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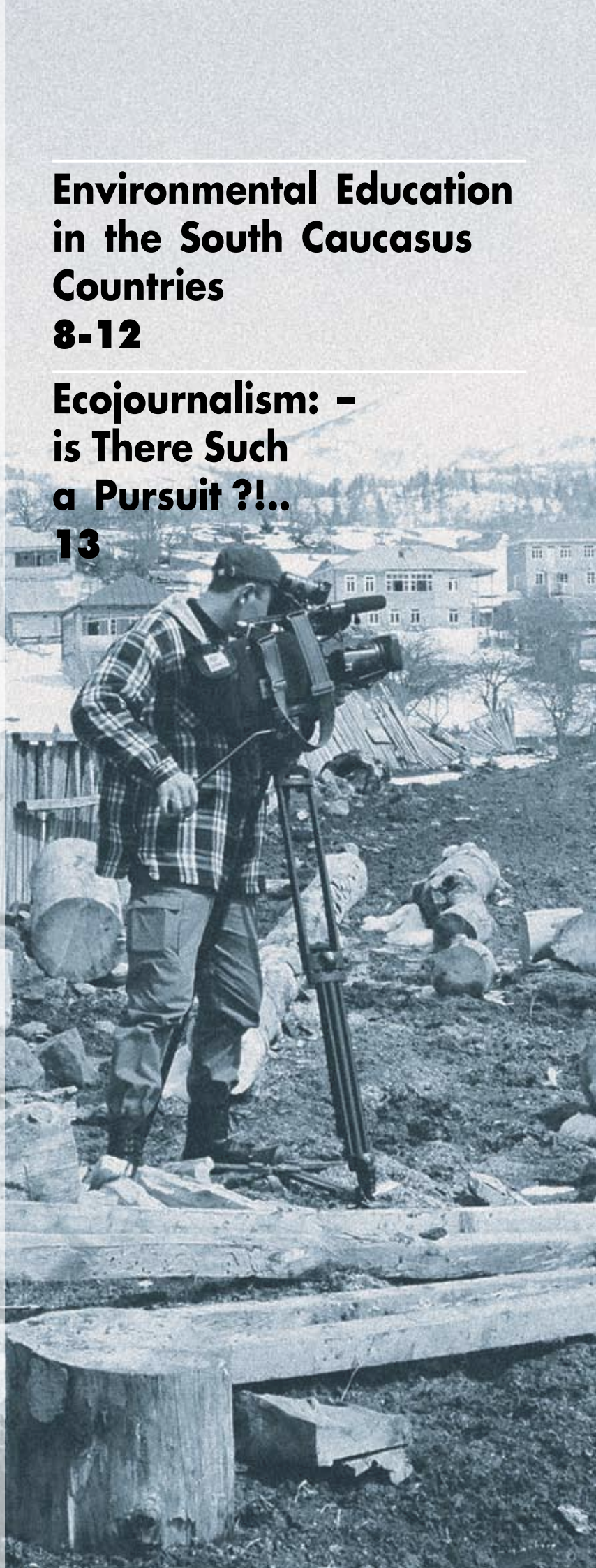
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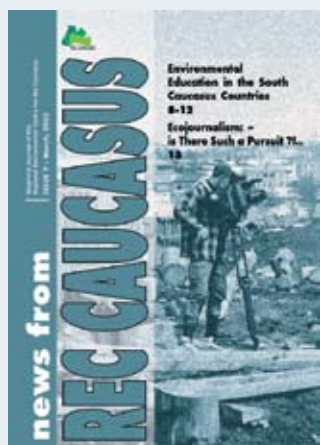
# REC CAUCASUS



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in the South Caucasus  
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is There Such  
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news from  
**REC CAUCASUS**

**ISSUE 9 – March, 2005**

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of REC Caucasus**

## *Dear Reader!*

This is yet another issue of our “News from the Caucasus” created and published by joint efforts of our organisation, journalists, representatives of NGOs, academic circles and devoted readers from all the three South Caucasus countries. In this issue we make an attempt to highlight the most burning questions that give rise to concern among the population of our region. We have tried our best to provide answers to open-ended questions and suggest ways to resolving a number of other problems.

