid climate change affects ecosystems and species ability to adapt and so biodiversity loss increases.

DESERTIFICATION: Desertification is the extreme deterioration of land in arid and dry sub-humid areas due to loss of vegetation and soil moisture; desertification results chiefly from man-made activities like bush burning and indiscriminate felling of trees. However, desertification is sometimes influenced by climatic variations. It is actually the global warming that actually encourages the desertification by ozone depletion.

Ozone depletion being a direct result of global warming will also contribute to increase of global warming as its depletion will lead to further damage of the system that should reduce the global warming. Another important & discussing point is that both of them are dependent on each other and make a very good viscous circle of destruction even though global warming is characterized by increased temperatures while ozone depletion is characterized by the colder temperatures.

FLOODING: Global warming has been identified as one of the causes of sea rise, and when the sea rises, the water covers many low lands. This is a big problem to the ecological system as there are huge loss of plants and animals. Again homes and properties are lost and thus posing a great danger to health and human environment. This often comes like a chain reaction, one thing happening that leads to another and so on. Recently in Australia, we read of the havoc caused by sea rise to the environment and the destruction of lives and properties.

CONCLUSION AND RECOMMENDATIONS

First and foremost, the government should endeavor in making it necessary for everyone both young and old knows what global warming is and its effect to the ecosystem. The more facts that you have, as to what mainstream science says about it, the more you can persuade others to make simple yet effective changes in daily behavior. In other words, mass campaign and education must be carried out to sensitive the masses on how to be environmental friendly.

Secondly, strategic planting of trees in your yard can reduce heating and cooling bills. Trees provide shade, also reducing air conditioning costs. Evergreen trees are excellent windbreaks for homes, reducing heating costs and providing a beautiful year-round landscape. Trees also store carbon, which helps reduce direct heat from the sun and global warming effects.

Finally, to avoid environmental pollution the industrial companies should engage in recycling. Recycling saves energy and reduces carbon emissions. Bye-products that are reusable and have less packaging. Thus Government of various countries should enact laws that should ensure that industrial companies provide facilities that would enhance recycling.

ENVIRONMENTAL SECURITY: ECONOMIC AND SOCIAL ASPECTS

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Ecology – is complex problem, so complex decisions are needed.

Preservation of environment and acceptance of administrative decisions, recreational use of natural resources of natural-resources fund territories demand certain regulating actions. These actions have to be based on exact basis of complex interdisciplinary approach to environment security.

Threats for the environment changed so the management of environment security also need be changed from traditional methods and ways to new interdisciplinary approaches. We investigate dynamics of ecological-economic evolution and technological change as a macroeconometric model and as a complex dynamic model. Complex dynamics in ecologic-economic systems is presented with an emphasis upon models of shortage of recourses. The topic is to determine the equilibrium "benefits-costs" of foreign capital interference (that theoretically should help the situation) in issues of environmental security regulation in recipient-states. In the process of analysis some novel results and conclusions concerning impact of FDI on environmental security regulation and tools of its volatility have been received, especially for the group of transition states. The building of the "FDI-environment improvement" model for macro data of transition economies was based on the classic "predator-sacrifice" model.

In math symbols we can propose some form of function:

F(E)=(political impact, economic costs) → min.

So the challenge is to model and to optimize (minimize) the function of possible costs and political "costs" from ecothreats and ecoviolence (from ecoterrorism). The first possible approach is to develop environmentally benign technologies.

But here is the exact place where convergence principals appear - ecological problems of modern world has in basis economic approach. Every ecoterroristic attack first of all is estimated not from political impact it had but from what volume of economic costs it had. And after this calculation we have minimum two participants of act – the part who paid for the realization of ecoterroristic act, and the part (political party or state-government) who pay for rehabilitation and making amends to aggrieved ones.

An ecological crisis is a crisis of operating mechanisms of society adaptation in a social and natural environment, and a sense of global crisis of civilization consists exactly herein. That co-operating of humanity with an environment on the whole, which mediates by authorities institutes, can result in death of humanity and its social systems. An urgent necessity to replace the vector of this co-operation by reform of management appears.

Requirements and principles of ecodevelopment get special social significance that admits including it to the number of the most important national state goals. Unfortunately, in most countries awareness of this is going much slower than it is needed today.

Only convergence of modern approaches can be useful to permanently developing world of new threats – ecothreats.

Offered approach to determination of payment for the natural capital use considers the negative consequences of inefficient nature use and stimulates natural resources users to diminish negative impact on environment.

ACCESSING OF IMPACT OF NUCLEAR FACILITY ON THE ENVIRONMENT IN THE INSTABILITY CONDITIONS

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In recent years the interest in nuclear technologies has been highly increased in Ukraine and all over the world. In 2009, construction started on 12 new nuclear power reactors (the total number of nuclear reactors under construction is 56), the largest number since 1985, and projections of future nuclear power growth were once again revised upwards [1].

Besides the progress of nuclear energy, up-to-date nuclear technologies are used with great interest in the different fields of public activities. The modern multipurpose research reactors are being developed in many countries around the world. Nowadays on our planet there are 240 different research reactors in operation which are used for studying, training, nuclear research, material tests, radioisotope producing for medicine and industry. Nuclear applications for different purpose such as sterilizing or sanitizing of aseptic food, crops improving on genetic level, human health by treating and early effective diagnostics of diseases in medicine, land and water resources management and environmental protection are being developed and used all over the world.

All of these facts indicate of critical role of nuclear technologies in economic and social development of many countries. Their peaceful use should not argue with sustainable development paradigm which consists of social, economic and environmental components. The last one is very important due to guarantee human health.

Potentially dangerous nuclear facilities and technologies need the monitoring and supervision of some parameters in order to achieve environmental and social sustainable development goals. For this purpose a range of indicators of sustainable development in the energy sector were developed.

Some subjects relevant to the energy sector that may be addressed by indicators include resource availability and geographical distribution, land use, critical doses exceeding established limits for nuclear facility staff, inhabitance and ecosystems and also potential for causing major and irreversible environmental impacts [2].

The impact of nuclear facility on the environment and human health is one of the main and important sustainable indicators. Whether all components of complex system "nuclear facility – environment – human" (Figure 1) are in stable conditions the monitoring and supervision of some parameters of each component, which shouldn't override the established reference values and limits, are able to find out such impact.

The period of the stable conditions change into unstable, volatile. History knows many such facts. The natural disaster in Japan and Libya's civil war are the latest examples of these processes in external environment which can influence on functioning of anthropogenic dangerous objects.

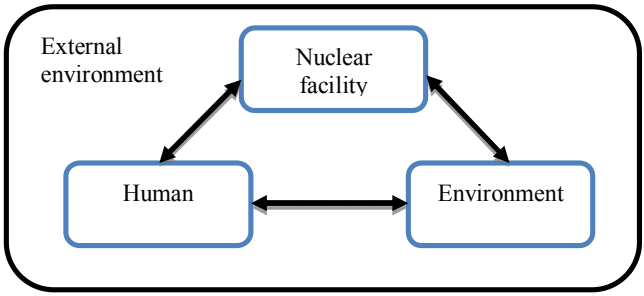

Figure 1 – Components of monitoring system

Also all of these components are complex natural and technical systems which can contain instability and response on external conditions. In the period of destabilization of the entire system or some of its component it is impossible to determine the past and future progress of events for all indicators which can be measured at any time [3]. That is not possible to determine the impact of nuclear facility because the small rates of some input parameters can produce high rate of output ones.

Using of system diagnostics of complex in whole will solve this problem optimally by taking into account all factors and opportunities commensurate with their importance at all stages of research and construction of full-scale models based on the purpose of its operation – "to minimize the impact".

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ANALYSIS OF SYSTEM TREATMENT OF INDUSTRIAL AND DOMESTIC WASTES IN POLTAVA

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Currently, Ukrainian society has become a major consumer products, which led to the growth of formed wastes. Anthropogenic and technogenic load on the environment in Ukraine is several times higher than corresponding rates in developed countries.

To protect 1 ton of waste is to use 3 m^2 of land, but after depositing of waste make a negative impact on air quality, groundwater and soil. For Poltava the problem of rendering of both industrial and domestic wastes harmless until now is not decided and continues to become sharp.

For Poltava enterprises we calculated index of universal formation of wastes [1] (Table 1) after a formula:

$$П_{зув} = 5000 \cdot M_1 + 500 \cdot M_2 + 50 \cdot M_3 + 1 \cdot M_4,$$

where M_1, M_2, M_3, M_4 is conditional units the values of which equal to the amount of well-educated wastes on an enterprise for to the classes of danger (1, 2, 3, 4 accordingly). Unit of M is tone/year.

Table 1 - Index of universal formation of wastes, ton/year

Name of enterprise	Wastes of a 1 class of danger	Wastes of a 2 class of danger	Wastes of a 3 class of danger	Wastes of a 4 class of danger	Пзув, conditional ton/year
"Poltavhimmash"	0,54685	0,500	646,688	1110,619	36429,269
" Kernel Group"	0,63830	2,525	721,148	32687,645	73199,045
"Poltavakonditer"	3,42185	6,753	83,6560	5466,392	30134,942
"Ltava"	0,39175	11,65	465,550	9442,141	40503,391
"Element Six"	4,62000	17,06	2299,45	3334,260	149936,76
"Poltava Avtoagregatny plant"	2,42750	11,00	975,439	4408,859	70818,309

Resired results allow to draw conclusion, that the considered enterprises must be brought to Register of objects of formation, treatment and utilization of wastes so as:

$$П_{зув} \geq П_{сз},$$

where $П_{сз}$ is a maximum value which for the objects of formation of wastes presents 1000 conditional units in a year.

It is known that industrial wastes of 4th class of danger, and also wastes residential housing to the sector of disposed on grounds, without regard to that due to decomposition of organic part can act part fuel used as raw material for the receipt of compost and biogas. Anaerobic processing of organic wastes accelerates the natural decomposition of organic without the participation of oxygen and keeping the temperature, moisture and pH and allows to produce liquid products.

The advantages of such biological processing include reduction of waste material, waste stabilization, and the destruction of pathogenic microorganisms and biogas energy for later use.

End products formed in such biological treatment can, depending on their quality, be used as organic fertilizer (soil improvers) and as energy source.

As part of the organic waste is more than 40%, it allowed to count the number of biogas per techniques (Table 2)

Table 2 - Theoretically possible quantity of biogas

Method	Biogas
[2]	153 thousand tons
[3]	159 thousand tons
[4]	2 thousand tons

In addition, anaerobic technology is processing a large number of industrial waste, which will increase the number of resulting biogas and sharply reduce the area required for disposal of waste.

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ENVIRONMENTAL PROBLEMS IN DOWNSIDE OF GLOBALIZATION

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Rapid globalization, which covered all areas of society today is accompanied by growing disparities in world industrial production and use of natural resources. All this leads to instability and tensions between individual states. Nowadays ecological factors more significantly affect the transformation of modern international relations.

Globalization is a comprehensive transformation of the world community in an open integrated system of technical, financial, economic, social, political, socio-cultural linkages and interdependencies. An important component of globalization is economic globalization.

Economic globalization is such an universalization of economic life that by influence of the exchange of knowledge, people, goods, cultural values etc. more and more incline to common standards, principles and values.

Economic globalization brings with it not only benefits (spread of new information technologies, transfer to resource saving technology), but also losses.

One of these negative points are environmental problems of humanity: quantitative and qualitative depletion of natural resources, reduction of forest area and arable land, freshwater, ocean pollution, intensification of natural disasters, natural calamities and disasters, global climate change, chemical and radioactive pollution, ozone layer of the greenhouse effect, irreversible loss of the gene pool in the world in connection with the disappearance of many species of animals and plants, etc.; growing human population genetic threats as a result of increasing quantities of radioactive waste, the formation of new disease pathogens.

They are the result of uncoordinated economic, social and natural sides of the development process, which are formed primarily at the national level, and further developing the global scale, creating synergic effects.

People in different ways related to the ecology. This is yet another negative consequence of economic globalization: economic inequality of the countries. There are three groups of countries: the first - developed, are the "center" of the economy, the second - forms the "periphery", the third - countries with low levels of development.

It so happened that the second and the third groups provide prosperity to the first group. Now the leading states consume natural systems of other territories, using their resources and moving the polluting production and waste there.

In countries with low levels of development prevails neglection of the problem of available resources, lack of economic incentives, the rule of corruption. Environmental issues there are far off, because many people live below the poverty line and the main task for them is just survival.

Today social and environmental standards in developing countries are lower than in developed countries. This allows them to obtain competitive advantage, because prices for their products do not contain costs for social services and environmental protection. In the future it could mean that all countries will be forced to lower their standards to stay competitive in the global competition.

Remember that the natural environment does not define national borders: environmental problems of one country harm to others. Solving these problems is possible only by joint efforts. You go on this type of development that would have united the interests of the interests of preserving and increasing importance of environmental resource base and ensure a high standard of living for all mankind.

This model of development requires a range of measures.

First we need a rational management of natural resources, which, in turn, needs implementation of legislation, ensuring effective measures for environmental protection, rational use of natural resources, control of the fulfillment of environmental safety's requirements.

An important mean to improve the environment is the development and implementation of saving technologies, development of alternatives to traditional energy sources. These are bio-energy, solar energy, hydropower, geothermal energy, wind power, environment energy.

Another measure is to move businesses to cost-effective and environmentally safe innovative development. Innovative development involves the use of nano and other advanced technologies. Nanotechnology gives new possibilities of processing waste water treatment, detection of mercury and more.

Another measure of environmental improvement is to improve ecological education. It is an effective instrument of public ecological awareness that leads to understanding of ecological problems, necessary to solve them and find possible promising paths. Improving environmental education is the basis for development of ecological culture.

Thus, all these measures lead to the reduction of

ecological globalization's negative impact.

However, in order that these measures were implemented in reality necessary to create a modern mechanism of protection from environmental threats. Regulation of environmental threats must be carried out at three levels: the level of international cooperation, regional level, national level.

Nevertheless, we must remember that economic globalization generated environmental problems can be solved only by joint efforts.

THE ROLE OF AN ENVIRONMENTAL FACTOR IN THE REGIONAL LABOUR POTENTIAL FORMATION

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In spite of the fact that today a lot of scientists research the influence of the environment on human health but the question of the influence environmental factor on the formation of labour potential of the region and its management with ecological factor does not research.

On the authors work opinion [1] only through human health can detect the direct link between labour potential territory and the level of contamination of the environment.

Ecological factor or the contamination of the environment has the ability to influence not to score itself but on its structural elements, on the processes associated with it. Changing of quantity and quality characteristics of the labour potential of the territory on all stages of its reproduction occurs under the influence of this environmental factor [2].

Analysis the opinions of different authors we can draw conclusion that on the phase formation of labour potential of the territory the influence environment can be traced through the public health.

In our opinion only such environmental factors as air emissions of hazardous substances, discharge of sewage into natural water bodies and waste disposal in soil influences on decreasing level of labour potential of region.

Pollution of environment affects on the workforce area in the result of social nature as: 1) increased morbidity population, 2) increased in injuries 3) staff turnover, 4) migration of the economically active population outside the region, 5) reduction of individual labour productivity; 6) death rate, 7) birth-rate, etc.

Diseasing of the population in consequence of environment influences on the physical decline of human development that leads to lower grow of population and therefore it economically active part. Impairment of physical development of the new generation of population in the result of pollution has also negative impact, because decrease ability to get a certain kind of education [3]. Death rate of the population therefore environmental pollution is one of the main factors reducing labour potential. According to the State Statistics Committee of Ukraine, increasing the death rate due to diseases caused by environmental pollution (neoplasm's, respiratory diseases, etc.).

Ecological influence on the enterprises in the region as economical actors, accompanied by additional costs associated with removal, prevention and compensation of the negative social consequences of environmental pollution, as well as by loss of business income (in the connection with the underutilization of time and lower labour productivity comparing with other economical resources). As a result, instability of the staff in the enterprise through satisfied of sanitary-hygiene conditions of job the enterprise carries economical loss. At the state and local level the management of the territory the influence of the ecological factor on labour potential accompanied by loss

of income in accordance with state and local budgets, the cost of which are directed to the liquidation, prevention and compensation of the negative consequences through the environmental pollution. These losses occur due to lower profits for companies, in consequences of the environmental pollution [2].

Of all upper mentioned we can conclude that human health is indirectly dependents on the environment, which plays an important role in disability and reduced life because disease, which leads to lessen to the level of labour potential of the region. A person can be healthy only is the "healthy environment". Population health is the most important factor that determines the present and future of our country [4].

In our opinion it is necessary to form such a mechanism leading of the labour potential of the territory with ecological factors in the management of the economy that would provide of the interests of environmental protection and economical processes taking place in the country, linking into the whole internal resources of the country and its external environment, strengthening the adaptability and competitiveness of national economy.

Compatibility of the economical growth and environmental protection can only be provided when all countries without exception, recognize the mutual ecological and economical dependence, the necessity for coordination ecological growth and environmental priorities and on these principles will build its international economic relations, together preventing the destruction of our planet.

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MODERN TRENDS ECOLOGIZING WORLD ENERGY

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On the background of developing and deepening global environmental crisis, one becomes aware of the value of the state environmental protection for the life, attempts to implement the main objectives of the Concept of Sustainable Development, changing attitudes to traditional energy (taken measures to curb fossil fuel use). Modern power, based largely on fossil fuels can not guarantee sustainable development in the long term. On the background of the general instability and the search for ways out of the developing energy crisis, as well as awareness of the value of a favorable ecological environment in recent decades the world has witnessed increased attention to renewable energy sources (RES).

Understanding the ecological importance of environmental protection is increasingly becoming a determining factor in solving many complex problems at the government level, government agencies, and large companies. This approach is manifested in the fact that even countries that do not experience shortages in energy resources stimulate the development of renewable energy.

World vastly different from each other in terms of emissions, leading to accelerated accumulation of greenhouse gases in the atmosphere. While residents of the richest countries account for only 15% of the world's population, they are responsible for nearly half of all CO2 emissions. A carbon emission per capita in the United States is five times higher than in China and more than 15 times - India. In Ethiopia, the average rate of carbon emissions of 0.1 tones of carbon dioxide, compared with 20 tones in Canada. The global carbon budget due to energy emissions into the atmosphere should be an annual 14.5 GtCO2. At present the greenhouse gas emissions in the atmosphere are being doubled.

The European Union is firmly committed themselves to the use of solar, wind and biomass - the Strategy development and use of renewable energy, according to which the energy balance of the EU countries the share of renewable energy should be increased from 4% in 1991 to 20% in 2020. (Up to 25% by 2030), and the production of electricity from renewable energy sources increases to 21% in 2010

Greening Trends of modern power found its reflection visible and in the use of transport fuels. It is known that transport - the main polluter of the environment consumes up to 60% of world oil production. In recent years, the transition to new sources of fuel: liquefied natural gas, liquid hydrogen, biofuels (ethanol, ethanol, biodiesel).

However, the importance of biofuel projects on the national economy is also hard to overestimate. Ukraine consumes more than 11 million tons petroleum products per year, of which about 50% are imported fuel in the gas balance of the share of imported energy resources is about 80%. In Ukraine today there is no full-fledged market biodiesel and bioethanol. However, Ukraine has already built a dozen biodiesel refineries with a total capacity of more than 250 tones per year.

Today, Ukrainian refineries are in a very competitive disadvantage relative to European businesses: imported fuel dictates a fashion to the standards of Euro 4 and Euro 5, while at the same time, technological backwardness of Ukrainian refineries preclude release of such products at least the next 5 years. In many developed

countries, cars are transferred to the environmental standards for fuel: Euro-6 is scheduled for the introduction of the EU in 2014

Many other trends noted in the area of greening of world energy - upgraded technology, developing the legal framework, accepted the special state program for the development of renewable energy, is carried out extensive educational outreach. The latter proved to be extremely important in achieving tangible progress in the restructuring of the energy policy in Denmark, France, Spain, Britain, Germany and other countries.

In many countries (U.S., Canada, Japan, EU, India) adopted the Programme on Hydrogen Energy and Hydrogen Fuel. They invest billions in investments in fuel cells, hydrogen cars and hydrogen fueling stations, solar-hydrogen and wind-hydrogen technologies (70-80's leader in hydrogen power was the USSR).

Also in the U.S. and EU plans to introduce energy-saving technology provides the following activities:

1. Organic waste (household, wood pulp, animal waste and poultry waste sewers, "green" - greens, cabbage, garden and park, etc.) Process using microorganisms in the biogas and bioethanol (an alternative to gasoline) that will cover up to 10% of energy demand.

2. Produce electricity using nuclear fusion power plants that run on an isotope of hydrogen - deuterium (with the addition of tritium). Unlike nuclear, thermonuclear energy is virtually no radiation threat.

3. Agriculture is fully translated into the low-energy "bespluzhnye" technology (in the West they were called no-till, that is, "without plowing - to a depth of 5 sm). For example, if the Ukrainian average per hectare wheat consumes 120 liters of diesel fuel, the technology no -

4. till - no more than 20 liters, it means 6 times lower.

Taking a course for the revival of our economy, it is necessary to take into account the current trends of ecological, humane, social life, to use international experience in restructuring the economy, as well as mechanisms for regulating all economic sectors, including energy.

GREATION OF ADEGUATE COUDITIONS FOR ECOLOGICAL EDUCATION IN A FAMILY – THY MAIN STATE PRIORITY

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The article is devoted to the main problems arising in the family interrelations. Besides, the excerpts from the Ukrainian Constitution articles and Family Code which regulate the family interrelations are given.

Key words: family, state, education, parents, children.

The family well-being should be first and foremost the main priority for any country. The very family interrelations are the main world outlook forming factor for teenagers being in their part the next generation and responsible for the future of a state.

It should be mentioned that it is childhood perception of family interrelations in future.

V.O. Suhomlynsky, a personality is formed mainly up to nearly 12 years old.

Undoubtedly, the basis of ecological education in the child-hood is formed by parents and teachers. But there arises a question: are the young parents able to inculcate, responsible education upon their children? A teacher must be educated himself that's why there appears a certain doubt, because most of contemporary parents have a low level of ecological culture themselves.

If parents want their children and grandchildren not to become the victims of mankind's technological mistakes, then they must first of all compensate the gaps in their own ecological education thus not allowing the same concerning their children and descendants.

Ecological culture forming is a complex and manifold process, which has to begin in a family, when a child just starts to speak walk and perceive the environment. The human ecological behavior is proved to be based not only upon mental activities, but is motivated by ancient genetic - inborn programmes: " do not kill the like" " protect" your own place of existence" and that's why the forming of ecological motives and persuasions should be started before a human acquires his psychological ability for complete critical reinterpretation of facts, ideas and continuation of all the life gradually mastering the system of knowledge about environment and the main principles of ecological education.

Since the basis of ecological education is formed in the early childhood the parents and the family being the first teachers, the questions concerning the possibilities of such education is logical and natural. Therefore the complex human ecological education must be stared from the moment of his (her) birth.

Despite the social crisis, a family reserves for itself a place of primary importance for every person.

A family created something like a pattern according to which a teenager begins to perceive the others and evaluate himself as a personality the society as regards.

Even taking into account any problems which often accompany a person during all his life it is just a family where one can find understanding and support. But unfortunately not all the parents are an example for their children. Sometimes it is even on the contrary… Therefore a family well-being must be an immediate task for every state.

Legislation of Ukraine forms a good basis for the development of young families but alas it does not regulate the order of their execution.

The Family Code of Ukraine regulates the family interrelations legally.

According to article 1: Regulation of the family interrelations is realized be the Code with such a goal as:

- Strengthening of a family as a social institution and a union of concrete persons;
- Strengthening of the sense of duty before the parents children and other members of the family;
- Structuring of the family interrelations on the parity basis, on the feelings of the reciprocal love and respect mutual aid and support;
- Providing of every child with family upbringing and opportunity for spiritual and physical development;

In accordance with Article 5 of the Family Code of Ukraine: "The state protects a family childhood, motherhood, fatherhood and creates the condition for the family strengthening"

But if we look at the situation in this country nowadays we shall see that the state pays insufficient attention to the improvement attention to the improvement of social status and family development.

During the first half year of 2009 69 thousand pairs annulled their marriage.

According to the statistics the strongest families in Ukraine live in Transcarpathia where every year the quantity of marriages is 2,5-3 times more than the quantity of divorced. The worst situation is in the Donetsk Region where 10 of 13 marriages get divorced.

It should be also mentioned, that the religions belief plays a great role in the human life in Transcarpathia. It is just the belief that stimulates the married couples to follow moral rules, which undoubtedly condemn a divorce and first of all teach children to respect spiritual values. Unfortunately, the atheistic outlook of the Soviet power influenced the people's consciousness rather negatively and as a result married couples do not understand the very importance of a marriage namely the responsibility not only for themselves but for the children who above all suffer from the parents divorce.

Attention must be also paid to the fact that a lot of Ukrainians are beyond the borders of the country in connection with the lack of work and the need of material provision.

Scientists are un able to present exact information about how many Ukrainians work abroad the number being from 3 to 7 million persons. According to State Communities on Statistics there are nearly 13,5 mln. families in Ukraine , 6,9 of them have children. There are also about 400 thousand families having many children and more than 2 mln. being incomplete.

The considerable number of low-income families in need of social security remains the problem of actual state social policy.

Evidently, there exist various social centers and services, but they do not have enough money to help and support a great deal of low-income and broken families.

Nowadays the problem of finances often causes divorces, in the best case a family has only one child which leads to the demographic decline. Formerly the Ukrainian population has diminished from 52 mln. to 46 mln. inhabitants.

In accordance with Article 51 of the the Constitution of Ukraine parents have to support their children up to the full ege. Unfortunately, sometimes just children are the source of a financial income for parents, in case underage parents work illegally or supplement their families earnings, and at work being engaged in beginning. Although the Constitution of Ukraine (Articles 52) points to the right of education for every citizen, and the full secondary education in Ukraine is obligatory and free of change, children of low-income families are unable to study at school because of costs lack to buy school stuff.

That is why the improvement of the actual system of social security for separate family categories especially for the so-called socially vulnerable ones (with many children, incomplete ones, students, functionally unable pensioners, ect.) is a strategic guideline of the state social policy concerning families.

The main aim of social security improvement should be: stabilization of standard of living of the Ukrainian families extension of privileges and allocation of extra funds for the low-income and broken families, creation of social centers to offer psychological help not only in cities, but in remote populated areas.

Advertising greatly influences human consciousness, therefore the improvement of the social security system can be made at the expense of an advertising company

which is sure to extend not only the idea of healthy way of life, but also to propagandize a good example of parents to their children.

On the other hand, the main priority of every family should become not only material but also spiritual values, which are to unit a family despite any social and political changes.

The family well-being depends on the household itself and it is just good interrelations that create the family common bases.

The family as a social phenomenon contains the range of factor which form everybody of us not only as a human being, but as individual.

FINANCIAL SUPPORT ENVIRONMENTAL SAFETY OF UKRAINE

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Economic security is the foundation of any country in the world. But environmental issues are increasingly brought for discussion in the world community. To ensure the most efficient and prosperous country should provide three main factors: social and environmental and economic security. It is clear that each of these factors depends on the other two. In this article we will examine the relationship between environmental and economic security.

Currently, Ukraine has a fragile economic system. Monetary system of the country is soft and leadership focuses on economic growth, while the country needs a system reliability. The stability of the economic system defined by the following three factors: safety, liquidity and profitability. It is in the following order should operate the country's leadership. Safety economy directly depends on its stability. Historically, perhaps even historic, Ukraine article prescribes ecology in the budget ever, but it wants the best performance.

Since 2006, providing economic environment improves. But the crisis of 2008-2009 made its "contribution" in the growth and new growth observed since 2010. Currently, Ukraine is gradually coming out of the crisis and restoring funding environment of the country (Table 1, Fig. 1).

Table 1 - Data for budget of Ukraine

Year	Expenses budget	Financing environmental sector	Percentile
2002	49498467.30	1304611.30	2.64
2003	55907506.00	448614.00	0.80
2004	72215687.60	220661.80	0.31
2005	117394610.10	199080.30	0.17
2006	140199363.70	1177859.00	0.84
2007	174631522.20	1497194.30	0.86
2008	253207875.10	1732420.40	0.68
2009	274156440.70	1608352.30	0.59
2010	307748182.90	1973121.30	0.64
2011	321920850.30	2958234.80	0.92

By the ecological situation in Ukraine after the Chernobyl accident followed most of the world. Ukraine's goal to bring the country's environmental policy to a new level and show the world that with the problems the country can cope alone and does not require surgery and reminders from the UN, EU Euro, etc.

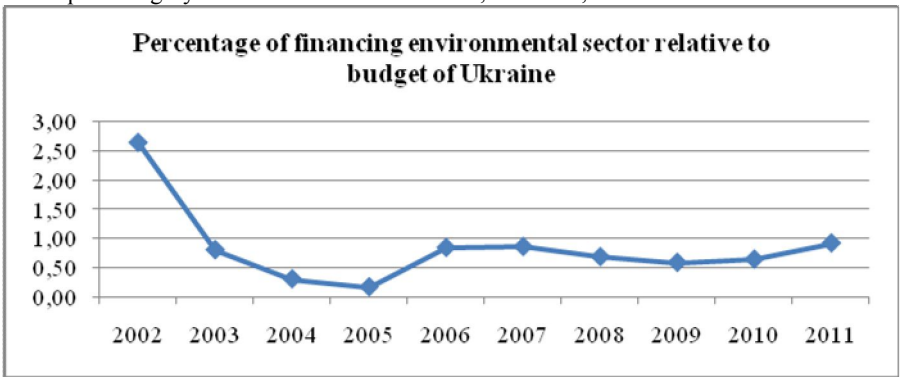

Fig. 1

The more leadership is concerned about the environmental safety and its financial supports and develops, the more protected and confident the country can feel the world.

Environmental security is important not only for the moment, but also factor in future, as such, as a whole. With bad environmental future generations suffer more problems. Every year lost by a simple environmental sector means more cash investments, spent more time and more lives lost and undermined the health of our citizens.

Currently, our budget does not allow countries to allocate sufficient funds for environmental articles to solve all existing problems and prevent possible problems. One of the outputs of support environmental sector is to encourage and attract private enterprise and environmental holdings at favorable terms to both parties.

In developed countries, such agreements are standard practice and more countries have a way to solve problems. In Ukraine, unfortunately, most do not want to deal with the state because it is not profitable and difficult.

Thus we can conclude that environmental security should review its funding schemes and the economy as a whole. Finding alternative ways to solve this problem.

MOTIVATIONAL MECHANISM FOR THE SUSTAINABLE ENERGY EFFICIENT DEVELOPMENT

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Entry. A question about the problem of the energy conservation is an urgent for today for Ukraine and the whole world. In the conditions of the market-oriented economy, political instability, world financial and economic crisis of Ukraine, a

strategic plan for the sustainable development is needed, especially in the sphere of the usage of the energy efficient recourses and energy conservation.

