SPREADING THE WORD:

MEDIA TRAINING TO BUILD AWARENESS OF GEO-5 RESULTS IN SOUTH AND EASTERN EUROPE

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LIST OF ACRONYMS

CEU Central European University
DEWA Division of Early Warning and Assessment
GEO Global Environmental Outlook
IPCC Intergovernmental Panel on Climate Change
RPS Renewable Portfolio Standards
UNDP United Nations Development Programme
UNEP United Nations Environment Programme

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The United Nations Environment Programme (UNEP) often talks about the importance of the ‘science-policy interface’. Translated into more down-to-earth language, this short phrase refers to among other things, the need for scientific knowledge about the state and trends of our planet to be available as clear information which decision-makers can use to address environmental problems and threats. Another phrase, ‘information for decision-makers’ which dates from the first United Nations (Rio) Conference on Environment and Development in 1992, also captures nicely this crucial need for ‘actionable information’ and, in a more current phrase, ‘evidence-based policy-making’. In short, the idea is to make sure that what the scientific community knows is communicated in a clear and timely fashion to those in the political realm who need to address salient planetary issues.

To this end, a three-day Outreach and Media Training Workshop for South- and Eastern Europe was held at the Central European University (CEU) in the aftermath of the publication of UNEP’s fifth Global Environmental Outlook (GEO-5) assessment report. The purpose of the Workshop was focusing on the need to help translate GEO-5’s science into policy, and to ensure the word gets out to both policy-makers and the public in an understandable form. National environmental policy experts and media professionals from 10 Eastern and South-Eastern European countries were teamed up in pairs to examine key messages and results in the GEO-5 report, particularly from the European regional chapter and global scenario chapters, to see which of these might have resonance and validity in their countries.

Participants extrapolated from relevant GEO-5 findings to their own national (or local) situations in ways that would facilitate the development of policy responses. The resulting stories that appear in this volume allowed participating journalists to communicate the major issues that the wider European region is facing with their likely implications, along with some potential ways of addressing or coping with such environmental challenges.

We hope that you, the reader, will find echoes of your national situation in at least one of the following stories, and perhaps even a potential approach for dealing with one or more issues that may also be faced by your country or locality.

Finally, communication alone is not sufficient to assure environmental issues are addressed, but it is certainly a vital link in the chain of conveying scientific findings and translating the same into workable policy solutions.

Ron Witt
UNEP/DEWA Regional Coordinator for Europe
KEY MESSAGES

The combined experiences of the GEO-5 Outreach and Media Training Workshop allowed the development of key conclusions that we hope will be useful to those of you reading this publication.

TAKEAWAY TIPS

- Scientific reports will not achieve desired results unless coupled with sufficient media and public attention, to help stimulate action by decision-makers.

- Media, policy makers and scientists can and should work hand in hand to develop methods for effective information sharing.

- Develop partnerships across sectors and disciplines (media, government, private sector, civil society) to help spread information about environmental change.

- Scientific concepts and trends must be personalized to be understood by the general public.

- People need more than text and numbers, so make and make use of creative visuals – info-graphics, pictures, thematic maps.

- Let people dig deeper if interested – always provide access to primary sources where more detailed information is available.

- The best way to describe abstract concepts is through story telling (see Box: What Makes a Good Story?)

- Creating both general (international) and specific (local) relevance through stories of environmental change will help deepen public consciousness, increase support for action, and develop the necessary momentum for change.

WHAT MAKES A GOOD STORY?

1. Find a *hook* – a story that will resonate with the citizens of your country: if it’s too far away from their concerns, it will not work.

2. Tell a *story* where you can describe a problem, challenge as well as a solution: find a story which illustrates a more complex issue.

3. Make sure you have good *figures*, starting from local, national, global levels; one where people can realize the extent of different issues.

4. Integrate examples from abroad, for example what other countries have done to solve common problems.

5. Key experts to be interviewed: it is always nice to have good speakers or quotes, who are well known on the subject – being pro or against.

*Note: Health issues are a good entry point for environmental issues, especially for European audiences.*
Introduction

The Global Environmental Outlook (GEO) series is referred to as UNEP’s ‘flagship publication’ and by many measures stands as the most comprehensive integrated assessment report on the state and directions of the global environment. Since the launch of the first report, the GEO series grew into a science-based but policy-relevant assessment of global environmental trends, past, present and future.

The latest in the series, GEO-5, was launched at the Rio+20 UN conference in June 2012. Like previous GEOs, GEO-5 also covered drivers of global change, the state of the environment in thematic and regional breakdown, and future projections. Also, as earlier volumes, GEO-5 came with a Summary for Policymakers and interpretive summaries for other audience groups, such as business. As usual, in order to facilitate access to the information, GEO-5 was of course made available in all official languages of the UN.

Despite efforts to make the GEO-5 report, and its summaries, available for specific audiences, these products alone cannot do justice to the true richness of the information available in the report. GEO-5 is a thick and encyclopedic report – it is a small fraction of the intended audience that will even have a copy, let alone read it in full. However, GEO-5 serves as an excellent reference volume for journalists who in turn can play a role as mediators and interpreters of the information according to the needs of specific audiences.
GEO-5 offers information relevant for specific regions, sectors or thematic interests in different chapters, prepared by some of the leading experts, often based in regional or thematic collaborating centres of UNEP around the world. In order to help journalists ‘get at’ the heart of the information, a media training workshop was designed and delivered at the Central European University, Budapest, Hungary on July 9-10, 2012, soon after the official launch of the GEO-5 report.

There are several reasons why a media training workshop focused on the Eastern European and Central Asian region is particularly important. Even 20 years after the fall of centrally planned economies, the region continues to face some unique challenges. Although the collapse of centrally planned economies often resulted in the reduction of pollution, some toxic legacies persist. Compared with countries in Western Europe, awareness of environmental issues tends to be low, and policies also tend to focus more on ‘catching up’ economically with the developed world rather than sustainable development, even if the rhetoric has been adopted. Under such conditions environmental reporting – and environmental interests, which are at the end of the day human interests - often plays second fiddle to economic growth. Helping journalists from the region to overcome these problems can therefore fill an important gap and increase the uptake of an important global assessment.

This report presents the methodology of the media training that was a first for the GEO series, the rationale for the methods chosen, a discussion of specific steps, all to help make easier any possible use of similar methods. The report then also includes as illustration of the articles that were published in various media, print or electronic, in the region, both in the original language and the English translation. The articles serve both as illustrations of how the messages of an important global assessment can be turned into exploratory and interpretive essays, but also have value in their own right – whether the fate of waste in Georgia, the importance of water for Hungary, or implications of climate change for people and the economy in Russia, the articles present interesting stories that grew out of discussions that started at the training workshop and the content of the GEO-5 report.

While this type of media training was a first in the GEO series, the conclusions of this report argue it doesn’t have to be the last. The writers of GEO can do a good job by getting the science right; but it is primarily the job of journalists to craft the stories and bring specific issues home to people around the world.
The general goal of media training is to improve the quality, accuracy and visibility of environmental reporting through strengthening communication between scientists and journalists.

Environmental scientists are often dissatisfied with the coverage of environmental issues in the media. Among major challenges are “the public’s understanding of the issues: unfamiliarity with basic scientific concepts (e.g., uncertainty, relative risk, the difference between a hypothesis and a theory, etc.); the lack of institutional support within the academic world for communicating with the press; the scientific community’s practice of speaking with frequent and careful qualifiers; and, their scientists’ failure to capture the public’s attention and/or concern about the potential impacts” of environmental change on people.1

Environmental journalists are frustrated by the peripheral position of their subject in the media. The place of environmental themes in the media is still disproportionately small compared to political and economic news coverage. The current development of environmental journalism is in decline because of the economic recession and the ongoing migration of audiences and advertisers to the Internet. Environmental journalism in Central and Eastern Europe is at particular risk due to both weaker professional development of mass media and much lower public concern over the state of the environment. Historically, a "culture" of environmental reporting in Eastern Europe was poorly developed because of an underdeveloped civil society in the former socialist countries and USSR. And journalists, the majority of whom don’t have a scientific background, cannot effectively analyze environmental issues on their own.

The goal of the Outreach and Media Training Workshop for South- and Eastern Europe was to help all participants, including the participating authors of GEO-5, to understand how to dissect relevant sections of this complex scientific report and

METHODOLOGY
1. Terminology of environmental science in the mass media.

Language is the most important tool of the journalist, and the terminology chosen to name something has much to do with how an idea is either embraced or rejected. Journalists have to see a difference in the meaning of terms. For example, the term ‘global warming’ has fallen into disuse in scientific reports because every time an unusually large snowstorm or record setting cold temperature happened, ‘global warming’ deniers would point to the latest weather event as proof that the Earth was not warming. Climate change has become a more apt term. Another pair of terms caught in the cross-hairs is ‘biodiversity loss’ versus ‘mass extinction of species’. As also confirmed by GEO-4, the reference to the ‘sixth extinction’ versus ‘biodiversity loss’ helps compare the present situation to historic precedents when the rate and scale of changes was similar. While mass extinctions have happened in the past, the current loss of species is the first that can be clearly attributed to human activity.

2. Dealing with scientific uncertainty.

There is the communication issue. Scientists often perceive journalists as unprepared to properly address uncertainties inherent in many environmental problems or studies. Scientists often fear that the media and the public will see the give-and-take typical of scientific debate as a fundamental disagreement about the underlying foundations of evidence. To some extent, all science is inherently uncertain. “Scientific uncertainty lies at the heart of many of today’s most important environmental controversies: climate change, endocrine disruptors, and genetically modified organisms, to name just a few.” The Inter-Governmental Panel on Climate Change (IPCC) has even developed a six-point quantitative scale based on subjective percentage probabilities of scientific claims: from ‘very unlikely’ with probability less 1% to ‘virtually certain’ with probability as high as 99%. Most environmental concepts are somewhere between these two extremes. The GEO series reports, including GEO-5, utilizes scenarios for the projection of the state of global environment under different conditions.


Methodology

1. Policy strategies. Scenarios are very helpful in science, but with many uncertainties and assumptions. In order to make them understandable for a broader public, journalists need to make clear the limitations of knowledge. However, rather than interpret that as a failure, it should be recognized that science often uses an incremental and continuously evolving approach to discovery that brings us closer to the truth as best we can define it.


There are always skeptics in science who can deny any environmental issue (climate change, ozone depletion, etc.) claiming the particular concept as politically motivated. Skeptics benefit from the fundamental changes in the way news is disseminated via the internet. There is a growing trend of scientists using their own websites to publicize their research findings. Through such outlets, individual scientists increasingly have an opportunity to self-publish and distribute their results, independent of quality assurance, fact checking, and other benefits provided through peer review or within a traditional newsroom setting, but also without the attendant constraints and limitations. A journalist’s failure to differentiate between results drawn from empirical data versus some political, social or personal agenda can mislead the general public. Journalists need to weigh the respective viewpoints and motivations of scientists to the extent possible and understand the empirical value of scientific journals and assessments based on peer-reviewed publications, such as GEO. It is up to reporters to understand and clearly represent these matters, first to their editors (most of whom have little or no scientific/environmental background) and then to their lay readers.


Many environmental issues, except disasters, are not ‘breaking news’. News is almost always something that happened today. On any given day, news organizations have more events to cover than they can reasonably get to. Reporters also compete with each other for the best placement of their work in a world of finite space and air time. Chief editors make the final decisions on what to run and where, based on input they receive from reporters and their own judgment.
Environmental science news in many ways is the antithesis of the traditional definition of news. As opposed to ‘breaking news’ environmental change news often ‘oozes’ - happens as gradual change in small increments. Such issues often also lack a single highly visible and particularly responsible ‘bad guy’. Plus scientists use careful language, pointing out uncertainties, and that can discourage news coverage. Uncertainty means that an environmental story will often be buried in a newscast or newspaper.

It is a particular challenge for environmental reporters to spark their audience’s interest in global environmental issues, such as those covered by the GEO. A local audience is most likely to ask: How will this change affect my family and I at home? Scientific confidence about climate change impacts actually decreases with finer spatial scales, due to increases in natural climate variability. However, dramatic events, such as the heat wave in Russia or the flooding in Central Europe in 2013, capture the public’s attention and make the connection between less specifically predictable local impacts to more predictable dynamics at the global scale.

The concept behind the event was to bring together environmental journalists and local environmental experts, and have them work in pairs (journalists + environmental expert) to identify and jointly write an article about a specific issue(s) in their country based on the results of GEO-5. Participants attended from Armenia, Azerbaijan, Belarus, Croatia, Georgia, Hungary, Montenegro, Russia and Serbia. In order to qualify as a participant, journalists had to have a solid professional record, good working English and commitment to prepare and publish an article on the results of the workshop in a major national media. Local environmental experts also had solid track records, and came from either national environmental agencies or NGOs.

At the first session, GEO-5 authors presented an overview of the key findings of GEO-5, with emphasis on the European chapter, future outlook and global synthesis. In particular, the representative of UNEP-DEWA reviewed the structure of the report and selected internationally agreed goals and priorities the report focused on. Coordinating lead authors of the regional chapter for Europe presented methodology and results of prioritizing environmental policy options for the region. The coordinating lead author of the chapter on Scenarios and Sustainability Transformation presented policy scenarios to achieve long-term sustainability goals. The session allowed for a generous question and answer period following every presentation, and fruitful discussions. There was also a possibility to go into details on: assessment methodology; how to make environmental news more relevant for the reader or viewer; how to catch the public’s attention on environmental issues; and how to present epistemological principles of modern science to public in an understandable way, etc. The Information Officer in UNEP’s Regional Office for Europe also provided a review of UNEP’s media and outreach strategy for GEO-5.
In this step a brainstorming session was held in breakout groups, with three countries in a group, represented by two participants per country. There were three breakout groups, each of them facilitated by one of the GEO-5 authors. The main objectives of this session were for participants to discuss the task together, raise any issues that were not clear, and to start identifying examples of stories for their county. All groups were asked to think about key audiences, their information needs, and the best ways to bring them the information from GEO-5 to have an impact.

The main objective of this step was to identify potential stories building on the results of the previous step. Each journalist and policy expert pair from the same country was asked to identify 2-3 key topics based on GEO-5 that were of particular significance for their own country. They then capture the essence of each story on a slide with a few bullets plus a picture and / or chart from GEO-5. Country pairs presented the highlights of the 2-3 potential stories they identified. The most popular stories concerned waste management and water scarcity – issues that had evident priority in many countries in transition. At the end of this step, a decision was reached on the preferred story that would be developed in full. In the subsequent stage of this step, the author pairs worked on the details of the story, including finding relevant illustrations.

At the final stage, author pairs from every country presented the outline / details of their selected story to the extent it has been developed for printing and distribution for discussion in the session. Specific publication options (type of media product, format, timing, etc.) were also discussed. Participants read the stories of two other countries, and provided ‘peer review’ comments from the substantive, messaging, and any other point of view. At the end, a plenary session provided an opportunity to review the results achieved, reflections on the process, what has actually been produced, and the details of their publication plans. The workshop ended with an agreement to make all published materials available to UNEP for wider dissemination.
3. ARTICLES
ARMENIA

Armenian case features the Global Environmental Outlook (GEO 5)

AZERBAIJAN

For our future generations: The country is implementing programs on maintenance and expansion of the forest area

BELARUS

Climatic “permutations”: What could they lead to with respect to our health and economy?