Each division of this issue and each contribution to it present a grateful topic for discussion. We will revert to these topics in every subsequent issue as and when our readers kindly communicate to us their views. However, the space of one issue is too small for us to publish all the materials and set all the questions the editorial board solicits answers to from the readers, all the more that environmental problems are constantly on the increase.

We therefore are looking forward to your recommendations, comments, fresh ideas, topics and other forms of feedback that will greatly contribute to further issues of “News from REC Caucasus”

Seeing that the basic objective of this publication is to disseminate information with a view to increasing the environmental awareness of the general public and laying the foundation of channels for exchanging information and experience, further success of this publication largely depends upon your support and contributions.

*Lela Janashia*

## REC CAUCASUS FOUNDERS MEETING: SUMMING UP THE RESULTS OF THE FIRST FIVE YEARS OF ITS ACTIVITIES AND PROSPECTS FOR THE FUTURE



Last February Brussels (Belgium) hosted the Second Meeting of the Founders of the Regional Environmental Centre for the Caucasus (REC Caucasus) attended by Mr Huseyn Bagirov, Minister of Ecology and Natural Resources of the Azerbaijan Republic, as well as by the Deputy Ministers and Departmental Heads in the Ministries of Ecology of Armenia and Azerbaijan. Besides, the meeting was attended by the representatives of the European Commission, European Parliament, the US Environmental Protection Agency (USEPA), Ministries of Foreign Affairs and parliaments of the South Caucasus countries and members of the REC Caucasus management.

The main objective of this meeting was to sum up the results of a half a decade's work of REC Caucasus and discuss plans for its future. In the course of deliberations

the role of the founders, the Board and the International Advisory Council was particularly stressed together with the importance of the Information Points.

The meeting was aimed at determining the future strategy basing on the achievements made over the last five years and enhancing the potentialities of REC Caucasus in resolving the environmental problems of the region, as well as on promoting the role of the Centre in the European Neighborhood Policy and "Environment for Europe" Process. To that end, coordination mechanisms were also discussed. The participants in the meeting agreed on setting up a special Founders Working Group for reviewing the issues set forth in the course of the discussions with a view to elaborating concrete proposals for the next Meeting of the Founders scheduled for this summer.

### REC CAUCASUS BOARD OF DIRECTORS MEETING

On February 25-26, 2005 REC Caucasus headquarters hosted Board of Directors Meeting. The meeting agenda included review of outcomes of the REC Caucasus Founders Meeting (February 8-9, 2005, Brussels), particularly establishment of the Founders' Working Group and its work. Samvel Amirhanyan, Chairman of the Board presented review of the activities during last five years, report on the work of the

Board in 2004 as well as prospects for future activities.

► The nine-member Board of Directors consists of the representatives of government, NGO, donor as well as science and business sector. The Board of Directors meets four times a year to oversee the work of the Centre, and provide strategic direction.



## REC CAUCASUS NEW YEAR PARTY CELEBRATION

On January 14-15, 2005 REC Caucasus welcomed all stakeholders (representatives of academic, business, NGO and media sectors) on its New Year Party Celebration.

The event took place in parallel in Baku, Yerevan and Tbilisi.

## REC CAUCASUS INTERNATIONAL ADVISORY COUNCIL MEETING

was held on February 25-26, 2005 at the REC Caucasus headquarters.

► The 22 member International Advisory Council is the stakeholders' forum that consists of representatives of government, NGO, donor as well as science and business sector. It meets in full session twice a year – its thematic committees work all year round providing policy advice and recommendations to the staff.