Scientific research of the sustainable development problem points has been carrying out in Ukraine for a long time. This point was studied by such scientists as O.G. Biloys, E.M.Borschyk, I.M.Vahovich, B.M.Danilishin, L.B.Shostak etc. A regulatory framework also exists, particularly the Ukrainian Law "About Stimulation of the Region Development". But the biggest part of these researches and legislative acts are oriented to the support of the country's depressive territories by other regions and resources. So, we are going to try removing the symptoms, not to destroy the origin of the problem.

In our opinion, it is necessary to activate the inner possibilities and to discover potentials of every separate territory via introduction of the incentive mechanisms. Thus, the important task for today is the working out and launching incentives to encourage regions and the whole country to the sustainable energy efficient development.

Problem Statement. The main task of the work is to research theoretical aspects of motivational system towards stimulation of the sustainable energy efficient development.

Results. Motivational mechanism is the complex of outer and inner conditions, which get a person interested in the implementation of definite economic activity to suffice needs and to implement interests.

Having considered and analyzed the raw of economic theories, connected to motivation, let us correlate them with the stimulation of the sustainable energy efficient development.

The motivational theory of drives by Karl Hall, describes the behavior of a person. This behavior is supported by the definite stimulus (material or moral), that is strongly enough secured in the human's psychics. As the result of such a fixing, the person begins to act according to the definite scheme. Using this theory of drives, from position of the sustainable energy efficient development, it is necessary to use definite stimulus in the energy efficiency and production system (investment, tax credits etc.). In such a way the "pattern of sustainable development" is created.

Let's consider the motivational theory of expectations by V. Vrym, which is based on the expectations of a definite event. A person makes efforts to achieve some definite aim in the very measure, that one assesses the probability of being rewarded for it. Having adapted it to the aims of the sustainable energy efficient development, this theory will have the following algorithm: using the system of stimulus (used efforts), the achievement of the result is predetermined (saving of the lightning, decrease of the usage of DH etc.) The received result will cause the reward for the sectoral and regional system (getting the profit for the region in different spheres of the vital functions). Therefore such a scheme works: "stimulus- sustainability- getting the profit for the branch, region, and country in general- desire for the sustainable energy efficient development"

There is a very similar theory of the justice by Stacey Adams. The workers of the enterprise compare their rewards with used efforts and with rewards of other workers who are engaged in similar jobs. The main conclusion of a theory of justice for the practice of management is that as long as people believe that they receive fair compensation, they will seek to reduce labor intensity. If the wage gap among workers is due to different efficiency of labor, it is necessary to explain to the staff that when

their performance reaches the level of their peers, they will achieve the same level of salary. If the comparison shows an imbalance and a feeling of injustice (a person believes that his colleague gets more pay for the same job) this creates psychological tension in the workplace. As a result, it is necessary to motivate staff, reduce tension and to restore a sense of justice to correct the imbalance.

From the position of the sustainable energy efficient development, putting regions, energy dependent establishments and housing in equal conditions is necessary to reach sustainability. Though, sustainability achievement needs usage of different approaches, methods and instruments, but it should be fair for everyone. It means that it should settle interests conflicts to minimum.

Conclusions:

The Mechanism for the Sustainable Energy Efficient Development should be understood primarily through the prism of the theory of motivation. Successful transformation of the leading theories of motivation contributes to the creation of a new theory incentives for sustainable regional development, under which each regional system is characterized by a combination of needs (social, economic and environmental) which should be achieved. But the motivation is considered in framework of procedural theories of motivation from the standpoint of what causes a person to guide their efforts to achieve various goals.

It is clear, that the problem of the increasing of the production efficiency and the development in Ukraine is the complex problem that influences the economy of the country, ecological situation, and social mood. In our opinion, the solution of this problem is the complex and macroeconomic launching of the motivational mechanisms of the sustainable energy efficient development stimulation on the levels of the territory, enterprises, and other subjects of the economy, and citizens with the helping of economic methods and indexes too, that fit conditions of the market economy the most.

DEFINING ENVIRONMENTAL AND ECONOMIC RISKS FOR ATTAINING SUSTAINABILITY IN AGRICULTURE

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Agricultural production is a subject to many environmental and economic risks. Any farm production decision plan is typically associated with multiple potential outcomes with different probabilities. Weather, market developments and other events cannot be controlled by the farmer but have a direct incidence on the returns from farming. In this context, the farmer has to manage risk in farming as part of the general management of the farming business. Hazards and unforeseen events occur in all economic and business activities and are not specific to agriculture. However, farming risk and risk management instruments in the sector may have a certain number of specificities.

Many risks directly affect farmers' production decisions and welfare. In response to the potential impact of these uncertain events farmers implement diverse risk management strategies in the context of their production plans, the available portfolio of financial, physical and human capital, and the degree of aversion to risk.

These risk management strategies may include decisions on-farm, changes in portfolio structure, use of market instruments, government programs, and diversification to other source of income. Many general agricultural support policies have risk management implications and influence risk management decisions. Because of the complexity of these interactions governments need to make significant efforts to achieve coherence, particularly among different policies and between policies and market strategies.

Agricultural risk is an interrelated "system" in which markets and government actions interact with risks and farmers' strategies. Government programs may underpin the development of market strategies, but they may also crowd out market developments or on-farm strategies. The result of these interactions is the set of risk management strategies and tools that is available and used by farmers. The available strategies are not the simple addition of government programs, market instruments and on-farm decisions; they are mutually interdependent and constitute a unique system.

The risks and sources or risks that are relevant in agriculture have different characteristics, and they can be classified in very different ways. It is not necessary to opt for any particular classification of risk, and different ones can be used for different purposes. Some technical characteristics of risks apply across different classes and can be very significant in terms of the appropriate and available strategies to deal with each risk. Any classification of risks underlines the fact that an individual farmer may be facing very different risks at the same time. In these conditions, the optimal choice of a strategy to deal with them requires that correlations among risks be accounted for.

ORGANIZATIONAL AND ECONOMIC ASPECTS OF WATER MANAGEMENT ON THE BASIN METHOD

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Nowadays, there is a lot of attention in foreign, domestic practice, and in science which is paid to the management of water resources at the basin method. This approach is systemic, because the water basin is a rather complicated multi-level system which consists of a set of subsystems with complex relationships. Their breach of the functioning sometimes leads to the degradation of the entire basin. Thus, the decline in biodiversity can substantially affect the water quality in water sources, and changing landscape structure always affects both the level of water in water bodies and on the assimilative capacity of ecosystems.

Environmentally irregular growth in consumption of quality water eventually leads to a significant rise in the cost of water margin required quality in connection with the complication of artificial purification. The increasing scarcity of fresh water facilitates the transition to water resource management. This management is based mostly positive feedback mechanism (changes in the parameters of homeostasis of the system).

Natural potential is involved in developed countries in order to reduce the cost of water treatment. Area pools are scientifically proven structured for this. It's doing to minimize the contamination of surface and underground water sources and to maximize the reproductive capacity of aquatic ecosystems. In this regard the experience of Kazakhstan is quite revealing. There based on species diversity allocation of ecosystem

zones, allowed not only to restore the broken during the development of virgin land territory, but also significantly improve water quality in rivers and lakes in the country.

Thus, the strategy of integrated management of water resources (promoting the transition to low-flow and waterless technology, desalination of brackish water, improved methods of treatment, the import of water and water-intensive products) are increasingly based on ecological and economic practices (restoration of the natural structure of the basin, biodiversity conservation, establishment of bio-filters, etc.), which are focused on sustainable water use. Implementing of such strategy can significantly save on the costs of water treatment, since in the case of high-quality natural cleaning costs are solely for water disinfection (UK experience).

It is important to standardize the human-induced pressures on water basin for its safe operation. We are talking about the selection of water and discharges of polluted water. It is believed that the use for technological purposes without serious environmental consequences can be about 10-40% of the annual runoff of the source [1-3], depending on the size of a water body (small, medium, large rivers). In our view, this limit is appropriate to include as water, which can be purchased and the selection of water users and water, hypothetically necessary for the dilution of untreated sewage to safe concentrations. This approach can greatly simplifies the procedure for water resources management and will contribute to safer use of water.

Specified environmental constraints cause the formation of water. Its subjects on the one hand stands the state as municipal and community organizations in the field of water and on the other hand stand water users (business entities and households). One should discriminate between two very different market - the competitive (government - business entities) and socio-economic (the state - people).The object of the market of fresh water from surface sources, while the goods must act already mentioned 10-40% of average runoff. As international experience shows, the best allocation of resources is provided on the basis of market licenses, which can be sold both by the state and by water users to each other in case of under-utilization of the acquired volume of water or to raise additional funds from the water savings resulting from the transition to more advanced technology. Market (competitive) pricing on water resources is a kind of a motivating factor to rational water use.

Taking into account the environmental restrictions, regions with significant water needs can compensated it by water from groundwater sources (temporarily), delivery of water from neighboring regions, as well as through government programs which facilitate the transition to the best technologies in terms of water saving. Naturally it is necessary to make arrangements for the selection of above-limit, on the basis of the principle of "polluter pays" principle, that is compensation payments, fines, etc. should be charged solely for the profit of the destructor, not laid in the cost of production ("user pays"). All this must be provided in the audit business.

In the case if it necessary to use water resources for public purposes than environmentally based standards the principle of "all of society pays" must be put into practice by taking into account the costs of restoring and maintaining aquatic ecosystems in taxes for households and business entities.

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RESOURCE SHOCKS AND ECONOMIC SAFETY

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World economy tendencies carry extensive socio-economic character: population, consumption of resources, and anthropogenic impact on the environment growth. With development of society all natural, labour and money resources are involved for providing world production. But, if labour and money resources are largely controlled by man from point of their reproduction and management, natural resources can cause so-called market failures, conditioned not to finish counting of reproduction and assimilatory capacity of nature. The problem is intensified in connection with the uneven location of natural resources on regions. All of it forms pre-conditions to ***resource shocks*** origin**.**

Resource shocks are unexpected sharp exogenous or endogenous changes in the economic system, accompanied by a protracted price dynamics (no less than 12 months) and resulting in a recession, foremost in countries, which are dependency upon a resource. Three oil shocks serve as a prime example of resource shocks: first in 1973, second in 1979 and third in 2008, although now, possibly, we look after fourth shock already. The consequences of these shocks, however strange, carried world character and were accompanied by the economic crisis [1, 2].

Reason of origin of resource shocks is market misbalance. More frequent this misbalance is conditioned by decline of resource supply (first and second oil shocks), and also increase of resource demand (third oil shock) [3].

Resource shocks can carry both negative and positive character.

Table 1–Advantages and lacks of origin of resource shocks

Negative sides	Positive sides
• economic crisis; • price increase on resources and concomitant products; • depression in economy; • growth of unemployment; • social crisis; • origin of conflicts for resources and other	• revolutionary changes are in development of new sources of resources; • development resource saving technologies; • search of new deposits of resources; • development of rational resources use; • development of new technologies of extraction and harvesting of resource etc.

Mainly countries, owning resources, do not give serious value possibilities of their replacement unlike countries which have resources deficit. In the case of origin of resource shocks the economies of energy dependent countries suffer most. It is necessary with the purpose of diminishing of risks of origin of resource shocks:

- to invest in development of alternative resources;
- to create resource reserve for a start resource shock for non-admission of production decrease;
- to work out the partner relationships with organizations of a few countries-exporters of resource;
- to develop economy of resources technologies which will allow on great while to save the world supplies of resources;
- to probe new territories for the search of new deposits of resources;
- to apply wastes of the used resources in one industry for making of products in other and other.

For providing resource safety in a country pattern of consumption, and also material-informative metabolism must be changed. For example, to reduce requirements in the certain type of energy production basis must be transformed (base facilities of labour); structural transformations must be carried out (the old will disappear and new industries will appear); extractive and processing spheres are reconstructed; knowledge base and skills of workings must be changed; the systems of transport, connection, infrastructure and other must be adapted. Naturally, similar changes affect the system of production relations: the systems of property, money circulations, and economic instruments must be transformed (taxes, prices, payments etc.).

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TACKLING ENVIRONMENTAL PROBLEMS (NATIONAL ENVIRONMENTAL COMMISSION) TANZANIA

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NEC's environmental management activities contribute to prevention and solution of various environmental problems. These activities include measures for preventing global warming and reducing waste for examples.

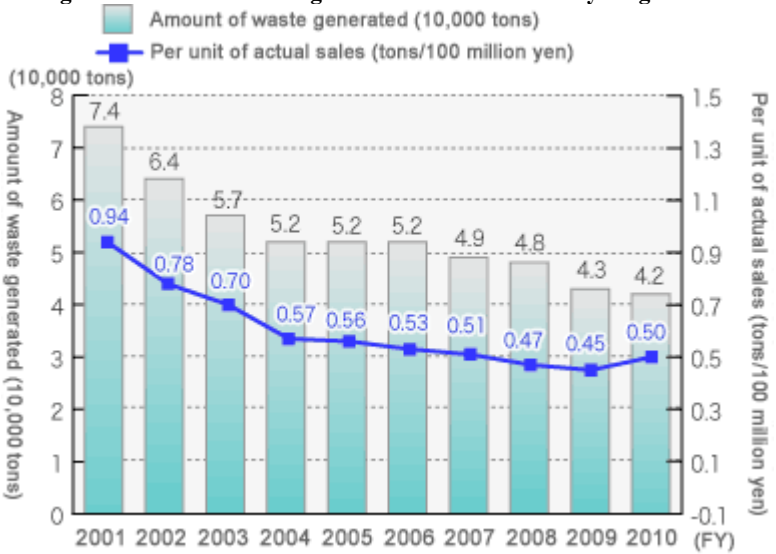
PROBLEMS AND SAFETY WAY TO PROTECT ENVIRONMENT.

1. NEC aims to reduce CO_2 emissions in all of its processes and business operations. NEC also contributes to reducing the amount of CO_2 emitted by customers by providing IT solutions. The NEC group participates in the Challenge 25%

Campaign, a national movement to combat global warming. In addition to attempting to prevent global warming, NEC has also started studies which forecast the impact of global warming in order to take measures to adapt to it. The following presents the results of efforts of the NEC Group to reduce greenhouse gas emissions.

2. Waste Material Reductions and Proper Processing. In FY 2010, we reduced the amount of waste we generated (general waste and industrial waste) to 42,000 tons, a drop of 1.5% compared with last year. This was achieved by selling off waste as new resources, and was also the result of a decrease in production levels. Since FY 2007, we have been managing waste generation in terms of how much waste is generated per unit of actual sales, in the same way as CO2 emissions. This system was introduced to improve resource productivity. In FY 2010, we generated 4% less waste per unit of actual sales than in FY 2006. We also maintained our target of zero waste emissions for the NEC Group. This was achieved by conducting regular inspections of our waste disposal subcontractors to ensure that waste was being disposed and offering advice to improve the overall level of recycling.

Changes in amount of waste generated and level of recycling.



Scope: NEC Tanzania (headquarters, offices in Magogoni area, 4 plants, and laboratories), 15 manufacturing subsidiaries, NEC Electronics, and 10 independent affiliates.

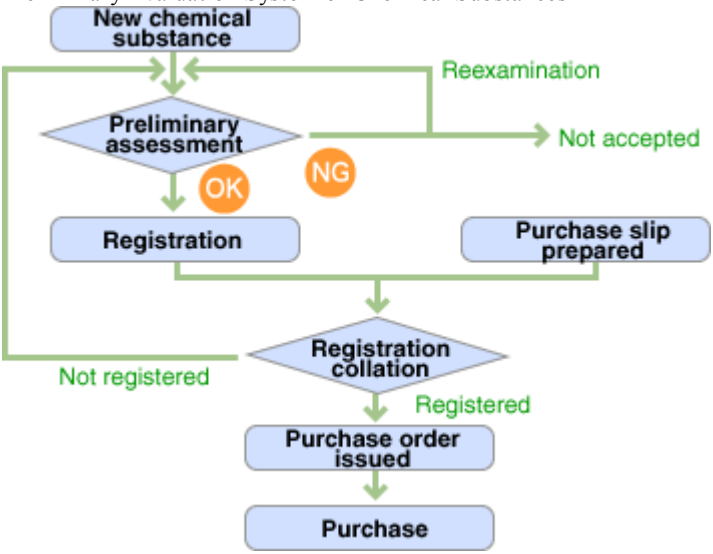
3. Chemical Substance Management and Reductions. NEC carefully examines environmental impact and safety in all phases of handling chemical substances, from receipt and use to disposal. NEC takes all possible measures to reduce consumption of chemical substances and to replace harmful substances with safer ones. >Use of Chemical Substances. In FY 2009, the total amount of regulated chemical substances used decreased by 11% to 34,000 tons compared with the previous year. Since FY 2007, we have been managing the amount of chemical substances we use in terms of unit of actual sales, in the same way as CO2 emissions. This system was

introduced to improve resource productivity. In FY 2010, we reduced our chemical substance use by 22% compared with FY 2006 levels, which was considerably better than our targeted reduction of 8%.

Preliminary Evaluation of Chemical Substances

Since 1979, NEC has been conducting preliminary evaluations to examine environmental and safety aspects carefully when using a new chemical substance for the first time. These preliminary evaluations are a series of strict examinations of physical properties, toxicity, handling methods, emergency response, recycling methods, environmental impact, and other items related to chemical substances. Only substances that have passed these examinations are allowed to be purchased. Material safety data sheets (MSDSs) are prepared based on this detailed data. A manufacturing assessment is carried out in all the manufacturing processes to evaluate the environmental and safety aspects.

Preliminary Evaluation System of Chemical Substances



4.Prevention of Air Pollution. NEC takes all possible measures to reduce SOx and NOx emissions.

5. Preventing Soil Contamination. NEC has performed voluntary soil surveys at all manufacturing sites of NEC Group.

6. Prevention of Ozone Depletion. NEC implemented measures to prevent ozone depletion including introducing ways to prevent diffusion such as sealing and using collection devices, as well as using a new flux coating system, and a substitute gas cleaning system.

7. Protection of Water Resources. NEC has undertaken activities to reduce water consumption and to protect forests in catchment areas.

8. Conservation of Biodiversity. NEC is making efforts to protect endangered species.

9. Prevention of Other Kinds of Pollution
NEC conducts environment measurements required by laws and regulations and by local government ordinances based on an annual plan.

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SYNERGISM IN INFORMATION ECONOMY

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Information economy is a term that characterizes an economy with an increased emphasis on informational activities and information industry. It is extremely important to draw attention at the role of synergism in information economy. Synergism or synergetism is the display of co-operative behaviour of natural material essences. As a result they unite in a system.

The analysis of the researches on economic synergism enabled us to define and analyse the basic kinds of synergism: interpersonality synergism, administrative, investment, financial, operating, trade synergism, synergism of man and computer, synergism of complex processing of natural resources, innovative and corporate synergism.

Interpersonality synergism. It is possible to talk about origin of such synergism, when two or a more people with different skills co-operate. As a rule, in business, it is a collaboration of people with organizational and technical skills. The principal reason of collaboration is the achievement of synergetic effect.

Administrative synergism. This type of synergism determines a general positive effect. It goes about known management problems of a company that entered a new industry. In comparison to synergy effect from centralization of business processes, in case of enterprises integration on value creation chain a synergy effect will be less considerable.

Investment synergism is possible as a result of common use of fixed assets, common supplies of raw materials, use of common capital productive assets.

Financial synergism may arise under condition of taxes cut, diversification. For companies, that provide financial services, for example, providing clients with wide set of financial goods and services (credit cards, opening accounts, housing mortgage, personal loans, mediation, investments, creation of "development budget") it is necessary for constructive change of economic position of firms participants.

Operation synergism appears when production capacities and personnel are used more effectively, overhead costs are distributed, and purchasing of large lots of goods provides advantages. Operation synergy is related to operating activity of incorporated firms and includes scale effects, price increase and higher increase rates.

Trade synergism. With the aim of sale optimization firms use common channels of goods distribution which are kept in one storage. It can also goes about an external incentive for separate enterprises activity for the sake of sustainable development, which will lead to forming new types of goods, for example ecological, and their realization with the aim of satisfaction of consumers preferences. Ecological goods and services must become major requirements for the society. For this purpose the synchronized action is needed in the field of favourable tax system creation, encouraging crediting, favourable pricing, public policy forming, assistance of mass media, state support of ecologically friendly goods and services market.

Synergism of man and computer is a combination of human skills, capabilities and computer technical characteristics. Computers are extraordinary in combination with professional skills of people, which work with such technique. Enormous information content can be worked out only when personnel are involved. It is a combination of a computer and man and is another type of synergism.

Synergism of the complex processing of natural resources is especially important in connection with problems of economic synergism in the context of sustainable development. The basic idea here is in one hundred per-cent use of resources, zero-emission production, ecoefficient production. The basic principle of by-product synergism is the following - wastes of one production can be used as input resource for other production. This principle must diminish harmful emissions in the atmosphere and aquatic sources, prevent excessive wastes formation and also will allow reduce the operating costs of enterprises. As a result there is a possibility to get a synergetic effect from similar industrial symbiosis of production.

Information-innovative synergism. Its basis is information assets which in combination with other productive factors give the complex of advantages. Integration of unique information technologies and foods in a productive environment enables economic agents to use natural resources effectively and rationally and adhere to ecological equilibrium. Basic advantages of this type of synergism, which can promote company's efficiency, can be the following: protective, investment, competition, expansive and ecological advantages. Basic advantages of information-innovative synergism can be formulated in the following way: protective advantages enable to decrease threats for companies functioning and prevent the basic types of threats; investment advantages appear due to possibility of free money investment in profitable business; competitive advantage appears due to a more complete risk control (price, currency and other risks control) etc.

Corporate synergism. Curien N. distinguishes the following constituents of corporate synergism: financial, client, intersystem and educational. The essence of financial constituent consists in optimization of distribution of capital, balanced growth and risks. Under a client constituent the mentioned author understands development of

cross sale, search of common clients. An intersystem constituent means common process of optimization and scale economy. Development of key competences and best experience exchange means an educational constituent.

THE FORMING OF THE SYSTEM OF ENVIRONMENTAL LOGISTICS

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The possibility of including the questions of the rational usage of environment in the range of issues ,which are considered by Logistics, allows us to make a conclusion about the necessity in certain transformation of logistics systems.

The traditional scheme of formation and analysis of material flows is undergoing some changes due to the need for recycling and recovery.

Forming the system of logistical managing, taking into account an ecological factor, we can talk about the need of allocating Logistical subsystem which is linked to the traditional: supply, production, sales, warehousing and transport systems.

The characteristics of the logistical subsystems of enterprise is presented in the Table 1.

Table 1. The characteristics of the purpose of the enterprise logistical subsystems

Subsystem name	Function
Purchasing	Organization of material and technical purchasing
Production	Governing material stream inside the enterprise
Marketing	Organization of product and service sales
Storing	Choosing warehouses and places of their accommodation
Transport	Organization of cargo transport
Informational	Integration of governing all material stream elements, their efficient and reliable cooperation
Ecological	Securing ecologization of production, optimal recycling and utilization scheme

The main function of environmental logistics is to provide the rational usage of environment(the implementation of recourse and energy-saving measures) and the protection (development of optimal schemes to utilize wastes of production and consumption).

The usage of effective economic (ecological and economically reasonable amounts of payments and fines for the pollution of environment) and organizational (improving the system of monitoring the environmental performance, etc.) instruments of state regulation can put the environmental component in a row with other subsystems.

To determine the effectiveness of environmental logistics result should be compared with the costs, which result in its receipt, and both the non-recurrent expenditure (capital expenditure in the construction of nature conservation), and operating costs should be taken into account.

Among the positive effects of the transformation of logistics system, taking into account the environmental factor, the risk reduction takes place.

In general, the inclusion of environmental factors to the traditional questions concerned by the logistics, allows to create an effective reasoned approach to the management to reduce production costs damaged to the environment.

The main courses of realization of this approach are:

- design and application of optimal planning and managing of inventory holdings;
- analysis of the influence of production process and the elements of logistics on the environment;
- using of alternative technology;
- reliability control of processing equipment.

A TYPOLOGY FOR THE CLASSIFICATION, DESCRIPTION AND VALUATION OF ECOSYSTEM SERVICES

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The transition to sustainable development requires to pay more attention to the quality of life, people's welfare, as well as restoration of natural ecosystems and the services they provide, the quality of which in the past 50 years have substantially deteriorated as a result of the growth of human impact on the environment. According to this, the issues connected with the management of ecosystem services (eco-services) become more urgent. These issues are: eco-services and their functions assessment, formation of markets for eco-services, identifying potential consumers and sellers, implementation mechanisms and instruments of their compensation.

There are two basic interpretations of ecosystem services. According to a broad interpretation, eco-services are the full range of goods and services provided by nature, i.e. all three functions of natural capital (resort, ecosystem, social).

According to a narrow interpretation, eco-services are the functions of ecosystems that provide economic benefits to their customers and are based on nature ensuring of various regulatory functions [4, 5].

According to G. Daly, eco-services are the conditions and processes through which natural ecosystems, species and their constituents maintain and reproduce human life. It also have properties to conserve biological diversity and ecosystem to produce goods (such as seafood, biomass fuels, natural fibers, pharmaceuticals). Examples of eco-services are water and air purification, assimilation and detoxification of wastes, regulation of rainfall and drought, soil formation, biodiversity conservation in agriculture, protection from ultraviolet radiation, stabilizing the climate, etc. [2].

According to the classification [3] eco-services are divided into four groups:

- providing (products derived from ecosystems);
- regulating (the benefits derived from regulation of ecosystem processes);
- cultural (non-material benefits derived by humans from ecosystems);
- supporting (services, required to support other eco-services).

Evaluation of eco-services effectiveness is based on economical estimation.

Currently, the procedure of economic valuation of ecosystem services consists of four main phases [1]:

1) identification of eco-services;
2) determining their economic value;
3) identification of beneficiaries of services;
4) formation of payments (compensation) mechanisms for eco-services.

There are two points of view on economical estimation of eco-services. The first involves the need for permanent improvement of methodology of economic evaluations, determination of value of eco-services, creation of mechanisms to include these values into economic policy of the state. The second point of view denies the great value of economic estimations of eco-services, explaining that ecosystems has infinite value and assessments of its individual elements is absurd.

The theory of eco-service's economic valuation in the context of sustainable development going through the stage of formation. Eco-services are essential to prevent global environmental problems (biodiversity preservation, climate change protection, etc.). Economic evaluation of eco-services is important for the improvement in the environmental field, acting as a basis for accept management decisions, namely: to determine losses from the misallocation of eco-services, to justify the cost-effectiveness of investments in the environmental complex, compare the costs and benefits of eco-services utilization, as well as to calculate the compensation payments, and create a qualitatively new information base for decision-making in wildlife management..

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DESERTIFICATION IN AFRICA

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Desertification is the degradation of land in arid, semi-arid, and dry sub-humid areas due to various factors: including climatic variations and human activities.

Desertification is one of the world's most alarming global environmental problems. It takes place worldwide in dry lands. At least 90% of the inhabitants of dry lands live in developing countries and they suffer the poorest economic and social conditions. Dry lands occupy 41% of Earth's land area and are home to more than 2

billion people. It has been estimated that some 10–20% of dry lands are already degrade, the total area affected by desertification being between 6 and 12 million square kilometres, that about 1–6% of the inhabitants of dry lands live in desertified areas, and that a billion people are under threat from further desertification.

Desertification is caused by a combination of factors that change over time and vary by location. Key factors such as human activity and climate variation contributes to the desertification of arid, semiarid and sub-humid land; which will be my areas of focus.

But desertification is a broad term when talking about the more heightened forms of the degradation of dry land ecosystems, not to mention the consequences that delay their natural occurrence of their ecosystem services. Many key processes are related to desertification, "drought, primary production, carrying capacity, soil degradation, and water resources," as well as social impacts to the ecosystem.

The objective of this paper is to clarify the definition of desertification and its causes and effects of processes set off by climate variability and human practices.

CAUSES:

They have difficult socio-economic conditions, insufficient institutional and legal frameworks, incomplete infrastructure, and weak scientific, technical, and educational capacities.

Cultivation of marginal lands, i.e. lands on which there is a high risk of crop failure and a very low economic return, for example, some parts of South Africa where maize is grown.

Destruction of vegetation in arid regions, often for fuel wood.

Poor grazing management after accidental burning of semi-arid vegetation.

Incorrect irrigation practices in arid areas can cause Salinisation, (the build up of salts in the soil) which can prevent plant growth.

POSSIBLE SOLUTIONS

1. Afforestation, that is re-planting trees, especially in shelter belts. Planting grasses can help stabilise the soil and cut down on erosion by wind and rain.
2. Also terracing the land to slow down the water running off will make better use of the rain that does fall.
3. By August 2005, 30 African countries finalized, validated and adopted their National Action Programmes. These countries are Algeria, Benin, Burkina Faso, Cape Verde, Chad, Djibouti, Eritrea, Ethiopia, Gambia, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Morocco, Mozambique, Namibia, Niger, Nigeria, Senegal, Sudan, Swaziland, the United Republic of Tanzania, Togo, Tunisia, Uganda, Zambia and Zimbabwe.
4. Poor irrigation Make sure the water is not evaporated on the surface which wastes water and increases its salinity.
5. Planting leguminous plants to restore nitrogen in the soil
6. Spraying croplands with petroleum to protect seeds from blowing away and to retain moisture.
7. Create windbreaks.
8. Solar ovens to replace firewood.
9. Individuals and government to reclaim and protect lands.
10. Sand fences to reduce wind velocity.
11. Control over off-road vehicles.
12. Develop an ecosystem management plan.

13. Culture of Prevention.
14. Water management.
15. Mixed farming practices.
16. Capital Investment.
17. Access of Information.

Two thirds of the African continent is desert or dry lands. There are extensive agricultural dry lands, almost three quarters of which are already degraded to some degree. The region is afflicted by frequent and severe droughts.

Many African countries are landlocked, have widespread poverty, need external assistance, and depend heavily on natural resources for subsistence.

THE ECOSYSTEM ASPECT OF TRANSFER FOR TECHNOLOGIES

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Energy saving and ecology, as being relevant to all mankind problems were reflected among the projects of the various structures of technology transfer, particularly in the areas of clean technologies. Efficiency of information on intellectual property allows you to track the latest scientific achievements and advanced technologies.

The term clean technology combines five groups of technologies: alternative energy and renewable energy; management of electricity; eco transport, management of waste, emissions, air and water resources, innovative technologies and materials: nanotechnology, biotechnology, eco-friendly materials.

With the emergence of the biosphere, appeared Information and the evolution of environmental factors, among which is necessary to allocate information block of the biosphere, it's genoplast Information set of gene pools within the ecosystem, which is its cybernetic control, in which a single channel transmission of genetic and environmental information provide signal communication at all levels of organization of living.