“I will give away a fridge for free... but to a good home”

GEORGIA

Soviet trash dumps - A suspended programme

HUNGARY

We are a great power in water: On the initiative of the President, Hungary is going to hold a UN conference next autumn

LITHUANIA

We do not have a second planet

What awaits our planet in the future

RUSSIA

New report on the state of the global environment
The Armenian case portraying the transition to universal water metering and volumetric water pricing was highlighted in Chapter 11 “Europe” of the fifth Global Environmental Outlook (GEO-5), launched on the eve of the Rio+20 Summit by UNEP.

GEO-5 is the most authoritative assessment initiated and coordinated by the United Nations Environment Programme (UNEP). The main goal of GEO is to keep governments and stakeholders informed of the state, trends and outlook of the global environment. Over the past 15 years, GEO reports have compiled and examined a wealth of data, information and knowledge about the global environment; identified potential policy responses; and provided an outlook for the future. The assessments, and their consultative and collaborative processes, have worked to bridge the gap between science and policy by turning the best available scientific knowledge into information relevant for decision makers. The GEO-5 report was produced over two years in a process that involved more than six hundred experts worldwide, who collated and analyzed data from every continent to build up a detailed picture of the world’s wellbeing. The GEO-5 was launched on June 6, 2012 in Rio de Janeiro, Brazil and twelve other locations worldwide. The report is available at: [http://www.unep.org/geo/geo5.asp](http://www.unep.org/geo/geo5.asp)

GEO calls attention to the need for the measurement of our natural capital as a key precondition for better management and mentions as a positive example Armenia’s reform of measuring water consumption. The report points out that “soon after the reforms took place, average water use decreased three to four times compared to the use based on flat-rate calculations. The massive process of introducing individual metering became a trigger for a chain of water sector improvements, all backed by a legal, regulatory and institutional framework that enabled private sector involvement accompanied by investment and management efficiencies. As a result, the quality and reliability of water delivery improved.” Even being an economic instrument without an environmental target, metering and meter-based pricing has resulted in environmental co-benefits.

Given this positive result, are there other areas where Armenia could potentially offer a positive example by addressing some of its own needs? Under current conditions, Armenia urgently needs to speed up efforts to secure its energy supply and sustainability. This can be supported by improved energy efficiency (especially in buildings where the potential to reduce energy consumption is 40%, equivalent to reducing greenhouse gas emissions by 944,000 tCO2e per year), better and more widespread use of indigenous energy resources, including particularly renewables.

Currently, there is a broad range of policies and incentives practiced throughout the world that can reduce production costs and speed up commercialization and market creation. Among others, these include appliance standards, building codes, energy efficient building tax reductions, renewable energy loan guarantee programs, clean energy.
funds, support for research and development and education at all levels, etc. Specific to renewable energy are the renewable portfolio standards (RPS) and feed-in tariff incentive schemes. RPS schemes are quota-based, and retail suppliers are obliged to supply a certain portion of electricity from renewable sources. RPSs are practiced in the UK, Belgium, USA, etc. Wider spread in most EU countries is the feed-in tariff scheme, also called “advanced renewable energy tariff”, which is based on a mandated price of electricity sold into the electric grid from renewable source and that guarantees access to a grid provided by utilities. The advantages include geographic distribution, local acceptance and participation, lower administrative costs, etc. Used as examples in GEO-5 are two pricing models for feed-in tariffs: a market-independent fixed price, applied in Germany, and a market-dependent premium price model, practiced in Spain. Another interesting example is in Bulgaria, where a special fund is created for farmers or individual land owners to rent their land plots for installing renewable energy generating facilities. Finally, the good news in regard to renewables is the rapid transformation in solar generation driven by expanding global investments in advanced solar technologies and the drastic cost reduction in solar costs.

While there is no lack of bright ideas that could be a part of Armenia’s energy future, the main barrier rests in establishing a clear vision and strategic planning implementation for speeding up the development and deployment of new energy technologies; ensuring that these innovations are feasible and worth an investment to lead towards accelerating the process of energy modernization; and can catch up with EU trends and provide yet another positive example.
This year, the United Nations Environment Programme (UNEP) released its fifth report on the state of global environment named “Global Environmental Outlook” or GEO-5. According to the report, despite the fact that we have hundreds of internationally agreed goals and objectives, the environmental situation on our planet continues to be close to critical.

The report analyzed the performance of the 90 most important environmental goals and objectives; however, it turns out that significant progress has been achieved in only 4 of them. Little or no progress has been found in 24 goals and objectives, including issues of climate change, fisheries, desertification and drought.

Some progress has been detected in 40 areas, including expansion of protected areas, such as national parks and efforts to prevent deforestation. The report warns us that if humanity will not urgently change its ways, critical thresholds may be breached. This might lead to irreversible changes occurring to life on our planet.

“If current trends are maintained, if natural resources extraction and consumption patterns prevails, the government will face unprecedented levels of destruction and degradation” – the report states.

The report also calls out to pay more attention to policies targeting problems of environmental changes – such as population growth and urbanization, unsustainable consumption patterns based on fossil fuel extraction, energy consumption, transport and globalization...

This summer (2012) the capital of Hungary, Budapest, hosted a conference with journalists and representatives from the Ministries of Ecology of Azerbaijan, Belarus, Armenia, Croatia, Georgia, Hungary, Montenegro, Russia and Serbia which was organized by UNEP and the Central European University. The purpose of this conference was to find communication solutions to existing environmental issues and overall critical situation. During those several days of work, the members of represented countries discussed current environmental situations and shared experiences with each other.

During the conference it was noted that Azerbaijan does not remain on the sidelines when it comes to solving environmental problems. As we mentioned before, one of the report’s sections was dedicated to forests and it is gratifying to know that our country devotes much time to addressing forestry.

As stated on the website of the Ministry of Ecology and Natural Resources of Azerbaijan, forests are considered to be one of the most valuable natural resources of the country. In the VIII-IX centuries they covered 35% of the territory of Azerbaijan. At the moment their area covers 989.4 thousand hectares (ha) or 11% of the territory. For example,
in Russia such area amounts to 44%, 41% in Latvia, and 39% in Georgia.

In Azerbaijan, forests are usually located at an altitude of 1200-1800 meters above sea level. Although these forest areas are not large, they possess an impressive variety of species. There are 435 species of trees and shrubs, of which 70 are endemic. The whole territory of the Republic is characterized by broadleaf forests. This type of forests is most common in the lower and midland parts of the Greater and Lesser Caucasus mountains and Talish mountains. In many places at an altitude of 600-1600 meters, these forests form a single belt. The remaining forest areas are spread in the form of meadows and woodland belts.

The forests consist of three key species - beech, hornbeam and oak. These species constitute 82.6% of the total forest cover. Additionally, there are other tree species such as maple, linden, alder, poplar, willow, elm, and other broadleaf trees. Coniferous (needle) trees account for 1.7% of all forests in the country. In Azerbaijan, 107 species grow naturally; 7 out of these species are coniferous (needle). They include long-barreled and fruitful juniper with solid odor, hook-shaped pine, Eldar pine and European black linden.

The distribution of forests according to their age is quite diverse. This way, young forests account for 11.2% of the forested land, “middle aged” trees – 63.3%, growing trees – 13.4%, mature and old – 12.1%. Forests host approximately 150 species of 1,536 wild fruit plant varieties. They produce tons of wild fruits (normal walnuts, apples, pear, dogwood, cherry-plum, medlar, nuts, dates, hawthorn, chestnut, blackberries, etc.). 30% of these fruits are important for production purposes.

Our forests are a favorable environment for beekeeping development. At the moment, forest facilities contain approximately 700 bee colonies. Bees help pollinate forest plants and thus create conditions for harvesting abundant seed crops and honey.

Mountain forest zones located particularly in the occupied territories of Azerbaijan suffer from severe damage. Due to such aggressive damage, 246,000 hectares of occupied forest areas were barbarously destroyed. Due to the removal of valuable tree species that grow in these areas, the need for biodiversity protection has reached critical limits.
Forest management in Azerbaijan is based on the forest codes and the national law “On Environmental Protection”. All of the country’s forests are owned by the state and perform water conservation, soil protection and climate-regulating functions.

It is encouraging that the Ministry of Ecology and Natural Resources of the country regularly holds events on reforestation; this way, the overall number of forests grows each year. According to the official message from the Department of Forest Development of the Ministry, during the first half of 2011 forests were planted on 1,335 acres, which was more than the original plan of 1,330 acres. During the same period 15,893 hectares of forest land were processed and a seed reserve containing 14,284 kg (against the planned 5,429 kg) was collected.

Massive tree planting efforts continue to this day. For example, the Gazakh district of Azerbaijan supports voluntary gardening work. Since the beginning of this year active tree planting efforts take place along Baku-Gazakh, Yukhari Salahli-Kemerli highway, Gazahbeyli-Ashagy Salahli as well as in other areas. It is planned to plant up to 100,000 trees before the end of the year.

Furthermore, it is known that the United Nations Development Programme (UNDP) is preparing to sign a document on the implementation of the project to protect the environment in Azerbaijan. As noted by the UN resident-coordinator in Azerbaijan, Mr. Fikret Akchur, the project is aimed at greening the slopes of the Caucasus Mountains by means of planting new forests there. These measures will be taken in order to reduce the harm caused by flooding.

In the course of the spring working visit of a Tatarstan delegation to Azerbaijan, which was led by the Prime Minister of Tatarstan, Mr. Ildar Halikov, an agreement was reached with respect to providing a supply of forest planting material to Azerbaijan. According to the Ministry of Forestry of Tatarstan, the seeds for reforestation activities on the territories of Azerbaijan will be supplied from forest nurseries and the seed-breeding center of the Republic of Tatarstan.

Also, Azerbaijan plans to develop and strengthen the educational base in the field of forestry. This includes publication of professional textbooks on forest management and establishment of forest colleges. This project will be carried out by the experts of the EU FLEG project on forest protection in Azerbaijan. Recently this project has been extended for another four years.

“During the first phase of the project (2010-2012) we carried out work to identify main problems, causes and effects, as well as legislative gaps in the forestry sector. During the second phase of the project (2012-2016), more detailed work will be carried out in order to address identified issues,” Azer Garayev, a program consultant mentioned during his interview with 1news.

Experts from Azerbaijan FLEG named illegal deforestation performed by local population for heating purposes, illegal grazing, as well as contamination of forest areas, as the key modern issues of forestry. It is known that the Commission decided to allocate 22 million Euros for the development of environment and transportation in countries of the “Eastern Partnership”. Out of this sum, 9 million will be allocated for the extension of the program on protection of forests (FLEG East II). The funding is distributed among the participating countries based on existing needs in a non-uniform manner.

Azerbaijan currently does not have post-secondary technical institutions that train professionals in forestry, said Garayev. A college of this type used to
exist in Aghdam, which is now occupied. “Education should be proper so that graduates can meet the real objectives set by the State for protection and efficient use of forests,” he said.

According to the coordinator of the project, FLEG plans to work and consult with the government of Azerbaijan in order to open forest colleges in the regions which need forestry expertise the most. Basically, these are the north-western and southern regions.

During two years of work FLEG has repeatedly published studies for students, foresters, amateurs and professionals from the forestry sector. At the end of June beginning of July, the project has published a textbook entitled “Sustainable forest management in Azerbaijan.” Garayev said that this textbook contains essential information on biological and ecological characteristics of forest protection and forest augmenting efforts. The book provides information on international regulations in the field of forestry, including the EU regulations regarding the sale and transit of timber.

Also with the help of FLEG experts, 300 copies of the training manual for volunteers in forest fire management were published.

Returning to the subject of the UNEP report, it can be noted that the Programme publishes numerous papers, reports, and newsletters. The current fifth report is a good example of a study on environment, development and human well-being which provides analytical data and information for policy makers and all interested individuals.

In conclusion, it is important to recall that UNEP was established under the UN program that promotes coordination of environmental protection on a system-wide level. The program was established by a resolution of the UN General Assembly N2997 from the 15 December 1972. The main goal of UNEP is to organize and implement measures aimed at protecting and improving the environment for the benefit of present and future generations. The Motto of this Programme is “Environment for Development.”
CLIMATIC “PERMUTATIONS”: WHAT COULD THEY LEAD TO WITH RESPECT TO OUR HEALTH AND ECONOMY?

The temperature is rising, the wind has “settled”

The ongoing climate change has regional characteristics. Existing assessments of climate change in the territory of Belarus does not contradict the concept of global warming – the expert mentions. For much of the 20th century to the end of the eighties, short periods of warming were followed by cooling periods similar in magnitude and duration periods. A warming period unmatched in duration and intensity began in 1989 with a sharp increase in temperature in winter. This phenomenon continues to this day. During this period, the average annual temperature has increased by 1.1 degrees Celsius.

Active warming of the past twentieth century had virtually no impact on the average annual amount of precipitation (98 percent of the norm), in turn the average amount of precipitation of both warm (97 percent of the norm), and cold periods of the year (99 percent of the norm) also appeared rather normal. However, the obvious change was identified in the increasing irregularity of rainfall both during the year and in general for some non-consecutive years. This means that very dry years may alternate with very wet ones.

Interesting observation: from the 70s of the previous century, Belarus experienced a decrease in wind speed in parts of European Russia and Western Siberia. If until 1971 the average wind speed in Belarus was 3.6 m/s, over the past three decades it has dropped to 3.1 m/s.

Recently, UNEP experts presented their new report called “Global Environmental Outlook - 5”. This report discusses one of the priority environmental discussion topics, such as preservation of biological diversity in the context of a changing climate.

Urgency of the problem has long been understood in Belarus as well...
THE GRAIN IS COMFORTABLE

Whether we want it or not, changes in weather conditions have a strong effect on our lives. All weather-dependent sectors of our economy such as agriculture, forestry and energy have to adapt to the natural “permutations”. One of the most vulnerable areas is farming - Elena Komarovskaya emphasizes. Among the negative effects of warming we should mention an increase in the number of droughts. In addition, there are other issues such as weaker and diseased plants, deteriorating conditions of over-wintering crops due to possible sudden changes in temperature, and the increase in the likelihood of damage to winter crops from water-logging and snow mold.

And that's not all! The probability of damaging young crops (especially heat-loving crops) increases with unexpected frosts. After all, surely you've noticed that after a warm April, May can break out in cold.

On the other hand, there are obvious advantages. For example, the increased duration of the vegetative and frost-free growing season. Plants receive more heat and light. There is solid evidence to this fact: an increasing air temperature and number of dry days in July - August accelerate the ripening and harvesting time for crops, improves grain quality and increases the duration of the post-harvest period. At the same time, increases in air temperature in winter and early spring months reduces the cost of livestock housing, and improves the conditions of winter crops and herbs' hibernation.

MORE SUNFLOWERS AND APRICOTS

Specialists from the Ministry of Agriculture and Food have undertaken a mission to adapt agriculture to the continuously changing weather conditions. For example, in recent years, Belarus has significantly increased corn acreage for growing grains. The production of winter barley has been introduced to the farms of Brest and Gomel regions, which started to produce significant amounts of yield. The amount of yield could be compared to other popular crops. The advantage is 2-3 weeks earlier harvest for winter barley compared to other cultures. Rape acreage for seeds also increased. The southern regions annually grow soybean, while recently these regions started to pay more attention to growing sunflower, vegetable peas, sweet corn, and green beans. The cultivation of an early heat-acclimated variety of potatoes has also been mastered. Work continues on the establishment of industrial plantations of grapes. As for suburban areas, they continue to harvest quality watermelons, melons and even apricots.