## REC CAUCASUS NEW PUBLICATIONS



► REC Caucasus new publication - "Environment and Public Authorities" is the second edition of a three volume directory of governmental organisations with environmental responsibilities in the countries of the South Caucasus. First volume of the publication covers the Republic of Armenia. Second one will provide information about situation in the Azerbaijan Republic. Third volume will be dedicated to Georgia.

The first edition of the Directory was highly demanded by stakeholders as assisted in understanding quite complex nature of environmental issues, and organisational structure and functions of the governmental agencies with environmental responsibilities. The publication also helped in establishing contacts in the region and beyond, strengthening communication between the sectors.

The first and second parts are available free of charge to all concerned at the REC Caucasus offices in English and Russian. Electronic version of the Directory can be found at [www.rec-caucasus.org](http://www.rec-caucasus.org)

We hope that the information given in the Directory will be found useful and easy to search. Please, do not hesitate to contact us with any questions, queries or comments at:

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# REC CAUCASUS New Project FOR REPRESENTATIVES OF THE MEDIA

**M**edia plays a key role in creating a civil society oriented to resolution of environmental problems. Therefore, increase of the total volume of information in this respect at the disposal of journalists is vitally important for attaining the desirable level of participation of the general public in environmental decision-making. To that end, in 2004 REC Caucasus elaborated and implemented the project "Media and Public Participation Techniques". This initiative was the first of its kind that was aimed at promoting environmental journalism in the three South Caucasus countries, also at increasing ecological and environmental knowledge among representatives of the mass media with a view to better highlighting environmental issues and, no less importantly, to promoting national and regional cooperation of the stakeholders for ensuring efficient resolution of general environmental problems.

The project involved over 70 representatives of press, radio and TV working in the national, English and Russian languages and also information agencies and students from the South Caucasus countries, thereby creating a precedent of transboundary and intersectoral dialogue. One of the basic results of this

project is the exceedingly keen interest of the mass media towards environmental issues, that is proved by increased number of the printed publications, TV and radio programmes dealing with ecology and environmental protection.

With adequate support, journalists have elaborated guidelines for the mass media in the sphere of environmental protection in their national languages (the English and Russian versions will be available in the e-format). These guidelines are in fact a comprehensive review of the existing environmental situation for prospects for the future. They have supplements which are actually practical instructions helping the user to identify who is who in the environmental sector of the Caucasus, make reference to the sources of information and contain a short glossary of the basic terms in the sphere of protection of the environment together with a list of environmental hot spots in the Caucasus and their description. It is just this manual, together with the experience acquired in the course of joint work of journalists, NGOs, experts and representatives of the State authorities of the three South Caucasus countries plus a great desire to continue cooperation and hope for developing new initiatives in this sphere that formed the basis for launching the journalist project "Environmental Hot Spot Journalistic Monitoring" aimed at monitoring the environmental hot spots.

Within the framework of this project it is planned to organize seminars and trainings for environmental journalists so that they should focus their attention on intersectoral issues, present the environment as an integral part of the development of economic, social and political issues of the region and conduct series of national and regional media tours and joint journalistic research in the environmental hot spots.

Besides, an interactive electronic database will be elaborated in the form of a map: selecting an area of interest, the visitor will be able to familiarize him- or herself with the relevant materials (data about cities and towns, national parks, etc.), as well as with the general statistical data for different territories. Some of the articles will be elaborated in the framework of the media tours, and special trainings of NGOs and the media will become constituent parts of the project.

REC Caucasus welcomes all those interested to participate in this work.

## NEW SERVICE WITHIN REC CAUCASUS INFORMATION PROGRAMME

► REC Caucasus developed new service within its Information Programme. Henceforth all concerned can use on-line search system of the REC Caucasus library resources by visiting link on the publications page  
[www.taia.biz/rec\\_items1/items1\\_english.php](http://www.taia.biz/rec_items1/items1_english.php)

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## NEW PUBLICATIONS AT REC CAUCASUS

English-Russian-Georgian and Azerbaijani Glossaries of Terms Used in Environmental Enforcement and Compliance Promotion as well as "Guiding Principles for Reform of Environmental Enforcement Authorities in Transition Economies of Eastern Europe, Caucasus and Central Asia" are available to all stakeholders at the REC Caucasus offices.