Technology transfer should take into account the ecosystem character of the organization of living things. Most adequately meet the network structure of genoplast-innovative ecosystem of technology transfer - Hi-tech clusters in the priority areas of innovation. It is particularly important ecological foresight to forecast "implementation" in the structure genoplast and expertise, giving the vision and impact of technology adoption. The question of effectiveness is also a shared responsibility of environmental science, business and government, on the other side sufficient information, cultural and technological preparation for the changes.

In order to solve the task of developing strategies, to improve the eco-sustainability of the economic system and saving the world's widely used method of road maps. Road map is a document that reflects the multi-level strategic development of the subject area within a single timeline, and provides performance expected efficiency technologies and products with high potential demand and attractive consumer features.

Road maps as a method of foresight have been proposed in the early 1980's. for long-term strategy of technology development in specific sectors or individual

companies. The point of this method is to develop options for the industry's innovation strategy. Roadmap illustrates the stages of transition from current state to achieve the targets in the long term through the development of technologies, products, services, business and the market (Figure 1).

Among the supra-national initiatives should pay attention to a series of road maps developed by the European Union: «Roadmap 2050»,« Renewable Energy Technology Roadmap 20% by 2020»,« Road Maps for Nanotechnology in Energy (Nano roadmap (NRM)) »,« Multi-annual Roadmap «The Energy-efficient Buildings (EeB)» and others

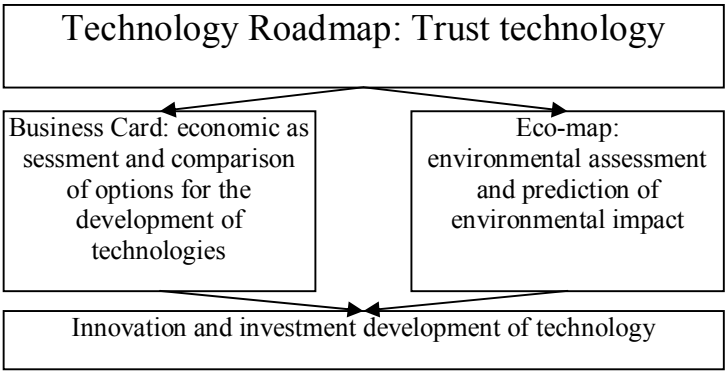

Fig. 1 The concept of integrated road maps, taking into account environmental component

For initiative of the European Commission in the implementation of the 6th Framework Program, have been investigated prospects of nanomaterial and nanotechnologies in the European eco-energy industry. This also applied the method of road maps. Created map «Road Maps for Nanotechnology in Energy (Nano roadmap (NRM))» possible to determine the direction of the commercialization of nanotechnology in the energy sector for the period to 10 years, as well as provide key technology solutions. So roadmap «Multi-annual Roadmap« The Energy-efficient Buildings (EeB) » has been the initiative of private sector companies and the European Commission.

In Ukraine today a network of environmental technology transfer Network (ETTN) operates, which operates on the methodology of the European Network of EEN (Enterprise European Network) in cooperation with the Russian (RTTN) and Belarus (RCTT). The main objectives of the ecological network of technology transfer is: Transfer environmental-friendly technologies and know-how between research and industry, searching for partners and investors for cooperation in the implementation of technology, organization of interaction between research institutions in the environmental field with international networks.

The world lives in conditions of tough competition, in which the problem of transfer of innovative technologies with minimal loss of time and other resources at every stage of advancing technology to market is the key. The particular importance is environmental priorities of innovation in all sectors without exception. Only through

the use of modern technologies and know-how can dramatically affect the improvement of the environment.

MARKET OF ECOLOGICAL SERVICES IN TANZANIA

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An ecosystem is a biological environment consisting of all the organisms living in a particular area, as well as all the nonliving, physical components of the environment with which the organisms interact, such as air, soil, water and sunlight,

Ecosystem Services are commonly defined as benefits people obtain from ecosystems.

Classification of economical services

-Provisioning Services or the provision of food, fresh water, fuel, fiber, and other goods;

-Regulating Services such as climate, water, and disease regulation as well as pollination;

-Supporting Services such as soil formation and nutrient cycling; and Cultural Services such as educational, aesthetic, and cultural heritage values as well as recreation and tourism.

At present, however, many of these ecosystem services are either undervalued or have no financial value at all. As day-to-day decisions often focus on immediate financial returns, many ecosystem structures and functions are being fundamentally undercut.

Pro-Poor Payments for Watershed Services

Payments for Watershed Services (PWS) currently exist in TANZANIA, and different countries. In most of these cases, maximizing watershed services through payment systems has led to poverty reduction.

"While there is clear potential for tradeoffs between poverty reduction and watershed services goals, practitioners and policymakers around the world have already shown that they can design and implement PWS programs that minimize these tradeoffs. Indeed, because PWS initiatives are voluntary, because they involve transfers of wealth (often from wealthier urban areas to poorer rural areas), and because they can empower the poor by recognizing them as valued service deliverers, PWS schemes are actually more likely to have pro-poor impacts than most other environmental management interventions."

Potential Benefits of Market Payment of Ecosystem Services (MPES) for the Rural Poor

• Increased cash income for consumption or investment purposes (such as increased caloric intake for children, expanded access to education and health care, new products for sale, improved enterprise productivity, etc.)

• Expanded experience with external business activities through PES-related economic transactions and interactions with PES-relevant intermediaries

• Increased knowledge of sustainable resource use practices through training and technical assistance associated with PES deal implementation

• Improved resilience of local ecosystems and flow of ecosystem services

Key environmental challenges in which the ecosystem market faces in Tanzania

The environmental challenges are locally and regionally specific but the National Environment Action Plan (NEAP) and the National Environmental Policy (NEP), passed in 1997, identified six major problems of urgent national intervention:

• Land degradation putting soil fertility, food security and biodiversity at risk. About 60% of the country is estimated to suffer from land desertification problems.

• Poor access of good quality water for urban and rural poor. Although Tanzania is blessed with a variety of surface water resources, surface water is limited throughout the country for most of the year. Water shortage and bad water quality are common problems.

• Environmental pollution. Although the level of industrialization is low in Tanzania, untreated industrial waste causes significant levels of localized pollution. About 80 % of the industries, most of them located in the coastal Dar es Salaam. It has been estimated that almost 70 % of the industries pollute directly or indirectly the Indian Ocean

• Loss of wildlife habitats and biodiversity. Wildlife habitats and biodiversity are threatened due to fragmentation, loss of critical ecosystem linkages and over exploitation.

• Deterioration of aquatic ecosystems. One example of this is Lake Victoria, which once drew on hundreds of species, mostly endemic, and now rests solely on three species. Similarly, the marine environment is subject to increased population pressure, harmful fishing techniques, pollution and the breakdown of traditional institutions.

• Clearance of forest and woodlands. Deforestation in Tanzania is taking place at an alarming rate. Since only 5% of the population has access to electricity, wood fuel accounts for more than 90 % of total energy consumption. In 1999, the amount of fuel wood within sustainable use was estimated to17 million/year while the current use is 32 million/year and it is projected to increase.

IN SEARCH OF ALTERNATIVE SOURCES OF ENERGY

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Alternative energy is a term that refers to any source of usable energy intended to replace fuel sources without the undesired consequences of the replaced fuels. The term "alternative" presupposes a set of undesirable energy technologies against which "alternative energies" are contrasted. As such, the list of energy technologies excluded is an indicator of what problems that the alternative technologies are intended to address.

The objective of the research is to define the main alternative sources of energy.

The main advantages relating to the use of natural and renewable energy sources are: the sun, wind, tides, and geothermal activity are all renewable; they are cheaper; the remaining oil, gas and coal supplies last longer. The only disadvantages relating to the use of clean energy sources is that the initial cost of renewable energy systems can be expensive.

One of the sources of alternative energy is artificial photosynthesis. Since the creation of earth, green plants have employed photosynthesis to capture energy from sunlight and convert it into electrochemical energy. Researchers in the United States funded by the U.S. Department of Energy, discovered the key catalyst the can do the same job as photosynthesis. They discovered that nano-sized crystals of cobalt oxide can effectively carry out the critical photosynthetic reaction of splitting water molecules and produce liquid fuels from (carbon dioxide and water). Recently Sun Catalytix, a company based in Cambridge, MA announced that they used only one bottle of drinking water and four hours of sunlight to produce 30 KWh of electricity. The research led by Dan Nocera, Catalytix owner and MIT chemist. The even more exciting news, artificial photosynthesis produces Hydrogen instead of Glucose like in green plants. This means that we can use Hydrogen to power up many other things. In 2008, for the first time in the history of aviation, Boeing has flown a manned airplane that was powered by a hydrogen battery.

Another source of alternative energy is rubbish and wastes. Thousands of tons of rubbish and waste products are produced everyday on the planet. This can be a valuable resource to be used for energy production. Such projects have already been developed and some have already become profitable. For instance, Fulcrum BioEnergy announced a plan for building 120$ million plant near Reno, Nev., to make ethanol from garbage. The plants then would use over 90,000 tons of garbage to make 10.5 million gallons of ethanol a year. The project is expected to start in 2010.

Bacteria and microorganisms can also be very useful. A research conducted at the University of University of Sheffield and published in the Journal of Bioinformatics, investigated the possibility of harvesting energy from bacteria. They studies a kind of bacteria called Nostoc. Nostoc fixes nitrogen and, in doing so, releases hydrogen that can then potentially be used as fuel. Fixing nitrogen is a complex process because bacterial metabolism is a huge network of chemical reactions, and even the most sophisticated techniques can only measure a small fraction of its activity. Shang-Tian Yang, professor of chemical and biomolecular engineering at Ohio State, used another kind of bacteria to produce energy. Yang and his colleagues developed a mutant strain of the bacterium Clostridium beijerinckii in a bioreactor containing bundles of polyester fibers. In that environment, the mutant bacteria produced up to 30 grams of butanol per liter.

Geothermal energy can become a valuable source of energy in the future. This geothermal energy originates from the original formation of the planet, from radioactive decay of minerals, and from solar energy absorbed at the surface. Oregon Institute of Technology is planning on building a 7.6$ million geothermal power plant on campus, the plant will become the main source of power for the school in few years; and making the school the first university to be powered completely by geothermal energy.

Wind energy is being effectively used in many countries of the world nowadays. Wind farms produce significant volume of energy, but this is not the only way to use wind power. Researchers from the Delft University of Technology in The Netherlands, have successfully demonstrated an experiment to generate electricity from high-flying kites. According to the scientists, a single 10-square-meter high-flying kite could produce 10 kilowatts of power, which could supply electricity for about 10 houses.

Even breath is considered as a source of energy. A new technology called “the Eco-Box”, developed by Origo Industries will capture the CO2 exhaled by airport

travelers and convert it to fuel. The system will recycle breths through a photo-bioreactor (PBR) to create an algae-based biofuel to power some of the airport's ground vehicles and potentially generate electricity.

The sun is our ultimate energy source because it drives other sources, such as wind and water. Many companies make many things that run on Solar power, such as cell-phones, small planes, and solar panels to power several things. Solar energy is likely to be the main source of power in the future, its free, clean and there is lots of it.

Various water resources (ocean current, waterfalls, dams) are ways to produce power. A team of scientists at Florida Atlantic University are working on a project to generate renewable energy using ocean currents. When the project is completed, it is expected to supply Florida with 1/3 of its energy and power 3-7 million homes.

A conclusion can be made that there are various sources of alternative energy, and we have to find the ways to implement and use them in Ukraine.

ECOSOCIALISM AS A DIRECTION OF SOCIETY'S SUSTAINABLE DEVELOPMENT (MARX'S ECOLOGY)

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"We know only one science, the science of history.
History can be viewed from two sides: it can be
divided into the history of nature and that of man.
The two sides however, are not to be seen as
independent entities. As long as man has existed,
nature and man have affected each other."
K. Marx and F. Engels, "The German Ideology"

The "deep ecological" ideology fashionable today asserts that we should feel collective guilt for the environmental crisis engulfing the planet, and that what we need is "green values" that place nature rather than man at the center of our ethos. Marx offers a materialist alternative that permits us to deal with the real source of our ecological problems: exploitation and class conflict. In Marx's view, the exploitation of the producer classes by the ruling classes of history is simply the flip side of human society's exploitation of nature. Man exists in what Marx called a "metabolic" relation with nature, a relationship that is absolutely essential to man's survival and welfare. Labor is the essence of this metabolic relation. For labor is the process by which we remold the "raw materials" produced by the "great workshop of nature" (Marx) for our own survival and benefit.

When human social and economic relations become alienated and exploitative, the ruling class thus created becomes just as interested in exploiting nature without regard to the ultimate destructive consequences as it is in exploiting the class that "works" nature-the workers, the serfs, the slaves. Thus human history — "the history of class conflict" — is simultaneously a history of our increasingly conflictual, alienated relationship with nature. It is this history and these alienated, exploitative social

relations, rather than individual moral values, which must be overturned if a harmonious, sustainable relationship with nature is to ensue [6].

So, in Marx's view, the exploitation of the producer classes by the ruling classes of history is simply the flip side of human society's exploitation of nature [6].

As Bellamy Foster writes in his “Marx’s ecology”: “It was labour that constituted the secret, from the very first, not only to the development of human society but also to the transition of ape to man. It was labour, moreover that defined the distinctive ecological niche occupied by humanity. Marx and Engels thus saw the human relation to the earth in co-evolutionary terms – a perspective that is crucial to an ecological understanding, since it allows us to recognize that human beings transform their environment not entirely in accordance with their choosing but based on conditions provided by natural history.” [4].

J.B. Foster: “The only real social and ecological solution is a society not focused on accumulation or economic growth per se, but on sustainable human development. No matter what measures you introduce to modernize capitalism ecologically, the system requires a constant growth of the treadmill of production.” [2].

“The universality of man manifest itself in practice” Marx wrote “ in that universality which makes the whole of nature as his inorganic body, as a direct means of life and as the matter, the object and the tool of his activity…Man lives from nature, i.e. nature in his body, and he must maintain a continuing dialogue with it if he is not to die. To say that man’s physical and mental life is linked to nature simply means that nature is linked to itself, for man is part of nature.” [3].

In Foster’s view, one can speak of an "elementary triangle of ecology", derived directly from Marx, which takes the struggle to a deeper level. This can be defined as: (1) social use, not ownership, of nature; (2) rational regulation by the associated producers of the relationship between human beings and nature; (3) the satisfaction of communal needs — not only of present but also future generations. [2]. Also, he names “the informal laws of ecology”. These are: (1) everything is connected to everything else, (2) everything must go somewhere, (3) nature knows best, and (4) nothing comes from nothing (there is no such thing as a free lunch) [5].

One of the main points in Foster’s research of Marx’s work is the "metabolic" relation between nature and society, which reflects the last one’s studies of agricultural chemistry and the problem of soil fertility. Marx used the idea of metabolism to theorize both social and ecological relations; the metabolism represented the “natural” flows sustaining both social life and environmental systems. For Marx, a “metabolic rift” was created by capitalism through the dissolution of the connection between the industrial worker and the "natural" conditions of his existence [1].

Foster argues (paraphrasing Marx) that through Marx and Engels’s reading of Darwin, “Marx and Engels thus saw the human relation to nature in co-evolutionary terms - a perspective that is crucial to an ecological understanding since it allows us to recognize that human beings transform their environment not entirely in accordance with their choosing, but based on conditions provided by natural history” [1].

The topic is a comprehensive one, however, we are able to make some conclusions: humans’ relationship to the Earth needs a new revolutionary road, but, as it has already known, everything extra new is just well forgotten old one. So, humanity has to be more attentive and interested in getting to know some already famous approaches, but in the shape of new modern vision, that is required out of it nowadays in the light of the new world conditions and conveniences.

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ECONOMICS FOR ECOLOGY

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Definition of Economics: Economics can be defined as sciences which studies human behavior as a relationship between ends and scarce means which have alternative uses.

By ends, it means human wants, desires or needs; these human wants are numerous relative to resources used in satisfying them. By scarce the resources used to satisfying human wants which called means are scarce or not many.

Definition f Ecology: Ecology can be defined as the study of relationships of living things to another and to their surroundings.

So by mere understanding of the two concepts above we can establish the Economics for Ecology as;

Definition of Economics for Ecology: Economics for Ecology can be defined as the sciences which studies human behaviors and his surroundings (Environments).

Ecologists benefit from interactions with economists in at least two distinct ways:

1) Ecology has historically borrowed and adapted analytical modeling approaches from economics, and

2) Many of the environmental issue that ecologists work with are explicitly influenced by economics.

By bringing economists to work with ecologists and environmental scientists at NCEAS, we gain both analytical expertise and knowledge of the economic factors that play an important role in conservation and management decisions. Together ecologists and economists collaborate to better understand human interactions with ecosystems. Natural environments provide important services to humans that may be lost when those systems are degraded. For example, coastal wetlands provide critical habitat for animals that are harvested, reduce shoreline erosion, filter water before it enters the ocean, and can buffer inland communities against storm surge. Ecologists and

economists work together to identify and place values on such services for society. Where multiple management and conservation actions are being considered, economic expertise helps to identify the approach that achieves desired conservation and management goals while minimizing societal costs. Alternatively, economics provides a decision-making framework within which to maximize conservation benefits of an environmental policy given a fixed allocation of resources.

To catalyze greater collaboration among ecologists and economists, interdisciplinary teams of NCEAS researchers have engaged both research communities, publishing in the economics literature and in the ecological literature

Satellite imagery has been used to make large-scale estimates of the relative contributions of marketed products and ecosystem services to national economies, globally

A model has been developed to describe how declines of pollinators may affect markets for crops that require insect pollination

Alternative methods for extracting resources while minimizing environmental impacts can be evaluated with simultaneous consideration of ecological and economic factors

The value of a single species performing an ecosystem service, such as pest control in agriculture , can be calculated and compared to alternative methods of performing that service

Applying ecosystem-based management in the oceans presents new challenges in ecology, economics and governance as the spatial scale at which we govern systems frequently does not match the spatial scale that is relevant to the organisms we manage

This discourse between ecologists and economists has been invigorating for researchers at a fundamental level, as they break new ground in their respective fields, and provides management and conservation professionals with critical tools for decision making.

Economics has provided real solutions to pollution and environmental degradation. One problem is what is known as the “tragedy of the commons.” In a 1968 issue of Science, Garrett Hardin, emeritus professor of biological sciences at the University of California at Santa Barbara, wrote a seminal article arguing that a resource tends to be overexploited when owned by the public and not private individuals. If no one owns a piece of grazing land, each herdsman has an incentive to add another animal to the herd until the land is overgrazed. As a result, “Freedom in a common brings ruin to all.

Hence, the lack of property rights and market prices creates a “tragedy of the commons”–unnecessary pollution, extinction of animals, destruction of forests, strip mining, and more. At first government favored regulation as a solution, but economists have encouraged the establishment of clearly specified property rights and accompanying price signals in water, fishing, and forestland, so that owners can preserve these resources in a balanced way.

In sum, free-market environmentalism has come a long way in showing how to replace the regulatory fist of command with a greener invisible hand.

THEORETICAL ASPECTS OF SUSTAINABLE DEVELOPMENT OF SOCIO-ECONOMIC SYSTEMS

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Intensive consumption and inefficient use of natural and power resources, formation of plenty wastes, as a result of economic activity resulted in the origin of catastrophic ecological situations which violate equilibrium in the natural environment and put healthy existence of society under a threat. Consequently, the question of immediate solution of contradictions of interests of social, ecological and economic systems appears.

At the international conference in Rio de Janeiro in 1992 it was decided that the unique possibility for providing long-term| development of socio-economic system is realization of sustainable development (SD) model.

The most widespread and generally accepted concept of sustainable development is determination from the report of the World Commission on Environment and Development «Our general future»: «Sustainable development is development at which the necessities of the present are satisfied and the same possibility is guaranteed for future generations». This content means that socio-economic development must be carried out on the basis of concordance of orientation of scientific and technical development; exploitation of resources and institutional changes, with the purpose of minimization of negative consequences of natural resources depletion and worsening of the environment quality, and the losses of resources must be fully compensated.

On the whole there are more than 60 concepts of sustainable development in literature, but often attention is concentrated on the separate aspects of sustainable development, from here there is a large variety of concepts which are used for his description: continuous; balanced; sustainable; ecoadaptive; controlled; harmonious; endless; ecologically safe.

Conception of sustainable development is acknowledged as a strategic direction for providing financial, social and spiritual progress of society. The concrete filling of this conception is foreseen in governmental programs of sustainable development of all levels, oriented on main directions of human activity which is marked by Agenda 21 (Fig. 2).

Conception of sustainable development is based on a synthesis of three constituents:

- ecological, which means balanced consumption of resources and material well-being of natural systems integrity;
- economic is subsequent harmonious development of production, productive forces of society;
- social increase of population welfare, living standards levelling, – internal and external, improvement of social norms and standards.

Combination of the mentioned constituents, that are interdependent and influence one other, must take place on Pareto optimum principle: value of every individual criterion, that describes the state of a system, can not be improved without worsening of other elements. Therefore, in basis of sustainable development

conceptions principle of social, ecological and economic system balance, as a unique whole is taken.

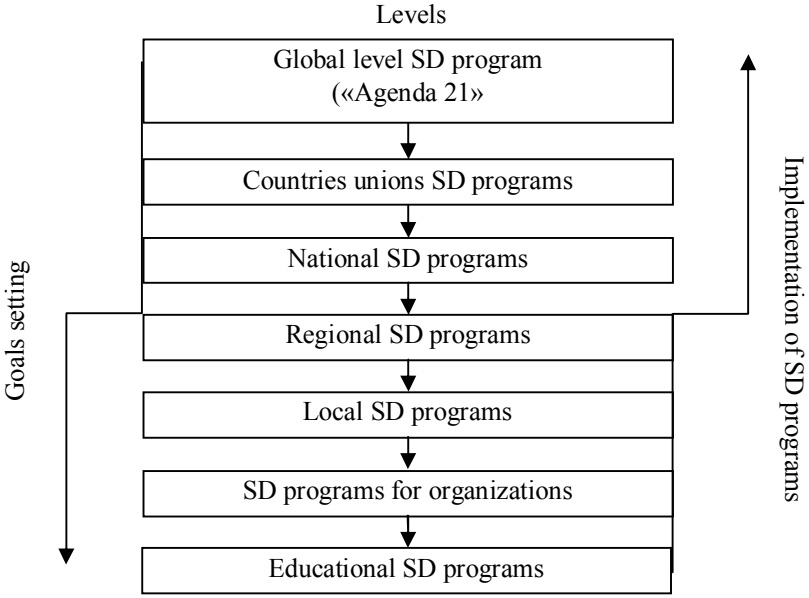

Fig. 2. Realization of sustainable development conception through programs of different levels

Important principle of sustainable development providing is testability, determination of development aims of socio-economic system and its evaluation by certain indexes. The evaluations of indexes are used for: determination of changes in economic activity, social sphere and the environment; comparison of expected results; in time acceptance of free decisions by leaders.

Also, principle of informatization constancy achievement, brining to society current problems and ways of solution through education and information technologies is extremely important. Sustainable development strategies will be ineffective in case of absence of support and public involvement: citizens, business, and government bodies.

Unfortunately, today governments of many countries, including Ukraine, passively consider the problems of sustainable development, though this question is very important. The government of every country must not ignore principle # 1, marked in Agenda 21: people have the right on healthy and productive life in harmony with nature.

PHYSICO CHEMISTRY ANALYSIS RADIONUCLIDE PRASEODYMIUM-143 FOR THERAPHY CANCER APPLICATION

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Selection of radionuclides for use as a therapy is determined by several factors such as characteristics of the emitted radiation including the type and energy, the half-life, specific activity, ease of production, the abundance of the target nuclide in nature, purity radionuclides and feasibility of production in its use. Radionuclide praseodyum-143 obtained from the decay of 143Ce by irradiating CeO2 target in a nuclear reactor core. Radionuclide praseodyum-143 into something interesting in radionuclide therapy because it has an amazing nuclear properties, the half-life 13.57 days and 0.97 MeV beta emission energy. The prospect of a radionuclide 143Pr potential for therapeutic applications when there is a demand for a lower dose is needed with a longer rate of about 14 days or comparable with the radioisotope 32P ($E\beta$ = 1.7 MeV) that still be an option in therapeutic activities. This is an additional option for the RNT (Clinical radionuclide therapy)) (Vivalmath et al., 2005). Radionuclides are viable to be produced in nuclear reactors by 1013 n.cm flux-2.s-1, which allows to be produced in Indonesia.

When the radionuclides will be used on the inner cavity of the required substance (carrier) is appropriate. Conformity carrier substance with the function of radionuclides for therapeutic applications of radionuclides must be considered. Substance carrier to be used must have properties that support the process of radionuclide distribution on the target cancer cells. Additionally, safety of the carrier substance used for therapy radionuclides a top priority. Radionuclide-derived radionuclides of praseodymium has the ability to treat bone cancer. Thus, the carrier substance to be used need to have properties that support the distribution process in the bone in the body.

Carrier substances derived from ingredients calcium phosphate (CAP) is widely used for therapy in the inner cavity of the body because it is considered safe and not cause a reaction that gives side effects. Among these are compounds of hydroxyapatite (Ca10 (PO4) 6 (OH) 2) which has the main composition of potassium and phosphate (CAP). This material is commonly used as a bandage on the inside of the body and can be injected in the bone without surgery techniques. This material has the properties of stable and commonly used in the cavity of the body. Hydroxyapatite material is considered suitable for the purpose of praseodymium radionuclide distribution that will be applied to therapy of bone cancer. Bioactivity of the CAP depends on several factors during the synthesis process, such as reagent precursors, impurity content, crystal size and morphology, concentration and agitation of reagents, pH, and temperature. (Santos et al., 2004). Thus the need for research to find out the nature of the interaction between hydroxyapatite with related praseodymium tagging process of hydroxyapatite by praseodymium. The optimum condition of the marking of hydroxyapatite by praseodymium need to know to know the stability of the energy of the tagging results.

JAKARTA SOCIAL ACTION

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"In this world no one who does not change, all changes from time to time."
(Heraklitus 500 years BC)

Quote Heraklitus represents what is perceived by the city of Jakarta today that the situation is getting worse. Yes, Jakarta, which I know today is a city mostly inhabited by the unemployed, lazy, beggars and criminals. In this essay, I discuss the current impact of youth migration in Jakarta and I give my ideas and initiatives to help reduce the high rates of youth migration in Jakarta. I do believe youth plays a big role in overcoming this global threat.

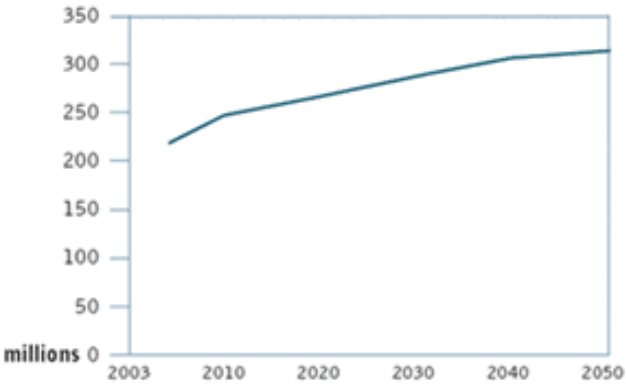

Fig. 1 Indonesia population development protection

My vision, through JSA project together we could help the government to reduce unemployment and migration in Jakarta and flatten development in all parts of Indonesia. Jakarta is the capital of Indonesia and the largest metropolitan area in Southeast Asia with Tremendous rate of population growth and the wide range of urban problems. As the capital and the economic, commercial, cultural and transportation hub of Indonesia, Jakarta still remain attract growth. The urbanization in metropolitan Jakarta will from the keep going on. Villages became no longer attractive to residents due to the subsistence village economy is no longer considered promising. Especially with the development of time line that makes many people feel more and more needs to be fulfilled. The agricultural sector is at the heart of the village economy has long lost charm. Agricultural conversion, especially in Java and Bali slowly becoming increasingly non-agricultural areas unstoppable. Those cities have changed the function of rice fields and gardens in the village become an arena of new business: golf courses, villas, real estate, motels, factories or mini market. These new businesses would simply absorb the labor that has the skills and educational background of at least high school. This makes the youth village that is not absorbed into the labor force migrated to Jakarta in the hope of a more prosperous life. Waves of migration / urbanization is a

reality of socio-demographic increasingly irrefutable that confirms the difficulty of living in the village. However, the rapid growth of urban population, either naturally by birth or because of migration, can create problems, like poverty. Ironically, the rate of migration continues to rise, although migrants who had no education and skills provision quite often fell as unemployed and homeless in Jakarta. From this point, the unemployment problem can escalate into social burden of the city: crime, hooliganism, and the proliferation of potential violence that gave birth industries fear of crime.

THE ECOLOGICAL EDUCATION AS FACTOR OF SOLVING THE PROBLEM OF ELEPHANT POACHING IN TANZANIA

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Supervisor: Shvindina H.O.

Ngorongoro national park is a national park which situated 140 kilometers from Arusha region in northern Tanzania east Africa.

There is some very disturbing news from ngorongoro because the situation for elephants in the area become critical in every year there is poachers who are killing these animals because of ivory illegal trade in every day life of elephant.

As statistic shows, in 2008-2009 there 44 elephants were reported wounded or killed by spearing or poisoning arrows and bullets in ngorongoro national park. In this period it is proved that there were customers who buying tusks on $38 and selling on $64 per kilogram across the border. One tusk of elephant contain 50 kilogram so for two tusk's weight is about 100 kilogram. The income per elephant is near $6400.

One of the most dangerous foes for elephants are farmers, who are alternative sellers of ivory tusks. This kind of poachers are using crop damage as excuse for killing elephants and they wait elephant to come near the farm and then they spear them and remove tusks.

Human and elephant conflicts can be described in this way:

- A conflict between elephants and peoples has been growing steadily since farming introduced in the villages near to ngorongoro national park and this took place from 30 years ago. The activities were established by irrigation from local spring and swamps. This area is unfenced and received heavy rainfall during rain season but there is hundreds of elephant which is caused human-elephant conflicts because of peoples

crops are been destroyed by elephants and elephant are being shot with guns and poisoned arrows or spears.

- During the year 2008 Tanzania government got a report about many of both wounded and dead elephants during the period when crops was growing but also when there were no crops elephants are disturbed because in that died elephants were founded that their tusk was removed.

- Also there is a tribal who are living in this ngorongoro national park which is called maasai peoples this peoples are killing elephant because they are pastoralist tribal so they keep many groups of livestock so when elephant are killed by maasai in relation there must be peoples injured from elephant or livestock killed by elephant but the tusk had not taken.