THE FOREST “FROZE” WITHOUT THE SNOW

Some of the progress is also visible in the forestry sector. For example, overall ripening of fruits and seeds of woody plants and berries has accelerated over the years. The soil is now melting faster than before which allows one to stretch the dates for planting new and young trees.

However, in comparison with the agricultural sector, there are much more disadvantages. For example, the overall warming increases the duration of the fire season in the forests and peat bogs. The structure of forests also undergoes some changes. There have been increases in the likelihood of mass breeding of pests due to the reduced “immunity” of trees.

Increase in the probability of late frosts can negatively affect the current growth of oak, spruce, linden, and overall condition of crops planted in nurseries. Wintering conditions for trees deteriorate due to lack of forest vegetation or shortened presence of snow cover.
FORGET THE BATTERIES?

One of the most important socio-economic impacts of climate warming is fuel and energy savings resulting from changing heating needs – the specialist mentions. This is caused by the reduction in duration of the heating period and increase in the average temperature.

However, there is a pitfall associated with this so-called “economy”: the warm season increases the energy consumption of air conditioning and refrigeration. However, we must take into account two factors that mitigate the negative consequences for our country. First, during summer the temperature increase for Belarus is not as significant as during the heating period. Second, the air in the housing sector will not have a significant effect on the fuel and energy consumption. However, in some well-known cities of the world the energy consumption for air conditioning may well exceed the energy consumption for heating.

DISEASES THAT ORIGINATE FROM... HEAT

The most comfortable climatic conditions for human health are observed during the warm periods of the year when average daily temperatures reach 15-25 degrees Celsius in Belarus.

In connection with the warming comfort during this period, there has been an increase in repeatability of high temperatures. This leads to an increased physical load on the human body, particularly dangerous for patients with cardiovascular diseases.

In the warm period, the number and duration of snowbreaks has increased. Snowbreaks interspersed with cooling is considered to be the most dangerous “influenza” season.

Global warming also recently caused the outburst of diseases that were previously uncommon for Belarus. Primarily this is due to the more active breeding of harmful insects such as ticks that carry tick encephalitis.
In order to properly dispose of old appliances it is necessary to take care of their destination first.

The days when we recklessly kept all unnecessary equipment at our houses are long gone: now we cannot send it to the summer houses or stack it in piles on the balcony reckoning that “someday it may come in handy”. Specialists emphasize that in Belarus the “fashion of total re-equipment” had already begun a few years ago. According to the most conservative estimates, approximately 150 000 refrigerators, 260 000 TV sets and 90 000 washing machines are thrown away on an annual basis in order to be substituted with new equipment. Is it possible to get rid of old or unnecessary equipment in an environmentally friendly and feasible way, at least in the city? Reporters of New Magazine (NM) decided to embark on a journey to answer this question. In order to provide for the “presentation material”, they also stuffed their car with various “electronic junk”.

**DOESN’T BURN IN FIRE, DOESN’T “MELT” IN THE ENVIRONMENT.**

How can one find a “home” for a refrigerator, a television set and a VCR produced back in the Soviet times?

In theory, if we decide to dispose of this equipment on a landfill it would be rather dangerous. Additionally, we would waste an opportunity to earn some money. Refrigerators, washing machines and cookers contain ferrous and nonferrous metals, which may be recycled; additionally such materials as plastic, rubber and glass can also be recycled and reused. For example, if we consider a broken kinescope as a candidate for immediate disposal, specialists would inform us that such action would be identical to planting a time bomb in the ground. The consequences of such action would be rather predictable. Kinescope as the core component of a television set contains heavy metals that can poison the soil, ground water, and air. Plastic computer casings and monitors are also filled with special substances to prevent sudden combustion and thus are just as toxic as the kinescope. If these items cannot burn, the environment would definitely not have the power to have them disintegrated by means of its natural processes.

**ACCELERATED AGEING**

Back in the days, broken TV sets could be offered to the repair shops for further dismantling. The sum of money offered to the previous owner was rather symbolic; however, having this option was better than nothing. After having called a dozen of repair shops we realized that nobody needed our “TV junk”. The explanation presented to us was that modern technology becomes obsolete very quickly. A five year old television is a really old piece of equipment, that is why it is hardly interesting to extract any valuable spare parts from it. Given this information we could predict what the answer would be for the equipment we had back in our trunk from Soviet times...

The next logical step for us was to travel directly to the capital’s recycling stations. It is known that on average a TV set contains about 5.9 kg of polystyrene, 0.17 kg of aluminum, 0.223 kg of copper, 23.4 m of cables with harnesses and 15.6 kg of glass.
“For us an old TV set is a useless old box. It is not to our advantage to disassemble it for the sake of half a kilo of non-ferrous metals, not to mention that it is very hard to extract. We would not even be able to get anything valuable from a dismantled VCR” – we received such a response from a representative of one of the recycling stations in the Orlovskaya street.

We received similar explanations from other recycling stations; however it turned out that an old refrigerator can eventually be given away. “Pure” metal scrap from a refrigerator would cost approximately two thousand rubles per kilogram on average; however if we were to sell the entire refrigerator at once, each kilogram of its weight would approximately cost 700 rubles. The price is dictated by the fact that there are other materials inside the fridge – rubber and plastic that would need to be extracted separately prior to recycling or utilization. This way, we can fetch a sum of 35-50 thousand rubles for a medium-sized refrigerator.

DIVIDE AND RECYCLE!

We had another backup plan – a sorting station named “Western”. This company works primarily with corporate customers - manufacturers, service centers and shops. But, as explained by the company’s director Dmitry Kuchuk, recently they have made a concession: they started to take old electronic equipment from the public. Even though the station does not provide any money in exchange for the malfunctioning equipment, conscious consumers continue to call non-stop, just to get rid of old gas stoves and teapots. Station’s experts can even arrange for picking up a refrigerator or a washing machine straight from your home, but in this case you will have to pay 40 - 50 thousand rubles for transportation. In case the visit is arranged, personnel would also take little things like a broken kettle, toaster or a hair dryer free of charge. With help of this service we were able to get rid of our old refrigerator along with the rest of our “e-waste.”

Upon its arrival at the sorting station the equipment is generally divided into components that can be recycled. We were able to “spy” on what happens to the refrigerator after its “death.” Firstly, easily removable parts were extracted such as shelves, vegetable drawers and freezer doors. Next steps are more complicated. When it comes to a pair of pliers, environmentalists usually hesitate: what will happen to the ozone-depleting substances such as freons, which the refrigerator contains?

Despite this concern, the deputy director of the “Western” sorting station, Alexander Logutenok, is convinced that the refrigerators handed over for processing contain virtually no harmful substances, which is why they are susceptible to malfunctioning sooner than expected. After its disassembly, the waste is sorted by type and is passed further to special organizations for processing. At present we can hardly see waste sorting in our country as a “business opportunity”. For example, one disassembled refrigerator can yield a “net” revenue of only ten thousand rubles or less.

Additionally, there are a few other ways to dispose of large equipment. You can leave it at designated collection facilities if these are available at your location or store it on container platforms. You should never attempt to put electronics directly into the container! This will not only create additional troubles for communal service personnel but will also leave you with a fine. Housing and communal services should take care of the waste container and arrange for special vehicles that would transfer potential recyclables to a recycling facility as the container gets filled.
According to Alexander Logutenok, some international brands that produce electronics tend to apply the mechanism of collateral value even in Belarus. This mechanism implies that the buyer is initially slightly overcharged for the product. However, when the buyer submits this piece of equipment to recycling stations at the end of the product’s life-cycle, he or she can receive a discount for purchasing new equipment.

**OPINIONS: WHAT COULD HELP?**

*Anatoly KALACH, Project Coordinator for the Center for Environmental Waste Solutions:*

In Belarus different legal approaches exist when it comes to managing general electronic waste and corporate consumer waste. Corporate consumers are not allowed to send e-waste to a landfill without submitting special reports; they must act in accordance with the general law on waste, as well as laws governing the treatment of ferrous, nonferrous and precious metals.

However, it is an almost impossible task to track the movement of e-waste generated in residential areas: waste is left either next to the containers or is sent directly to the landfill. In order to take this spontaneous process under control it would be necessary to take some measures. For example, we could suggest creating a comfortable environment for the collection and recycling of old appliances, raising tariffs on secondary material resources, arranging for a specialized organization, which would be engaged in managing this kind of waste. It would be reasonable to introduce the principle of extended producer responsibility, which suggests that goods that lost their properties should be handled by the responsible manufacturer or importer.

**IN A CLOSED SYSTEM**

*Alexander Kirpichnik, General Director of “BelVTI”, OJSC of the Ministry of Economy:*

RUP “Vtorchermet” is currently ready to become responsible for the processing of ferrous metals, as well as extraction of the nonferrous materials from the equipment. However, who would volunteer to process the rest of the material? After all, the same refrigerator contains oils and insulation separate from the hazardous freons. These agents are not allowed to be extracted and recycled outdoors. In Europe they are derived in a closed loop where hazardous substances are extracted into a special container. This is just one example I can come up with, however there are many more other materials that would need to be handled properly.

Our organization clearly understands how to approach such waste; we even developed a business plan for the construction of an electronics recycling facility. Our concept includes not only collection, separation and recycling of secondary materials, but also production of new products from those recycled materials.

**BY THE WAY**

In the latest global report of UNEP on the problems and prospects of the environment named “Global Environmental Outlook – 5” (GEO - 5), the problem of electronic waste is mentioned as one of the priorities. It is estimated that each year 20 to 50 million tons of electronic waste are generated worldwide. This type of waste is generated at a speed that by far exceeds the rate of growth of all other waste categories.
HOW TO DISPOSE OF AN OLD REFRIGERATOR?

There are several ways to accomplish this mission. Each person can choose the most suitable option for him or her from the list below:

1. Take a refrigerator to the scrap metal station. You will be able to raise some money but keep in mind that you will need to deliver the refrigerator to the station on your own.

2. Book a visit to the “Western” sorting station. They can be reached via following phone numbers:
   (8-017) 263-50-32, 263-52-18, 263-50-03.
   You will not receive any money, but the personnel will gladly offer you to transport the fridge from your location by themselves (the service will cost about 40 to 50 thousand rubles).

3. Leave the refrigerator next to the containers at a specially equipped area. Communal companies will arrange for its disposal and it will be free of charge.
At the end of the nineties a letter was received at the Ministry of Environment. The “Georgian Railway” was asking the Ministry for the right to import wastes from Germany. Germany was upgrading its railway network, and getting rid of their reconstruction wastes was an expensive solution for a so-called Developed European country.

For what purpose would so-called developing Georgia need the German Railway wastes? Baulks under rails are normally impregnated by coal oil that is extremely harmful for human health, and can cause skin cancer.

Authorities of the Georgian Ministry of Environment considered what benefits German baulks would bring to the country, apart from money for each ton of dangerous wastes.

They decided that the wastes would bring more damage than benefit to Georgia, therefore they refused a German “client”. Developed countries have been practicing exporting their own dangerous wastes to other countries. A model has been operating in the following way: the countries with a high rate of production try to bring wastes out of their borders. As a rule, wastes of the developed countries are sent to the developing countries.

At that time, the Georgian Ministry of Environment refused “financially profitable wastes,” however Trash Dumps established during the Soviet epoch that are highly dangerous for human health still remain as an unresolved problem.

Used diapers, old umbrellas, phones, and shoes – an “arranged” Iagaluja confined trash dump near Rustavi City is full of various types of everyday use items, now disposed. A territory of 5 hectares (ha) exhales blue smoke, and breathing there is possible only through a respirator.

It has already been 2 years since the Trash Dump was officially closed. Closing means that no more trash has been dumped there, however it does not mean that the territory is not dangerous for the environment.

In 2011, research from the Environment and Security Initiative (ENVSEC) mentioned that despite the fact that there is no trash dumped at two big Iagluja and Gldani Trash Dumps, the combined area of which is 13ha, these dumps still remain as a main source of underground water and air pollution.

“Discharge of harmful substances cause risks connected with the health of the populations living in Tbilisi, Rustavi and nearby settlements. Additionally due to natural decay of organic materials, gas of warm effect such as methane and hydrogen is discharged from the Trash Dumps” – as highlighted in the research.

“Often domestic and wild animals, fishes and birds eat the wastes that cause their poisoning, diseases or accumulation of undesirable matters in their cells” – as mentioned in other research published last year where the “Green Alternative” Association considered Waste Management Problems.
Currently there are 63 officially registered Trash Dumps in Georgia, and none of them have a cleaning system for polluted exudates or a waterproof basement layer which would protect underground waters from these pollutants.

In villages, dumping of trash at or in rivers is a common occurrence. Everyday wastes cause permanent pollution of surface waters.

All of the Trash Dumps in Georgia were arranged during the Soviet epoch. During that time, territories for Trash Dumps were selected by Executive Boards. Mr. Alverd Chankseliani, the Senior Specialist of Wastes and Chemical Substances Department of the Ministry of Environment, says that requirements concerning arrangement of Trash Dumps existed however they were never executed. “Normally they would point at a territory and decide that it will be a Trash Dump. In most of the cases the Trash Dumps were not fenced. This is the way in which the most of the Trash Dumps were established, and that still operate in the country. None of them meet sanitary demands, they all are sources of anti-sanitary substances” – Mr. Chankseliani stated.

How, according to Sanitary Standards, must these old Dumps be closed?

In 2007 the Parliament of Georgia adopted a law concerning “Influence on Environment,” according to which operators of the old dumps had to conduct their ecological audits until 1st of January 2010, and take appropriate measures in order to avoid further pollution of the environment. However, none of the operators have taken any measures.

Currently there is no certain plan of sanitary closure of the two biggest dumps in Tbilisi. New dumps that meet sanitary standards were built in Tbilisi, however the issue concerning old dumps still remains unresolved.

Closing of old dumps has various stages. One of the most important stages is constructing a waterproof layer arrangement between trash and soil. In order to carry out this procedure, old trash must be temporarily removed from the territory, a waterproof layer must be arranged and the old trash must then be returned back. The trash transportation requires a high amount of finances.

“How finding finances is the biggest problem” Ms. Kety Gujaraidze, An Analyst of “Green Alternative” Association and an author of research concerning wastes, stated.

Management of Hard Wastes is one of the main challenges of the planet. The civilized world produces the most wastes. Demand for small, nicely designed electronic equipment is also increasing. Disintegration of I-phones or other small electronic equipment in parts, or their use in other production is practically impossible. After use or damage, they are dumped in trash with an existing interface.

The human population is a generator of wastes. Most of the huge amount of wastes are designed in such a way that their disintegration is impossible. "Nature disintegrates only naturally produced wastes" – Professor Marcus Wolf states. Wastes produced by humans, also known as anthropogenic wastes, differ from wastes produced by nature – they are dangerous and hard to disintegrate.

Economically developed or developing producer countries are producing more and more wastes. A UN report, GEO-5 published in July 2012, says that by 2035 wastes will increase.