► The countries of Eastern Europe, Caucasus and Central Asia (EECCA) are reforming their environmental enforcement and compliance promotion strategies and tools, and the related institutions as part of the effort to strengthen environmental management systems in conjunction with their transition to democratic, market-based societies. This glossary is a contribution to these efforts by defining the meaning of key terms used in environmental enforcement and compliance promotion systems in the Organisation for Economic Co-operation and Development (OECD) and EECCA countries. Also it aims to facilitate a better dialogue among environmental officials and practitioners within the EECCA region and support a more effective transfer of international experience.

These glossaries, which were prepared by a team of experts from OECD and EECCA countries, are one of the environmental activities undertaken within the programme work of the OECD's Centre for Cooperation with Non-Members. The translation of this publication in national languages and its printing was executed by the Regional Environmental Centre for the Caucasus.

► These glossaries are addressed to policy and lawmakers, inspectors, other government officials, NGO and academics, consultants, etc. - all those engaged with enforcement and compliance promotion activities. To a large extent, it is designed to create a shared East/West understanding of the environmental enforcement and compliance promotion terminology. However, the glossary may be helpful not only as an analytical document, but also as a mean to help strengthen regional and international networking. It may also facilitate dialogue



and cooperation among those working on environmental enforcement and compliance in OECD countries and in Eastern Europe, Caucasus and Central Asia.

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## THE THIRD REGIONAL TRAINING WITHIN THE REC CAUCASUS PROJECT ON LOCAL ENVIRONMENTAL ACTION PLANS (LEAPS)

was held on March 14-15, 2005 in Gudauri, Georgia.

International experts from Poland and Ukraine provided training in structure and development of the LEAPs final document project implementation teams from the pilot towns - Ararat, Ganja and Kutaisi

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# REC CAUCASUS PARTICIPATES IN HIGH LEVEL MEETING OF REPRESENTATIVES OF MINISTRIES OF ENVIRONMENTAL PROTECTION AND EDUCATION OF THE UNECE REGION



**REC Caucasus Executive Director converses with the President of Litva, Valdas Adamkus**

**O**n March 17-18, 2005 Vilnius, the capital of Lithuania, hosted a high level meeting of representatives of ministries of environmental protection and education of the United Nations Economic Commission for European region. The meeting officially declared the beginning of the United Nations Decade of Education for Sustainable Development (UNDESD) (2005–2014)

The meeting was attended by delegations from over 40 countries of the UNECE region, including Mr Alexander Lomaia, Minister of Education and Sciences of Georgia, Mr Husseyn Bagirov, representatives of international organisations and NGOs, together with those of REC Caucasus.

**The UNECE Strategy for Education for Sustainable Development was elaborated in conformity with the resolution adopted by the Fifth Ministerial Conference “Environment for Europe” in Kiev (2003).**

In the course of deliberations Mr Alexander Lomaia observed that his Ministry would support the Strategy and would actively participate in its implementation, especially in formal education. He mentioned REC Caucasus as one of the principal partners in this process and expressed desirability of setting up a training centre on the basis of this organisation.

Mr. Husseyn Bagirov, Minister of Ecology of Azerbaijan also expressed his preparedness to contribute to the implementation of this Strategy in his country.

REC Caucasus intends to convene a conference at the level of the ministers of the environment, education, economy and health that will kick off the implementation of the Strategy for Education for Sustainable Development. Mr Bagirov and Mr Lomaia came out in support of this initiative of REC Caucasus.