Usual methods used by poachers to kill those animals are:

1. Spears
2. Guns/bullet
3. Poison arrows
4. Arming weapons

The solution of problem appeared should be found in near future. The damage that already have been done to nature of Tanzania will cause social and economic problems. To prevent further elimination of elephants organizational actions for these conflicts solutions must be intorduced.

There is a list of the most required steps for different organizations involved in elephants saving:

Tanzania wildlife service, which is making surveying all the time for looking this animal's security by shifting.

Local government by preparing communities meetings in order to provide education to the leaders communities about the important of these animals for future generations.

Non Government Organizations which also conducting education programs to communities and societies rounded near to national park.

Ngorongoro trust fundraising activity for saving elephants. This is an organization which receives fund money and instruments from donor's national and international level.

In addition I should say there are next changes in society that must support mentioned program:

- Every one who is Tanzanian citizen should be responsible for all wildlife in the country and make sure that we end this problem of poachers and ivory business even to end this conflict between wild animals and farmers because this wild animals are very important for national economy through tourism sector and important for future generation.

- Government like a father should give more support to NGOS and all stake holders who involving in preventing this wild animals.

- In the country educational programs should be implemented that will change the attitude of farmers and their family, next generation to elephant's role in economic of country.

- Elaborating "green tours" for environmentalists which change the priorities in business.

- Educational program about game reserves must be done by dialogues, meetings, films, presentations, television and radio programs also we should talk to the

government in order to insert more effort in teaching curriculum from primary schools to higher learning institutions level about how to protect this wild animals from poachers.

A CYBERNETICS APPROACH FOR 21st CENTURY SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL PROTECTION

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The interest of the contemporary world in the field of natural and artificial resource optimization, in the extended process of sustainable development and environmental protection, manifests itself through the large number of meetings organized by the UNO, where the major role is played by specialized international institutions.

In this line of thought, the cadaster, as a complex resource recording system, represents an attractive domain for researchers who want to accommodate its role to the development of human society. In this context, a cybernetic approach to cadaster is not only necessary, but also possible if we think about the very complexity of the MAN - NATURE system.

The use of cybernetics as a modern method of research and coordination is imposed as an objective necessity in these days, in all the fields of human activity where there are similarities with this science. With this object, the cadasters - as a science and as a part of economic, social, technical etc. activity presents, as we have shown, through the mentioned concepts, the main cybernetic categories: "the system", "the model", "the information", and "the order".

ENVIRONMENT - CYBERNETIC SYSTEM

Roughly speaking, the cadasters and the environment, whatever the purpose is, can be expressed through the known block cybernetic scheme as in Figure 2.

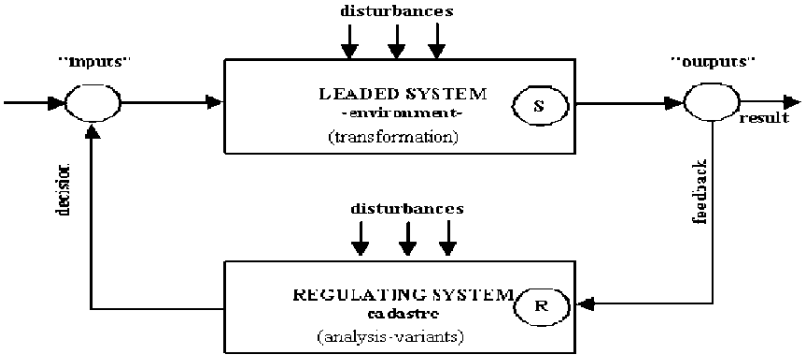

Figure 2. Block cybernetic scheme of the cadastre and environment

From a cybernetic point of view, this scheme represents a leading and organizing system (S+R), which as we know, consists of lead system (S) and regulating system(R).

Human action, directed as "inputs" and determined by a certain "social order (command)" is materializing within a certain transformation as "outputs". The result is compared with the "rate" given by the social order (command) within the control action through the "feedback", by the leading system (regulator) and after a process of analysis upon a few variants; a new command is elaborated as a "decision" for a new action. The new action is dependent on lots of elements that can interfere upon the two systems as "disturbances".

Development and Environmental Protection

Maintaining the permanent equilibrium between entrances and exits, through the structural transformation required in the two systems, as well as through "elimination" or "compensation" of disturbances, determines general "stability" of the leading and organizing system (S+R).

Therefore, the stability of the system depends on mutual interactions between its specific "elements": entrances, structure transformations and exits. For the cadaster and environment, this means that - considering the final social command (norm) as "outputs" and "inputs" - it is necessary to determinate that territorial structure which can assure the stability of whole system at a specific moment. Or, generally speaking, entrance elements and the final norm have got a dynamic nature, it results that the territorial structure is gradually transforming itself; too, in other words it passes from an inferior state to a superior one. It is obvious that any transformation in time and space in one of the element requires the transformation of others. The interdependence between the evidence of resources and their rational utilization in the context of durable development at global level calls for suitable measures and obligations from all the countries of the planet, the globalization of human activity phenomenon determines a new behavior and a new attitude concerning the way the resources are used and managed.

The phenomenon causes the logical and natural question: is there in every country a technical, economical and juridical (legal) evidence of all fixed goods (land and buildings), and is the cadasters of the country realized?

The answer to this question is determined in the correlation between the evidence, utilization and management of the resources on one hand, and durable economic and social development and environment protection on the other. The uncontrolled use of the environment's resources in many countries of the world, the lamentable position of the environment's components like soil, waters, forests, and force the actual human society to complete "the cybernetic system of cadasters" in the countries where is not made to break environment's degradation, to make a new human society, balanced in relation between HUMAN BEING and NATURE.

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REINTEGRATING HUMANS AND NATURE

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Ecological economics is a transdisciplinary effort to link the natural and social sciences broadly, and especially ecology and economics. The goal is to develop a deeper understanding of the complex linkages between ecological and economical systems, and to use that understanding to develop effective policies that will lead to a world that is ecologically sustainable, has a fair distribution of resources (both among groups and generations of humans and between human and other species), and efficiently allocates scarce resources.

The combination of human population growth and increasing per-capita impact is placing irreconcilable demands on the global biotic system. We can reduce per-capita demands with technology and recycling. But such strategies simply delay the inevitable unless the human population asymptotes. Of course, the population will reach a limit. The choice is between a series of global crises and a reasoned plan for the future. But for global sustainability to avoid becoming a cruel and unattainable fantasy, plans must include human population control and economics (**Odum 1971**).

In general the basic problems facing our ecosystem and the urgent need for innovative policies and environmental management techniques include:

- Unsustainably large and growing human populations that exceed the carrying capacity of the earth.
- Highly entropy-increasing technologies that deplete the earth of its resources and whose unassimilated wastes poison the air, water, and land.
- Land conversion that destroys habitat, increases soil erosion, and accelerates loss of species diversity.
- Biodiversity Loss and extensive land degradation.

Streamlining the ecological disasters to my country Nigeria, the major problems are:

- Urbanization
- Overpopulation
- Deforestation
- Desertification
- Pollution

All these environmental problems can be address but we must have it in mind that it has to be a continuous process and most of all should not be left alone for the authorities to handle. It has to involve everybody. Globally all these problems have become important paradigms in recent time. As a matter of fact, many Non-governmental organizations, corporate bodies and individuals have joined the government in the campaign of reducing, mitigating and stemming the consequences of environmental degradation by making all possible efforts to bridge the lapses between ecology and economics with several innovative measures, experimental researches and so on.

Based on my thesis, the following **recommendations** can be look into for further experimental examination, scrutinization and finally put into practise.

Environmental Management Technique

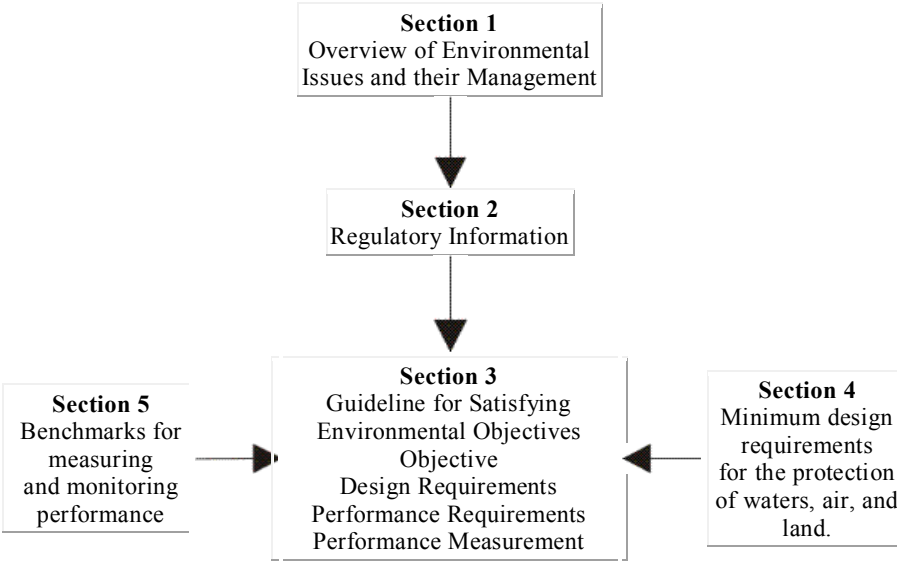
o This concept is concern with how humans interact with ecosystems and why their attempts at "management" failed so miserably. Adaptive environmental management technique redraws conventional boundaries by integrating science and social science concept.

o This approach acknowledges the coevolutionary nature of ecological and economic systems and is a key concept in ecological economics. Environmental management has proved to be an effective approach to understanding and managing complex, changing systems with large uncertainties. While this approach emerged out of ecology and its application to economy, it has tremendous implications for social organization.

o Environmental managers, local community people, and those in the broader public who are especially interested in environmental issues should question, assist in the monitoring, and share in the learning.

Conclusively, this environmental management techniques which must be cultured, home – grown and the frame work should be "Bottom – up". It should be community based and it should be organized at the villages, towns, or a simply community level that is local level. A number of community should be grouped together (politically) ward level. From ward level to local government level. Environmental management agent should be empowered to punish every offender. Environmental awareness education should be included in the primary and post secondary school curricula. (**Obajimi M.O. 1998, United Nations, 1992**)

Structure of environmental management technique



ORGANIC AGRICULTURE AS BASIS FOR ECOLOGICAL SAFETY FOODS OF FEED

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In Ukraine and other countries of the world actual is a problem of receipt of high-quality and safe agrarian products in an assortment and optimum for different industries of economic complex, especially for child's and dietary food, treatment.

Ukraine has considerable prospects in growing ecologically of clean agricultural raw material for the production of high-quality and safe agrarian goods, as during the last years sharply bringing of mineral fertilizers, application of chemical facilities of defence of plants grew short as a result of deficit of circulating money for agricultural commodity producers. General area of Ukrainian earths of the agricultural setting, which can be used for the receipt of high-quality and safe agrarian products in middle presents 4 - 5 millions and. [1, p. 56-57]. The general area of lands which are used for a production ecologically of clean products in the countries of European Union folds 3,8 millions and [2, p. 122].

On the basis of systematization of going near directions of introduction economic of effective and environmentally sound agriculture we came to the conclusion, that most acceptable in modern terms is organic agriculture.

Organic (natural, biological) agriculture is the system of organization and conduct of agroecosystems, where technological operations which are sent to optimization of height and development of plants conduct with the use of only natural origin (natural) of technological materials (finished shaving, facilities of defence of plants, regulators of height and other) and taking into account the indexes of quality and safety of agrarian products. Natural agriculture grows in developed країназ, and his part presents almost 30% from arable earths. In particular, in Switzerland this index of growing arrives at 15%, to Australia - 11%, to Italy - 8%, while in Ukraine only 0,4% [3, p. 43 - 44].

By basic arguments for introduction of natural agriculture abroad вважаються:необхідність receipt of high quality and safe products for a feed and treatment; some overproduce of vegetable and animal products; necessity of decline of global process of contamination of natural environment; presence of population which is able to purchase more expensive, but ecologically clean products.

For the conduct of this perspective and necessary direction of production of agrarian goods in many countries of the world corresponding is created state value and private structures and unions of farmers, which coordinate and help to work in this direction. For example, in Poland, if a farmer declared the intentions to pass to growing of biological products only, both he takes title on the interest-free crediting during three years, but if in three years an economy will not become biological or hard economic approvals are foreseen [4]. The same requirements in relation to the three-year term of transitional period for introduction of biological agriculture are expounded in international normative documents [5].

Thus, by perspective direction which takes into account objective conformities to law and system intercommunications between all links of reproductive process in природокористуванні there is development of organic agriculture in Ukraine. Introduction of mechanism of government order can become basis of organic

agriculture on a production ecologically of clean food products within the limits of the special raw material areas. By the article of a 1 Law of Ukraine "About child's food" regions or separate economies, which answer the terms of production of goods of plant-grower and stock-raisings, suitable for making of foods of child's and dietary food are certain the special raw material area [6].

Financial viability of creation of the special raw material areas suggest to determine after a condition:

$$\sum_{i=1}^{n} (У_{ек(i)} \times S_{ек(i)} \times Ц_{ек(i)} - C_{ек(i)} \geq З_{ек(кап)} \times r$$

where, Уек(і) – is the middle productivity of і-тої of agricultural culture, grown in the special raw material areas; Sек(і) – a gross production from the area of lot land which is busy і-n by an agricultural culture; Цек(і) – a market price of realization of і-n high-quality and safe agrarian products; Сек(і) – a production of mine-out and realized і-n cost agrarian products; n – an amount of types of cultures which are grown in the special raw material areas. Зек(кап) – the combined capital charges, related to creation and functioning of the special raw material areas; r – a bank registration rate.

This condition allows to define which from the economic instruments of motivation of agricultural producer ecologically clean products it is most expedient to enter. Certainly, if the market price of realization ecologically of clean products does not provide a certain income it is possible to enter the mode of dating of prices on this products and favourable tax treatment. Like, if the combined charges on creation and functioning of the special raw material areas do not provide corresponding their profitability, it is possible to offer the state subsidizing or favourable crediting.

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THE EFFECT OF DEFORESTATION

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Nowadays many countries are facing the problem of deforestation.

Deforestation is the permanent destruction of indigenous forests and woodlands. Deforestation has resulted in the reduction of indigenous forests to four-fifths of their pre-agricultural area. Indigenous forests now cover 21% of the Earth's land surface.

Deforestation occurs for many reasons, but most of them are related to money or to people's need to provide for their families. The biggest driver of deforestation is agriculture. Logging operations, which provide the world's wood and paper products, also cut countless trees each year. But not all deforestation is intentional. Some is caused by a combination of human and natural factors like wildfires and subsequent overgrazing, which may prevent the growth of young trees.

The top five causes of deforestation are: logging (both legal and illegal), industrialization, agriculture, oil exploitation and human disasters.

Deforestation has many negative effects on the environment:

The most dramatic impact is a loss of habitat for millions of species.

It also often results in damage to the quality of the land as it causes soil erosion.

As a result of soil erosion silting of water courses occurs.

Deforestation is one of the reasons of desertification.

Deforestation also drives climate change and causes global warming. Trees absorb CO2, helping to reduce the amount of carbon in the atmosphere. Carbon is one of the key causes of global warming and reducing these gases will help to slow and stop the greenhouse effect. The other issue is that trees are often cleared and burned. The burning of the wood releases carbon into the atmosphere, giving the double whammy of releasing harmful greenhouse gases, yet reducing the number of trees that would have helped to remove this from the atmosphere.

In Nigeria as in most tropical regions of the world, deforestation constitutes a major health, environmental, ecological and socio-economic challenge. The research methodology stresses a mix scale approach involving social research in areas of active and non-active deforestation in Ebony state Nigeria and the descriptive assessment and analysis of the forest resource exploitation issues, as well as the implication for sustainable forest resource management. Findings indicate that the income status of individuals residing in the areas of active deforestation was lower than those of areas of non-active deforestation. Higher yearly episodes of malaria and the tendency to spend less amount of money for malaria treatment characterized the areas of active deforestation and the inhabitants had higher preference for use of wood fuel and use of forest medicinal herbs for malaria treatment. In the areas of active deforestation, the mosquito night biting/landing rates were considerably higher than those of areas of non-active deforestation. Conservation policies aimed at slowing deforestation will impact malaria and would reduce the increasing incidence of deforestation-dependent malaria epidemics.

There are many steps to stop deforestation. The quickest solution to deforestation would be to simply stop cutting down trees. Though deforestation rates have slowed a bit in recent years, financial realities make this unlikely to occur. A more workable solution is to carefully manage forest resources by eliminating clear-cutting to make sure that forest environments remain intact. The cutting that does occur should be balanced by the planting of enough young trees to replace the older ones felled in any given forest. To plant indigenous trees will be also one of the ways out. Joining one of the many campaign groups is a positive step that can be taken, however there are other practical things that we can do. Ensuring that all paper is recycled and that paper purchased is recycled means that the demand for virgin material is reduced. We need to use wood sparingly.

Many differing groups such as environmental and political parties, governments, consumers, corporations and also those who actually work in the forests should work

together to stop deforestation. We need to raise awareness about the potential hazards that will accrue if deforestation continues unabated.

If there is nobody to alert the people of the climatic change and prevent deforestation then none would be able to save the planet Earth.

THE RESEARCH OF JURIDICAL PROBLEMS OF FOREST MANAGEMENT

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Despite that fact a forest is considered to be mostly a trade product, first of all it is an important environmental factor which is used to influence soil erosion processes, drying rivers, landslides, droughts, air pollution and other negative phenomena of nature. The forest management in this context is realized exclusively through the regulative methods use of individual and legal people without business purpose.

According to the article № 39 of Forest Code of Ukraine (hereinafter – FC of Ukraine) forests in Ukraine are divided into the following categories. It depends on environmental and socio-economic importance and the main performed functions:

1) protective forests (perform mainly water, soil and other protective functions);

2) recreational curative forests (perform mainly recreational, health, hygiene and health functions);

3) forests of conservation, scientific, historical and cultural significance (perform specific environmental, aesthetic, scientific functions etc.);

4) commercial forests.

Today the use of forest resources with sanitary-hygienic, recreational-curative and research purposes are secured in accordance with the articles № 74-75 of FC of Ukraine. However, the right to use forests in cultural, recreational, sports and tourist purposes is issued in accordance with a forestry and land legislation, resulting in two legal forms of its realization: through the regulation procedures for placing in the forests and lands meant for tourist camps, recreation centers, etc. and through general use of forest resources.

Forest land admeasurement for cultural, recreational, sports, tourist and educational goals is realized in accordance with regional planning schemes, general plans of settlements, forestry development programs of the Autonomous Republic of Crimea, regions and forest management materials. If these schemes, plans, programs or other material proposals for forest land admeasurement concerning cultural, recreation, sports, tourist and education and educational goals are absent, a forestry executive body, forest owners or permanent forest users, concerned enterprises, institutions, organizations and citizens are able to introduce them.

According to the requirements of forestry legislation local councils, administrations at all levels together with the forest sector bodies attract the party of the given type of forest management, i.e. legal people and individuals to hold events for the improvement of forest areas and cultural-consuming people service to preserve the forest environment and natural landscapes with the help of obtained rules of suburban areas architectural planning and sanitary requirements.

The right of research forest management is implemented for studying the forest ecosystems patterns. Its main purpose is to identify, study, preserve and use plant genetic fund in Ukrainian forests by means of scientific achievements application in genetics and tree species breeding.

In our opinion, the peculiarity of this right regulation on the principle of forest multiple forest use is its priority as for another forest management rights. To conduct research works in forests enterprises, institutions and organizations can obtain special forest plots where the using from another forest user is limited or prohibited, including citizens, if it is not compatibly with research purposes. The decision about limitation or prohibition rights is made by local councils with the permanent forest users agreement.

Forests that are given for this purpose belong to the category of attached forests. The object of such forest exploitation right is a forest area with plantations, which have standard, elite, unique and other properties. The subjects of the right of forest use with indicated purposes are forest sectors research institutions and organizations, national parks, forest seed-production plant, specialized seed forestry, breeding and nurseries complexes etc. Right of forest use for this purpose is realized within the forest land fund, which is provided in temporary use by local councils with the forest bodies agreement.

Unfortunately, despite the regulations of the article № 46 of FC of Ukraine which says that scientific research is one of the meaningful forest management actions the goal of which is to ensure scientifically sound use of forest resources, to protect environment and regenerate forests in Ukraine still one has not adopted a special normative act and no special provisions have been provided that would regulate the rules of forest use research purposes.

Instead, for example, the Russian Federation Ministry of Natural Resources has adopted Rules of forests use for research and educational activities. In these Rules the content defines the research and educational activities on the lands of forest fund. This activity includes the implementation of experimental or theoretical activity aimed at obtaining new knowledge about the forest ecological system and conducting applied research. It is directed primarily at using this knowledge to achieve practical goals and solving specific problems, protection and regeneration of forests.

Forests using for educational activities has to do with the establishment and using the objects that have educational and practical facilities on the forest plots (landfills, research sites for forest studying, development of methods for forest valuation, works to restore forest health, forest protection, forest restoration, and other measures) in the process of studying, using, protection and regeneration of forests and other natural components, items necessary for fixing the infrastructure of forest practice about special knowledge and skills of learners.

However, the current Ukrainian legislation considers educational activities only in the overall context and associates it with services for getting the higher education and issuing appropriate document according to such education.

Thus, we think Ukraine has to adopt a special legislative act that would regulate the peculiarities of scientific-research and educational activities with forest resources use.

ECOLOGY OF THE INTERNET: DIGITAL WASTE AS A RESULT OF HUMAN ACTIVITY ON THE WEB

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Among the many definitions of "ecology", there is a very simple and literal. It is a science with a mission to find the necessary tools of harmonious coexistence among different organisms, mostly - a man in our common home.

For some time the Internet as a unique phenomenon of XX-XXI centuries has become home, a habitat for many people. We're not talking about the need to raise the alarm and say that this trend soon, this time finally, to destroy humanity.

People changed way of life: in prehistoric times we lived outside, and then moved into the houses. Nowadays no one thinks about making a tragedy from it. In the same way the process of phasing out of the real in favour of virtual does not carry anything damaging to humanity.

However, a new habitat has brought a need to deal with new challenges, in particular - of garbage that it pollutes, the digital garbage.

"If we make laws for disposal of household waste, then soon we will have to buckle down digital waste", - writes Pablos Holman, IT-expert, a researcher of new technologies from the Intellectual Ventures Lab.

What can be distinguished among digital waste that man face? The main types of Internet garbage can be considered as such:

- Spam - in the broadest sense of the word
- Obsessive banners, hype, viral ad campaigns
- Aggressive-minded users who generate content that is free from ethics and political correctness
- Design web pages, which causes inconvenience to users
- False information, poor quality, processed and presented
- Irrelevant information, which still indexed by search services
- Computer viruses

These factors are digital pollution have a negative impact on:

- Human health, especially - mental
- Intellectual property rights of human being, its temporal and material resources
- Economic interests of companies

By the way, it is a unique case where only human receives all the negative results from digital pollution, any other component of biodiversity doesn't.

We can even make a joke that we, having gone to the Internet as a habitat, provided some extra place to live to other kinds of organisms living on Earth.

This is hardly the case. The first thing coming to mind whet trying to disprove materials of a research done by scientist at Harvard University Alex Wiessner-Gross in 2009, who concludes that the amount of electricity to perform two searches on the Internet and the amount of energy to boil a small kettle is approximately equal. That means the amount of greenhouse gases emitted for its production is equal to.

Whatever it was, in the near future we will be talk more and more about the ecology of the Internet - the biggest tool for communication, entertainment and business.

We do not know what will be the environmental framework for the Internet. But today all those who are involved in the development of information products, should care about the impact of this on the information environment.

We should talk more on creating information products that can be called ecologically pure information.

With this belief several companies work on Ukrainian market, including - «Digtal ventures», a company that develops web-portal tochka.net.

tochka.net - is a big portal, which aims to become the number one portal in the Ukrainian Internet by the end of 2011.

Company is involved in preparing a new site architecture, which will become more friendly to users. Portal provides quality information already, but lots of aggressive advertising are still there.

We also intend to actively deal with such a complex phenomenon as unproductive, unconstructive comments under our news, articles, photo. In the near future in all sections of the portal you will be able to log with your account from vkontakte.ru or facebook - this can significantly increase the level of discussions lead by our readers.

CONSTRUCTION IMPACT ON THE NATURAL CONDITIONS OF THE 7-TH AND THE 12-TH MICROREGIONS' AREA OF THE TOWN SUMY

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In the conditions of the scientific – technical progress the interrelation between society and nature has become much more complicated. The man has begun to interfere in natural processes, has conquered nature forces and with this keeps polluting and damages the environment.

The man from the earliest period of his development felt himself as a master of everything that surrounds him. Remember the proverb:"Don't rock the boat". One incorrect decision and it will take decades or centuries to correct fatal mistake.

The first paces are being taken now towards nature: different researches are being done, new technologies are being created, the production is being rearranged, the natural systems are being renewed. It goes without saying, that everything is right but there is one "but".

Nobody was thoughtful about the influence of building on the nature complexes of this or that territory. Influence of not an enterprise or some plant, but common block of flats. Frankly speaking there are no enough people who can imagine the true situation.

We explored catchment areas of the 7-th and the 12-th microregions and territories of Cheha Lake and some area of the river Psel. This place was not selected occasionally. Not so long ago there were bogs areas, gardens and old lakes. During the 80s a general plan was created. This is the only territory in our city, which settled so quickly. Only separate buildings were created in different parts of our city. That was

the only territory with planned catchment areas and infrastructure. There were schools, shops, kinder gardens for comfortable leaving. There are no roads without traffic jams in our town. Such location was constructed almost thirty years ago, when nobody could foresee modern transport quantity. Engineers planned a city of the future, but, as usual, it is necessary to sacrifice for great idea. The sacrifice was nature. Absolute points of highlands increased from 3 till 6 meters. Plants and around stratum was taken off before the deposit. The wind, temperature and air have changed. Effluent brought sand, salt and petrol oil, that loaded Psel and Cheha Lake.

But human is one of the heaviest polluters of the nature. Imagine such situation. There are mountains of garbage on the pavement. Car owner washes his car near his house and petrol and oil gets into the river. He does not recognize of his really bad action. Roads near the water make a great impact on water's well being.

So, there are no any industrial enterprises in the region, so is the best field for exploring the influence of house building and the impact of a big people quantity on the nature.

The aim of our research is to define the strength of the process of building and its impact to the nature of the 7-th and the 12-th and territories of Cheha Lake and some area of the river Psel. The following methods were used to reach our aim as:

- historical: to study about the earlier conditions of the explored territory with the help of historical resources;
- observation method concerns to the modern physics and geographical conditions of the area;
- Sociological questioning method.

The following information was received as a result of the usage of mentioned methods. There are upper chocks, paleogene, upper quaternary and modern technogenic deposits in the geological consistence of the area. Before the panting out process the ground strata appeared to be light loam, meadow loam and bog type.

During the observation it was found out that microclimate of the region characterized with high dynamic and inconstancy in a twenty four hours and season rhythm. Such rather big continentality of microclimate is connected with a big area of asphalt roads and reinforced building.

As a result of observation, it is possible to admit that the following physical, geographical condition take place as:

- Before the beginning of the construction the upper layer of soil with the vegetation had been taken off because the construction was impossible on the swampy territories ;
- Approximately the whole swampy vegetation near the water has been destroyed;
- Hydrological territory conditions were changed. The proper lake appeared and became the beauty of our town;
- Wide roads with high buildings accompanied the creation "corridor winds", which makes the region' air better;
- large areas of asphalt and concrete increased the continentality of microclimate;
- recreation load of the nearest water became bigger;
- The pollution of the river and lake increased by means of upper drainage with sand and oil.

Nevertheless there are positive sides. Many people receive habitation, objects of

social infrastructure (but not all planned). Such circumstance uploaded so analogical institutions in the other parts of the town. It increased quantity of work places. Sumy received wonderful and clear lake, and became a favorite place of a rest for Sumy dwellers.

As you can see the negative results is much more.

And it is not everything. From the first sight it is small item, all these blocks of flats. But what can we say about Nuclear Power Plants, about the waste of industrial production, about mining of mineral recourses? Here we can put only three dots.

THE FEATURES OF UKRAINE'S TRANSITION TO SUSTAINABLE DEVELOPMENT PRINCIPLES

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Sustainable development is the general concept regarding the need to establish balance between satisfying current needs and advance the interests of future generations, including their need for safe and healthy environment.

The paradigm of sustainable development includes requirements for environmental protection, social justice and lack of racial and national discrimination.

At the present stage primarily the environmental factor determines the historical perspective of mankind. Influence of environmental conditions is gong to be obvious on the development of all components of society without exception.

That is what determines the need for a new ecological-economic concept, development and implementation of which, in practice, will contribute to "greening" of thinking and viewing the many stereotypes in decision-oriented solutions.

Given the features of the present trends of globalization and public life, we can state that need ideology, which would take into account the modern features of transition to liberal market economy and accession to international structures. It is again underlines the necessity of comprehensive fundamental structural changes in the Ukrainian economy, including natural-resource plane.

In countries where these requirements are ignored by state-level, the concept of sustainable development is trying to attach a "friendly" content. For example, in Ukraine the term "sustainable development" often used to denote only steady economic growth of the country, its regions, cities, municipalities and industries. Sometimes unsystematic implementation of measures for environmental sanitation and living conditions are also added .

For the conditions of Ukraine sustainable development can be defined as the process of productive forces' harmonization, of providing guaranteed the minimum requirements necessary for all members of society subject to the maintenance and integrity of the play staged environment, to balance the potential nature and requirements of people of all generations

One of the main priorities of Ukraine is striving to build a people-centered, inclusive and development-oriented Information Society where everyone can create and collect, use and share information and knowledge, to enable each person to fully realize their potential, promoting social and personal development and improving quality of life [1].

Given the features of the transitional period, which is experiencing in Ukraine, the goals of sustainable development of the country should be: social justice, ensure the quality of the environment, management of natural resources, population stability and international cooperation.

To follow the principles of sustainable development economic reforms implement is necessary, strategic direction of which is expected to strengthen their social and environmental focus, It is can be realized through improving socio-economic and industry conditions, increasing real income at the state regulation of wages and pensions; rising educational and cultural level of population and creation of favorable conditions for health.

Sustainable development requires the formation of efficient production, coupled with changing consumption patterns in the first place - in industry, agriculture, energy. This will ensure economic growth while reducing the cost of energy, raw materials and waste, and sustainable use of natural resources for present and future generations.