The GEO-5 report also discusses the problems of post-Soviet countries concerning waste management. The report says that a lack of waste management plans and processing system have caused a lack in a system to separate municipal and
dangerous hard wastes. Due to this, the dangerous hard wastes at many closed dumps are still stored so that nobody knows about their existence, and often identification of pollution sources is difficult.

Hungary has a successful experience of closing of a dangerous dump. The dump was full of wastes from an old weapon factory.

The secret weapon factory “Nitrokemia” was built in Hungary in 1921. The government of Hungary was producing a high amount of weapon supplies for their security, using prisoners as labour. In 1960 the factory profile was expanded and production of chemical matters was added. Dangerous wastes that accompanied such production were placed at non-sanitary dumps. After a number of years, the soil and water was poisoned by mercury. The population had a negative reaction to it. How could the country manage a mountain-high dump?

After finding of appropriate funds, 22 tons of dangerous wastes were temporarily moved to another place, a waterproof layer was arranged at the old site, the wastes were returned back and it was covered by ground. Liquid mixed with mercury was pumped out of the dump and placed in a small tank. Owing to a protection layer of the tank, the dangerous liquid does not leak into the soil.

As a result in one of the areas of Hungary, at Balaton Lake, there is a small mountain made from a dump. Nobody can tell that there was a dangerous dump there before, and that it was impossible to breathe there. The Head of Environment Protection of the former factory, Mr. Gergely Koves, takes environment protection politics students to the mountain.

“There now we are standing on greatly preserved trash” – he said. Grass has grown on the mountain. According to Koves, works conducted were successful. Cultivation works still go on in the area.

There is no strategy of proper closing of dumps in Georgia.

In 2003, a draft law concerning trash dumps was passed to the parliament of Georgia for consideration, however it was never considered due to change of the government. Recently the Ministry of Environment has brought forward the EU Twining Project due to development of a frame-law on wastes. On 1st of July 2012 the project officially began, and it will finish in 2014.

After 20 months, when the Twining Project will finish, Georgia will have the frame-law concerning hard wastes ready, after which it will be passed to the parliament for consideration.

“The ministry representatives hope that the aforementioned law will change many things in a better way” – the head of Department of Wastes and Chemical Substances of the Ministry of Environment Ms. Ekaterine Imerlishvili stated. According to her, an issue concerning old dumps will be definitely considered in the frame-law.
Long-lasting dog-days, heat alarm, temperatures above 35°C, breaking heat records, everyday alarms due to sharp storms, severe water shortages on the fields - the Hungarian press was filled with such news in July. Hungary experienced an almost unprecedented heat wave recently, and these phenomena are expected to come along more frequently in the future. Our weather becomes more and more extreme and unpredictable as an evident sign of climate change.

These changes affect us apparently, not only our comfort but also our purse. A record of electricity consumption was broken too during the heatwave, mainly due to the necessary use of air conditioning. Those concerned can measure the result of it in the next electricity bill. Besides households, these extremities have considerable costs at the macro-economic level too, from agriculture through to transportation and infrastructure.

The changing climate has considerable effects on water management as well. Yearly precipitation has decreased by 15-20 percent in Hungary during the 20th century. Our summer weather is getting similar to those of the Mediterranean countries. Drought periods are more frequent. The average water level of the Lake Balaton could decrease to under 60 cm by September. The water disappeared from the “Fátyol” waterfall of the Szalajka stream, which was among the most beautiful waterfalls of the country. Droughts, and the ever-growing water shortages, cause severe problems in agriculture, they endanger tourism, and last but not least also put risk on human health.

**WAR FOR WATER?**

The water shortage, which appears time to time in Hungary, is a permanent phenomenon and also source of conflicts in other parts of the world. “If the wars of this century were fought over oil, the wars of the next century will be fought over water - unless we change our approach to managing this precious and vital resource” – warned Dr. Ismail Serageldin, Vice-Chairman of World Bank, as early as 1995.

80 percent of the world population lives in areas of water scarcity; half of the world population – 3,4 Billion people – are endangered by severe water famine. There are staggering data that show the global water consumption has tripled in the last 50 years. Unfortunately these figures will grow further in the future, the 5th Global Environmental Outlook (GEO-5) of the United Nations Environmental Programme forecasts. There are costly and risky plans from China, India through the Middle-East to California to cover the ever-growing water demand of mega-cities with millions of inhabitants, industries and the largest water consuming sector by far: agriculture. Water is becoming a strategic natural resource.

Many people are not even aware of the fact that we enjoy a unique situation here in Hungary. We are in possession of freshwater resources of global
importance; according to the estimations, our fresh-water resources could supply 200 million people in present circumstances. While we take it as granted that we open the tap and get healthy drinking water from it, in many developing countries, in particular in Africa and Southeast-Asia, people – especially women and children – spend many hours a day to fetch water from distant springs or wells; that is why many kids are not able to go to school. 3.5 Million people die every year as a consequence of water-borne diseases.

The Millennium Development Goals, adopted by UN member states in 2000 includes a target to halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation. The first goal has been achieved, but still 600 Million people will lack access to safe drinking water in 2015. Concerning sanitation we are not on track at all: more than 2,5 Billion people globally lack those services of sanitation which are obvious for us.

**HUNGARY TAKES A ROLE**

Much attention was given to the issues of water and sanitation at the UN Conference on Sustainable Development – the so-called Rio+20 conference – held in June 2012. One of the concrete achievements of the conference was the decision on the elaboration of the Sustainable Development Goals. Water and sanitation was among the proposed themes supported by most; and Hungary intends to play an important role in the elaboration of such goals. As a first step Hungary – together with Finland, Thailand and Tajikistan – organized a series of consultations in the “Friends of Water Group” during the preparations for the Rio+20 conference; the outcomes were sent to the conference Secretariat.

President of Hungary, Dr. János Áder, proposed in his intervention at the plenary meeting of the conference, that “we hold a UN Conference on Water and Sanitation, to continue the work started in Rio, in the autumn of 2013 in Budapest, the capital of Hungary.” The proposal was warmly welcomed, and several countries offered their cooperation.

**HOW TO REDUCE WATER CONSUMPTION?**

The GEO-5 report states that the four main reasons leading to water shortages are the following: population growth, increasing water consumption, water pollution and climate change. Experts projected various scenarios while analysing the change of future processes as consequences of different measures. According to the estimates, the most important determinant in water consumption is the growing water consumption of households, followed by the industrial and agricultural water consumption. The most obvious way of reducing water consumption is increasing efficiency.

The average water consumption per capita in Hungary is 100 liters a day (3-4 l for drinking and cooking, 4-7 l for washing up, 5-10 l for cleaning up, 10-15 l for hand washing, 40-100 l for shower/bathing, 20-40 l for washing, 20-40 l for toilet flushing). In addition, there is garden watering and car washing, the water consumption of which is difficult to estimate.

We can do a lot in our daily activities to reduce our water consumption. Here is some advice to follow:

- use water saving taps, therefore you get water of the right temperature right away;
- by using the special tap filter air is added to gush therefore makes the same effect for bathing and washing up by using half amount of water;
- repair dripping taps;
- use a water saving toilet flush in order to use just the amount of water that is really needed;
take a shower instead of a bath and save at least half of the water;

where possible (in a weekend-house or in a family house) use grey water from washing or washing up for toilet flushing;

use water from a bucket for car washing instead of hosing down – you can save a lot of water;

collect rainwater and use it for watering plants;

water your garden early in the morning or late in the evening - the evaporation is less at lower temperature and plants can use water better than at noon;

consume less meat and more local, seasonal vegetables and fruits, because the production of fruits and vegetables requires less water than those of animal husbandry (their “water footprint” is much lower).
WE DO NOT HAVE A SECOND PLANET

What is our planet’s state of the environment? What driving forces change the functioning of planetary ecosystems irreversibly? What driving forces and trends threaten to cease the supply of critical natural goods, such as clean air, clean water, and a stable climate? Have four-decades-old environmental policy efforts been sufficient to reverse these trends? What is the future of our planet? These questions arise for many people in Lithuania and all over the world, but not everybody knows (not even some environmental professionals), where to look for authoritative and science-based answers. The mass media offers a lot of speculations on these questions.

The United Nations Environment Programme celebrates its forty-year anniversary this year. The Rio +20 summit in Rio de Janeiro, Brazil, happening right now on the 20-22nd of June, is the fourth global leaders’ summit in the history of humanity that aims to solve environment and development issues. The United Nations Environment Programme has a mandate to monitor the state of the global environment and to supply regular science-based reports to governments. The fifth report will be presented for the consideration of global leaders in the Rio +20 summit (the global leaders summit in 1992 also took place in Rio de Janeiro, Brazil). The Global Environmental Outlook prepared by the United Nations Environment Programme is the only science-based, authoritative and global-community-mandated report on the state of the global environment.

It seems that a lot has been accomplished since the beginning of environmental policy and politics in 1960-70s: ministries of environment or other mandated environmental agencies exist in almost every country in the world; there are thousands of environmental professionals at work; there are hundreds of multilateral environmental and cooperation agreements signed and ratified; thousands of environmental laws, programmes and action plans passed in national, federal and local branches of the government; and, it seems, it is hard to navigate through so many environmental initiatives. However, are these efforts sufficient? Have these four decades of formalized environmental policy been sufficient to change the course of humanity to a sustainable and safe future for current and future generations?

The Global Environmental Outlook declares that only four out of ninety environmental goals have been fully accomplished; among them are banning the production and use of ozone-depleting substances, removal of lead from petrol (only a few countries in the world remain that use lead in petrol), increasing access to improved water supplies and boosting research to reduce pollution of the marine environment. Forty environmental goals show signs of improvement, for instance, expansion of protected areas and battle with unsustainable forest logging. Little progress was found in twenty-four areas, such as climate change, desertification, and the protection of fish stocks. The situation has worsened in eight areas, e.g., the protection of coral ecosystems, and the situation on fourteen remaining goals was inconclusive due to lack of data. Authors of the report warn, if the current socio-economic and environmental tendencies do not change, humanity may spoil life-supporting systems beyond repair.
In brief, for a while now we have been cutting the branch on which we are sitting. There is no second planet we could inhabit.

The Executive Director of the United Nations Environment Programme, when asked on why the global community was unable to solve these problems, responded that he would not like to encourage pointing fingers at this stage. He also added that he would not be surprised that to many, the conclusions of this report may provoke anger, frustration, shock or surprise.

He emphasized that we have failed to frame sustainable development as a lifestyle choice, business style and public policy paradigm. He added that governments are not leading with sufficient attention and fail to see the socio-economic benefits of environmental policies. According to him, the conclusions of this report should be understood as an imperative for all to act now: governments, businesses, society and individuals.

However, the message of this report is not only pessimistic. There are many examples in the world, where environmental policy is successful, achieves its goals and contributes to welfare creation. Now is the time when such case studies must be publicized, analyzed and suggested for wider implementation.

There are many good examples mentioned in this report from all continents: integrated river basin management in Senegal, China, USA, Canada and Europe; sustainable land management in Ethiopia; protection and restoration of mangrove ecosystems in Mauritius and Cameroon; South African free basic water policy; abolition of subsidies for fossil fuels in India, China and Indonesia; climate change adaptation policies in the Maldives; payments for ecosystem services in Vietnam; emission trading system of the European Union; European fuel and vehicle standards; low emission zones in European cities; Natura 2000 network of protected areas in Europe; European Union directive on registration, evaluation, authorisation and restriction of chemicals (REACH); nitrogen accounting in Danish agricultural sector; feed-in tariffs for renewable energy in Germany, Canada and USA; innovative solutions for sustainable mobility in the cities of Brazil and Colombia; green funds for infrastructure developments in Peru, Ecuador and Colombia; organic agriculture in Latin America; carbon tax in Canada; irrigation management in Saudi Arabia; protection of marine ecosystems on the shores of Africa and Arabian peninsula; and many other examples, a complete listing of which would be impossible here. To sum up, transparent, effective and accountable public policy is the core engine of progress.

But is it really the right time to pour money into environment, when the banks are trembling and the Arab Spring protestors are in the streets? This is a typical question from a skeptic. Unfortunately, we can no longer ignore these scientific warnings. In these few decades science has answered many questions on how the biosphere functions and the age of marginalization is over. Environmentalists working in all fields (marine ecosystems, desertification, climate change etc.) agree, that the essential political-economic-social turn, ensuring human continuity and welfare on this planet, must take place in the next few decades. “If we look from a political-economic perspective, this is not a good time to change anything; but looking from a historical perspective – a suitable moment” – A. Steiner spoke. It is said that a crisis is a moment to rethink what went wrong in the past and may be a source of innovations and improvements. In 1992 in Rio, most of skepticism towards environmental protection and sustainable development came from the developing countries, but today the leadership from the developed world is slowly taken over by China, Brazil, South Korea, United Arab Emirates, Kenya, Chile and South Africa.
I invite everyone interested to follow the Rio +20 summit and its outcomes, to glance through and read the Global Environmental Outlook and apply its conclusions in personal and professional life. I will not be trivial to repeat, that environmental education will bring up a new generation and this bright new generation will solve all problems. No, we do not have the luxury to wait until this responsible generation grows up seeing a two-faced reality. Everyone can find some kind of application of these ideas in their professional lives: starting with an artist, teacher, farmer, ending with business leaders, politicians and journalists. Lithuania is a small country, but it is not isolated in the context of environmental, social and economic problems.

We are all on one and the same spaceship called the Earth. Environmental protection must become a natural and inherent part of our core values.
WHAT AWAITS OUR PLANET IN THE FUTURE

Scientists predict that by 2025 humanity will have modified half of the planet’s terrestrial ecosystems, which will be a critical point for irreversible ecological and climate changes.

Already today some of the Earth’s territories have become uninhabitable. But what awaits us in the future, if we do not change anything – ice age, continuous droughts, or something else the planet has never experienced before?

What can we expect from the future, if we continue changing the planet at the same speed? Scientists deliberate many future scenarios, which inspire film directors – dried out rivers, destructive tornadoes, uncontrollable flooding, and even a necessity to look for another living place for humanity.

For the world’s powerful, it remains to be science fiction, while climate scientists and ecologists warn that the time remaining for necessary changes is ticking away.

Prof. Anthony Barnosky and 20 of his colleagues published an article in “Nature” last month, warning that humanity has already modified 43% of Earth’s ecosystems, and a continuation of as business as usual means that by 2025 we could reach the critical tipping point of 50%.

“Accelerating climate change, increasing appropriation of natural ecosystems, extinction of species – it is clear, that something extraordinary awaits us” – A. Barnosky claimed.

Addressing the university community in an interview, the author says that the Earth has already lived through some extraordinary and critical moments, but this time we have the capabilities to recognize this moment approaching, investigate it and benefit from the knowledge.

“We have reached a point when long-term planning is necessary for a sustainable future. Our actions have consequences. Contemporary science helps to understand them, therefore, we should build action plans and programmes that would enable us to maintain the quality of life we have today. I believe, humanity will acknowledge that we are in a crucial crossroad, and will be able to make appropriate decisions” – the scientist said.

The article appeared in the beginning of June, just before the United Nations Rio +20 conference in Rio de Janeiro, however, that did not convince the conference participants, who have not reached any legally-binding agreement.