► *In popular opinion, Environmental Education (EE) and Education for Sustainable Development (ESD) are similar notions. However, practical implementation reveals differences between them, for EE mostly focuses on the environmental impact of pollution, liquid waste, automobile fumes and industrial emission, etc., on their causes and consequences, on possibilities of their mitigation and also on environmental care and protection, while ESD is more concerned with utilization of natural resources and the importance of their sustainability.*

► *Negative environmental impact is first of all treated as a consequence of irrational use of natural resources. It has been recognized that a favourable environmental situation will not develop in the absence of a reliable social and economic state of the population, and that a healthy environment is one of the pre-requisites of creating a long-term viable economy. Thus, ESD covers environmental, social and economic aspects. In a broader context, ESD focuses on ethics and justice, which is expressed in a democratic form of government and social responsibility of the global scale.*



# THE CLEANER PRODUCTION PROJECT IS EXTENDED

**CP** launched its functioning in February 2003 in several countries of NIS (Moldova, Georgia, Kazakhstan). The project is being conducted under the aegis and with the financial support of the European Commission TACIS Programme. It has been led by a group of experts from different consulting companies, under the leadership of IMC Consulting (UK).

► *Cleaner production (CP) is a cost-effective, preventive approach to pollution control that makes efficient use of energy and materials and reduces risks to health and safety.*

► *The most attractive feature of this project is that it provides rare opportunity for the consideration of economic and environmental interests on a single scale, it does not require huge investments and doesn't call for any procedures of special difficulty.*

Project is being implemented in a close cooperation with REC Caucasus, REC Moldova and REC Central Asia.

This year the CP project team has organised the conference – called “Cleaner Production Development Strategy in Georgia”. Attendance of a large number of high level participants corroborates the importance of discussed issues and proves that future extension of CP development in Georgia is not a question of a long time perspective.

The Project team plans to publish the conference brochure in the nearest future which will highlight manufacturing opportunities and also provide special case studies on the pilot factories.

In just two years CP Project has been piloting two enterprises: The Tbilisi Paper Factory and the Wood Service

Company which produces windows and doors of the European quality. The Paper Factory operates on recycling scrap paper.

It's worth notion, that with the help of CP method these companies managed to identify and utilize commercially valuable emissions and wastes generated by industries with the most effect. This led to a relevant cost savings of the consumed raw material, higher product yields and quality, improving organisational structure of the company as well as minimizing the general impact on the environment.

Currently, CP Project is extended for 10 months, starting from February to October 2005.

Within the project extension period it is planned to organise two further Advisory Board (AB) meetings in each selected countries, for reviewing the projects' development and adoption of AB recommendations.

Furthermore, CP targets the development of the roles of CP platforms as the focal points for discussion in seminars and workshops. Additionally, the elaborated CP platforms will be helpful and valuable for delivery of working seminars on the project's recommendations on policy issues.

Within this period CP aims to implement a training session with local experts and technical staff of various manufacturing enterprises. Experts will be provided with case studies in Georgian language which can be particularly helpful and valuable when undertaking CP activities. Also, special recommendations concerning the CP implementation will be offered.

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## SMALL GRANTS PROGRAMME “SUSTAINABLE DEVELOPMENT OF THE CASPIAN COMMUNITIES”

Funded by the EU “Sustainable Development of Caspian Communities” Programme focuses on reduction and prevention of excess usage of natural resources in the Caspian Sea region through funding alternative projects for development livelihood support that are more sustainable from the Caspian Sea natural resource usage perspective.

Along with environmental importance, the Programme significantly contributes to implementation of the National Programme for Regional Development. Creation of hundreds of workplaces enhances employment of the population that supports goals and objectives of Azerbaijan Poverty Reduction and Economic Development Programme.

Small Grants Programme is being

implemented in Azerbaijan, Kazakhstan, Turkmenistan, Russia (Republic of Kalmikia, Dagestan, Astrakhan region) since February 1, 2004 and is supposed to be completed by the end of the year 2006. 41 projects with a total cost of 290 014 Euro are being implemented in Azerbaijan within the frames of the Programme.