There are such the main peculiarities of Ukraine's transition to sustainable development as:

- most state regulation of sustainable development, maximum use of Ukraine's economy opportunities, particularly its natural and raw resources, manufacturing, scientific and intellectual potential;
- a combination of state influence with market forms of sustainable development, promotion a qualitative change through early financing, lending logistical and monetary support, provision of economic benefits of sustainable development priorities.
- taking into account the specific situation, which will be made sustainable development, set priorities and their inclusion in the plan each year according to financial possibilities of the state.

In conclusion, to ensure proper functioning of Ukraine's transition mechanism to sustainable development it is necessary to pursuant to its main principles. They are:

- focus on local capacity, especially natural resource conditions, scientific, technological and intellectual potential;
- the use of program-based planning and development of annual programs, plans and projections of socio-economic development with environmental safety requirements;
- combination of government and market regulators influence of economic development.

The ensuring effective information society development in Ukraine will increase protection of the man’s rights and freedoms, his welfare, will increase Ukraine's competitiveness and productivity in all economic sectors.

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ACTUALIZATION OF THE INTERCONNECTIONS BETWEEN NATURAL CAPITAL AND HUMAN CAPITAL IN THE CONTEXT OF ENVIRONMENTAL MANAGEMENT

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My interest in environmental management developed when I was a student at the Sumy State University, where management was my major. My teacher of management Prof. Dr. Oleg Balatzkiy is "Father of the environmental economics in Ukraine". His ideas, in general conversation with him and his colleagues and students have formed me as a researcher, whose mission is a noble desire to protect nature.

My teaching and research experience convinced me that environmental management is a complex concept. Simplifying the understanding of this concept leads to a reduction of its role in organizational activities and as a consequence only a partial solution to environmental problems. Environment should be viewed as a multidimensional phenomenon that includes not only the economic or ecological, but also socio-psychological and cross-cultural components. In my basic research I conducted an analysis of socio-psychological, in particular, motivational factors, environmental management and how they affect the economics of the enterprise.

So far deepening my knowledge in the field of environmental economics related to complexity of environmental management. In parallel, there is another purpose of my research – synergy of natural capital and human capital within the environmental management framework. This idea I got after the practical research of environmental management in industrial enterprises of Ukraine. With a synergistic approach I can explore the nature of relationships in the environmental management system and find previously hidden effects. Then I will be able to prove the profitability of environmental factors for stakeholders, and ultimately to find balance between the interests of all participants of ecological and economic relations.

Unfortunately, Ukraine has a considerable distance between theory and practice of environmental management. This is particularly strongly expressed in environmental policy. The solution of environmental problems begins at the state level. The least explored part of the problem of balance of business and ecology at the organizational and state level. First of all, business organizations, multinational companies are major players in the market, while the main polluters of the environment. It is on inner motivation of business depends on just how quickly and effectively we can warn, but not offset the effects of pollution. The needs and motivation, organizational behavior, HR-management, change-management, conflict-management, etc. are development of the classic management theory. All the positive experience of this theory and relevant practices are not used in solving environmental problems yet. It is a need to integrate not only the economics and ecology and the subsequent release of environmental management, but there is also a need for integration of environmental economics and management theory. We are talking about the complexity of environmental management. A study of environmental management from all perspectives (ecological, economic, institutional, socio-psychological, cross-cultural) leads to the clarification of the relationship between these aspects, i.e. to the synergy of environmental management, in particularly, the synergy of natural capital and human capital – through constructive solutions of environmental conflicts (fig. 1).

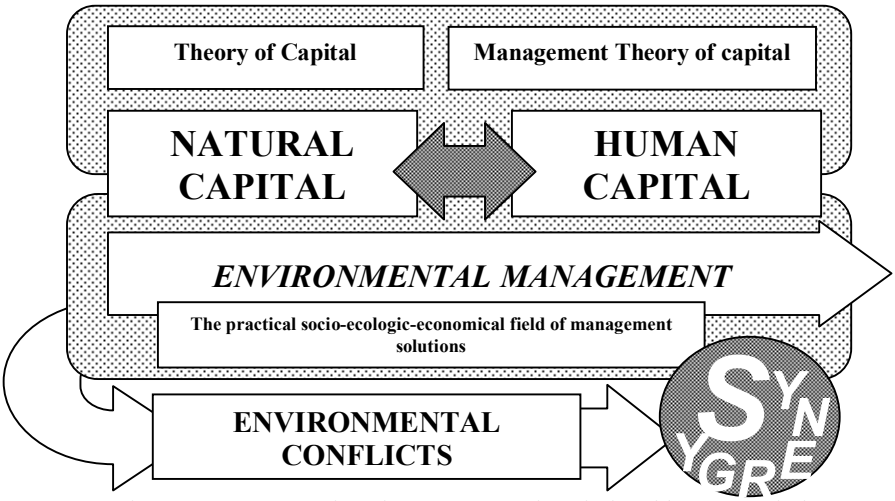

Figure 1 Interconnections between natural capital and human capital

In Ukraine the sphere of environmental economics follows more the tradition of the Soviet Union. The latest world trends in this area relate to involvement in the field of ecological and economic research socio-psychological and cross-cultural aspects, which is the full balance according to the concept of sustainable development. Also a specific part of research in sphere of environmental management and economics is the development of knowledge and skills in the field of capital theory. Not all capital can be classified clearly into only one form. Often we see synergetic interaction of different capitals: physical, financial, human, social and natural capitals. Within this article the special interest is in two forms of capital – natural and human, because its interaction has, in my opinion, the highest potential to improve national economics through environmental management both at the micro and at the macro level. Besides this is an innovative issue for science in Ukraine.

THE CONCEPT OF SUSTAINABLE DEVELOPMENT AS A BASE FOR THE DEVELOPMENT OF LOCAL COMMUNITIES IN UKRAINE

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Community development – is a dynamic social and cultural process. Working with community demands attitude to it as to a living organism, understanding and consideration of its dynamics. And when we talk about "community development", we mean not only (and not so much) the growth of wealth, level of wage, per capita income and so on. Community development - is, above all, social changes, through which in the community arise new initiatives, increasing social capital, people change their vision of the world and their role in it. This is a development of new possibilities,

development of own potential. And this development should start with people, because they know best about their own life and their problems.

The bottom line is to make it possible to do changes - for individuals, communities, institutions and relations between a wide range of organizations that are participating in the development of civil society and promote better social and economic policies.

Key aspects of public participation and community development:

1. Formation of social capital. It includes activities that promote more active involvement and building of trust in communities (establishment of relations, unification of efforts, development of cooperation). Public participation is directed on the increasing of confidence and ability of people and their associations (formal and informal) to be involved in activities that improve their quality of life, and build relations of mutual support, that promote development of good neighborly relations and stability of communities.

2. Services. Public participation should promote conditions in which local communities can influence to service delivery and use of resources to help in defining problems, setting priorities, developing and implementing solutions. Public participation should promote ability to plan and implement solutions that were taken at the community level, and actually take responsibility for their community.

3. Involvement in governance – presentation and defending the interests of community in making decisions by government. The idea of public participation based on the right of people to participate in decisions that affect the welfare of their communities. Building communities directed to promoting a more influential voice of the public on many levels, building community connections. It also provides community involvement as equal partners and the responsibility of local communities, service providers and others who make decisions.

If people in the community are initiative, creativity, if they recognize responsibility for their development, they should be actively involved in decision making.

Community development process includes the following stages:

1) Understanding of community needs;
2) Formation and support of community groups;
3) Planning of projects;
4) Realization of projects;
5) Evaluation of results.

These stages of activity related to each other. Indeed, some steps may occur the same time. The community participation is key in each of these stages.

Community development takes place on the following principles:

- People have the potential to change their world - our life is not static. It is constantly changing, evolving, and the community can and must develop too. People have the opportunity and ability to change their own situation and the situation of their community.
- Effective and appropriate development based on identified community needs – the community itself should determine its own needs.
- Community development takes place through participation - community members, not outsiders, control the process of development.

- The development of community is based on the combination of knowledge that already exist in the community - the community members are specialists in community development.
- Community development includes a collective activity - community members working together to make positive changes in their community.
- The development of community is comprehensive - community development recognizes the connections between economic, social, political, cultural and environmental problems.

Thus, community development is a process of following a positive, overall change in society where the community itself identifies its problems, develops strategies to solve them and puts these strategies into practice. The members of community work together to make changes that positively affect the welfare of the entire community. In view of this the concept of sustainable development that harmonizes economic, social and environmental components of development and does not disrupt the balance of interests of present and future generations, should form the basis of modern community development programs. As for Ukraine, the administrative-territorial reform should be based on the principles of sustainable development of existing communities.

FINANCIAL RESOURCES OF INSTITUTIONAL ENVIRONMENT SUSTAINABLE DEVELOPMENT COMMUNITY

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The basis of our experimental hypothesis is that this way of funding the most effective at changing the values and norms of conduct the members of community, particularly towards to the culture of sustainable development.

We decided to test this hypothesis based on the results of the UNDP Local Development CBA (CBA / UNDP - web page: www.cba.org.ua), which was started in Ukraine in September 2007. The program is financed by the European Commission and co-financed and implemented by UNDP in Ukraine in support of the Government of Ukraine.

The purpose of this program is to create an enabling environment for sustainable socio-economic development for local communities through the promotion of self, developing and implementing small-scale community initiatives in all regions of Ukraine.

Locally, the project works with participating communities (self-governing community organizations, activists and residents of the immediate communities) and local authorities (village, town, city mayors and councils, district councils, district administrations).

The project has provided small grants for implementation of micro communities based on the principle of self-help and cooperation within the private and public sector, where each partner has to contribute to development. The Financial Mechanism of Program project predicted that the share of value of micro-financed by community members (not less than 5%) and other costs are financed by central and local budgets (45%) attended the IWG UNDP was approximately half of all contributions (50%).

But the main result of micro-projects has not solved only by the immediate problems of real community development, as elaborated by international standards and mechanisms for self-organizing community interaction and community authorities.

Taking part in the project community has the obligation, with the assistance of local authorities to support the sustainability of the process to continue to receive positive results. The analysis of community development in the Sumy region has aready showed that after the implementation of microprojects, communities continued to project activities already focusing less on the assistance of donors, but it's reliance.

As an example, a community v. Buymerovka Trostyanetskij district, Sumy region, following the implementation of micro-construction of a new water supply, with the assistance of the international program own IWG UNDP, which based on our own forces, raised money and successfully implemented energy conservation projects and street lighting in the community.

Participation in an international action program actually changed the mechanisms of self-organization and management of all communities participating in the UN Development Program Local Development CBA. It is primarily about institutional changes in society by implantation of international standards of sustainable development.

LAWYER'S ANALYTICAL FUNCTIONS IN THE COMPLEX OF ECOLOGICAL ECONOMIC MONITORING

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The environmental information diversity, problems and solved tasks, needs integration of the ecological informational - analytical space in interests of environmental safety and sustainable development of region.

Exactly for this purpose the system ecological - economic monitoring was created. System management is based on combination interests of different users' categories (ecologists, physicians, lawyers, economists and managers) within the limits of the uniform information analytical interface. Physically such environment represents computer the Internet - a network which should be transformed to virtual ecological environment which gives the resources to the registered users.

The lawyer provides corresponding support of decisions which are accepted by the manager, frames legal models and techniques for definition of legality of actions which are prescribed by the ecologist, the physician and the economist, defines terms of carrying out of liquidating works according to the current legislation, has possibility to initiate claims to infringers of ecological safety, to define sources of indemnification of injury.

The subsystem "Lawyer" carries out following functions:

– Display a card of area;
– Displays the chosen zone of ecological pollution to a card;
– Formation the interface for information reception about ecological, medical, social both economic actions and necessary resources for their carrying out;
– The reference to programs which carry out operations of visualization of a pollution zone;

– Formation the interface for information reception about legal aspects;

– Formation the interface for definition of sources of indemnification and calculation of the sum of the put injury;

– Formation the interface for definition and processing of real zones of pollution taking into account the information about all ideal zones which are included into its structure;

– Formation the plan performance of actions and transfer to its manager;

Lawyer in the complex ecological-economic monitoring provides great-vove regulation of relations between the subjects that affect the environment. It uses information about the ecological condition of the zone and offers a range of appropriate legal measures.

Objectives lawyer in complex ecological-economic monitoring:

1. Formation directory of legal measures defined for each second of the event conditions of use;
2. Formation of legal reference resources activities defined for each resource of its regulatory and information costs.
3. Creating a list of legal measures (for punishment, remedy, compensation of material and moral losses) that are planned for in the area and decide what resources to carry them out.

The system of legal liability and sanctions for illegal behavior ecologically meaningful rather complex. Law of Ukraine "On Environmental Protection" with reference to the legislation of Ukraine has established disciplinary, administrative, civil and criminal penalties.

Disciplinary liability for environmental violations following the environmental and legal infractions related to the performance of the functions of the employee.

Administrative responsibility lies for violations of mandatory rules, the general procedure for using natural resources, environmental protection and environmental safety .

Criminal liability in the field of ecology as defined in the Penal Code of Ukraine: - a special form of protection from environmental violations that constitute the greatest danger to society and the environment.

Civil liability under the provisions of Article 68 of the Law of Ukraine "On Environmental Protection" and civil law the application of disciplinary, administrative and criminal liability does not relieve perpetrators of compensation for damage caused environmental pollution and degradation of natural objects 'facilities and quality of natural resources.

Functions of all experts are united in uniform system which carries out ecological economic monitoring of environment.

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GARBAGE BANK, SOLUTION OF URBAN WASTE

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City population growth rapidly in Indonesia in the decade of 19th century until the 20th century although some big cities like Jakarta, Surabaya and other cities have built systems strict in relation to urban population growth in each region. Still it can't overcome the overcrowding problem in big cities. Jakarta, for example, is the city with the highest density in Indonesia with 14.484/km^2 (2008), while Surabaya is second place with 8.059/km^2 (2008).

Rapid growth population rate will not increase the burden light for a city in the preparation of new infrastructure, such as education, transportation, health and other urban ministry servants, especially the newcomers who has low education, so that this situation will also further increase the burden of city government.

One of the expenses incurred are the solid waste or often referred to as garbage, trash the rest of the unused goods both solid and liquid waste from humans, and thus if the waste problem can't be managed properly, will automatically cause a further decline in environmental quality would threaten human life their self.

With the rapid urban growth and changing social level as well as technology develops human progress, waste becomes a serious matter and required careful handling in an integrated way with new innovations that more adequately reviewed from all aspects, be it social, economic aspects and technical aspects. In today's conditions solutions become an increasingly urgent in cities in Indonesia, because the growth of cities in Indonesia will continue with the acceleration that is not also reduced even there is a tendency to increase.

Such conditions can be predicted that going forward that the city also will produce more waste and more varied, therefore if not done right the current handling of this will result in adverse changes in environmental balance or are not expected to pollute the environment so that all of the land, water and air, which in turn exposed to the life of urban life that is not healthy anymore.

Urban waste from day to day has increased its production in line with the growth of urban population increased as described above. The city government in this regard has been set up polling stations closer to the community, as well as a wagon or a car that operational from home to pick up trash then trash taken to the landfill. However, running system has not yet been able to solve the problem of garbage properly and completely.

By this condition we need the effective solution, namely the principle of waste management system without rest (zero waste system). In this system the public to be fully involved, the government would only act as facilitator and regulator. People will manage their own garbage, people will feel ownership and will also get revenue from this management, while local governments will greatly reduce the burden bear. Public participation is required here is the beginning of packaging waste themselves in accordance with the existing types of waste include organic waste, waste paper, plastic and metal trash then exchange it according to its type.

In fact in a big city, one of which is the city of Surabaya's waste-management problem is a serious problem, which so far only in the urban waste collected through the TPS (last place collected for garbage), then it transport to the landfill without any

sorting by type of garbage. This resulted in a pile of garbage in the landfill will just be a mountain of garbage and will pollute the environment in the vicinity, ranging from the air that emit odor, water pollution in the region experiencing and is a nest of disease. And if you do the separation of garbage in the garbage pursuant to its type will be able to be recycled back into economically valuable goods, for examples:

- Paper waste, paper can be recycled into paper pulp into new paper again
- Plastic waste can be recycled into plastic grains / ahandicrafts (bags, clothes, hats, purses, etc.)
- Metal waste can be recycled into metal again, which is useful
- Organic wastes can be processed into compost / organic fertilizer

Vision

From the description above, through garbage bank we put a vision as follows: "Overcoming the problem of garbage in the city of Surabaya to make the garbage as land jobs that lift the economy rate of poor people"

Mission

1. To solve environmental health problems caused by waste by involving the participation of the public directly
2. Able to create new jobs for the community so as to overcome the problem of unemployment in Surabaya
3. Build awareness in society about the importance of sorting, managing waste and make it as economically valuable goods in order to provide additional income.
4. Giving loans to people in need with no interest in its payback.

THE FORMATION OF THE EFFECTIVE POLICY OF SUSTAINABLE DEVELOPMENT VIA PREDICTION OF THE ENTERPRISE AND MARKET REACTION

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To secure the sustainable development every state must form up and implement such a policy that could ensure simultaneous economic, ecological and social development of a society.

Ensuring of sustainable development must be based on the state stimulation to implement innovations that are effective by these three components. Meanwhile the instrumental system of the state and regional stimulation of innovation implementation must be formed in such a way that the increasing effectiveness value of costs invested by an enterprise in a reasonable direction of innovative activity (using the methods of positive motivation) would considerably exceed the lowering effectiveness value of their investments in an unsuitable direction (using the methods of negative motivation) after its use. As a result it would raise the total socio-ecologic-economic effect of the innovative activity.

Such an instrumental system of stimulation would be characterized by the increase of investment volume into innovations that secure the sustainable development.

The factors of the reverse impact, improvement of ecological, social and economic components of society's welfare and market factors influence the effectiveness of stimulation policy concerning the implementation of such innovations by enterprises.

To form up an optimal stimulation instruments of innovation implementation it is suggested to use social-ecological-economic effectiveness rate, concretized by results and expenses of innovation implementation. The concretization of constituent results and expenses on state stimulation of innovation implementation, necessary for sustainable development, showed that for their estimation it is badly needed to predict reaction of market and innovative process subjects to stimulation means.

There was revealed the difference of modern tendencies from classical views concerning consumer distribution by motivational force to consume innovations. It was revealed that the consumers with different motivational force of behavior orientation on sustainable development have different sense of usefulness of corresponding innovations. For instance, with normal extra charges the majority of population is ready to buy innovations, the consumption of which does not affect their health. But they are not ready to pay for the production, the consumption, manufacture and utilization of which does not affect the environment.

It was suggested to distinguish the rational consumer choice, by which the product's usefulness and quality are changed in consumer's conception by the mass media. Their maximal relation to product's price or consumer expenses point at the new products of the highest consumer appeal.

Other investigations of consumer behavior were conducted. They allow to improve the prediction of innovation implementation effectiveness by enterprises and effectiveness of state stimulation of their implementation.

There was revealed the lead of development of social (state and regional) effectiveness of innovation implementation, aimed at achievement of sustainable development, in comparison with the implementation effectiveness of such innovations from a position of a concrete enterprise. It determines the reasonability of state and regional stimulation of enterprises to implement innovations.

The growing tendencies of the revealed lead depending on the concepts of sustainable development and ecodestructive influence level point at increasing role of regional and state stimulation of sustainable development.

It was proposed to determine the reasonability of further social expenses on stimulation and further expenses of an enterprise on innovation implementation at every level of outer stimulation via the criterion of the boundary socio-ecologic-economic effect.

The proposed paradigm of formation of sustainable development policy will allow to maximize economic, social and ecological effects obtained by a society under equal starting conditions and expenses on state management. The obtained results permit to determine the most effective regulation methods of social development and to form up the effective instruments to stimulate innovative activity of each sphere of the state economic activity.

Key words: sustainable development, effectiveness, implementation of innovations.

HOW TO IMPROVE ECOLOGICAL KNOWLEDGE AMONG YOUNG PEOPLE

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1.What does ecological education look like in different countries?
2.How ecological education should look like?
3. Examples of well - ecologically educated countries.
4.Creative initiatives that we as young people can take up to educate about ecological education.

STUDY OF TOTAL QUALITY MANAGEMENT IMPLEMENTATION ON CONSTRUCTION COMPANY

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Since the economic crisis storm in Indonesia ended, lots of new construction company built. The increasing number of construction companies in Indonesia is not followed by the increasing of the construction's company quality. The effect is, quality became the second.

Revenue of construction companies is not just received form controlling total asset and equipment, but also received from management ability, human resources, technical ability, usage of innovative solution, infrastructure system, ability to undertake complex needs, ability to receive and undertake risks.

Number of Construction Company 2004 - 2007							
Provinsi		2004	2005	2006	2007	2008	2009
1	Nangroe Aceh	3710	3866	4071	4026	6069	7227
2	Sumatra Utara	3890	3807	3936	3889	7169	7818
3	Sumatera Barat	2837	2435	2664	2247	4477	4711
4	Riau	1973	1652	1773	1795	5.678	6.027
5	Jambi	1807	1931	2302	2454	3059	3286

6	Sumatera Selatan	2548	2629	2394	2862	3668	3952
7	Bengkulu	657	804	693	660	1132	1176
8	Lampung	3857	3636	4033	5146	2542	2704
9	Kep. Bangka Belitung	325	294	388	358	905	935
10	Kepulauan Riau	-	332	502	411	1701	1971
11	DKI Jakarta	4417	5015	4690	5372	6809	7643
12	Jawa Barat	6268	6500	6438	6194	10755	11745
13	Jawa Tengah	7619	7203	5535	4191	11050	11642
14	DI Yogyakarta	1239	1155	1081	1048	1183	1234
15	Jawa Timur	8356	7958	7303	7202	16902	17740
16	Banten	1285	1749	1182	1419	2380	2745
17	Bali	1731	1615	1571	1575	2221	2348
18	Nusa Tenggara Barat	1213	1253	1198	1217	2316	2426
19	Nusa Tenggara Timur	1780	1660	1553	1607	4056	4237
20	Kalimantan Barat	2994	2171	2023	1997	5135	5657
21	Kalimantan Tengah	178	202	218	216	3366	3596
22	Kalimantan Selatan	4613	4783	4101	4558	3689	3945
23	Kalimantan Timur	1454	1671	1678	1757	6493	7280
24	Sulawesi Utara	191	214	242	218	2296	2411
25	Sulawesi Tengah	2217	2554	2128	2623	2521	2722
26	Sulawesi Selatan	5728	4965	4960	4963	7921	8669
27	Sulawesi Tenggara	1026	1056	1246	1207	2451	2700
28	Gorontalo	1132	1288	1612	1540	1301	1408
29	Sulawesi Barat	-	576	655	621	1427	1485
30	Maluku	1197	1028	1136	1124	2266	2343
31	Maluku Utara	989	1149	1132	1053	1603	1831
32	Papua Barat	2191	1246	1503	1424	1564	2020
33	Papua	-	994	926	927	3218	3903
TOTAL		79422	79391	76867	77901	139322	151537

Source: www.bps.go.id

Total Quality Management is one of possible approach to do business that want to maximize the organization competition ability from products, services, human resources, processes, and environment.

If those factors are under control, there will be a big opportunity for those construction companies in Indonesia to challenge foreign construction companies.

Lots of internal problems are created by those Indonesian companies themselves, and actually those internal problems are under their organization's control. This problem usually related to company's weak management system. The effect is,

sometimes internal problems became the main problem behind the fall of a construction company in Indonesia.

In this theses, 20 elements of Total Quality Management that is taken from ISO 9000 is implemented in a construction company in Indonesia named PT Nusa Raya Cipta and that company undergoing project – Sahid Residence.

From the case study of PT Nusa Raya Cipta and Sahid Residence project, can be inferred that PT Nusa Raya Cipta and Sahid Residence already implemented Total Quality Management in a good way. The commitment of top management to implement Total Quality Management to is also implemented in a good way. But, for PT Nusa Raya Cipta and Sahid Residence poject to implement Total Quality Management consistently, the writer suggest that quality audit is done continuously.

ECONOMICS VS. ECOLOGY – CONTEMPORARY TRENDS, RISKS AND CHALLENGES

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It is widely known that the Greek word 'oikos' is the common root for the 'eco' in both terms "economics" and "ecology". It is sometimes stated that ecology is the science of nature's housekeeping, while economics is the science of human housekeeping. That is why the contemporary tension between ecology and economics is looking strange.

We have at least two possibly conflicting objectives in our decision making and those are minimizing environmental impact and maximizing economic profits. While during the last century economic and ecological goals were mostly conflicting with each other, nowadays those goals are getting more and more aligned. The target of reaching sustainable development assumes that meeting the needs of the future depends on how well we balance economic and environmental objectives – or needs – when making decisions today.

Nowadays, greening of economy presents more opportunities, but at the same time we are facing many more environmental risks. From one side, companies go green and proportion of green goods constantly grows. In addition, new technological advances especially in the renewable energy sector reduce the amount of greenhouse gas emissions. On the other side, we face more environmental risks that are resulted from both human activity and natural disasters. Moreover, as a result of human activity, many natural disasters like earthquakes lead to environmental catastrophes that include soil and water contamination. Consequently, environmental risks need to be evaluated more carefully than in the past. For instance, building new infrastructure such as nuclear power stations without complex investigation of all environmental risk factors is too dangerous and can lead to large losses, both in human lives and in economic downturns.

Currently, businesses are taking the lead in building the environmentally sustainable future and governments are only providing support for those initiatives. It is completely different from the situation in the past decades, when governments were imposing environmental regulations on industries. Transformation of the business environment towards green products and projects is impossible without support of the

customers who are willing to pay (and pay higher price in many cases) for green products and technologies to minimize their environmental footprint. The education plays an important role here and sometimes the environmental education takes such unusual channels as TV advertisements and computer games that indirectly teach people to be environmentally responsible.

Many companies increase their publicity and environmental awareness by publicizing their environmental initiatives like greenhouse gas emissions reduction resulted from clean technologies or from minimizing processing times and customer waiting times. The competition has increased due to the fact that companies and businesses can make profits by going green. The fastest growing “green” industrial sectors are the renewable energy and innovative technologies for operating buildings. Renewable energy sources are well-known solar panels and wind mills. Innovative technologies for operating buildings include “green” housing and geothermal heating and cooling. These two directions created the concept of distributed power generation that will replace centralized power generation at the power stations by power generated at the residential buildings and re-distributed among the consumers. Those new power grids can be highly optimized using smart computing in order to improve energy distribution effectiveness even more.

In conclusion, innovation, technological advances and modern information technology including optimization will be the leading forces driving sustainable development and rational use of natural resources. Higher environmental risks that we are facing will need to be taken into account when planning for the new and managing existing industrial infrastructure.

IMPORTANCE DATAWARE FOR SOCIAL-ECONOMIC SYSTEMS

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Under modern conditions of social and economic development, especially important area of information provision has become the management process, which consists in gathering and processing information necessary for making sound management decisions.

Any decisions require processing large amounts of information depends on the competence of the head of possession of sufficient information about the rapidly changing situation and the ability to use it.

"The information capacity" is very important. Because these days dictates the urgent need to feel sure a society where the value of information for all spheres of public life are constantly increasing. Because without the use of information unthinkable effective management of different social organizations and systems.

Management of social systems, their subsystems and organizations expects the production, reproduction and use of different types of information.

As improving the management company increases the need for knowledge about the objects of governance, whether it be social groups, populations, social organization, territorial collectivity or a subsystem of society - economic, social, political, social and cultural. Under these conditions, both subject and object of management need to be

accurate and complete information about the functioning of society, its main subsystems, organizations and groups.

More resources to increase efficiency of management laid down in Decision Support Systems. They represent a computer information system that provides its employees with senior control information used for non-traditional non-programmable Polystructural making management decisions.

Effective decision-making is only possible when entering the field of information management and timely manner. Only such information that arrives, is processed, interpreted and used in time when making decisions to optimize management activities.

The purpose of the operationing management information system installed by the user, consequently, a person is an essential component of this system. Another important component is the processing of information in accordance with specific instructions for the user. Thereby, an information management system - is a multicomponent system, uniting people, processing procedures and equipment.

In our time, the person himself creates the need for information, using it to do with the increase of information resources is necessary to the development of information systems and technologies komkunikatsionnyh, formed as a result of the information market that represents the information as a resource. In consequence of creating market.

On first plan under, using modern information technologies are expert systems, based on research in artificial intelligence, expert systems based on the principles of human mental activity. Unlike other computer technologies, they are capable of producing not only the calculating operations but also to draw conclusions based on the facts and given rules, in much the same conclusion a thinking man. These systems can be used in the management activities, such as the analysis of investment projects or to determine the nature of emergency actions in case of floods, earthquakes, technological disasters and other extreme situations in which there is always a lot of uncertain, unpredictable elements. Therefore, they are often called "intelligent advisory systems."

Qualification using of modern information technology makes it possible to provide a quantitative and qualitative efficiency, profitability and cost management.

However, the use of modern information technology creates a vast expanse of new opportunities for improving management performance. Consequently, and in the application of modern technologies in the practice of management must be able and energetic leadership.

The main effect of the integral, which is to be achieved as a result of welfare is to improve the quality of life. It covers the characteristics and indicators of living as an economic category, working conditions and leisure, housing, social security, free time and opportunities to use it well, subjective feelings of comfort and stability.

To justify the use of information management, should take into account the effects of different categories - economic, technical, social, etc. If you use information management capability to predict the socio-economic development.

Effects of social instollation really do influence the development of people: the development of skills, information exchange and networking, social security, civil society development.

The main economic effect would be to obtain profits from the sale of those activities that have a commercial orientation.

The main social effect will be to raise the standard of living.

The main technical effect will be to raise the volume and speed of use and more intensive development of science-intensive industries.

The main environmental effect will be to enhance the environmental quality, efficiency and production processes.

Therefore adequate use of information systems affect the effective management of resources, and the combination of effects influences the structural mutations both in economic and social sphere and other spheres.

Because information management is an important factor for socio-economic development and improved quality of life.

Research advisor – Macenko O.M.

COMPONENTS OF SUSTAINABLE DEVELOPMENT OF RAILWAY TRANSPORT IN UKRAINE

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Sustainable development of industries of the national economic complex of Ukraine - is, first of all, their economic growth, which provides an effective solution of problems of social life support and improving the quality of population's life. One of the most important sub-industries that helps the constant development of the national economic complex, and provides its own constant development, is the railway.

The marked industry has its number of peculiarities. It is quite difficult, because it covers a variety of transport links, including locomotive and carriage economy, cargo, passenger and logistics, travel industry, communications, energetic and civil structures, etc. The activity of the rail transport provides a balanced solution of socio-economic problems, environmental and natural resources protection. That is the constant development of the railway industry as a system provides a coordinated functioning of its economic, ecological and social subsystems. Unplanned deformations during the process of functioning and development of any of these subsystems lead to the loss of stability of the whole system.