Vilija Augustavičienė, Head of Economics and International Relations Department of the Ministry of Environment of Lithuania and member of the Lithuanian delegation for the Rio +20 conference, said that European Union countries would like to have stronger environmental institutions, which would be able to influence state policies, but this proposal is confronted by poor countries and some of the rich countries.

“It is a pity that the expectations of the European Union countries have not been met. Developing countries are afraid of such strong environmental
institutions that could evaluate their progress, and give compulsory-to-implement recommendations. They unanimously object this proposal. Developed countries, such as the USA and Canada, object, because they do not want to institute these mechanisms of evaluation and control. These are the main reasons why environmental protection today is the weak link in the context of sustainable development” – V. Augutavičienė said.

“We have to acknowledge that environmental policy as an area of public policy is relatively young. Environmental policy is probably only forty years old, therefore, the results are considered to be still very poor. Out of ninety environmental goals, only four have been met” – Nora Mžavanadze, doctoral student of Central European University and collaborator of the United Nations Environment Programme, noted.

Industry no longer uses ozone-depleting substances, lead is eliminated from petrol, access to safe drinking water has been significantly improved, and research for marine pollution reduction has been significantly advanced.

According to N. Mžavanadze, these goals have been reached because they were relatively easy compared to others, meanwhile the majority of other environmental goals raise many contradictions and require a consensus, that is difficult to achieve on the level of the global community.

“Every year we hear from the mass media, that once more climate change negotiations have failed. Here is one aspect, illustrating how hard it is to achieve an agreement. Only a few companies produced ozone-depleting substances. That means that achieving an agreement and ensuring an effective monitoring is relatively easy. Now let’s imagine how many actors there are that contribute to the greenhouse gas emissions globally. That means, we are seven billion actors, or maybe even more. Therefore, imagine, how difficult it is to agree when different national delegations meet representing different societal development, different power centers. Of course, the big countries aspire to be the power centers, but who thinks about small states in the Pacific, which may be slowly drowning already” – N.Mžavanadze said.

The recently published fifth Global Environmental Outlook states that very little progress is noted in the fields of climate change, desertification, and protection of fish stocks; in some cases the situation is actually even worsening. The authors of the report warn – if current socio-economic tendencies do not change, humanity may spoil life-supporting systems beyond repair.

“Some Pacific Ocean peoples and their politicians already search for a territory to relocate in case sea levels rise. Just imagine what it means for a whole nation. On the other hand, my colleagues already research the first cases of climate change refugees, where people are already unable to survive in territories where their ancestors lived for centuries. These territories, ecosystems become uninhabitable, and critical resources are exhausted or disappearing, for instance, water.” – N.Mžavanadze said.

Arūnas Bukantis, Vilnius University professor of climate sciences, said that the future can be predicted according to examples of countries where almost all terrestrial ecosystems have been modified by humans. Similar tendencies will spread to other territories.

“The first place goes to the United Kingdom, then Ireland, Denmark, Moldova, the Netherlands, Kuwait and Haiti. In these countries 98-99% of terrestrial ecosystems have been modified by humans: forests cut for timber and turned into pastures as in the United Kingdom and Ireland, or into agricultural fields and
meadows, just like in Denmark and Moldova. Dried wetlands turned into agricultural fields as in the Netherlands. These territories are characterised by increased risk of soil erosion, flooding, wind erosion. These processes are already observed.” – the climatologist elaborated.

Aside from the direct local impact of land-use changes, there is a secondary global impact for the global ecosystem. And this is exactly why the 50% limit may be critical.

“Changing ecosystems as a result of changing land-use, we accelerate climate change. In nature, if we change one component, i.e. chemical composition of the atmosphere, the changing climate already may by itself destroy the remaining ecosystems, for instance turning them into deserts. Human beings do not create deserts intentionally and directly, but unsustainable growth of animal husbandry increases the risk of desertification”- the scientist explained.

Scientific research shows that the impact on the environment as a result of human activities will increase in the future due to population growth, and polarization of economic powerhouses. Therefore, Professor A. Bukantis claims, that significant changes are predicted even in the near future.

“Climate change processes, global warming, will accelerate in the coming decades. Therefore, a hike in the warming process is foreseen for 3-5 decades of this century. All climatic zones, all ecosystems will feel new conditions and new stresses. Of course, this move of climatic zones and ecosystems will lead to such unpleasant effects as dying forests, desertification, shortages of drinking and fresh water. The scale of the process will only increase” – the climate scientist predicts.

The reasons why a global climate agreement cannot be reached have already been listed many times – incompatible economic interests, accusations from the poor countries to the developed ones for planetary destruction, lack of willingness to stop economic growth in this competitive environment, and many other reasons.

Analysts notice, that twenty years ago such an agreement seemed to be possible. Now with the emergence of multiple new economic powers, and with the increasing economic importance of Southern and Eastern countries, this hope turns into utopia.

N. Mžavanadze, doctoral student at the Central European University and collaborator of the United Nations Environment Programme, says that the situation may change in an event of a large shock.

“Many environmentalists think, that some form of shock – price shock, military conflict for natural resources or something else – will encourage us to mobilize and rethink our priorities in such a way that environmental protection will become a norm, a new business as usual”- she says.

The current financial crisis for some is a pretext to push environmental priorities off the table, but this is also an opportunity to rethink what went wrong and look for alternatives. Exactly during this financial crisis the vision of green economy came up. There are many good practices to be studied.

“The implementation of green initiatives find their way in the Global South too. South Korea recently announced a very ambitious initiative in the field of green economy. There are many innovations in China. China applies green GDP accounting system. Green GDP accounting aims to show annual environmental costs of GDP. In some cases, these costs exceed economic growth rates” – N. Mžavanadze explained.
In the last forty years many environmental institutions and ministries have been established, many multilateral environmental agreements have been signed and ratified, many initiatives have been started, but it is obvious, that these efforts have been insufficient. Scientists, disillusioned by global negotiations and decision-making processes, anticipate that sooner or later climate change consequences will force countries to come together and agree.
NEW REPORT ON THE STATE OF THE GLOBAL ENVIRONMENT

It has been noted that over the past 12 years, the Russian environmental protection system has come to a state of decline. The question remains: what is the state of the existing global environmental institutions, tools, and the actual environment? The latest report from UNEP, namely the Global Environmental Outlook, is considered to be one of the most reputable sources of information and provides a thorough overview of the current state of the global environment. This article discusses the contents of this latest report from the point of view of the author, Vladislav Larin.

STAGES OF THE PROBLEM RECOGNITION PROCESS

40 years have passed since the first world conference on the problems of environmental pollution was held in Stockholm. Over the years major international environmental conferences were carried out in Nairobi (1982), Rio de Janeiro (1992) and Johannesburg (2002). These conferences provided platforms for heated discussions between decision-makers, scientists and other professionals that were eager to identify solutions to urgent issues of human survival. The latest international conference which was conventionally called “Rio+20” took place in June 2012.

Since the Russian version of this report most likely will not be published (we cannot expect our citizens to be concerned with the existing and future environmental issues), I will briefly discuss the structure and content of the GEO report. In comparison with the previous releases, the structure of the report has been significantly altered. The report is broken down into three sections and, like many papers of this kind, it might leave the reader with a rather ambiguous impression. On one hand, the observed trends do not provide any ground for optimistic forecasts. On the other hand, despite the lack of optimistic forecasts, we must hope for a better future and work hard to make it our reality.

CURRENT CONDITION AND TRENDS

The first section of the report defines the current conditions of the global environment, and analyzes the trends in its changes. It is rather pleasing to note that according to UNEP’s regional division guidelines, the Russian Federation applies to Europe. The report does not provide much novel information in the cited quantitative information. For example, population growth on the planet is now about 7 billion people. However, according to the existing forecasts this figure could exceed 10 billion by the end of this
century. Given the forecasted global crisis it is not entirely clear what the projected population will consume and where they will work if we take into account the fact that during recent years even the most developed countries faced overall food and workplace shortages. In addition, all of these people would need decent housing, adequate sanitation, access to an education system, medical treatment, electricity, fuel and other modern commodities. If a person is denied access to any of these commodities, it would be rather hard to call their lives “normal”. Lack of access to commodities leads to income differences, envy, resentment, aggression, etc.

Additionally, another problem exists where the population does not “want” to be uniformly distributed over the surface of the land. As a result, the population of Macau is over 21 thousand inhabitants per 1 square km, whereas in Greenland every resident has 35 square km of uninhabited space. The report shows various maps where the territory of Russia is painted in colour, showing a significant decline in population density. If it can serve as a consolation for the Russians, the similar pattern is observed in a number of regions of Scandinavia and in Kazakhstan. Such uneven settlement distribution can lead to major issues, both environmental and social.

The same pattern is observed in the industrial production sector - the cost of production per unit area continuously reduces in most regions of Russia. In other words, overall production capacity is reduced and the remaining industrial production is concentrated in fewer regions. So people have to either move to more prosperous regions (which unfortunately cannot sustain an infinite number of people) or live in poverty. A similar phenomenon occurs only in central Africa.

Forecasts with respect to the global warming situation are also rather gloomy. If the present trends are maintained, by the end of this century global temperatures will be expected to rise by 3.5 - 6 degrees and as many observant citizens have realized, this increase will not result in milder winters and warmer summers in Russia. Most likely the situation will be reversed - as a result of changes in steady circulation of air and water masses, the weather will become erratic, unstable and unpredictable. In other words summers would become hotter and drier, and winters would be more frosty while the world would experience even more natural disasters than it does at the moment. According to the author of this report, as well as to many international experts, greenhouse gas emissions from power plants are one of the main triggers of the ongoing global climate change. As the population continues to grow, the development of traditional energy production methods will inevitably lead to aggravation of the problem. So the only escape from the collapse would be to abandon coal and oil consumption. However, it is not very likely that fast-growing economies would be ready to go for this option.

Enough has already been said about the results of uncontrolled human population growth, such as over-exploitation of biological resources, destruction of living organisms and plants that are considered “harmful” to the business activities of man, coupled with rapid reproduction of “useful” species. Any artificial and minor ecosystem is extremely vulnerable and fragile - no matter what kind of an ecosystem it is – a plantation of trees that produce cocoa beans, a rice field which stretches for 1,000 sq. kilometres, a pig farm with 50 thousand pigs or salmon farm. These types of “useful” organisms will be required in abundance in the case of rapid population increase and emerging need to level our needs. In the first chapter of the report, the problems are identified but no solutions are proposed.

With respect to climate change events, it should be noted that for the territory of contemporary Russia
these are much more noticeable than for the rest of the land. For the past 50 years the Arctic region and large parts of Siberia experienced an increase of 2.4 degrees in the average surface air temperature. A similar situation is observed in Alaska, northern Canada and Greenland. As a result, the border of the glaciers of the Arctic Ocean in February has decreased from 16.7 million sq. meters in 1978 to 14.3 million sq. meters in 2010, and in September - from 7.8 million sq. meters in 1978 to 4.5 million sq. meters, respectively.

At first such changes seem to show that the climate is becoming less harsh. However, these changes should not strike us as positive. As a result of melting permafrost, various companies, settlements and transport infrastructure continue to “drown”. Oil and gas infrastructure is only allowed on the permafrost during winter time since tundra turns into an impassable swamp during summer. As temperature increases, the development season for oil and gas infrastructure shortens and the cost of work increases. As the sea level rises it destroys the port infrastructure since it is not adapted to the warmer weather. The effluent from northern rivers increases, thus more solid deposits are accumulated in the ocean. As a result, coastlines and bottom topography are being changed, which require additional mapping works. Climate change is caused by the rapid increase of CO2 in the atmosphere (in the last 50 years – by 25%). Current projections of global energy development do not provide for optimistic forecasts.

Compared to other governments, Russia demonstrates an optimistic trend with respect to water access: the largest rivers continue to provide the majority of the country’s population with drinking water. But the reward cannot be granted to the efforts of the country’s leaders. The fact is such that a relatively small and still declining population lives in the world’s major river basins to this day. Besides, the quality of water supply in the Russian Federation is not evaluated, since there are no data on toxic chemical pollutants in water supply.

For those interested in global environmental issues, the report provides information on pollution of air, forest, water, etc. The section of the report on sources of information used to assess the state of the environment is also well represented.

**ENVIRONMENTAL POLICY**

The second part of the report is devoted to the analysis of political and practical solutions in the field of conservation practices in different countries of the world. It provides examples of more or less successful actions directed at environmental conservation and recovery in disturbed areas. In addition to general global issues and widely used political decisions, each region has its own environmental problems and respective policy solutions. Although most of the experts already know much of the discussed information, I would like to once again reiterate that I see it as a good reference for the growing environmental concerns with interesting data being presented in separate sections.

When talking about Africa, issues such as overcoming the consequences of forest destruction, the restoration of vegetation, and the fight against the drought and natural disasters should be discussed. Major political and environmental solutions are developed or are being developed with respect to these issues.

The region, called West Asia in the report (in modern practice often referred to as the Middle East), brings together the countries thriving at the expense of oil production and trade. Overall this income generation model is not reliable, because it is based on the use of a single non-renewable energy resource. The region faces serious environmental problems,
coupled with lack of water, land degradation and desertification. On top of these problems by the middle of this century the region is projected to further experience temperature increase and a decrease in rainfall. In this case, the coastal line will be filled with sea water as a result of rising sea levels. As a result, the key efforts of the environmental authorities are aimed at improving water use. Also, much attention is paid to the development of energy production using renewable sources of energy - primarily the sun, which is present in abundance.

It is considered to be an achievement to refuse fossil fuel subsidies in a number of countries in the Asia-Pacific region. Let us say it implies to such giants as China, India and Pakistan. Experts know that unbalanced state subsidies to coal miners, oil companies and the nuclear industry undermines competitiveness of renewable energy sources. In Uzbekistan one of the priorities is water reservoirs upgrade measures. Such measures allow for increasing reservoir capacity and reducing the likelihood of breakthroughs and destruction. In Bangladesh, the issue lies in the pollution of the environment with heavy metals which originate from old decommissioned ships being dismantled.

The countries of Latin America and the Caribbean, otherwise rather different, have a number of similar problems and identified solutions. The most important issues for these countries is water resources management, biodiversity preservation and rapid reduction of deforestation activities. In many of these countries the agricultural sector practises monoculture, which has a detrimental effect on biodiversity and ecosystem sustainability. As a consequence the countries suffer from land degradation and destruction of soil cover.

The North American region, which comprises the United States and Canada, is rather homogeneous in terms of well-being and its attention to the environmental issues. The report is dominated by information on the positive results of environmental policy implementation – with a focus on the Canadian experience. Attention is drawn to the prospect of a regional increase of the primary energy production from renewable sources from 27% to 77% by 2050. By 2030 it is expected that the energy from renewable sources would become competitive and the cost of production would fall below the cost of the fossil fuel-derived energy production.

For me, as a resident of one of the countries of the European region, it is most interesting to get acquainted with a global vision of the situation we have from the point of view of UNEP experts. This is where the differences within the region are more than noticeable. If the countries of the European Union are optimistic in terms of their technological capabilities to reduce environmental pollution, the situation in Eastern European countries (according to the classification of UNEP these include all former republics of the USSR) is less cheerful. For example, there is virtually nothing said about Russia – the only mentioned aspect is the readiness of our country to reduce greenhouse gas emissions by 50% by 2050 in comparison with 1990. Despite this hopeful call, it should be remembered that in 1990 most of production and manufacturing activities were practically stopped in the country. Thus the emissions dropped compared to the previous years of arms race and the activities of the Military Industrial Complex (MIC). This way, the base line of 1990 does not offer challenging comparisons. In turn, the members of EU countries are planning to halt the use of petrol cars in cities before 2050. They plan to build all new buildings according to the requirements of climate protection and energy efficiency. By the way, renewable energy continues to remain the centre of attention in the European Union as it was expected. However it still does not apply to Russia in any way.
POSSIBLE FUTURE SCENARIOS

The third section of the report describes the likely scenarios for the development of civilization during the next 20-40 years. The overall picture seems to be very controversial. On one hand, more developed countries have made great efforts and spent large amounts of money to develop and promote a new way of life based on the use of renewable resources and new technologies. There are obvious achievements and success stories that were presented. On the other hand, the majority of the world’s population still lives very modestly. And these people want to get their share of sources and commodities as soon as possible. How will the development of these regions go? No one would be able to predict.

In this situation, in order to understand the hidden mechanisms of restrictive factors for human development, it is useful to re-read the works of fundamental Malthusian points of view. Or to read biological papers which would focus, for example, on the stability of ecosystems and the effects of mass breeding of animals or plants of the same species (no matter what it is about – a one-celled algae or warm-blooded mammals).

On top of that we should not forget that the economic crises has been ongoing for several years now. It seems that even the brightest minds are not able to predict its timing, scope and depth. We can just hope that any crisis - no matter how hard it may be - leads to a change in the environment and society towards greater excellence and sustainability.
The showcased articles, which resulted from the GEO-5 Outreach and Media Training Workshop for South- and Eastern Europe, highlight the differentiation inherent and necessary in making such scientific reports accessible to a diversity of audiences. While all articles were different in focus, topic and style, they all serve the common purpose of bringing technical information ‘home’ to the general public.

Analysis of sample articles shows, that there are different ways of how journalists may refer to GEO in their publications. Authors may either write exclusively about the GEO report, giving description of the content of the main sections and chapters of GEO-5 and communicating main messages. They are linking specific problems of their countries with findings of GEO-5, and also critically evaluate existing developments and policies in light of the report’s recommendations. Articles may even contain some critical analysis of the report itself. Such an approach seems to be the most beneficial for the idea of promotion of the GEO reporting scheme, because the reader gets general knowledge about the report and some understanding of its scale, scope and recommendations. But in order to have such an article a special journalist, preferably an environmentalist by training is needed, and also it should be published in a journal or media that targets an educated audience which is already informed about major environmental issues. In the sample list of articles there is at least one which fits nicely into this category (and therefore may be regarded as a good example of this approach), and one which is also written along similar lines, albeit it is quite brief.

More frequent is another approach though, when authors are using reference to GEO as an introduction and invitation to discuss some local problems. Such articles usually are focusing on one particular issue (related to water, wastes, forestry, etc.), briefly giving some reference to GEO in the beginning and then
go in details describing conditions or particular problems in their respective countries. Some articles contain interviews with local experts who can provide detailed information on the issue discussed in the article. In this case mentioning of GEO report serves rather as a trigger to start discussion on a given local problem.

It seems that there are two reasons for such a situation; both are inherent to the very nature of the GEO report series. First of all, the GEO-5 report is very broadly focused, there is not one particular problem or sphere to which it is devoted (for example, the IPCC report, focused in this case solely on climate change). It really is about "everything" environmental. Therefore journalists, who very rarely are represented by trained environmentalists, prefer to take just one example or idea from the GEO report and develop it further in relation to the problem which they are discussing. The second reason deals with the structure of GEO, which deliberately does not report statistics on the country level, instead it just gives some examples. Journalists, especially in CEE, are quite keen to report on how their respective countries are matching with others. The best GEO can offer for that purpose is some mentioning of a country as an example/reference in the text. Journalists are trying to build on that, demonstrating in what context their country is mentioned in the report and starting to build their article from that point.

Both approaches are quite relevant, as the purpose of GEO reporting is, on one hand, to inform about a broad range of environmental problems, and on the other hand, to provoke regional and local debate on how to improve the environment ("think globally, act locally"). Obviously more specialized and scientifically oriented media inclines to the first option, while general (non-specialized) media to the second. It seems that in future planning of media outreach schemes for GEO reports, both these options should be considered and strategy for public outreach should be built accordingly.

We hope that the Workshop held in Budapest is only one of many more to come, in helping to bridge technical experts with government practitioners and journalists. Only with such collaborations will we see improvements in public understanding, support, and action for improving environmental conditions.
ANNEX 1: TRAINING WORKSHOP AGENDA

GEO-5 Policymaker and Media Outreach Workshop for Eastern Europe
July 9-10, 2012
Central European University
Budapest, Hungary

AGENDA

MONDAY, JULY 9

CHAIR OF MORNING SESSION: DR. LÁSZLÓ PINTÉR, CEU/IISD

<table>
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<tr>
<th>Time</th>
<th>Activity</th>
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<tr>
<td>9:00 – 9:05</td>
<td>Welcome on behalf of CEU (Alan Watt, Professor and Head of Department, Department of Environmental Sciences and Policy, CEU, TBC)</td>
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<tr>
<td>9:05 – 9:20</td>
<td>Welcome on behalf of UNEP, objectives of the meeting and overview of the agenda (Ron Witt, DEWA Regional Coordinator, UNEP)</td>
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<td>9:20 – 10:00</td>
<td>Introduction of participants, meeting logistics (Laszlo Pinter, Professor, CEU/IISD)</td>
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<td>10:00 – 10:30</td>
<td>Highlights from GEO-5: Global drivers and challenges to the Earth System, followed by discussion (Ron Witt)</td>
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<td>10:30 – 10:45</td>
<td>Break</td>
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<tr>
<td>10:45 – 11:45</td>
<td>Highlights from GEO-5: European chapter, followed by discussion (Nicolai Dronin, MSU, Ruben Mnatsakanian, CEU)</td>
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<tr>
<td>11:45 – 12:30</td>
<td>Highlights from GEO-5: Scenarios and global responses, followed by discussion (Laszlo Pinter, CEU/IISD)</td>
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<td>12:30 – 14:00</td>
<td>Lunch</td>
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<tr>
<td>14:00 – 14:10</td>
<td>Introduction to the working session (Laszlo Pinter, CEU/IISD)</td>
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<td>14:10 – 14:30</td>
<td>Putting GEO-5 findings in the media (Isabelle Valentiny, UNEP)</td>
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| 14:30 – 15:00 | Initial brainstorming breakout group session (3 countries in a group, 2 participants per country)  
   The objectives of this session is for participants to discuss the task together, raise any issues that are not clear, and to start identifying examples of stories for their county. Think about key audiences, their information needs and the best way to bring them the information from GEO-5 to have an impact.  |
| 15:00 – 16:00 | Story identification (work in pairs, journalist and policy expert from the same country)  
   The task is to identify 2-3 key topics based on GEO-5 that are of particular significance for the country and to prepare a slide for each with a few bullets plus a picture and / or chart from GEO-5.  |
<p>| 16:00 – 16:20 | Break                                                                   |
| 16:20 – 17:25 | Sharing of results in plenary                                            |
| 17:25 - 17:30 | Summary of progress achieved, quick overview of activities on Day 2      |
| 19:00        | Group dinner                                                             |</p>
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<th>Time</th>
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<tr>
<td>9:00 – 9:05</td>
<td>Welcome and overview of the agenda for the day</td>
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<tr>
<td>9:05 – 10:30</td>
<td>Breakout group work to develop the story (work in pairs, journalist and policy expert from the same country)</td>
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<td>The purpose of this session is to develop the details of the story, including finding relevant illustrations.</td>
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<td>10:30 – 10:45</td>
<td>Break</td>
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<tr>
<td>10:45 – 11:00</td>
<td>Quick checkup in plenary on how country teams are progressing, any need for further clarifications and guidance</td>
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<tr>
<td>11:00 – 12:30</td>
<td>Continue breakout group work to develop the story (work in pairs, journalist and policy expert from the same country)</td>
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<td>At the end of the session country pairs hand in the story outline / details to the extent it has been developed for printing and distribution for discussion in the afternoon session. Participants in their group also discuss specific publication options (media product, format, timing etc.).</td>
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<tr>
<td>12:30 – 14:00</td>
<td>Lunch</td>
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**CHAIR OF AFTERNOON SESSION: RON WITT, UNEP**

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<th>Time</th>
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<tr>
<td>14:00 – 15:00</td>
<td>Review of drafts (3 countries in a group, 2 participants per country, plus one member of workshop secretariat)</td>
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<td>Participants read the stories of the 2 other countries in their group, and then provide comments from the substantive, messaging and any other point of view</td>
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<tr>
<td>15:00 – 16:15</td>
<td>Plenary session for countries provide a brief overview of how far they got developing their story and the details of their publication plan.</td>
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<tr>
<td>16:15 – 16:30</td>
<td>Overview of results, next steps (Ron Witt, UNEP)</td>
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<tr>
<td>16:30</td>
<td>Close of workshop</td>
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Armenia

Armenian case features the Global Environmental Outlook (GEO 5)

The Armenian case portraying the transition to universal water metering and volumetric water pricing was highlighted in Chapter 11 “Europe” of the fifth Global Environmental Outlook (GEO-5), launched on the eve of the Rio+20 Summit by UNEP. GEO-5 is the most authoritative assessment initiated and coordinated by the United Nations Environment Programme (UNEP). The main goal of GEO is to keep governments and stakeholders informed of the state, trends and outlook of the global environment. Over the past 15 years, GEO reports have compiled and examined a wealth of data, information and knowledge about the global environment; identified potential policy responses; and provided an outlook for the future. The assessments, and their consultative and collaborative processes, have worked to bridge the gap between science and policy by turning the best available scientific knowledge into information relevant for decision makers. The GEO-5 report was produced over two years in a process that involved more than six hundred experts worldwide, who collated and analyzed data from every continent to build up a detailed picture of the world’s wellbeing. The GEO-5 was launched on June 6, 2012 in Rio de Janeiro, Brazil and twelve other locations worldwide. The report is available at http://www.unep.org/geo/geo5.asp

GEO calls attention to the need for the measurement of our natural capital as a key precondition for better management and mentions as a positive example Armenia’s reform of measuring water consumption. The report points out that “soon after the reforms took place, average water use decreased three to four times compared to the use based on flat-rate calculations. The massive process of introducing individual metering became a trigger for a chain of water sector improvements, all backed by a legal, regulatory and institutional framework that enabled private sector involvement accompanied by investment and management efficiencies. As a result, the quality and reliability of water delivery improved.” Even being an economic instrument without an environmental target, metering and meter-based pricing has resulted in environmental co-benefits. Given this positive result, are there other areas where Armenia could potentially offer a positive example by addressing some of its own needs? Under current conditions, Armenia urgently needs to speed up efforts to secure its energy supply and sustainability. This can be supported by improved energy efficiency (especially in buildings where the potential to reduce energy consumption is 40%, equivalent to reducing greenhouse gas emissions by 944,000 tCO2e per year), better and more widespread use of indigenous energy resources, including particularly renewables. Currently, there is a broad range of policies and incentives practiced throughout the world that can reduce production costs and speed up commercialization and market creation. Among others, these include appliance standards, building codes, energy efficient building tax reductions, renewable energy loan guarantee programs, clean energy funds, support for research and development and education at all levels, etc. Specific to renewable energy are the renewable portfolio standards (RPS) and feed-in tariff incentive schemes. RPS schemes are quota-based, and retail suppliers are obliged to supply a certain portion of electricity from renewable sources. RPSs are practiced in the UK, Belgium, USA, etc. Wider spread in most EU countries is the feed-in tariff scheme, also called “advanced renewable energy tariff”, which is based on a mandated price of electricity sold into the electric grid from renewable source and that guarantees access to a grid provided by utilities. The advantages include geographic distribution, local acceptance and participation, lower administrative costs, etc. Used as examples in GEO-5 are two pricing models for feed-in tariffs: a market-independent fixed price, applied in Germany, and a market-dependent premium price model, practiced in Spain. Another interesting example is in Bulgaria, where a special fund is created for farmers or individual land owners to rent their land plots for installing renewable energy generating facilities. Finally, the good news in regard to renewables is the rapid transformation in solar generation driven by expanding global investments in advanced solar technologies and the drastic cost reduction in solar costs. While there is no lack of bright ideas that could be a part of Armenia’s energy future, the main barrier rests in establishing a clear vision and strategic planning implementation for speeding up the development and deployment of new energy technologies; ensuring that these innovations are feasible and worth an investment to lead towards accelerating the process of energy modernization; and can catch up with EU trends and provide yet another positive example.

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Annex 2: Articles in original publication language

AZERBAIJAN

Для будущих поколений
В стране реализуются программы по сохранению и увеличению площади лесов

Л.БАЙРАМОВА
В нынешнем году Программа ООН по окружающей среде (UNEP) выпустила свой пятым доклад о состоянии окружающей среды в мире "Глобальная экологическая перспектива" - GEO-5. Как отмечается в документе, несмотря на сотни согласованных на международном уровне целей и задач, ситуация на планете близка к критической. В докладе проанализировано выполнение 90 наиболее важных экологических целей и задач, но, оказывается, значительный прогресс был достигнут только в 4-х из них. Маленький прогресс или его отсутствие было обнаружено в 24 - в том числе изменение климата, рыбных запасов, опустынивание и засуха.

Некоторый прогресс был обнаружен в 40 направлениях, в том числе расширение охраняемых территорий, таких как национальные парки и усилия по сокращению вырубки лесов. Доклад предупреждает, что если человечество не примет радикальных мер, то правительства будут преобладать, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то правительства не примут радикальных мер, то 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нанесен серьезный ущерб. В результате агрессии 246 тысяч гектаров лесных участков окутаных земель были варварски уничтожены. Вследствие вывоза вырубленных ценных видов деревьев, растущих на этих территориях, охрана биоразнообразия достигла своего критического предела.

Управление лесами в Азербайджане осуществляется на основании лесных кодексов и закона "Об охране окружающей среды". Все леса страны находятся в государственной собственности и выполняют водоохранные, почвозащитные и климаторегулирующие функции.

Отрадно, что министерство экологии и природных ресурсов страны регулярно проводит мероприятия по воспроизводству лесов, и их количество год от года только возрастает. Так, только за первое полугодие 2011 года, согласно сообщению Департамента развития леса Министерства, были выполнены работы по посадке лесов на 1335 гектарах против прогноза в 1330 гектаров. За этот же период в целях обработки лесных угодий были проведены работы на 15893 гектарах, а план по созданию семенного резерва выполнен на уровне 14284 кг против прогноза в 5429 кг.

Посадки деревьев продолжаются в стране и сегодня. Например, в Газахском районе Азербайджана проводятся субботники по озеленению. С начала нынешнего года производятся активные посадки деревьев вдоль автомагистралей Баку-Газах, шоссе Юхары Салахлы-Кемерли, Газахбейли-Ашагы Салахлы, а также в других местах. До конца года планируется высадить 100 тысяч деревьев.