There is a strong and stable connection between the economic growth and the development of the transport system. While assessing indices of this or that particular industry today in the world the first place is occupied not so much by economic characteristics but by environmental, which are considered to be a component of constant economic development and rail transport.

Specific influence of the rail transport on the ecological situation in Ukraine is stipulated by the following factors:

- the consumption of natural resources for rail transport activities;
- the low level of fuel efficiency;
- the use of a number of plots for infrastructure , also with generous soils;
- the pollution of air, water and soil by emissions and discharges because of the exploitation of mobile and fixed assets, etc.

Owing to the environmental advantages, the rail transport has the potential to carry more people and goods with high energy efficiency while reducing noise and emissions, with better safety and reliability, convenience, lower cost. The ability to

realize this potential, combined with a great attention to the customer's needs is laid in the complex of new technologies, administrative and operational methods.

CONCEPTS OF ECOLOGY ECONOMICS ABOUT THE SOCIETY

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To know the meaning and appreciate the concepts and ideologies of ecological economics a brief discussion about environmental economics is essential for proper understanding.

What is environmental economics?

Economics is a body of knowledge (a science) that deals with the efficient allocation and distribution of economic limited or scarce resource for the usefulness of the society or people using certain theories, values, methods, and assumptions.

Environmental economics is a distinct branch of economics that acknowledges the value of both the environment and economic activity and makes choices based on those values. The goal is to balance the economic activity and the environmental impacts by taking into account all the costs and benefits. The theories are designed to take into account pollution and natural resource depletion, which the current model of market systems fails to do. However, This fail systems needs to be addressed by correcting prices so they take into account "external" costs (uncompensated side effects of human actions),for instance environmental pollution.

The assumption in environmental economics is that the environment provides resources (renewable and non-renewable), assimilates waste, and provides aesthetic pleasure to humans. Therefore, when markets fail, the result will be inefficient or unfavorable allocation of resources. Thus, economic theory wants to achieve efficiency, environmental economics is used as a tool to find a balance in the world's system of resource use.

What is ecological economics?

Ecological economics is a new model with the basic premise being that market-based activities are not sustainable, so a "grand new theory" is needed to describe the world and determine how to conduct activities in a sustainable manner. It uses an entirely different framework.

However, it takes a broader perspective and recognizes that there are more things that contribute to human well-being than health and education (human capital), social capital and the contribution of the earth and its biological and physical systems (natural capital). Its goal is to develop a deeper scientific understanding of the complex linkages between human and natural systems, and to use that understanding to develop effective policies that will lead to a world which is ecologically sustainable, has a fair distribution of resources (both between groups and generations of humans and between humans and other species), and efficiently allocates scarce resources including "natural" and "social" capital. There are four types of capital that are always considered in ecological economics which includes; Built capital, Social capital, Human capital, and natural capital.

In addition, ecological economics reminds us that "sustainability" is a multi-faceted goal by focusing on the complex Interrelationship between different elements of sustainability.

In the real world today advance countries have moved towards global warming and sustainable energy development which plays a vital role in development of any given economy, why most of Africans and developing countries have not even achieve the millennium development goals (MDG's) needed for growth and development, before thinking of achieving economic sustainability. Thus, this has created the wide gap between the rich advanced countries and developing nations of the world resulting to wide gap of inequality.

From the above we can say that environmental economics is the study that deals with the economic insertions into the natural environment with a goal to balance the economic activity with environmental degradation by taking all costs and benefits into account. Why ecological economics is a new model with the basic premise being that market-based activities are not sustainable, so a "grand new theory" is needed to describe the world and determine how to conduct activities in a sustainable manner. That is, it deals with the study of human economy as part of nature's economy. However it must be noted that both field of economics are inter related.

INFORMATION SYSTEM FOR MONITORING THE CONDITION OF TERRITORIAL-PRODUCTION SYSTEMS IN TERMS OF SUSTAINABLE DEVELOPMENT

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Currently, Ukraine is undergoing reforms, its economy is unstable, processes that occur in it, threaten the safe operation of certain territories, state and society in general. The transition to sustainable development (SD) of the state is possible only by ensuring SD of all its regions, which envisages formation effective spatial structure of national economy with balancing the interests of all regions. Problems that are solved in each region, to a great extent should comply with a national objective, but considering local peculiarities. It implies the need for target monitoring and comparative analysis of many factors and indicators in developing and implementing strategies and tactics for sustainable development (SD) of regions. That's why the current practice of regional analysis requires development methodological provisions of creation information-analytical system of monitoring indexes-indicators of ecologically sustainable regional development.

To date, to assess SD of international community more than 1 thousand indexes were developed, which are rather difficult to make decisions, assess the sustainable development of territories [1, 2]. Overall development of criteria and indicators of SD is carried out using two main approaches:

- construction of integral index, based on Aggregate Sustainability Measures (ASM);

- construction of systems individual Sustainability Performance Indicators (SPI), each of which reflects certain aspects of SD.

Unification is usually based on three groups of indicators: ecological-economic, ecological and socio-economic and environmental.

One of the main components of this system is to create a database (DB). The main cause of a natural occurrence database concept is the desire to increase the flexibility of automated information systems, ie make them less dependent on changes in requirements for automated information systems (AIS) with information processing and more suitable for further development and modification.

Above all, it's necessary to declare the main ideas underlying the concept of database:

1. To isolate any application from the impact of changes in other applications through shared data by distinguishing logical records used by applications from the results that actually(physically) stored on magnetic media.
2. To Eliminate redundant data duplication.
3. To Centralize data management.

Thus, the essence of the concept of database is integrated conservation and differentiated applications using all the information about the objects of the data domain, which represent a particular interest for the organization. Under such conditions, on the one hand, data presentation formats are described in a logic (obvious) level for each program, but on the other hand, all other data that stored in the database and have no connection to a certain application, is "transparent" for it. This means that the application does not feel their presence.

Thus, all data is placed in the same repository. AIS users are able to apply to any data that interest them. The same data can be in different combinations and presented differently according to users' needs. This is achieved by immersion of the database in a special software environment, that performs the access of functions and data structures transformation, which is called database management system (DBMS).

So, it's not difficult to notice that the use of DB and DBMS to create large powerful AIS, which include a large number of interconnected applications, definitely gives significant advantages compared with the same variations of creation AIS based on file systems.

To develop a well-built, centralized information-analytical system of decision making, firstly, it's necessary to design a global database, which has to include as many factors, indicators, indices, etc. as possible, which relate to sustainable development of Ukraine regions. Such database must be programmatically flexible and a universal structure, that allows easily to manipulate data.

It is suggested to be developed via "Microsoft SQL Server 2008", as this software environment allows using a number of required processing and storage methods.

To provide the functionality of the database it must be developed:

1) A set of functions:

- Functions that ensure correct operation of DB;
- Computational functions of mathematical apparatus;
- Back programmatic functions;
- Functions that automate your database.

2) Mathematical tools:

- The mechanism for calculating the correlation matrix;
- Mathematical Logic of decision making;
- The mechanism of calculating the necessary formulas.

3) User Interface:

- To provide a convenient location of user components;
- To develop a built-in visualization workspace;
- Maximally protect the user from direct work of DB;
- Visual task solution.

In our view, it is possible to realize all this by the means of environment programming "Microsoft Visual Studio 2008", by using C# programming language. "Microsoft Visual Studio 2008" and "Microsoft SQL Server 2008" have extremely good compatibility and allow the programmer to work with them easily.

Based on the development and implementation of information-analytical sustainable development system of Ukraine, it will be able to try various computer - mathematical models, aimed at an objective and complex assessment of the effectiveness of Ukraine regional development in various fields.

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THE FUEL ENERGY PROSPECTS OF UKRAINE

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Almost every modern house intend for living is inconceivable without heating. Gas heating is now considered the most perspective. It is used in industry and in private life. Equally with cheapness reasons of nits popularity is the fact that products of gas combustion almost do not pollute the environment.

Gas heating has a number of complications. At first, it is dependent from the opportunity of connection with highway. Individual gas supply plan needs a long-term coordination. However, all this nuances do not diminish those conveniences that are provided by this method of heating. You see, it is favorable from the ecological and economic points of view : adoption of gas for heating units increases their efficiency, reduce operating costs, automates the process of gas heating, etc.

To substantiate this statement the analysis of different fuels can be realized.

Fuel oil boilers. Installation of these boilers provides full home heating autonomy from the external main sources. But for all that ensuring of regular supply of diesel fuel and installation of storage for diesel oil are necessary. Mean while it is known that diesel oil usage adversely influence on environment despite the fact when it is burned a little amount of carbonic acid is released into the atmosphere allocation of soot particulate can be more harmful than CO_2. Nevertheless, such equipment are

popular, because the price of a kilowatt of heat costs about 2 times cheaper than electric heating.

Solid fuel boilers. The main advantage of this boilers is their independence from additional sources of energy such as electricity. Their efficiency is high and reaches about 70-80%. But the fact that when the combustion of fuel occurs various greenhouse gases, soot are allocated and ash accumulates should be taken into account. Moreover, what is inconvenient, the permanent control over the firing process is necessary.

Electric boilers. Among the main advantages of such boilers is the lack of energy losses in heating because their efficiency is almost equal to 100%. They are relatively inexpensive, compact quiet in operation and ecological. The absence of an open flame provides their safety. Electric boilers are simple to use, doesn't require a boiler, installation of flue and in general doesn't require any special care. But: 1) it is not always possible to allocate required electrical power to heat your home (single phase wiring); 2) high cost of electricity; 3)regular power failures that often happen in our country.

Waste oil boilers. It is believed that a devices of this type improve the ecology of the planet. In Ukraine, for example, up to 77% of all oil waste into soil or discharged into water, thus poisoning all down to groundwater. Only 14-15% of the matter comes to regeneration. If these numbers are increased, boilers could become a sort of "waste heat plants for waste oil.

Gas-fired boiler is the most ecological variant of heating. Among the advantages of gas-fired boiler is the simplicity of exploitation. There is no necessity to reserve fuel. The coefficient of efficiency of the equipment that works on gas is 95%. Such kind of heating saves 20-30% of money in comparison with the central heating.

The European experience shows that the most ecological and profitable fuel is gas. In spite of the lack of gas that is held in different regions, the prospect of the acceptation of governmental programme concerning gasification is urgent.

BUILD THE FRAGILE ECONOMY KINGDOM

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Optimism Indonesian government about better Indonesian economic condition will be realizing. By economic growth around 6.3%, Indonesia has joined the State of G-20 forum and will not be impossible in 2030 Indonesia will enter the category of 10 countries with largest gross domestic product (GDP) in the world. At first glance this condition suggests that Indonesia indeed is a new economic kingdom in the future, but do Indonesian really have to be proud of this?

Expected to be categorized as 10 countries with the largest GDP in the world is a proud achievement for Indonesia. Indonesia, together with other developing countries joined in the BRIC (Brazil, Russia, India, and China) and Turkey has succeeded to survive in the middle of the economic crisis that shaking the world in 2008. With an average economic growth 6-7% per year, the dream to become the new world economy kingdom is possible to be realized.

Besides being a matter of pride, that achievement should also serve as a challenge to proof. 'Proof' because in essence the current Indonesia economic growth is predominantly driven by investment of telecommunications, banking and finance sectors which is actually a hot money. That money is very easily to run back to foreign countries. It made Indonesia seem like a fragile economy kingdom with pseudo-economic growth which relies on hot money.

Indicators of fragility of the Indonesian economy can be seen from the condition of people's basic needs. One of them is food price problems. Indonesia is a fertile country which has entered a food trap of global capitalism. The main commodities instead of rice which is the needs of the Indonesian people are very dependent on imports. The food price is very unstable in Indonesia. It is also become a cause of declining food security of Indonesia.

Other indicator is increasing the quantity of labor force that became source of unemployment problem. Total labor force in Indonesia in February 2010 reached 116 million people, added 2.26 million people compared to February 2009 which reached 113.74 million people. (Data from Statistical Center Bureau of Indonesia No. 33/05/Th. XIII, May 10th, 2010)

Uneven development is also a problem for Indonesia's economic growth. Development in Indonesia is still based on investment which focused in large cities. That caused the underdeveloped regions are economically marginalized. Pareto law still exists in Indonesia related to this economic problem, 80% of the total funds is still rotating at 20% area which is actually large cities. Many underdeveloped regions that actually have potential economic do not optimized because they do not get the flow of investment funds.

COHESION FUND AND ITS INFLUENCES ON SUSTAINABLE TRANSPORT

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Sustainable Development is a concept and a system of mechanisms stands for meeting the needs of present generations without a risk for futures generations to meet their own needs. Sustainable development has been a elementary purpose of the European Union since 1997. It was enshrined as article 2 of the Treaty. It is supposed to underpin all EU policies and actions as a main tool. The EU first formulated its sustainable development strategy during the 2001 Gothenburg European Council. But basic assumptions of this concept have been published in 1987 by the *Brundtland report*[1].

The most important aim of the EU Sustainable Development Strategy is to identify and develop actions to enable the EU to achieve a continuous long-term improvement of quality of life through the creation of sustainable communities able to manage and use resources efficiently, able to tap the ecological and social innovation

[1] http://www.euractiv.com/en/climate-environment/sustainable-development-eu-strategy/article-117544

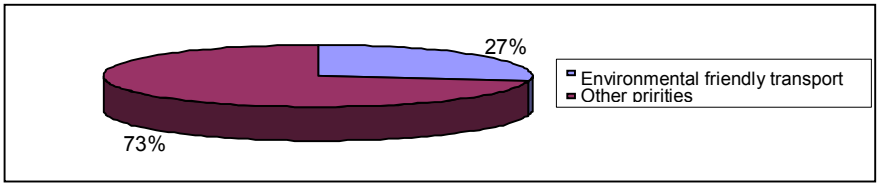
potential of the economy and in the end able to ensure prosperity, environmental protection and social cohesion[2]. The strategy set overall objectives and concrete actions for seven key priority challenges until 2010.

The sustainable transport is one of them. It is understood as a complex of activities referring to any means of transport with low impact on the environment and promoting healthy lifestyles. In general, sustainable transport is not only concentrate on environmentally friendly means of transport, but wider also on harmonizing legislation within specific sectors, and enhancing transport safety. In order to achieve concrete effects such as a better integration of different transport modes connected in efficient logistics chains, developing the management of freight transport, halving the number of deaths on the road, rethinking air transport, there are many EU programs and financial instruments like funds related with them.

One of such instrument is a Cohesion Fund established in 1993 in the Treaty on European Union. Up to today its main role is intensification of cohesion process within European Union. It supports projects based on improvement of the quality of environment and TEN (Trans-European Network). To apply for financial support from Cohesion Fund, member states need to have GDP of 90% of the EU average or less. It can support even 85% of total investment in some projects. During first period of its existing, the biggest support got Ireland, Spain, Portugal and Greece[3]. After EU enlargement in 2004, Cohesion Fund, aimed in new member states. The largest amount of Cohesion Fund was transferred to Poland[4].

During, 2007-2013 EU programming period, Cohesion Fund supports most of initiatives described in *Infrastructure and Environment Operational Programme*. It includes 12 priority axes. However, we set our attention on the priority VII – *Environmental Friendly Transport*. Projects, which are realised within this priority, are co-financed by Cohesion Fund. As you can see in the figure 1, it absorbs over 25 % of total EU contribution in Infrastructure and Environment Operational Programme.

Figure 2 EU financial contribution to support the priority VII and other 11 priorities.



Source: Own analysis based on http://ec.europa.eu/regional_policy/country/prordn/details_new.cfm?gv_PAY=PL&gv_reg=ALL&gv_PGM=1212&LAN=7&gv_per=2&gv_defL=7.

Environmental Friendly Transport Sub-programme targets to increase the ratio of alternatives to road transport such as railways, inland waterways, sea transport, multimodal transport and public transport within metropolitan areas. Replacement of

[2] http://ec.europa.eu/environment/eussd/.
[3] Bache I., George S., Politics In the European Union, Oxford University Press, Oxford 2006, p.471.
[4] http://ec.europa.eu/regional_policy/funds/procf/cf_en.htm available on October 12th 2009.

road transport by alternative modes will decrease bad influences of road communication on environment and it will make it balanced and sustainable.[5]

Table 1 Selected projects realised within Environmental Friendly Transport priority, co-financed by Cohesion Fund

Project	Total cost	Cohesion Fund
Railway: F. Chopin Airport – Warsaw City Centre	**369 477 780**	**150 416 285 (41%)**
Railway Station in Wrocław - Modernisation	**361 604 854**	**180 639 275 (50%)**
Marine Safety System (KSBM)	**111 665 386**	**86 078 346 (77%)**
Sea Port in Szczecin - Enlargement	**60 810 287**	**35 108 645 (58%)**

Source: Own analysis based onhttp://www.cupt.gov.pl/.

ENERGY EFFICIENCY AS AN ELEMENT OF INNOVATION DEVELOPMENT

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Sustainable development requires innovative ways of running business. Investments in energy efficiency are the foundation for future sustainable development of business in a competitive environment. Stable growth of energy efficiency can not be achieved without innovations (technological, institutional, and infrastructural).

Innovation in the energy is:

- development of energy conservation;
- growth of energy efficiency;
- usage of renewable energy sources;
- introduction of alternative energy sources.

Growth of energy efficiency is accompanied by a decline in energy intensity of GDP and increase in energy productivity.

Reduction in energy capacity can occur due to improvements in technology (invention of new equipment and decommissioning of old equipment), changes in parameters of loading production equipment and due to structural shifts in the Economy (changes in the share of different in energy capacity types of Economic activities due to the difference in the tempo of their development).

The main factors to increase requirements in the field of energy efficiency and environmental safety are the next ones:

- the need to reduce the impact on the environment;
- the need to increase energy efficiency and energy conservation.

One of the conditions to increase the energy potential of the region is infrastructure development (Figure 1).

[5]http://ec.europa.eu/regional_policy/country/prordn/details_new.cfm?gv_PAY=PL&gv_reg=ALL&gv_PGM=1212&LAN=7&gv_per=2&gv_defL=7, available on March 26th 2011.

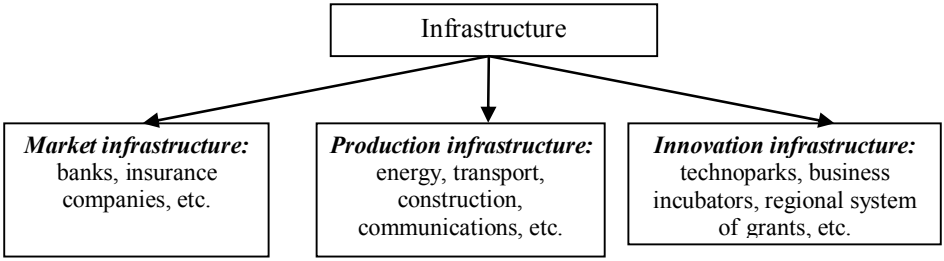

Figure 1 – Infrastructure development

THE ROLE OF ENVIRONMENTAL EDUCATION IN SUSTAINABLE DEVELOPMENT

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Poland is a country, which use natural Earths sources in way by implement renewable energy sources and abort of behaviour which devastating natural riches of the Earth. Poland in 2020, must get 15 percent. share of energy from renewable sources. Achieving this goal is the obligation arising from the findings of the European Union. Today our country is at the beginning of the exploration of energy from its natural sources. Nowadays we need to implement some rules connected with cooperating with a Nature and saving all kind of life, not only human life. Ecological education could be a great combination of these activities. This kind of teaching involve modern system of education, which should gradually put into changes in the social lifestyle. Not only important are knowledge and experience, but also promoting sensitive bearings and values. Examples of inspiration for ecological education might be : national, cultural and religious tradition or daily experiences. The most important aims of ecological education are: developing interests connected with economical, social and ecological policies, get a knowledge and experience necessary for improvement in environment, popularization new behaviours and creation new way of green lifestyle[6].

Creation of this basic bases should start from a primary school to college. What is more parents must show a right choice for a children for example use some ecological gadgets in a house or save a paper in a work. This abstract present how people can change a youthful outlook on life.

First of all in this case important is a analysis of polish documents about ecological education. The main document that describes the targets of ecological

[6] Narodowa Strategia Edukacji Ekologicznej *„Przez edukację do zrównoważonego rozwoju”*, Ministerstwo Środowiska, Warszawa 2001, p. 7-8.

education In Poland nowadays is National Strategy of Ecological Education which was developed in 2001[7]. Strategy was an answer on Agenda 21 standings which was signed in 1992 at the United Nations Conference on Environment and Development in Rio de Janeiro, called also Earth Summit where countries matched that ecological education is a main source of sustainable development achievement. The basic targets of National Strategy of Ecological education are to[8]:

1. Popularize the idea of eco- development in all spheres of peoples living,
2. Implement ecological education in all levels formal and informal education,
3. Create regional and local Programm of Ecological Education which would be complacement of National Strategy of Ecological Education,
4. Promote good practices in ecological education.

Since 1989 when National and sixteen Woievodian Founds of Environmental Protection and Water Economy were raised, they are financing ecological education actions. Only in 2009 National Found has spend 48,3 million PLN for grants on ecological education[9].

This program was implemented to all types of schools in Poland. The most extreme approach to the ecological education present a primary school and high school.

In primary schools a ecological education is used during lessons about the nature. Children learn about certain species of plants, animals, which are rather rare. They know that this kind of specimens should have a special protect. New idea on the implementation of ecological content are educational paths. In these paths students have the opportunity to the overall perception of the contemporary world, including a complicated system of relations nature - man. Children learn to care about the nature by cleaning up the world. Every year also are organized eco-games and rallies, which stimulates children's awareness.

In the high schools there are educational blocks, one of which is a block of environmental education. The primary objective of ecological education in secondary schools is to raise awareness and consolidate for students some kind of the need to live with the ideas of sustainable development. This can be achieved through the actions, which are constituting the man who knows where is his place in the environment. It is also important to develop skills of a nature observation and the collection of information about it, to know the laws which are in the nature, encourage sensitivity to the beauty of nature or implementation of active forms of education, such as "green schools"[10].

This is a way of ecological education in a school. Probably, not only teachers could educated children about environment. Parents also should show them a right alternative to live according to nature. This type of appropriate behaviour should be taken by parents for example from a work. An important challenge for ecological education is to raise awareness about the sustainable development in the workplace. It is important to see the implementation of these principles as an opportunity rather than cost. Reducing the negative environmental impact in the workplace is not limited to reducing the consumption of raw materials, but also a number of other activities.

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[7] Ibidem, p. 10
[8] Ibidem, p. 10-11
[9] *„Sprawozdanie z działalności Narodowego Funduszu Ochrony Środowiska i Gospodarki Wodnej w 2009 roku”*, opracowane przez NFOŚiGW, Warszawa 2010, p. 8-10.
[10] Narodowa Strategia Edukacji Ekologicznej *„Przez edukację* ... op. cit., p. 13.

Any form of support of the environment and reducing our negative impact on nature, is the key to success. Not only national, but also international. An integrated approach to sustainable development: a environmental protection, promote clean energy and above all increasing public awareness offer greater chances of improving the surrounding environment and its usability. It is worth noting that from year to year energy generation from renewable energy is becoming more common. "Nature don't know what is reward or punishment, knows only to the consequences"- Robert Ingersoll.

THE FORMING OF THE LOGISTICAL MODEL OF THE SYSTEM OF RECYCLING

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Wide-ranging recycling is possible on the assumption of creating definite infrastructure, which includes logistical scheme as integral economical system of the acquisition, stocking, sorting, certification and identification, realization, utilization and recycling with elements of the definite service: informational, marketing, transport, commercial.

In compliance with functional structure of waste logistics, the forming of the logistical scheme occurs in some stages.

The first stage is acquisition and stocking, which include rationally constructed logistical path of transport, acquisition and stocking of wastes.

To be effective at this stage it is necessary to conduct billet work, to create specialized reception centers, stocks and fleets.

The creation of waste reception points from people and organizations is complicated by the need to stimulate the process of sorting.

The solution of this problem may be the application of the organizational, administrative and economical features (penalties for the unsorted wastes, partial compensations of the payment for the removal of waste if it is sorted, organizing of the trade-in of high-demand goods in exchange for the high-quality secondary material) by the help of the municipal authority, mass communications and social organizations.

The next stage is sorting, certification and identification of wastes.

Quantitative and qualitative wastes composition is determined on this phase, the data base of existing wastes is formed, ecological and economical conditions are apprised.

The integral part of the logistical system is distribution logistics, which is characterized with features of stocking governing and reserve governing.

The appraisal of wastes stream, which results are used for choosing transport containers and economical appraising of resource takes on special significance.

Economical appraisal of wastes provides the determination of outlay amounts, for its storing and preparations for recycling, appraisal of economical results from its using in production and economical cycle, confrontation of allocation cost and utilization with definite natural resources cost.

It is necessary to form specialized commercial- mediate net on the stage of the market advance and selling withdrew from common wastes secondary materials.

At the same time following logistical functions are realized: governing transport stream, secondary material reserve stream, storing logistical operations for the purpose of outlays minimization .

It is significant that the effective organization of the logistical utilization scheme of common wastes information stream governing, including data about the wastes forming, place of its accumulation, the necessity of secondary materials on enterprises takes special emphasis.

An effective selling of the specified logistical collection system, wastes recycling and utilization is provided with creating of the specialized logistical centers.

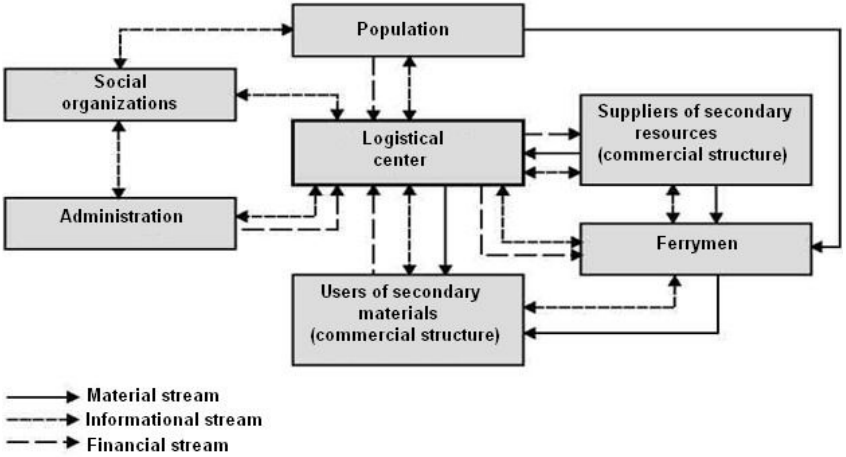

Illustration 1. The Model of The Logistical System of Recycling

The logistical center plays role of the informational stream coordinator, which makes conditional upon the trajectory and the material and financial stream direction , for that, dispatch, informational and calculating subdivision is provided in its structure.

DEPENDENCE OF THE ROUND GOBY'S (NEOGOBIUS MELANOSTOMUS) POPULATION STRUCTURE ON ECOLOGICAL CONDITIONS

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Research advisor – Yulia Polikarpova

The study of ecological patterns of population structure has significant value nowadays. One may differ from another in the level of development, size, age, and other characteristics. Ecological characteristics and hydrological conditions cause changes in the population structure. Changes of the degree and nature of the population is an essential feature that reveals the dynamics of a population. In other words, it is an adequate response to different ecological characteristics and hydrological conditions.

This is relevant for such an everybiont species as round goby (N. melanostomus) species. Since the round gobies don't migrate on long distances and are adherent to certain areas of the sea, their dependence on environmental conditions is essential.

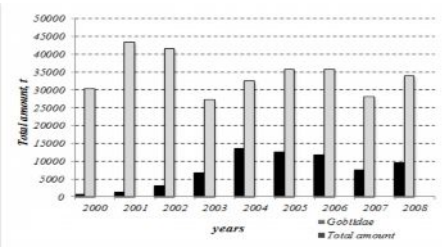

Figure 1. Total number of the gobies caught in the Azov Sea in comparison with other fish

The objective of our research is to analyze differences in the population structure of the round goby (size, age and sex structures) under changing ecological conditions.

The family of Gobiidae is one of the largest polymorphic groups of fish. It includes 850 species that inhabit shallow areas of tropical and temperate seas and fresh water. There are five commercial species: the round goby (Neogobius melanostomus) (Pallas, 1814), the monkey goby (Neogobius fluviatilis), the toad goby (Mesogobius batrachocephalus), the syrman goby (Neogobius syrman), the grass goby (Zosterisessor ophiocephalus).

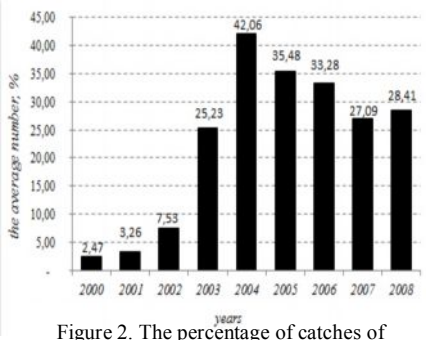

Figure 2. The percentage of catches of gobies in the Azov Sea

It should be mentioned that in the Azov Sea region the round goby is an important food resource. The volume of the gobies caught in the Azov Sea in comparison with other fish is shown on figure 1 (Fig.1). The total amount of their catch in the Azov Sea for the period of nine years (2000 – 2008) is about 7521.10 tons.

Study of differences in population structure is important for fisheries, because changes of environmental conditions often lead to deterioration of fishing, and consequently the decrease of the region's economic component.

Proportion of the gobies catches in the Azov Sea has been shown in the dynamics of their catch for nine years (Fig.2). Among them the round goby amounts the largest number of catches (about 90%). Thus, the question arises about the round goby's ability to adapt to changing habitats.

At the current stage of our research we have analyzed individuals from two basins of the Azov Sea (the first near Kirillovka village – 10 km from the coast, the second in the lower part of the Utliutsky firth – 100 m from the coast). Factual material was collected in July 2010.

In the Utlyutskyy firth the number of males caught dominates over females, in the Azov Sea there is the same amount of them (Tab. 1). The average size of males from Utlyutskyy firth is 2,66 cm larger than females, but in the Azov Sea females are 1,1 cm larger than males.

Table 1. Comparative characteristics of the catching structure of the Azov Sea and Utlyutskyy firth populations of the round goby

	Utlyutskyy firth					*The Azov Sea*				
	amount	*min*	*max*	*aver*	*mist*	*amount*	*min*	*max*	*aver*	*mist*
♂♂	72	7,00	15,70	12,48	± 0,16	22	5,70	7,80	6,80	± 0,16
♀♀	17	6,00	13,00	9,82	± 0,52	22	6,07	11,80	7,90	± 0,29
♂♀	89	6,00	15,70	11,97	± 0,19	45	5,70	11,80	7,38	± 0,18

So, there is a substantial increase in the number of females compared to males, as well as their size in Utlyutskyy firth, and vice versa, the number is equal for both sexes and females dominate in the Azov Sea. This probably happens due to the fact that since Utlyutskyy firth is a regular reservoir for feeding because it has good forage base, the round gobies come for feeding grounds to Utlyutskyy firth and for spawning to the Azov Sea.