Кроме того, известно, что Программа развития ООН (UNDP) готовится к подписанию документа о реализации проекта по защите окружающей среды в нашей стране.

Как отмечал резидент-координатор ООН в Азербайджане Фикрет Акчур, проект нацелен на озеленение склонов Кавказских гор путем высадки новых лесов. Данные меры будут призваны в целях сокращения вреда, наносимого наводнениями.

А в ходе состоявшегося весной нынешнего года рабочего визита в Азербайджан татарстанской делегации во главе с премьер-министром РТ Ильдара Халикова было достигнуто дово- веренность о поставке сюда лесного посадочного материала. Как сообщил Министр лесного хозяйства Татарстана, семена для лесовосстановительных работ на территории Азербайджана будут поставлены из лесных питомников и селекционно-селеноводческого центра Республики Татарстан.

Также в Азербайджане планируется развивать и укреплять образовательную базу в сфере лесного хозяйства. Сюда относится как издание профессиональных учебных пособий по лесопользованию, так и создание лесных техникумов. Этим займутся специалисты проекта Еврокомиссии по защите лесов Азербайджана FLEG, действие которого решено продлить на следующие четыре года.

В первой фазе проекта (2010-2012 годы) работала велась по выявлению основных проблем в лесном хозяйстве, причем и следствий, а также законодательных пробелов. Во второй фазе проекта (2012-2016 годы) планируется более детальная работа по решению выявленных проблем" - заявил ранее в интервью Tnews консультант программы в Азербайджане Азер Гараев.

Среди основных проблем лесного хозяйства в Азербайджане, экспертам FLEG ранее отмечали незаконную вырубку лесов местным населением в целях отопления, нелегальный выпас скота, а также загрязнение лесных территорий. Как известно, Еврокомиссия приняла решение выделить 22 млн. евро на развитие сфер окружающей среды и транспорта в странах "Восточного партнерства". Из них 9 млн. пойдет на продление программы защиты лесов (FLEG East II). Финансирование распределения между странами-участниками не равномерно, а на основе потребностей.

В Азербайджане сейчас не существует специального среднего технического учреждения, которое готовило бы специалистов в области лесного хозяйства, отметил Гараев. Раньше такой техникум существовал в Агдаме, ныне оккупированный. "Образование должно быть на соответствующем уровне, чтобы выпускники могли решать реальные задачи, поставленные государством в области защиты лесов и их эффективного использования", - сказал он. По словам координатора проекта, FLEG планирует вести работу и консультации с правительственными структурами Азербайджана по открытию лесных техникумов в регионах страны, наиболее нуждающихся в специалистах по лесному хозяйству. В основном, это северо-западные и южные регионы.

За два года работы FLEG неоднократно публиковал пособия, как для школьников, лесников-любителей, так и для специалистов лесной отрасли. В конце июня - начале июля в рамках проекта был издан учебник под названием "Устойчивое управление лесным хозяйством в Азербайджане". По словам Гараева, он представляет собой базис информацию на тему экологических особенностей леса, охраны и преумножения лесного массива. В учебнике приводится информация о международных актах, которые регулируют лесной комплекс, в том числе о регламенте EC касательно продажи и транзита древесины.

Также при помощи экспертов FLEG было издано 300 экземпляров учебного руководства для волонтеров по ликвидации лесных пожаров...

Возвращаясь непосредственно к документу UNEP нынешнего года, отметим, что Программа публикует большое количество докладов, отчетов и информационных бюллетеней. Нынешний, патая доклад является хорошим примером отчета по экологии, развитию и человеческому благополучию и предоставляет аналитический материал и информацию для политиков и всей заинтересованной публики.

В заключение напомним, что UNEP (United Nations Environment Programme) созданная в рамках системы ООН про- грамма, способствующая координации охраны природы на общесистемном уровне. Программа учреждена на осно- ве резолюции Генеральной Ассамблеи ООН N2997 от 15 декабря 1972 года. Основной целью UNEP является организа- ция и проведение мер, направленных на защиту и улучшение окружающей среды на благо нынешнего и будущих поколений. Девиз Программы - "Окру- жающая среда в интересах развития".
Аннекс 2: Статьи в оригинальной публикации языке

— Происходящие изменения климата

Температура растет, ветер — "успокоился"

Чем они могут обернуться для нашего здоровья и экономики?

Про то что климат меняется, многие сныдили не раз. Некоторые даже могут уверенно заявить: он менялся и раньше. Действительно, были периоды и потеплений, и похолоданий, однако ученые обращают внимание на то, что изменения никогда не происходили так быстро, как сейчас. Да к тому же в далеком прошлом уязвимые к климатическим "капризам" природные территории не были так густо населены, застроены и индустриализованы. Существует немало версий того, что будет с погодой нашей планеты через 50, 100, 1000 лет...

Однако все эти гипотезы носят веро-мышленный характер, проверить их мы пока не в силах. Зато углубиться в современные белорусские "климатические" изменения — реально. Делаем это мы вместе с начальником отдела климата Республиканского гидрометеоцентра Еленой КОМАРОВСКОЙ.

Температурарастет, ветер—"успокоился" — Происходящие изменения климата имеют свои региональные особенности. Существующие оценки изменений климата для территории Беларуси противоречат концепции глобального потепления, — отмечает специалист. — На протяжении почти всего ХХ века и до конца 80-х годов температура воздуха и продолжительность периода похолоданий сократились. Температура в теплые месяцы и начале лета, когда максимальные значения температуры ожидаются, уже в 1989 году резко повысилась до 1,1 градуса по Цельсию. Активное потепление последнего двадцатилетия практически не отразилось на довольно стабильных температурах января. Однако в другие сезоны температура воздуха в воздухе и увеличение числа сухих дней в июле — августе ускоряет созревание зерновых культур, улучшает их качество и увеличивает производительность. Кроме того, сушка полей и ускорение сроков уборки зерновых культур, улучшает условия продажи зерна и увеличивает производительность. Сокращение продолжительности пожароопасного сезона в лесах и на торфяных болотах лесного фонда. Изменятся структура древесных насаждений. Увеличивается вероятность массового размножения вредителей, поскольку "иммунитет" деревьев снижается.

Возрастание вероятности возникновения поздних заморозков может оказать влияние на текущий прирост дуба, ели, лиственницы и других деревьев, посадок в питомниках. Ухудшаются условия переиздания лесной растительности из-за отсутствия или сокращения сроков начала снежного покрова.

Батареи — долой?

— Одним из важнейших социально-экономических последствий потепления климата является экономия топливно-энергетических ресурсов на отопительные нужды, — обращает внимание специалист. — Происходит это потому, что сокращается продолжительность отопительного периода, при этом возрастает его средняя температура. Однако у медали есть и обратная сторона: в теплые времена года увеличивается расход энергии на кондиционирование и холодильную технику. Однако здесь следует учесть два фактора, смягчающие
негативные последствия для нашей страны. Во-первых, в летний период повышение температуры для Беларуси не столь существенно, как в отопительный период. Во-вторых, кондиционирование в жилых секторах не охватывает заметного влияния на расход топливно-энергетических ресурсов. Хотя в известных мегаполисах мира расход энергии на кондиционирование может превышать расход энергоносителей.

Хвастает..., тепла

Наиболее комфортный для здоровья человека климатический режим наблюдается в Беларуси в теплый период года, когда средние суточные температуры достигают 15—25 градусов по Цельсию. В связи с потеплением в этот комфортный период заметно повышается повторяемость высоких температур. Это ведет к серьезной нагрузке на организм, особенно для больных сердечно-сосудистыми заболеваниями.

В период отключений увеличилось число дней отпления, а также их продолжительность. Отпетели, чередующиеся с похолоданиями, считаются самым "простудным" сезоном.

Глобальное потепление способствует тому, что в нашей стране появляются заболевания совсем не свойственные нашей местности раньше. В первую очередь связано это с более активным размножением вредных насекомых, на пример, клещей, которые переносят клещевую инфекцию.

Недавно эксперты ЮНЕП представили новый доклад "Глобальная экологическая перспектива-5", одной из приоритетных тем которого является сохранение биологического разнообразия в контексте меняющегося климата. Актуальность проблемы уже давно поняли и в Беларуси…

Ольга АСТАПОВИЧ

Отдам холодильник в... хорошие руки!

Чтобы грамотно утилизировать старую бытовую технику, надо в прямом смысле повозиться. Прошло те времена, когда мы, подобно плохочинным, храли про запас не нужные нам вещи. Специалисты констатируют, в Беларуси несколько лет назад началась "эра великого переоснащения": по самым скромным подсчетам, покупая новую бытовую технику, мы ежегодно отправляем на пенсию примерно 150 тысяч холодильников, 260 тысяч телевизоров, 90 тысяч стиральных машин. Как избавиться от ненужной техники экологически грамотно и реально ли это сделать хотя бы в столице? Корреспонденты "НГ" решили выяснить это на практике, загрузив автомобиль "электронным старьем". Везде горячий, впридворе, -- не "плавится".

Задача непростая: пристроить нужно холодильник, телевизор и видеомагнитофон, сделанные еще в советские времена.

Теоретически выбрасывать эту технику на свалку -- это то же самое, что завалить в землю деньги... и большую опасность. Холодильники, стиральные машины и кухонные плиты содержат черные и цветные металлы, которые могут быть вовлечены во вторичный оборот, на переработку можно отправлять также пластик, резину, стекло. А, например, разбитый кинескоп специалисты сравнивают с добровольно зараженной почвой, которую рационально поздно сработать. Эта основная составляющая телевизора имеет "на лет" тяжелых металлов, способных отравить почву, грунтовые воды, воздух.

Не менее токсичны для окружающей среды пластиковые корпусы и мониторы компьютеров, которые "напичканы" специальными веществами, препятствующими возгоранию. Если уж огнью эти материала не поддаются, то природа са- мостоятельно "расплавить" их тем более не в силах.

Ускоренное старение помнится, раньше неработающие телевизоры можно было отдать в ремонтные мастерские -- деньги предлагали небольшие, но лучше хоть что-то, чем ничего. Обзвонив около десятка ремонтных мастерских, мы поняли: наш "телевизионный мусор" никому не нужен. Мы объяснили, что современная техника очень быстро устаревает. Пятилетний телевизор считается настоящим "старичком", поэтому едва ли можно извлечь из него какую-либо ценную заготовку. Что уж говорить о технике советского производства...

Отправляясь в столичные пункты приема вторичного сырья, мы поняли: наш "телевизионный мусор" никому не нужен. Мы объяснили, что современная техника очень быстро устаревает. Пятилетний телевизор считается настоящим "старичком", поэтому едва ли можно извлечь из него какую-либо ценную заготовку. Что уж говорить о технике советского производства...

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У нас был еще один вариант запасной -- мусоросортировочная станция "За- падная". Это предприятие работает в основном с юридическими лицами -- производителями, сервисными центрами, магазинами. Но, как пояснил директор предприятия Дмитрий Кучук, в последнее время здесь пошли на уступки: начали принимать старое электронное и электротехническое оборудование от населения. И хотя денег взамен взамен на вышедшую из строя технику, ня не выплачивают, сознательные потребители все равно обрывают телефоны -- только бы избавиться от старых плит и чайников. Специалисты станций могут даже приехать за холодильником или "старой" прямо домой, только в этом случае вам придется заплатить 40--50 тысяч рублей за транспортировку. В "нагруз-ку" бесплатного заберут разную мелочь -- сломанный чайник, тостер, фен. Полу- чилось, и у нас пристроить здесь свой старенький холодильник, а заодно и "телемусор"...
-- фреонами, которые содержит холодильник?
Однако заместитель директора муно-
рортировочной станции «Западная»
Александр Логутенок убежден, что в
холодильниках, попадающих на пере-
работку, вредных веществ практически нет, поэтому они и выходят из строя.
После того как «старичок» разобран, от-
ходы сортируются по видам и переда-
ются спецорганизациям на переработку.
Пока сортировку отходов в нашей стра-
не трудно назвать бизнесом. К примеру,
с одного «решётчатого» холодильни-
ка «чистая» выручка составляет всего
около десяти тысяч.
Кстати, есть ещё несколько способов
избавиться от крупногабаритной техни-
ки. Можно оставить её в специальных
местах сбора, если таковые имеются в
вашем регионе, или на контейнерных
площадках. Но никогда не пытайтесь
засунуть электронное оборудование
прямо в контейнер! Это не только соз-
даст дополнительные хлопоты комму-
налникам, но и грозит вам штрафом.
Службы ЖКХ должны следить за «при-
контейнерным» мусором и по мере
заполнения контейнерной площадки
выделять спецтранспорт для вывоза по-
tенциального вторсырья на перераба-
tывающее предприятие.
Как рассказал Александр Логутенок, не-
которые мировые бренды электроники
dаже в Беларуси практикуют использо-
вание механизма залоговой стоимости.
То есть покупатель изначально немно-
гого переплачивает за товар, зато после
окончания срока службы техники, сдав
ее в переработку, может рассчитывать
на скидку при покупке новой.
Мнения
Что поможет?
Анатолий КАЛАЧ, координатор проек-
tов по отходам Центра экологических
решений:
-- В Беларуси законодательно разли-
чаются подходы в управлении элек-
тронными отходами потребителей и
отходами юридических лиц. Последним
запрещено безотчетно отправлять на
свалку электронный мусор, они должны
dействовать согласно общему законо-
dательству об отходах, а также законам,
регулирующим обращение с черными,
цветными и драгоценными металлами.
А вот перемещение электронного мусо-
ра, который образуется в домах граждан,
отследить практически невозможно
-- что-то оставляют у контейнеров, что-
то отправляют прямо на свалку. Для
точно чтобы взять этот стихийный про-
cесс под контроль, надо предпринять
ряд мер. Например, создать удобные
условия для сбора и переработки ста-
рой бытовой техники, поднять тарифы
на вторичные материальные ресурсы,
определить специализированную ор-
ганизацию, которая будет заниматься
этим видом отходов. Ввести принцип
расширенной ответственности произ-
водителя, который предполагает, что за
товары, утратившие свои потребитель-
ские свойства, отвечает производитель
или импортер.
В замкнутой системе
Александр КИРПИЧНИК, генеральный
директор ОАО «БелВТИ» Министерства
экономики:
-- РУП «Вторчермет» сегодня готов за-
брать на переработку черные металлы,
мы можем извлечь из техники цветные.
Кто будет перерабатывать все осталь-
ное? Ведь в том же холодильнике, по-
mимо опасных фреонов, содержатся
масла, изолятор. Эти вещества изымать
и перерабатывать на открытом воздухе
нельзя. В Европе они извлекаются в за-
крытом контуре, с вытяжкой в специаль-
ные емкости. И это лишь один пример.
Наша организация четко понимает, что
с такими отходами делать, мы даже раз-
работали бизнес-план по строитель-
ству предприятия, перерабатывающего
электронику. В нашу концепцию зало-
жены не только сбор, разделение и пе-
реработка вторичных материальных
ресурсов, но и производство из них но-
вой продукции.
Врезка 1
Кстати
В последнем глобальном докладе ЮНЕП
о проблемах и перспективах состояния
окружающей среды «Глобальная эколо-
гическая перспектива -- 5» (GEO -- 5) про-
блема электронных отходов обозначена
как одно из приоритетных направлений.
Подсчитано, что в мире ежегодно обра-
зуется 20--50 миллионов тонн электрон-
ного мусора Рост этого вида отходов
опережает все остальные.
Врезка 2
Как избавиться от старого
холодильника?
Существует несколько способов, каж-
dый может выбрать для себя наиболее
удобный.
1. Ответи в пункт приема металло-
лома. За это вы сможете получить не-
большие деньги. Доставлять придется
самостоятельно.
კანის ავთვისებიან სიმსივნეს იწვევს.
ძვირადღირებული თავსატეხი იყო.
გეზს განვითარებად ქვეყნებისკენ იღებს.
განვითარებული ქვეყნების ნარჩენები გერმანული “კლიენტი” უარით გაისტუმრა.
გარემოს დაცვის სამინისტროში განვითარებული ევროპული ქვეყნისთვის გარემოს დაცვის სამინისტროში.
რუსთავთან “გაშენებული” აღლუჯას რომლებიც საფრთხეს წარმოადგენს.
მავნე ნივთიერებების გამოყოფა
მწვანე ალტერნატივამ”  ნარჩენები
ხშირად ამ ნარჩენებით იკვებებიან.
ჯანმრთელობასთან დაკავშირებული და ფრინველები, თევზები, რაც აირებს, როგორიცაა ნახშირორჟანგი (ENVSEC) ინიციატივის მიერ მომზადებულ
ბუნებრივი ხრწნის გამო, ნაგავსაყრელები რომელიც დღეს ქვეყანაში მოქმედებს”, – წერია გასულ წელს გამოქვეყნებულ
სხვა ნარკვევში, სადაც ასოციაცია 
რომელიც მიწისქვეშა წყლებს 
ჩაჟონილი წყლების შეგროვების და
2007 წელს, პარლამენტმა მიიღო კანონი
ადამიანი ნარჩენის გენერატორია. კურსული ჰაერი შეეწყდა ნარჩენისა თანამშრომლების გარემოს მიერ.


ანალიტიკოსი და ნარჩენების აიფონის ან სხვა ტექნიკის ნაწილებად ლამაზი დიზაინის ელექტრონულ და ნაგავი ისევ იქ დააბრუნო. ნაგვის ქვეყნებს სულ უფრო და უფრო მეტი ადამიანის წარმოებული, ანუ ჭამენ და მისგან არაფერი რჩება.

უზარმაზარი რაოდენობის ნარჩენის პრობლემაა”, – ამბობს ქეთი გუჯარაიძე, მოწყობილობებისადმი მოთხოვნა მომხმარებლური ჩვევებიც უფრო მეტი მყარი ნარჩენების მართვა პლანეტის თვალსაზრისით აქვთ. ანგარიში ამბობს, ძველ ადგილზე ჩაყარეს ზემოთ კი მიწა სითხე მიწაში უკვე არ ატანს.

5  http://www.unep.org/geo/geo5.asp

20 თვის შემდეგ კი, როცა ევროკავშირის ტვინინგის პროექტი დასრულდებოდა, საქართველოს მყარი ნარჩენების შესახებ ჩარჩო-კანონი დაამთავრა. ეს ქვეყანა იურიდიური ეძღვნეული, გარემოს დაცვა ნარჩენების ჰიგიენა უფრო მეტი იქ ნარჩენებისგან გარემოს სტრატეგიულმა გეგმამ გარდაქმნილი, რომ ზემოთ კი მიწა სითხე მიწაში არ ატანდა.

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HUNGARY

Vízügyi nagyhatalom vagyunk – Az államföldi kezdeményezésre ENSZ konferenciát rendez Magyarországot jövő összel

Kánikula napokon keresztül, hőségiadó, 35 fok feletti hőmérséklet, sorra megdöbbent megelégedek, heves vihark miatt szintet mindennapos riasztás, súlyos vízhiány a földeken – júliusban napokon keresztül ezekkel a hírekkel volt teve a hazai saját. Szintet példaéval hőséghullámot át ett át Magyarország a közelmúltban, és ezek a jelenségek a jövőben várhatóan egyre sűrűbben fordulnak majd elő. Az éghajlatváltozás víznyálvánó jeleként egyre sűrűsösebben, kisminthetetlen abban válik időjárásnak.

A változások egyre víznyálvánobbal érinnek nem csak a közérzetünket, hanem a pénztárcáinkat is. Jó részt a légkondícionálók kényesület használata miatt megdöbbent az áramfogyasztás rekordja is. Azt erősíti érzet, a vízhiány, hogy a természet kiváltja a tu 35 fok feletti hőmérséklet, sorra megdőlő dez Magyarország jövő ősszel a földeken – júliusban napokon kézékkal csökkent a 20. században. Nyári zöögazdaságtól kezdve a közlekedésen át a méditerrán országokhoz. Egyre gyakoribbak eredményt a következő havi villanyszám – Vízügyi nagyhatalom vagyunk – Az államfő

A változó éghajlat a vízgazdálkodásra is jelentős hatást gyakorol. Magyarországon. Világviszonylatban is jelentős édesvíztartalékokkal rendelkezünk: a becslések szerint jelenlegi körülmények szerint a vízfelhasználás a háromszög lehetőség folyt és elég gyorsan, így is 600 millió ember nem fog egészséges vízzel érhető el azonos hatás tekintetében a víz és éghajlatváltozás. Több-féle jövőképet felvázoltak a szakértők azt vizsgálva, hogy a különféle intézkedések hatására mennyben változnak a jövőbeli várható folyamatok. A becslések szerint a vízhasználatban a háztartások


LITHUANIA

**Antros planetos gyventi neturime**


Dr. Pintėr László professzor - Közép-Európai Egyetem, Department of Environmental Sciences and Policy

Dr. Gellér Zita szakmai főtanácsadó – Közép-Európai Egyetem, Department of Environmental Sciences and Policy

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Vetér Mátra is the program director at Greenpeace Magyarország.

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**Annex 2: Articles in originAl publicAtion lAnguAge**

“szürke” vizet a WC öblítésre;

- Kertes házban gyűjtsük össze az esővizet,
- Autómosáskor locsolótömlő helyett vö
- Amennyiben lehetőségünk van rá (pl. csa
- csót, mert ezek előállításához kevesebb víz
- és emiatt jobban hasznosul az öntözővíz,
- és ezzel öntözzük a növényeket;
- -szezonra jellemző zöldséget és gyümöl
- -sakban öntözzük, mert ilyenkor az alacso-
- -pontja ma nem kevésbé hasznos, mint a
- -általános hasznosítás (pl. kerti a gyú-
- skaidri, veiksmonga ir atskaitinga viešoji
- tačiau ar dabar laikas pilti pinigus į aplinkos apsauga ir atkūrimą Mauricijuje ir Kame-
- dujų išmetimų leidimų prekybos sistema,
- dėl po truputį užleidžia lyderystę tokioms
- gininkai (jūrinių ekosistemų, klimato kaitos,
- Afrikos ir Arabijos pusiasalio pakrantėse
- gas sistema; Europos Sąjungos šiltnamio
- se, Natura 2000 saugomų teritorijų tinklas,
- subsidijų iškastiniam kurui panaikinimas
- šalims kaip Kinija, Brazilija, Pietų Korėja,
- miestuose; taip vadinami žalių finansų
- paslaugų sistemos Brazilijos ir Kolumbijos
- nių ekosistemų apsaugos sistemų kūrimas
- ir vandens sąnaudų mažinimas, jūrų
- strukturės problemas Peru, Ekvadore ir
- mažos emisijos zonos Europos miestuo-
- rūne; Pietų Afrikos respublikos bazinių
- ruoti. Visose srityse dirbantys aplinkosa-
- Steineris. Juk ne veltui sakoma, kad krizė
- -
- nininkų perspėjimų. Per kelis dešimtmečius
- maištauja Arabų pavasario protestuoto-
- -
- naus vystymosi idėjas, o šiandien būtent iš
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- kas vystymosi idėjų, o šiandien būtent iš
- kėjimų už ekosistemų teikiamas paslaugų
- -
- ir išspręs visas mūsų problemas. Ne, ne
- kėjimų už ekosistemų teikiamas paslaugų
- -
- kai politikais ir žurnalistais. Lietuva
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- dvidešimties autorių bendras straipsnis,
- -
- mūsų laukia ateityje, jei ir toliau nieko ne
- -
- minė žmonės kaip viešosios politikos sritis yra pa-
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- tenka apgailestauti, kad nebuvo priimti
- -
- Jau pasiekėme tokį tašką, kai būtina pla-
- -
- kas mūsų planetos laukia ateityje?
- Didinti straipsnio tekstą
- Mokslinkinkai skaičiuoja, kad 2025-aisiais
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- kas mūsų laukia ateityje, jei ir toliau nieko ne-
- -
- jauda kai kuriose planetos territorijose
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- -
- didžiulių kaimų kaip funkcionuojanti biosfera ir aplinkosaukinių
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- mūsų veiksmai turi pasekmes. Šiais laikais
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- tenka apgailestauti, kad nebuvo priimti
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В России система охраны природы за последние 12 лет пришла в состояние упадка. А как обстоят дела в мире с природоохранными институтами, инструментами и с самой природой? Об этом подробно говориться в последнем отчете UNEP, получившем название Обзор окружающей среды в мире. Этот доклад считается одним из наиболее авторитетных справочников, поэтому представляется интересным хотя бы кратко обсудить его содержание.

Новый отчет о состоянии природы мира Владислав ЛАРИН

Этапы осознания проблемы
После первой всемирной конференции в Стокгольме, посвященной проблемам загрязнения окружающей среды пришло 40 лет. За эти годы состоялись международные научные конференции в Найроби (1982 г.), в Рио-де-Жанейро (1992 г.) и в Йоханнесбурге (2002 г.), на которых "сверяли часы" и повестки дня граждане и политики, вовлеченные в решение проблемы, "сверяли часы" и показывали перспективы выживания человека. Последняя такая конференция, условно названная Рио+20, завершилась недавно - в июне 2012 г. В качестве информационной поддержки всех этих, да и менее масштабных природоохранных мероприятий опубликовано огромное количество материалов, отчетов и докладов. Пожалуй, одним из наиболее систематизированных, авторитетных и полных справочных изданий стал доклад, подготовленный Программой ООН по охране окружающей среды (UNEP - United Nations Environmental Program) и названный Обзор окружающей среды в мире (Global Environmental Outlook). Всего было опубликовано 5 докладов из этой серии, причем последний - подготовленный к конференции Рио+20 и получивший название GEO-5, стал наиболее полным и, на мой взгляд, наименее оптимистичным. Поскольку русскоязычная версия доклада, скорее всего, опубликована не будет (зачем нам гражданам знать о существующих проблемах и грядущих угрозах), приведу кратко информацию, к которой я пришел, анализируя и сравнивая указанные мне документы.

В первой главе доклада проблемы на Земле делятся на две группы, одна из которых по своему характеру и последствиям превосходит другую. Первая группа - это проблемы, возникающие прямо на местах промышленного производства, и другая группа - это проблемы, возникающие в результате деятельности человека...
части территории Сибири среднегодовые температуры приземного слоя атмосферы увеличились на 2-4 градуса. Сходная ситуация наблюдается на Алтае, на севере Канады и в Гренландии. В результате граница распространения оледенения Северного Ледовитого океана в феврале сократилась с 16,7 млн. км² в 1978 г. до 14,3 млн. км² в 2010 г., а в сентябре - с 7,8 млн. км² в 1978 г. до 4,5 млн. км² соответственно.

Казалось бы, это хорошо - климат ставится менее суровым. На самом деле в происходящих изменениях хорошего не так много. В результате тает многогета мерзлота, вместе с которой "уляивают" и тонут построенные на ней предприятия, посёлки и транспортная инфраструктура. Нефтегазовая инфраструктура на мерзлоте создается зимой, поскольку летом тундра превращается в непроходимое болото. Температура становится выше, сезон освоения - короче, стоимость работ - больше. Уровень океана повышается - разрушаются портовые инфраструктуры, не адаптированные к более теплой погоде. Увеличивается сток северных рек, которые кроме воды несут в океан твердые отложения. В результате меняются береговая линия и рельеф дна, требуются дополнительные картировочные работы. А причина изменения климата заключается в стремительном увеличении содержания CO2 в атмосфере (за последние 50 лет - на 25%). Существующие прогнозы развития мировой энергетики не дают почвы для оптимизма. На фоне других государств в России сохраняется сравнительно неплохая картина со стоком крупнейших рек - он не сокращается, и с доступом населения к воде. Только усматривая в этом заслугу наращивания гидроэнергетических мощностей. В результате речь идет о преодолении последствий уничтожения лесов, о восстановлении растительного покрова, о борьбе с засухой и стихийными бедствиями. Основные политические решения лежат в этой плоскости.

Регион, названный в докладе Западная Азия (в современной практике чаще называемый Ближний Восток), объединяет страны, процветающие за счет добычи и продажи нефти. Их благополучие в значительной степени зависит от использования единственного невозобновляемого энергетического ресурса. Регион испытывает серьезные экологические проблемы, повышенные требования к охране водных ресурсов, разрушение земель и вызванное этим опустынивание. В довершение перечисленных проблем, к середине текущего столетия в регионе прогнозируется дальнейшее повышение температуры и снижение количества осадков. При этом прибрежная линия будет заливаться морской водой в результате повышения уровня океана. В результате существуют угрозы для прибрежных территорий, расположенных на берегах морей и океанов.

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газов на 50% по сравнению с 1990 г. Звучит неплохо, но при этом следует помнить, что именно в том году производство в стране практически остановилось, а значит и выбросов было существенно меньше, чем в прежние годы гонки вооружений и активности ВПК. То есть за базовый принят не столь уж высокий уровень. В свою очередь, страны-члены Евросоюза планируют к тому же 2050 г. прекратить применение бензиновых автомобилей в городах. А все новые здания строить с учетом требований сохранения климата и энергоэффективности. Кстати, возобновляемая энергетика - как и следовало ожидать - в Евросоюзе продолжает оставаться в центре внимания. На Россию это пока никак не распространяется.

Сценарии вероятного будущего
Третья часть доклада описывает вероятные сценарии развития цивилизации на ближайшие 20-40 лет. Общая картина представляется весьма противоречивой. С одной стороны, более развитые страны прилагают большие усилия и тратят огромные средства на развитие и продвижение нового образа жизни, основанного на применении возобновляемых ресурсов и новых технологий. И здесь очевидны успехи. С другой стороны, основная часть населения планеты все еще живет более чем скромно. И эти люди хотят всего, быстро и много. Как пойдет развитие этих регионов - пока не способен предсказать никто.

В этой ситуации, для понимания скрытых механизмов ограничительных факторов развития человечества, представляется полезным перечитать работы с изложением основ мальтузианских взглядов. Или почитать что-нибудь по биологии - например, об устойчивости экосистем и о последствиях массового размножения животных или растений одного вида (неважно о чем идет речь - об одноклеточных водорослях или теплокровных- млекопитающих).

В довершение всего не следует забывать, что уже несколько лет развивается экономический кризис. Похоже, что даже самые светлые умы не способны предсказать его сроки, масштаб и глубину. Остается надеяться, что любой кризис - сколь тяжелым бы он ни был - ведет к изменению природы и общества в направлении большего совершенства и устойчивости.
SPREADING THE WORD:
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2013.