Thus, we can conclude that, depending on the features of the biological species differences in the structures of populations in water with the different ecologically conditions can be observed. The differences of environmental conditions is a prerequisite for changes in the population structure.

BALANCED SCORECARD IMPLEMENTATION AS MECHANISMS OF REACHING SUSTAINABLE DEVELOPMENT

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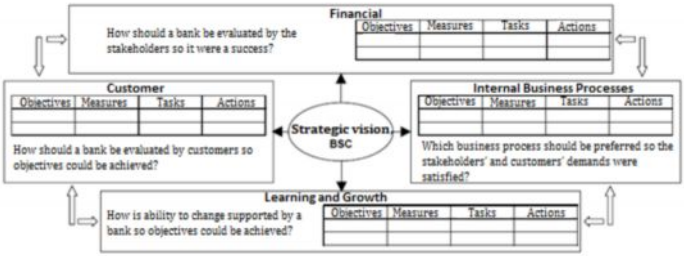
According to *Programme of Internal Trade Development* [1], Ukraine has got such corresponding strategic objectives:

- establishing state-of-the-art standards of trade and consumer service;
- developing competitiveness among wholesalers and retailers;
- optimization and restructuring of distribution network;
- improving a system of indicators used for statistical overseeing trade companies' business.

A typical enterprise invests about 42% [2] of its capital in inventories. Thus, a company's effectiveness substantially depends on amount of investments in inventories. No doubt, managing this kind of assets is essential. For its part inventory management helps to optimise investing in inventories and means identifying periods and amount of orders for replenishing stocks. This implies balancing some expenses that increase together with inventories rise and those expenses that decrease when inventories go up.

Achieving aforementioned objectives demands system approach in company management. Therefore we believe inventory management should be considered as an essential part of a trade company's business. Such top-companies as *P&G, Unilever, Colgate-Palmolive, Bondualle, British American Tobacco, Campina, Danone, Coca-Cola, Ferrero Roche, Kraft Foods* use strategic management in their business applying Norton-Kaplan's *Balanced Scorecard (BSC)*.

BSC was created in 1990 after a research study "Measuring Performance in the Organization of the Future" conducted by Norton Institute. It was a complex system that thoroughly measured a company's business using financial and non-financial



Pic. 1 Typical Balanced Scorecard (BSC) Structure

information. It was based on principles of strategic management. This system transforms a company's mission, vision, and general strategy into a system of interconnected measures. BSC enables identifying quantitative and qualitative indices that facilitate almost every employee's comprehension of what is necessary to be done for achieving common strategic goal. BSC enables managers' considering business in four perspectives (pic. 1).

Applying this approach to a commercial company we can point out the following key measures that show a company's effectiveness.

It also should be mentioned that a company's strategy influences importance of aforementioned perspectives. Therefore, more important KPI's share will be larger and vice versa. For instance, let us have a look at the strategies of well-known Boston Consulting Group's *Advantage Matrix* [3]. One can see there are a few ways of a company's growth with regard to its type of business: *Volume, Stalemated, Specialised, and Fragmented.* A special strategy is proposed for each category. Relevant strategy is identified by ROI and market share. In order to keep leading positions in the market cost reduction strategy is advised (as well as by Michael Porter's model) for companies where market share and profitability are closely associated, i.e. those companies that can fulfil their competitive advantages through increasing output (*Volume*). For this kind of enterprises measures of internal business processes will be more valuable (inventory level, customer service expense). Profitability in *Stalemated* companies is low for all competitors regardless of size. Thus employee learning and growth measures will be more important for such kind of companies upgrading them to more profitable category. The profitability of businesses in *Fragmented* sector is not correlated with market share. Poor performers can be large or small and good performers are also independent of size. The largest profitability in *Specialised* category is enjoyed by small businesses able to distinguish themselves among their competitors by following a focused strategy. *Customer* section (being stable will ensure fixed sales) will be the most important for this type of companies.

As for creating relevant BSC, it is worth to point out a list of obligatory measures that include evaluation of inventory management. Regardless of a company's strategy they all will be included though their rate will be different - Financial Measures,

Customer Measures, Employee Learning and Growth Measures, Common Internal Process Measures.

To reach Sustainable Development company should put it like a part of strategic vision and reflect in KPIs accordingly. International companies' successful applying BSC as an instrument of translating a company's strategy to employees' jobs is considered stimulating for adaptation of BSC in the local market. Measures that are essential for a commercial company's BSC were highlighted. They should be used for information support facilitating decision making in inventory management.

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COMPANY EFFICIENCY OF WORK AS RESULTING PARAMETER OF REPRODUCTION PROCESSES MANAGEMENT

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Efficiency is the central concept of economic practice. It determines its feasibility and supports the main prerequisite for the further implementation of production. Efficiency characteristic throughout the reproduction processes as a whole and all its phases: production, distribution, exchange and consumption. It shown in the activities of any economic level and economic systems at all levels and expresses the regularity inherent in any type of human activity.

Reproduction processes closely related to the efficiency of the economy, they largely determine the level, pace and nature of changes in time [11, p. 71]. Efficiency of production is formed as a final result of reproduction, but increasing it in turn serves as a characteristic of quality of reproduction processes, that's why reproduction specificity inherent in the current stage of economic and impact on the production efficiency, causing many of its features in the current environment. That's why the author [11] makes the very important conclusion: if the main opportunities for enhancing the efficiency of the economy driven by reproduction processes then we need to manage performance through effects on reproduction.

This conclusion is true for both macro- and micro-levels, so the efficiency of business management should be carried out through its reproduction processes.

On company level management of reproduction processes should have complex character for specific features counting of all elements of these processes - factors of production and economic relations. For this using and combination of factors of production can be realized by following functional subsystems of company: general management, manufacturing, logistics, finance, marketing, personnel management, innovation, information, organizational culture, which form a company system of reproduction processes management (CSRPM). Functioning of each subsystem is described by a certain set of partial indicators, which are combined in integrated

taxonomic indicators for integrated assessment of reproduction processes. Important for the development of management impacts on the reproduction process is to determine the relationship between their occurrence and the overall performance of the company, because need to manage performance through effects on reproduction.

In the context of research on the management of reproduction processes of company is to determine the appropriate level of impact the functioning of each of the subsystems CSRPM on the overall economic performance of company that will provide an opportunity to identify and prioritize the impact of selected subsystems in improving the quality of reproduction processes.

As economic category efficiency is the only qualitative-quantitative characteristics of economic efficiency [15]. The term "efficiency" comes from the Latin effectus, which means the effectiveness, efficiency, productivity or a specific process steps are signs of purposeful action and provides grounds for consideration as performance management category.

The most famous and most used approach to evaluating the effectiveness of targeted approach is dominated by the goal criterion. Thus, the effectiveness - the extent of the goals at a minimum but necessary cost [6]. This outcome of the organization work to the costs of achieving its quality, that economic performance is evaluative in nature, it may change with the change of ratings, indicating its dynamic properties. Maximizing final results from a unit cost is the main goal of any economic entity, and methods of achieving it, and ways of enhancing economic efficiency reserves are the subject of research by many foreign and domestic scholars. Thus, the investigation of economic efficiency dedicated work of such scholars as: O.M. Tyshchenko, M.A. Kyzym, Y.V. Dogadaylo, V.V. Ivaniyenko, N.S. Belynska, Y.V. Bohatyn, L.L. Yermolovych, M.N. Nagorska, V.I. Pavlyuchenko, R.M. Petukhov, V.V. Pryadko [17, 6, 1, 2, 5, 9, 11-13], but there is still no consensus on the definition and performance, and a multitude of approaches to its assessment indicates the complexity of the problem in domestic and in foreign practice, which requires further, more thorough research.

Investigating in his work in economic efficiency Pryadko V.V. [18] stresses the indissoluble relationship of production and management, which determines the ratio of essential and very close dialectical relationship of economic categories "management efficiency" and "efficiency", and notes that efficiency is the criterion of efficiency, and increase its level is a critical factor and reserves increase production efficiency. That is, the author underlines the functional interdependence between management efficiency and effectiveness of which is shown in the following: efficiency depends on the efficiency of management and the latest shows in production efficiency.

That's why the efficiency of production acts as a complex, multifaceted category which reflects the characteristic features of economic, social and technological phenomena as socio-economic nature, is a defining characteristic of efficiency as a phenomenon, yet the foundation of all existing classifications of management efficiency indicators.

One of the main problems of production management evaluation is to determine the methodical basis of benchmarks and indicators to ensure its comprehensiveness and objectivity [18].

Research and analysis of existing approaches to content and form of economic management performance indicators [4, 6.13] indicates that a significant number of opinions, approaches, judgments, estimates that differ.

All of this suggests that production efficiency can be expressed in one indicator, in which case the problem reduces to the detection of the signs that best represent the essence of efficiency. If the efficiency of using one indicator can not be expressed, it highlighted a number of features that can best reflect the economic content of production efficiency, and further suggested the compilation or a number of indicators to one of the express purpose of assessing the economic situation, or be allowed, that the final economic decisions made under conditions of multiple quantitative estimates – characteristics.

Analysis of current approaches to the determination of evaluation showed that despite the popularity of integrated assessment of efficiency in most studied sources is proposed as an indicator of general evaluation of use that profitability [3, 7, 8.10, 14, 16, 19 - 21], justifying its use as an indicator of overall economic efficiency of companies.

Implementation of further production, reproduction processes is possible only with its economic feasibility, which can be defined profitability of manufactured products. Effective management of reproductive processes, which is sold through the relevant components of CSRPM provides a positive impact on the overall activities of the company. This requires assessment of the proposed operation in the composite CSRPM the efficiency of the company that is the direction for further research.

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INFORMATION TOOLS OF MODELING AND FORECASTING THE STATE OF THE TERRITORY OF UKRAINE ACCORDING TO THE LEVEL OF ENVIRONMENTAL PROTECTION

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The development of strategies, plans, programs, environmental protection (EP) at all levels of management should be based on full and adequate display of the dynamics of ecological systems in each defined unit of administrative and territorial structure of the relevant background integral indicators in the country. For successful implementation of environmental policies it is necessary to have a sequence of events and the principles of hierarchical levels of EP (planet, country, federation, region, region, autonomy, cities and towns).

Environmental problems solved in each region must meet a national requirements, but taking into account the local features. All this implies the need to target monitoring and comparative analysis of the factors and indicators in developing and implementing measures of EP areas. EP indicators are used to provide reasonable criteria for decision making at all levels, thereby ensuring self-sustainability of ecological systems.

Modeling and forecasting of areas according to the level of EP allows to form a system of effective management measures to ensure EP state in a different way. That is why the current practice of interterritorial analysis requires the development of information means of the systems for monitoring (SM) EP.

Methodology of SM EP of territory of Ukraine is aimed at specific types of tasks on their applied usage stipulates two main factors:

1) availability of reliable sources of gathering information, modern perspective of software and hardware, technology of acquisition and efficiency of data processing;
2) analytical component in the software and hardware complex. This factor depends on the quality of analytical algorithms programs, efficiency of analysis.

Consider the nature of information and organizational prerequisites to develop information system of monitoring (SM) EP. In particular, the development of key components of this system establishes the formation of:

1) Content multidimensional database (DB) and knowledge base (KB);
2) Concept of analysis and modeling of modified EP and forecasting trends in areas of Ukraine;
3) GIS data using GIS technology;
4) SM software.

Content DB and KB may be represented by an object-relational normalized database tables that contain a hierarchical system of interrelated indicators EP. KB collects general theoretical knowledge and expert knowledge about the object of research in the form of descriptions of classes. The essence of DB and KB is an integrated conservation and use of differentiated applications of all the information about the objects of the subject areas of particular interest to the user. Under such conditions, on the one hand, data presentation formats are described in logic understandable for each program level, but on the other hand, all other data stored in the database and KB, and unrelated to a specific application is for it "transparent".

This means that the program does not feel their presence does not feel. Thus, all data is placed in a single repository. Users can apply to any data they interested in. One and the same data can be used in different combinations and different tasks are presented according to the users. This is achieved by immersion in DB and KB special software environment that performs the function of access and transform data structures. It is obvious that the use of DB and KB and their management systems to create large powerful automated information systems that include a large number of interconnected applications, definitely gives significant advantages compared with the same options for creation of automated information systems based on file systems.

The organization and allocation of data storage should be convenient and effective for efficient analysis and presentation of necessary data sets according to the prevailing needs of users. To ensure the formation of user requests to develop a normative reference system, which contains listings: administrative-territorial structure of Ukraine, economic indicators: indicators EP. As a DBMS Microsoft SQL Server 2008 can be used.

The concept of modeling and forecasting trends in areas of Ukraine according to the level of EP should contain balanced needs of particular users to obtain analytical information, actual resources and methodological framework to support research of EP area and the convenience of connecting new components of the analytical unit to the

system. Each component of the analytical unit should be designed for specified types of applications.

Each component of the analytical unit, which can be called for short theme or section, shall be specified in specified types of applications. It must include the analytical data and methodological information in the form of hypertext documents.

The structure of GIS unit includes: a spatial database that contains geographic information in order to construct of GIS model for sustainable development of regions and attribute information on the construction of EP level; geovisualisation (a set of intelligent maps and other geographic information, including interactive maps, 3D scenes, summary charts and tables, a publication on the Internet web maps); geoprocessing (set of tools to get new sets of geographic data with existing data sets with analytic functions application to them).

GIS data processing using GIS technology has become a common powerful tool in the state and municipal government in many countries for decision making.

Only in Europe more than 100 000 municipalities use GIS for urban management. Current GIS projects allow to display a range of processes and phenomena, which reflect data on sustainable development indicators of regions. The usage of GIS is a means of planning and a strategy of management to develop the regions.

Software of information and analytical system must be based on modern concepts of data warehouses (Data Warehousing), methods of data mining (Data Mining), methods of operational analysis of distributed multi-media (OLAP), networking technology of information service users.

Thus, the proposed SM EP can be used as "advisor" of the person who decides to provide the most objective information when planning and implementing organizational solutions in territorial management systems designed to actively control parameters as its own control area and parameters, such as legal regulations, which are set at a relatively high regional formation of hierarchical levels.

ENVIRONMENTAL DEGRADATION IN NIGERIA AND MANAGEMENT PROSPECTS

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Environmental degradation is the deterioration of the environment through depletion of resources such as air, water and soil; the destruction of ecosystems and the extinction of wildlife.

The environment surrounds and affects man, while man also affects the environment. In view of the fact that man affects the environment, the responsibility of taking purposeful collective action that may harmonise human existence with the rest of the environment falls on man.

Nigeria, a rapidly urbanizing and industrializing society, is currently faced with many environmental problems. As a result of rapid urbanization and industrialization, there is an increased demand for goods, land services, thereby leading to irretrievable changes in physical landscape. The two most important of the numerous problems

resulting from the urbanization of water basins, are floods and pollution. Construction of roads, houses and industrial buildings causes environmental problems.

That's why a comprehensive environmental planning/management strategy is extremely needed.

There are three major threats to effectively managing Nigeria's environment:

1) The unsustainable use of renewable natural resources.

The lack of inadequacy in management of natural resources by the government, having been making huge money from all those natural resources, but has failed to maintain the environments where those natural resources in been located.

2) Unplanned urban development.

The failure of the government to enforce at the initial stage the full master plan of the urban development programme, has resulted to a massive demolition of properties and this demolition has caused many environmental hazards to the citizenry.

3) Petroleum industry operations.

The petroleum industry has also contributed to the environmental problems faced by Nigerians. The inability of oil refineries to implements the environmental policies approved by the government of Nigeria has made the environment, where those oil refineries is situated, infertile.

To plan for effective activities and to manage the environment in a more sustainable manner, the Government of Federal Republic of Nigeria (GFRN) needs to address and mitigate these threats and the underlying causes of environmental degradation: increasing poverty, population growth and migration, and political and institutional constraints. To help improve environmental management and governance priority actions are to be made in the areas of:

1) Legal and policy reform.

Although the federal framework needs work in some areas, it is the states, due to the highly varied nature of the most pressing environmental threats they face, that need to be empowered to develop and enforce legislation promoting sustainable use of environmental resources. Sectoral policies are highly centralized and also suffer from lack of coordination. There's needs to be an integrated, multisectoral approach to policy development and implementation at both the national and state levels.

2) Economic incentives.

In Nigeria, the lack of effective resource valuation has strong negative impacts on the management of renewable natural resources and on the sustainable use of water and soils that effect overall quality and production potential. More complete knowledge of markets, better access to markets and use options for resources and their associated risks are unknown, or incomplete. There is considerable room for improvement in just about every economic activity that depends on clean and abundant sources of water, fertile soil, protection of infrastructure and populations from erosion, construction material from trees, food from plants and animals, etc.

SUSTAINABLE MANAGEMENT SYSTEM IMPROVEMENT IN THE SPHERE OF ECOTOURISM

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Urbanization and industrialization are creating a pressure on rural areas and ecosystems.

The public sometimes misinformed by relevant institutions on national parks, wildlife, forest planning and recreational efforts of the nature.

Ecotourism can be used as an important tool in raising the awareness of the population "in" nature and educating them on how they can protect their own ecosystems. Efforts in this direction will also have other noteworthy benefits, such as reducing the impact of climate change.

The role of environmental tourism in Ukraine cannot be underestimated. One of the good examples of environmental tourism is the tourist's activity in the Vilkovo town. This town is located in the Danube Delta in Odessa region, the south of Ukraine. This place has unique nature and unique cultural traditions. Local tourist companies had developed some interesting tourist's products: educational tours, birds-watching tours, 0 km tour (0 km is the place, where the Danube River fall into the Black Sea) and many others. Thanks to this many people, who can visit this place also can learn Ukrainian culture and traditions, the biodiversity of the Danube Delta and many other subjects. Danube Delta - one of the largest wetlands in the Europe. The area of it is about 4.200 km2 wetlands of international value. Two countries divide the Danube Delta - Romania (80%) and Ukraine (20%). Ukrainian seaside of Delta is youngest natural land of the Europe. The most saved part of the Delta is protected area by Danube Biosphere Reserve. Together with the Reserve in Romanian side they form bilateral Biosphere Reserve "Danube Delta " - one from five trans boundary reserves of the World. Tourism in the Danube Delta is new, but very perspective type of economical activity. Development of tourism is specially actual for Vilkovo town - unofficial tourist center of the Ukrainian Lower Danube Region. Tourism in Vilkovo has the history already - first official tourists coming in 1990. From 2005 tourism was development very fast. Presently in Vilkovo there are about 300 working places in the tourist industry. The biodiversity of the Danube Delta is about 955 species of birds and animals. There are 13 species in the European Red List. But it's very hard to save this unique biodiversity, because some people can't understand the value of it. That is why the environmental tours are very important in educational way. These tours can show how it is important to care about our nature, because we are the part of this nature.

Tour operators which plan to provide ecotours must count the impact from visitors. They have to remember that excursions to Reserves must be accessible for the limit quantity of tourists. In this case the important work for tour operators is collaboration of the management plans for natural areas. The model of that kind of plan is shown in the Table 1.

In the whole field of ecotourism the significance of planning for sustainable outcomes cannot be overemphasized. Tourism in nature areas relies on strategic planning which can only be achieved through the setting and evaluation of a range of sustainable options. These options should be presented to all stakeholders for their consideration and comment well before any final decisions are made. This is a crucial element in order to strive towards a more sustainable future for tourism in natural areas. When this high level of ecotourism planning is achieved, then it will also need to be followed by sustainable management practices in the operational phase.

Table 1 - The Model of Management Plan for Nature Areas

Planning framework	Suitable for regional planning	Provides information on impacts of visitor use needed for management action	Makes explicit provision for inclusion of stakeholders in planning	Responsibility/discretion for action left to managers	Readily integrated with other forms of planning
Recreation Opportunity Spectrum	XXX	-	-	-	XX
Limits of Acceptable Change	X	XX	XXX	XX	X
Visitor Impact Management	-	XXX	-	XX	X
Tourist Optimization Management Model	XXX	XXX	XXX	XXX	X
Visitor Activity Management Process	XXX	-	-	-	XX
Visitor Experience Resource Protection	XXX	XX	XX	-	XX

XXX – matches criteria well; XX – partially matches criteria; X – poorly matches criteria; - does not match criteria.

UKRAINIAN AQUACULTURE STEADY DEVELOPMENT IN MARKET ECONOMY

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Efficient ecologically balanced usage of artificial reservoir aquaculture is very important for fishery in Ukraine. Usually such reservoirs are ponds, lakes, pools, and pools-refrigerators. For population of Ukraine fish is a traditional product corresponding to their tastes and its production is located close to consumers' place of living. There is a point in aquaculture development. Its part in the country's GDP is very small. That is why to develop aquaculture it is necessary to create special laws and management structure. The state support should start with introducing a proper Law on aquaculture and The Programme of aquaculture development in Ukraine based on that

Law. Without such a law it is not possible to create regional work programmes for aquaculture development.

The creation of the fishing industry occurs along with gradual reduction of the government role in economy and appropriate increase of the individual initiative of managing subjects. At the same time, taking into account duration of processes of redistribution of public functions for the benefit of public sectors and initial accuring of the capital as decisive condition of such redistribution there are three major problems. Let us review all these problems in greater detail to identify their main features.

It is necessary to pay attention to improvement of directives, instructions and orders concerning aquaculture. For example, Instruction on Artificial Breeding, Growing up Live Water Resources approved by the State Fishery Committee order # 4 as of 15.01.2008 and registered by the Ministry of Justice in Ukraine under # 64/14755 as of 28.01.2008. The previous Instruction approved by the State Fishery Committee order # 154 as of 28.10.1998 and registered by the Ministry of Justice in Ukraine under # 357/3650 as of 7.06.1999 concerned artificial fish breeding aiming at improving fish productivity of fish water subjects which are seas with bays and estuaries of rivers that flow into the sea in the form of narrow sea bay with peculiar unstable hydro-chemical conditions, having transitional river-sea character, as well as lakes, bights, creeks, water reservoirs having constant or temporal connection with a river, marshy meadows or temporal water objects, and all tributaries in the scope of a river maximum flood state, some technical water reservoirs which are used (or can be used) for breeding and fishing of live water resources or are important for their reproduction.

Pool fishery is linked to hydrosole reproduction and breeding fish in artificial reservoirs. According to the specific features of production and biotechnological process as well as production requirements these farms are divided into:

Complete structure farms, with production of fry and marketable fish including all categories of reservoirs (spawning, fry, breeding, winter, service, quarantine, finishing, incubatory and live-fish reservoirs,);

Non-complete structure farms that can specialize in breeding – fry farms, or in marketable fish production – finishing farms.

The main index of fish farms efficiency is fish productivity that is the quantity of fish bred and fished out on 1 hectare of the pond area. This index reflects the sate of technology, production culture and management level. All ecological and economic indexes depend on this one. But the above-mentioned instruction does not pay attention to intense breeding technology for fry and marketable fish. Due to Instruction On Changes in the Order of the State Fishery Committee as of 15.01.2008 under #4 such terms as aestivating or fish seeding and two-year-old carp breeding in composite fish culture with other commercial fish breeds, selection and fish breeding, pond amelioration can be excluded from fish industry lexicon.

Quantity and quality of fish fry influences greatly the fish productivity and ecological and economic productivity. Fry larger in weight due to its better vital capacity guarantees better winter survival and, more efficient feeding and vegetation period, better weight for each marketable fish. There is a problem – How is it possible to grow fry annually in the same pond without a right to discharge water. There is massive loss of fish in the pond where there has not been catch and water discharge. Thus, there are new pathogenic agents. All this happens because of lack of knowledge among those people who regulate fishery.

It is necessary to find out new way of fighting diseases to get organic (ecologically clean) production of aquaculture.

The main reason for decrease in fish harvest is lack of farms turnover means what leads to pasture fish production technology. Another reason is privatization of sate fish farms that used to produce 90% of fish. The state still owns ponds (hydro-constructions) where fish is grown, the land under them and the water and offers to rent all these and pay for that. The land rent only is around 200-500 hryvnia for 1 hectare.

The second problem is pay the tax for using of water. It is 35 million Ukrainian Hryvnyas from annual pecuniary profits of Association of the fishing enterprises "Ukrribgosp".

As a result the expenses and prime cost are increase but the profits are decrease.

The third problem is the proprietors of assets. Presently there are three owners: State enterprise "Ukrriba" (it is own hydroconstractions); labour collectives (it is own administrative buildings, automobiles, tractors, etc.); bodies of local self-management (it is own a teritory which situated under the water).

The conclusion and recommendations of how to raise the economic efficiency of the fishing enterprises are consist of. Firstly, it is reasonable to decrease the tax on the hydroconstractions to 5 per cent of their residual value for the lease gradually for raising additional funds. Secondly, it is necessary to tax relief the fishing enterprises called tax for for using of water because the water is sphere of dwelling of the fish. Thirdly, we are suggest to hand over the teritory which situated under the water to "Ukrriba" such as it is a state enterprise.

According to the results of the conducted research further development of aquaculture in Ukraine and increase in fish production need the following steps to be done:

To improve Instruction on Artificial Breeding, Growing up Live Water Resources # 4 as of 15.01.2008;

To optimize special forms of the first documentation for the aquaculture farms;

To introduce fish breeding statistics report for all leaseholder;

To pass the hydro-constructions on to the water users who could maintain their technical state and to create the Reconstruction Fund for pond that are destroying;

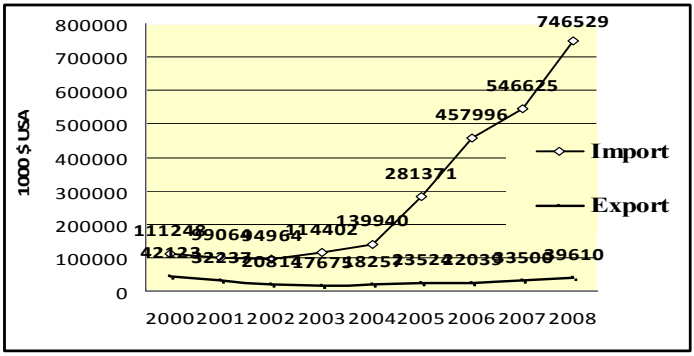
To stop shadow fish tread on markets and other places involving fish state administration, veterinary and sanitary service, state tax administration and police;

To establish paid consulting service for solving technological, economic and legal questions;

To grant the state of complete structure farm for those farm that have incubator with more than 20 million capacity, fish farming and finishing reservoirs and:

To solve the question of discount electrical energy tariffs for pumping water into ponds with 31,5 thousand hectares area as it is envisaged for pumping water into irrigation systems.

To develop all directions domestic exports for stimulation Ukrainian production of aquaculture (pic. 1).



Pic. 1. The dynamics export and import of Ukrainian production of aquaculture

From the scientific point of view the economic growth on the fishing enterprises is an integral part of events aimed at introducing the market-oriented economic relations. This reform should be carried out within realization of a strategic course towards the integration with the world economic area and adapting legislation of Ukraine according to the global economy requirements.

ENVIRONMENTAL AND ECONOMIC IMPACT ON THE USE OF COMPOSITE MATERIALS IN HIGH PRESSURE GAS CYLINDERS

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Concern for the environment is an issue of increasing importance for our society. In order to assess the environmental impact of composites, a thorough study of the entire life cycle of the product was conducted. A comparison between propane cylinders made of aluminum, steel and composites showed that composites had the least burden on the environment. This was due mainly to their low weight in transports and the fact that composites have a long working life in corrosive environments. To gain a clear understanding of environmental impact of a product, it is necessary to view its entire life cycle, from the production of its raw materials until it is finally discarded. Environmental work must be characterized by a holistic approach so that all relevant information is considered [1].

Life cycle assessment

Through life cycle assessment or analysis (LCA) we obtain quantitative values of a product's impact on the environment. An LCA comparison of propane cylinders made of different materials conducted by the environmental consultancy ASSESS Ecostrategy Scandinavia AB emphasizes the importance of the holistic approach. All of the propane cylinders were used in the same way, but they differed with respect to weight, material and manufacturing methods. The environmental effects were apparent. The method used in the study, EPS, which stands for Environmental Priority Strategies in Product Design, has been developed within the Swedish Federation of Industries and

is managed by CPM, Chalmers University of Technology. Results are given in the measurement unit ELU. Strong, light products can be made from composite materials. When they are transported, or used in transport applications, the total environmental load is often considerably lower than that of corresponding heavier alternatives. Because composites are corrosion-resistant, products made from them last longer. Recycling of metals has a positive effect, since it partly compensates for the high environmental impact of virgin metal production. The advantage of composite materials is that environmental impact from both their manufacture and use is normally low, which, from an environmental point of view, makes them a very good alternative. Tools for assessing and minimizing environmental impact We have long been accustomed to assessing and quantifying the costs, performance and quality of a product. Now there is also a need to assess and minimize its environmental impact. One way of doing this is by means of life cycle analysis. There are several effective methods, one of which is EPS. EPS meets the requirements of ISO 14040 and is used in the environmental work of, among others, Volvo, e.g., for establishing environmental product declarations The method is based on calculations of impacts from the different phases: Production, use, Scrapping and recycling. Each phase is subdivided into a number of separate activities and assigned an environmental load value according to the calculation principle:

Environmental load = Environmental load index x Quantity

Environmental load is expressed in ELU, Environmental Load Units. The index is a numerical value that corresponds to the degree of environmental load that a certain delimited activity is thought to cause, for example, the use of a specific raw material or consumption of specific energy resources. The size of the environmental load index depends on how the so-called 'safeguard subjects' are influenced [2].

LCA of propane cylinder

An LCA* has been conducted, the results of which are applicable in the design of propane cylinders with low environmental impact. Here, it is demonstrated how chosen material, method of use, length of working life and recycling influence the total environmental load. The study includes comparisons of three material alternatives: steel, aluminum and composite material. Both stationary and mobile use have been compared, as well as use in a corrosive environment. It is apparent that the weight and working life of the propane cylinders are the parameters that have the greatest influence on total environmental load. The low weight of composite cylinders and their long life in a corrosive environment explain why they generally display the lowest environmental load. In a corrosive environment the life expectancy of the metal products is limited to 5 years, while the working life of composite vessels is still 30 years. Recycling of metal cylinders is positive from an environmental point of view, but does not compensate for the heavy environmental load resulting from their manufacture and use The analysis shows that it is important to study the entire life cycle of a product in order to obtain all relevant environmental data. Merely considering recycling gives only a partial view, and can even be misleading. The study also demonstrates that composite materials offer significant advantages, in an environmental context, especially in applications in which their unique properties are used to full advantage [3].

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DECREASE IN RESOURCE CAPACITY AS THE FACTOR OF MINIMIZATION OF TECHNOGENIC LOADING

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In the modern world there is a comprehension of that is necessary to aspire to a sustainable development as to pledge of safe coexistence of the person and the nature not only at the given stage, but also in the future. One of sustainable development principles is rational wildlife management. In wildlife management as well as in economy the law of limitation connected with limiting possibilities of natural resource potential operates. However thanks to scientific and technical progress, borders of possibilities constantly extend: new technologies and the manufacture organization on extracting, overworking and in final branches, decreases upbuilding minerals and availability of an environment.

The call to steady economic development is connected with growth of economic well-being and well-being of a society whereas the requirement for resources to the level corresponding to natural economic capacity of ecosystems, at the same time, should be reduced.

Material streams are a starting point for the analysis of relations between economy and environment. These streams are considered by means of a method of the account of material streams or a method of the analysis of material balance (method MFA – Material Flow Analysis). Method MFA (a method of the account of material streams) is offered for control of material balance of national economy as a whole for the regular description and control of an industrial metabolism of national economies and consists in the account of all materials entering and leaving economic system. It generalizes extraction, manufacture, transformation, consumption, recycling and placing of materials. Method MFA deduces dependence of input of material resources in national economy from efficiency from which resources are used by economy.

In table 1 various components MFA on the scale of economy are illustrated.

Method MFA defines an important condition: the quantity of arriving streams of resources in economic system defines quantity of leaving streams in environment including a waste and emissions.

By means of the given method there is a reduction of consumed natural resources by economy. Inside economic system there is fuller withdrawal of all valuable properties of natural resources that also leads to reduction of consumption of resources. In turn it reduces quantity of leaving streams from economic system.

The continuous stream of materials through societies is considered as "an industrial metabolism". A waste is one of elements of this metabolism, they are on leaving the system. It is necessary to eliminate or reduce quantity of a formed waste. It can lead to decrease in costs on waste management. Also it is necessary to try to transform a formed waste into resources which shouldn't "be lost", but instead should

be used again. To be exposed recycling or to be utilized. It means readdressing of a waste from ranges in favor of alternatives of secondary use at which a waste is treated as a material which should be returned in material streams as raw materials or as fuel i.e. as resources.

Table 1 - Components MFA

Input	Economy	Exit	
Mining operations, including fuel in own country, and also a taken biomass ►	Accumulation of materials(Net additives to stocks) ►		
Not used minerals extracted in own country ►	Productivity Materials (in a year) ►	In the nature: emissions in air •депонирование a waste; dumps in water; absent-minded streams	►
Import ►	Recycling ►	Export	►
		Not used minerals extracted in own country	►
The indirect streams connected with import ►		Indirect streams, connected with export	

We had been undertook attempt of adaptation of method MFA to enterprise level. As examples were the enterprises of the baking industry of the cities of Odessa, Belgorod-Dniester and Kherson are taken. Attempt to make material balances under documents of these enterprises hasn't crowned success. It is connected by that the enterprises don't keep account streams "input-exit" in a complex. At the analysis of specific entering characteristics the wide spacing of values of a resources consumption has been found out. It is necessary to reduce resource capacity of the enterprises to level of the best indicators on branch. Specific streams "on an exit" too it is separated, but correlate with values of a resources consumption. The enterprises effectively using material resources, have the least volume of a formed waste.

At use of method MFA at enterprise level simultaneously questions of decrease in influence of the enterprise will be solved with a question of decrease in resource capacity of the enterprises on environment.

SUSTAINABLE DEVELOPMENT IN UKRAINE

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The objective of the research is to outline the main problems of sustainable development of Ukraine.

The Sustainable Development Strategy deals in an integrated way with economic, environmental and social issues and lists the following seven key challenges:1) climate change and clean energy, 2) sustainable transport, 3) sustainable

consumption and production, 4) conservation and management of natural resources, 5) public health, 6) social inclusion, demography and migration,7) global poverty.

Sustainable Development was first developed as a concept in 1987 with the publication of the Brundtland Report. But it was not until 1992 at the Rio Earth Summit that nations around the world came together to push for concerted action to try and reach an agreement on the best way to slow down, halt and reverse environmental deterioration. Out of Rio came Agenda 21, the Framework Convention on Climate Change and the Convention on Biological Diversity.

Ukraine joined the sustainable development movement in 1997, when the National Commission on Sustainable Development of Ukraine was established under the Cabinet of Ministers with the purpose of ensuring the solution of problems of the social and economic development, environmental protection and rational use of natural resources in Ukraine. In 1999 Verhovna Rada of Ukraine adopted the Concept of Sustainable Development of Settlements and the Cabinet of Ministers of Ukraine developed the Activity Program for the period of 2000 – 2004. It clearly stated that strategic goals of the government policy and priority tasks implementation of which would ensure creation of the conditions for sustainable development.

Current social and economic situation in Ukraine proves that the country hasn't succeeded in sustainable development yet. This is mostly caused by a number of obstacles the country is facing on the way to development and introduction of the sustainable development policy:

Ukraine's is still behind the developed countries in living standards indicators, level of investment attractiveness, competitiveness and sophistication of innovation environment. This challenge is explained not only by external factors but the internal Ukrainian problems as well.

Lack of adequate national regional policy has even increased the risks and negative trends of Ukrainian life: growing asymmetry in levels of regional development, rural degradation, crisis of urban settlement network, reduction and deterioration of the labor potential, increased migration of working population, especially young people (from many Ukrainian regions to abroad).

Another obstacle is lack of funding for regional development. Public funding, which could promote the economic potential of regions is almost absent.

What makes it more difficult to implement sustainable development policy is that there are significant economic, social, cultural, mental and other differences between the regions of Ukraine.

Moreover, ecological culture of the citizens of Ukraine is still rather low.

Directions for overcoming the obstacles the country is facing on the way to development and implementation of the sustainable development policy are:

- ensuring of the political support to the sustainable development strategy;
- ensuring of the informational support to the sustainable development strategy and training of the new staffing potential of Ukraine;
- integration of the sustainable development strategy into the strategy of social-economic reforms at all levels (national, regional and local);
- introduction of the mechanisms and elements of sustainable development into the sector economy.

As a conclusion, sustainable development will not be brought about by policies only: it must be taken up by society at large as a principle guiding the many choices each citizen makes every day, as well as the big political and economic decisions that

have. This requires profound changes in thinking, in economic and social structures and in consumption and production patterns.

ECONOMIST'S ANALYTICAL FUNCTIONS IN THE COMPLEX OF ECOLOGICAL ECONOMIC MONITORING

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The monitoring system and managements of an environment's ecological state is necessary for preservation a genofund and decrease in risk of the population diseases. The system basis is control process over a state of environment on the basis of a the regional network automated systems of monitoring which unite in global management system of an ecological situation in the country. The group of programmers had been created system ecological - economic monitoring.

As experts who estimate a situation and decisions in the field of the competence make, the ecologist, the physician, the economist, the manager and the lawyer are considered.

The economist spends search optimum behind cost of a action's variant which are recommended by ecologists and physicians. For this purpose he should have data about resources which are necessary for performance of prospective actions and about resources which are at the disposal of the corresponding ministries (the Ministry of emergency situations, the health protection Ministries), local administrations, military divisions. The result of work is definition of necessary additional resources for carrying out of actions which are offered by experts, formation of conclusions about cost of actions, possible economic expenses and sources of indemnification of ecological damages. In addition he makes approximate calculation of deadlines carrying out offered actions.

The subsystem "Economist" carries out following functions:

– Display a card of area;
– Displays the chosen zone of ecological pollution to a card;
– Formation the interface for information reception about ecological, medical both social actions and necessary resources for their carrying out;
– Formation the interface for information editing about resources and definition of additional resources which are necessary for carrying out of the planned actions;
– The Reference to programs which carry out operations of visualization a pollution's zone;
– Formation the interface for definition and processing real zones of pollution taking into account the information about all ideal zones which are included into its structure;
– The Reference to programs which carry out economic analytical operations over a pollution zone accordingly to the list of operations over a zone.

The general case of estimation of results of influence of unfavorable factors on environment, including the person it is considered in [2]. The total loss moves in the form of an integral functional from influence function:

$$Z_{ij} = \int_{\tau=t_1}^{t_2=P} \gamma(\tau, t_0) \leftarrow \iiint_{\omega T} \psi_i \left[L(x,y,t), \rho_i(x,y,t), X_i(\tau), Y_i(\tau) \right] e^{-(\tau - t_0)\lambda(\tau, t_0)} dx dy dt d\tau, \quad (1)$$

Where i – an index of type of recipients;

$(x,)$ – coordinates of points of a plane;

$\omega = \{(x, y)\}$ – A part of the controllable territory predisposed to influence;

$L(x, y, t)$ – intensity of the harmful factor in a point (x, y) at the moment of time t;

$T = [t_1, t_2]$ – An influence time interval;

p – duration of an interval after the influence termination on which stretch the state "эндогенных" (X) and "exogenetic" (Y) parameters of population and her life conditions is considered essentially important for the forecast of value of effect (effect continues to be supervised);

$\lambda(\tau, t_0)$ – Discount coefficient in the total with inflation coefficient;

$\gamma(\tau, t_0)$ – Function which translates loading estimations (or effects) in the monetary form;

t_0 – The moment of convergence of effects occurring at different times;

ψi – the functional operator.

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APPLICATION OF THE ENVIRONMENTALLY EFFICIENT WASTE TIRE RECYCLING TECHNOLOGIES

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The steady growth of motor transport is recorded in a whole world. The problem of waste tires accumulation is very actual issue today. In Ukraine, currently there are over 1 million tons of waste tires, in Kiev alone appear about 40 000 tons of used tires and only 20% of them are recycled. Waste tires are toxic, they occupy a large amount of natural areas and don't decompose biologically (buried in the ground tires decompose about 150 years).

Currently, the following methods and technologies are used for waste tires recycling: removal tires to landfill, combustion to obtain energy, mechanical method of recycling, cryogenic method, ozone method, pyrolysis, recovery, dissolving in organic solvents.

The essence of the proposed technology is follows: this method of destruction is based on the usage of organic solvent derived from the process of destruction. Activation of thermal process is carried out by organic solvent as is being applied a technical alkyl benzenes or alkyl benzene mixture with a boiling point up to 220 °C. The weight ratio of organic solvent to the amount of waste is in proportion 2:1.

The light hydrocarbons fraction generated during the production process (boiling point up to 220°C) is used in the further process of destruction as organic solvent. Light fraction of hydrocarbons after treatment, before using as a solvent for the next waste group have to be reformed, then it fed to the reactor to the original solvent. In this way, there is no need for organic solvents for thermodestruction of next waste groups. As a result of recycling tires we receive valuable end-products in the following tires: 32,5% - output gasoline fraction, 30% - technical carbon, 20% - steel cord, 17,5% - fuel oil. These products demand in the chemical and energy industries. This recycling technology is closed and doesn't contact with the environment. Moreover, the advantage of this method is that the process of decomposition of waste tires is based on organic solvents usage, obtained from the process of dissolution.

Implementation of the proposed technology has the following main tasks:

improving the ecological safety of waste tires recycling by implementation of non-waste closed technology of tire dissolution in organic solvents;

- development of business activities and new jobs creation;
- partial solution of the environmentally hazardous waste utilization problem;
- general improvement of environmental situation by reducing the area of tire landfills;
- providing additional revenue to budget from selling of processed products;
- return of secondary resources to economic activity in the volume of 9000 tons per year;

The proposed tire recycling by dissolving in organic solvents is non-waste, environmentally and economically profitable technology, as a result of which we receive valuable products which can be used in the chemical and other industries.

"BLUE HEART OCEAN": A NEW TECHNOLOGY OF CORAL REEF CONSERVATION IN THE IMPLEMENTATION OF FISHERIES SUSTAINABLE ECONOMICS, CASE STUDIES JAKARTA WATERFRONT CITY NORTH JAKARTA

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North Jakarta with a land area of 139.03 km^2 and the vast sea of 6,997,60 km, the hard coral reef found in groups with various types of *Acropora, Seriatopora, Mentipora, Echinopora, Branching, Tabulate and others.* Discourse Jakarta Water Front City is a concept of integrated coastal development by local governments in North Jakarta that aims to revitalize the coastal areas and improve the welfare of coastal communities by empowering the economic advantages of the beach. But this empowerment requires an appropriate method to continue to be sustainable, especially in maintaining the coastal ecosystem.

Table 1 – Chemical composition (% dry weight) of reef fish feces

Species	n	Caloric content	Protein	Lipid	Carbohy-drate	Ash	Calcium
Chromis atripectoralis	14	3.5	17.8 (1.2)	33.3 (3.2)	3.7 (0.3)	14.5 (1.8)	0.11 (0.02)
Chaetodon trifasciatus	14	1.1	11.4 (0.6)	6.0 (0.7)	5.1 (0.6)	43.0 (2.2)	2.81 (0.25)
Zebrasoma scopas	14	1.1	9.5 (0.7)	3.8 (0.3)	15.2 (1.8)	55.6 (2.3)	3.80 (0.24)
Scarus oviceps	14	0.6	7.0 (0.7)	2.6 (0.3)	3.5 (0.2)	72.0 (2.2)	7.45 (0.50)

Source : Bailey, T.G and D.R Robertson (1982)

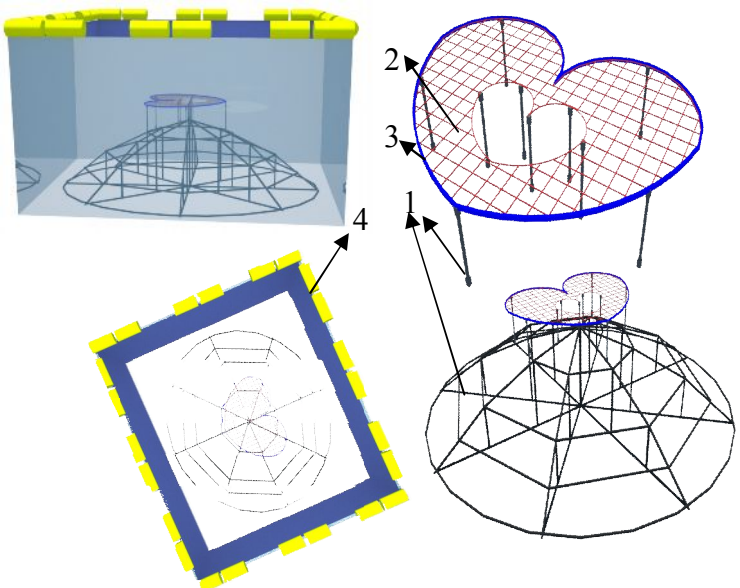

Figure-1. Design of " Blue Heart Ocean" in floating net cages

Description: 1. Foot Buffer 2. Iron wire or wire ram for the planting of coral reefs 3. Iron frame and Blue Lights 4. Design plot Keramba cage top view

The concept of Blue Ocean Heart is a Nursery ground form of heart-shaped frame (Heart / leaf spades) for the purpose of exotica, the new of this method is the placement of the Blue Heart Ocean beneath the floating net cage for the fulfillment of reef-forming substrate is inorganic carbon contained in the form of calcium carbonate

from fish feces. Substrate availability of calcium carbonate as reef-forming element, according to Morello (2009), fish droppings contain calcium dissolved in the water binds with carbon dioxide in water and form calcium carbonate. From the study found, fish feces can contribute between 3-15% of the total concentration of carbonate in the ocean depths of 1,000 meters to help regulate the balance of acidity of the sea and also as a substrate-forming corals (Table 1).Then with the installation of blue light mounted follows the shape of a heart-shaped frame Nursery Ground, to fish for conducting activities in the vicinity of the Blue Heart Ocean. Application of simple biorock by providing electrical voltage of 3.8-17 volts, also became one of the concept of Blue Ocean Heart to accelerate the growth of coral reefs (Figure-1).

Methods Heart Blue Ocean has 2 (two) approaches in support of the Jakarta Water Front City, namely the approach of technology and social approaches. In the analysis of implementation, there is a correlation between technological Heart Blue Ocean by the cultivation of floating net cages located in the coastal areas, so that the necessary empowerment of coastal community north of Jakarta to optimize the potential of maritime nature and biodiversity in the region as a vehicle for tourism and research objects, as well as take care to maintain marine ecosystem that became land income to coastal communities.

Methods Heart Ocean Blue is able to realize the coastal area into a tourism area and the conservation and coastal community-based economics, and able to realize the Sustainable Fisheries. On the other side for 5 years there will be sustainable fishery for coastal communities where their income from business Blue Heart Ocean, this can be sustainable without the problems of coastal reclamation on the mainland. And even this does not change the social culture of coastal communities which will essentially remain the fishermen and dependent on the catch at sea, especially with the Blue Heart Ocean will reduce fishing mortality, in which non-target fish can still be maintained in the cage. And when not being at sea, fishermen are still able to have revenue from tourism business Blue Heart Ocean.

Keyword : Blue Heart Ocean, Nursery ground, Electricity, inorganic carbon

ENVIRONMENTAL PEACE WITH PAPER LESS AND RECYCLE SYSTEMS

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Waste paper for many students is just trash and not beneficial things. There much waste paper that produced by student or institutional such as government offices and so on. Very much paper waste generated, whereas the production of paper comes from harvested trees so that it will increase emissions of carbon in the world. This phenomenon generally occurs in a developing country without advanced technology system.

When looking at education systems developed countries which already use a wireless connection technology as a means of textual education, developing countries

still use paper that is very much in his daily life. To reduce carbon emissions resulting from the use of paper that is not sustainable, then the waste paper management system is required to be made of paper which can be used again.

Paper recycling system is one alternative. Paper recycling does not require such high technologist for the paper making process. It takes only waste paper, glue, and some other devices. Waste paper can be achieved with a cheap price. Thus we have to add value when selling the paper has been used as a ready-made recycled paper.

Indeed in this way right when applied in developing countries like Indonesia. Steps are easy and cheap. But that we should develop a technology (education or daily life with paperless) before the technology promoted in Indonesia, then one way while reducing carbon emissions is a result of the paper with a paper recycling system.

*)Facts: in Indonesia I found the price of recycling waste paper with an attractive color (with a more complex management recycling system) is in great demand by the public. Although the price is relatively more expensive, but still great interest in the community.

ECOLOGICAL AND ECONOMIC ASPECTS OF PROCESSING RETURN THE PRODUCT TO OJC "CHERKASYHLIB"

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There are three bakeries owned by Open Joint Stock Company Cherkasyhlib in Cherkasy. Nowadays "Cherkasyhlib" took fifth place in Ukraine in terms of production. № 2,3 bakery businesses are considered at one production site in Cherkasy. Productivity plant number 2 is 11 175 tons / year, № 3 - 32 547 t / year. Standard equipment is put into operation in 2005, his term amortization is 12 years.

Specificity of bakery products is that it relatively quickly loses its quality properties. Products that are not suitable for consumption back to bakery for "regeneration" and reuse in the manufacturing process, all losses related to its processing to fully rely on the manufacturer's budget. Some distributors book more bread and bakery products and than sell that's why about 3 - 4 tons of product returns from the commercial network to the company. Basic principles of handling such type of resources are presented in Fig 1.

Natural gas is spending for drying the products to prevent damage of mould, and then dried products go on crusher for breadcrumbs. At the final stage these products entering the trade network but it takes power and re-packaging costs. The percentage of returns from retail outlets in certain bakery products can reach 20%, and all these products require additional processing involving energy, material and business resources.

To solve this problem some management decisions aimed to audit sales at all trade outlets in all major distributors of bakery products should be hold. Such research can hold its own company, without audit firms in order to save money. According to the research set a fixed volume of sales of all bakery products in different stores and kiosks, engaged in retail trade in bakery products. Separately record the difference in sales on weekdays, weekends and holidays Add 3-7% to received specific information

on all goods in case detection in consignments from manufacturing defects, or those that do not meet the visual needs of consumers.

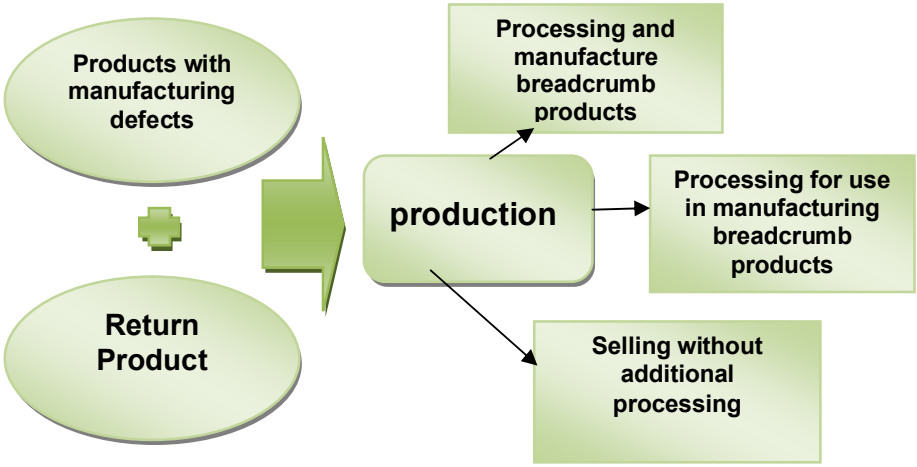

Figure 1 - Diagram handling returned products at JSC “Cherkasyhlib “

Redistribution of traffic between bakeries outlets should be held following the audit data. As a result, traffic volumes will decrease, and this will reduce the cost of fuel and lubricants, and with it the emissions.

As the amount of sales decline, new agents soul be found that have helped to keep production volumes. An easier way is to increase in sales of small baked goods. It can be realize through advertising new bakery next to the already known products that have won a certain reputation among consumers. It can be short commercials on local television or leaflets to be spread among potential buyers of cakes baking products - schoolchildren, students. Similar promotional activities will allow "re-conquest" the part of the market in small bakeries that specialize in shallow baking products, as well as in bakeries, which operate in most supermarkets. This will keep sales volumes and production volumes.

Declare the number of returned products to zero, of course is impossible, so a part can be recycled breadcrumbs, and the rest should find a permanent buyer among farms, poultry farms, fishpond, etc. It is also possible barter trade of raw materials necessary for production of bread and bakery products - butter, eggs, margarine and more. Permanent, established cooperation with similar farms will accelerate the pace of processing and return defective products, allows the potential to move raw materials / waste in food production and this will lead to a reduction of operating pressure on the equipment involved in the processing of baked goods. Such administrative decisions not only reduce the expenditure side but will be favorable for consumers.

PROBLEMS OF AIR POLLUTION

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Global total ozone decrease over the last three decades and is a recognized fact confirmed by both ground and satellite measurements. Regardless of the reasons that cause this phenomenon, all the specialists pay attention to changes in land surface exposure of UV radiation of the sun, and its most significant impact - a negative effect on health and the normal life of the biosphere. Change the number of ozone at different altitudes causes disturbance of vertical temperature distribution in the atmosphere, fluctuations in radiation fluxes and moving air masses.

All these circumstances can lead to significant changes in the Earth's climate. Therefore, the current monitoring of the ozone layer and long-term changes in it is one of the urgent problems of physics of the atmosphere. To solve this problem it is necessary to create a reliable monitoring system which consists of a set of equipment for atmospheric-optical observations of collecting and analyzing data that comes from it, and means bring this information to the user. Changes in the ozone layer and possible negative consequences of these changes stimulated the creation and operation of various measuring devices and networks.

Operates ground network studies of the ozone layer, much attention is paid to the measurement of aircraft and balloons, but were the most informative data of satellite measurements. Their role is extremely high. This is due to the possibility of getting through them information about the behavior of ozone on a global scale with sufficient detail for a long time.

To issues related to global changes of atmospheric processes, or its components should include:

- the problem of violation of atmospheric gas balance and is closely associated with it the problem of violation of thermal balance of the Earth;
- the problem of growth and other weather anomalies.

Their emergence is associated with excessive Anthropogenic global natural processes of economic activity and violations of balance between the major components of our planet. Unprecedented active and often unreasoned human activity, accompanied by destruction of natural resources and environmental pollution has led to what is now the planet's biosphere is in critical condition, when a global catastrophe in a few steps.

Now the formation of an international mechanism to monitor, reduce and prevent air pollution and ozone depletion. Developing cooperation in the framework of global and regional environmental organizations, which should facilitate coordination of environmental policy in general and provide a comprehensive monitoring system for the movement of flows of pollutants.

On the one hand, air pollution - environmental problem and is it of causing harm to human health, environmental and man-made material possessions, that is a result of emissions of toxic substances in the part of the various kinds of waste production. On the other hand technical problem, because it arises due to technical factors, and its solution requires a number of natural-scientific tasks and creation of conditions for the reduction and prevention of this dangerous phenomenon, including improvement of

production technology, waste disposal methods, facilities and observation environment control.

Air pollution and ozone depletion is the ecological problem. The atmosphere is unique and common habitat for life, and pollution affect all countries.

All aspects of air pollution are closely interrelated, which complicates the solution. Thus, the possibility of creating standards that regulate states to cooperate in the prevention of such contamination depends on the resolution of technical issues concerned in the presence of economic resources, reliable and complete data on the processes occurring in different components under the influence of environmental contaminants.

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ENVIRONMENTAL MOTIVATION OF AGRICULTURAL ENTERPRISES

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Socio-ecological motivation of agricultural activity – is the process of activation of motives, aimed at considering possible influence on environmental consequences of the social functions of entrepreneurs, examination strategic issues in the period of economy transformation, getting a profit in aspect of achievement tactical purpose.

To move to the production of environmentally friendly products should be involved economic incentives to farmers, the operation which will ensure the interaction of economic tools and incentives, economic sanctions, organizational and legal support. This mechanism should ensure the priority of consumer interests over economic interests of producers[1].

In the formation of motivational approach to environmentally friendly management should distinguish two methods of motivation:

Negative method	Positive method
Implemented by tools such as motivation payments for pollution of air, water, soil, waste storage, collection and recycling of wastes, the appropriate penalties, fees, etc..	Used tools such as motivation exemption from certain taxes or reduce them, subsidizing prices of environmental goods, accelerated depreciation, etc..

To develop the skills to be able to compete, nurture a culture among management personnel should regularly carry out professional training (including environmental) to develop the intellectual potential. That means, they need permanent professional training, which is one of management functions, which performed by a special algorithm:

1. Definition of strategy;

2. Installation requirements for necessary skills and knowledge;
3. Coordination with the direction the training objectives;
4. Develop methods and learning strategies;
5. Selection and training consultants;
6. Examination of training programs and the level of its presentation;
7. Conducting questioning of training participants, determine their expectations of results,preparation of participants;
8. Conduct training (personnel advice);
9. Monitoring and measuring behavior changes.
10. Implementation of training programs to improve on its results[2].

The system and volume of requared environmental knowledge of management personnel determined purposefulness, scope and content of their functions depending on the position.

Accordingly to this, for the management personnel, which responsible for adoption and implementation of decisions, the most effective methodology is distance learning model, without leaving the working activity, with the elements of management consulting as the integration process and with the participation teacher-adviser of environmental management.

Consultant of environmental management (internal or external) - is primarily a qualified professional advisor, who has a fundamental knowledges and experience with the target problems (environmental) functional activities, can effectively use them to analyze and solve practical problems and management in particular area or sector of activity in the dissemination of positive practice.

A unified system of required knowledge of managers should include:

• basic ecological concepts and definitions; basic laws of nature;
• current status and causes of global and national environmental crisis;
• the concept of sustainable development (world, national);
• modern principles of international and national environmental policies;
• international and national guidelines and documents on environmental policy and management;
• the environmental and technological issues in the context of national security;
•international environmental commitments and principles of environmental cooperation;
• international standards of management culture;
• international and national environmental legislation, standards of action;
• formulation and implementation of environmental policy and management;
• effective environmental management, its goals, objectives and functions;
• principles of inter-sectoral and inter-regional environmental cooperation;
• principles of environmental cooperation with the public and business sector of the economy;
• examples and methodology of effective environmental practices, including international cooperation[3].

Thus, under the stimulation of economic activity must be understood outside influence that motivates and forms the subject of motivated behavior, which aims is to achieve maximum economic and environmental impact.

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DIRECTIONS OF ECONOMIC REGULATION OF RATIONAL USING RESOURCES

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Beginning of XXI century was marked the unprecedented sharpening of problem of global ecological survival of humanity, predefined plenty of natural calamities and technogenic catastrophes. Actually every country of the world feels on itself the consequences of ecological crisis, related to elimination of natural resources. Thus, for today the problem of the rational use of natural resources outgrew in one of the most global problems of contemporaneity.

A degree of rationality of using resources is one of major factors of regional and national safety. Acknowledging importance of rational using resources , scientists-economists acknowledge contamination of environment as by-product of any normal economic activity often enough [1]. Neutralization of such consequences requires a purposeful policy from the side of the state, which must be directed not only on liquidation of consequences of inefficient using resources, and on his warning, which requires considerable investments in nature protection measures both from the side of the state and from the side of enterprises. Thus the complex of such measures must provide a maximal economic effect the constituents of which are ecological, social and economic results.

An ecological result consists in reduction of volumes of extrass of harmful matters in an atmosphere and water, increase of amount of suitable to the use of water and landed resources, stopping of extermination of forest resources and providing of their renewal.

A social result consists in providing of ecological comfort of dwelling which is extremely important for Ukraine, as greater part of its territory can be considered the area of ecological misfortune [2]. Also the important index of social effectiveness is an improvement of bodily condition of population and increase of life-span.

An economic result consists in satisfaction of necessities of man, conditioning, for its development as personality which is basis for forming of economic potential of the state.

The receipt of ecological and economic result depends on the level of the technogenic loading on an environment. During the last years it grows in Ukraine, that is stipulated the high degree of wearing out of capital assets and use of

ramshackle technologies. In a crisis and after crisis period a situation was worsened in connection with deceleration of rates of modernization of production and decline of innovative activity of enterprises.

By the simplest method to provide the increase of level of ecological and economic results there is an increase of volumes of the direct state financing on nature protection measures. However much such measure is too dear for the state and not always gives the expected effect. Therefore, except for the measures of direct support, considerable attention must be spared the indirection measures of stimulation of resource and energy-savings.

Unfortunately, in Ukraine neither a previous tax legislation nor operating Tax code, creates the proper terms for rational using resources , that conditioned by the inefficient structure of tax deductions which are directed mainly on the decline of the tax loading on the income of enterprise, and also relatively moderate taxation. It is possible to consider the increase of amount of people positive changes, which are under an obligation to arrange for resource and ecological payments and the list of deadheads was abbreviated.

In our view, in the nearest prospect of providing of rational using resources it is possible to attain by:

- tax stimulation of resource - and energy-savings;
- increase the level of ecological taxation;
- stimulation of investments is in the guard of environment and proceeding in natural resources.

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