Grants beneficiaries are communities of coastal zone of the Caspian Sea located within 20km zone from the shore line or 100km along the flow of the rivers flowing into it. These are municipalities, SMEs with private ownership, including registered private entrepreneurs, farmers, NGOs.

The projects are being implemented in the following regions of the country: Astarin, Apsheron, Masalin, Sabirabad,

Salian, Siazan, Khachmas, Devechin, Länkorän and cities of Baku and Ali-Bairamli.

Scope of these projects is diverse. It covers agriculture (27 projects), environmental education (3 projects), waste management (4 projects), water management (2 projects) and one project in each of the following areas: food production, land management, pisciculture, consumer goods production, ecotourism.

Administrative programs are implemented by the Regional Environmental Centre of Central Asia in cooperation with the Regional Environmental Centres of Caucasus and Russia in the frames of the contract with the EU. Technical support is provided by IMC Consulting (Great Britain).



## ENVIRONMENTAL UPBRINGING AND EDUCATION IN ARMENIA

by Nazik Khandjyan

*D.Sc.(Biol.)*

*Member of the International Academy of Information  
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**J**anuary 1, 2005 opened a UN Decade of Education for Sustainable Development. The idea of this Decade was conceived and initiated by the Government of Japan, and adopted in September 2002 at the World Summit for Sustainable Development in Johannesburg and later approved by the 57th Session of the UN General Assembly.

In their turn, the events preceding the idea of the Decade are connected with the concept of sustainable development which became current after the publication of the report of the World Commission for the Environment and Development. This report came out under the title "Our Common Future" in 1987. Later on, the UN Conference on the Environment and Development took place in Rio de Janeiro in 1992 and approved the concept of sustainable development as a basis for further discussions and adoption of a number of important documents.

The concept of sustainable development comprises three main aspects: – economical, social and environmental, and in this context environmental education as an integral part of the general education system acquires particular importance. Viewed from this angle, elaboration and implementation of national strategies

and programs of activities in the sphere of Environmental education in each and every country of the Caucasus is one of the decisive factors of the development of this sphere in the region. However, it is necessary to analyze and assess the current situation in the area and identify priorities in each country.

Environmental education in Armenia has been gaining momentum and becoming a constituent part of the education system of the Republic which to a certain extent is reflected at all stages of education. Environmental education becomes particularly efficient if and when its uninterrupted progress is ensured.

In this context it is expedient to state that Environmental education in Armenia is legally based on the "Law on Education" (May 8, 1999) and the "Law on Environmental education and Upbringing of the Population" (Dec.17, 2001).

The spheres covered by these laws are currently being amended. Besides, the "Strategic Program of Environmental education in the Republic of Armenia" was elaborated in 2003.

According to the "Law on Environmental education and Upbringing of the Population", continual environmental education comprises the following levels:

- ▶ pre-school environmental education and upbringing;
- ▶ general environmental education at school level;
- ▶ secondary vocational training in ecology;
- ▶ higher vocational training in ecology;



- ▶ postgraduate environmental education;
- ▶ Environmental education and upbringing of large sections of the population including servicemen.

Environmental education and upbringing at the pre-school level is provided via such continual actions as “The Day of Birds”, “Flower Show” and the like. The most impressive success story in this respect is a kindergarten where the kids are given some elementary knowledge about their environment that has been functioning in the city of Abovyan since 1993.

Environmental education is taught at lessons of geography and biology at 130 secondary schools. In pursuance of the Government Decree No.226 of May 5, 2002, “the state standard of a full course of secondary education” has been amended with new subjects on the curricula: ecological upbringing, management of the environment, principles of care of Nature (taught in the 9th year of the secondary school) and other subjects. Schools in Yerevan and also in some provinces of the Republic devote special attention to environmental education which it taught at sessions of Nature Lovers’ Club and talk shows, games, quizzes, contests and the like. In biology rooms at schools there also are some didactic materials.

In Armenia ecology is taught at 72 state and 22 private secondary schools, colleges and lyceums. Among the subjects taught there are such environmental-oriented ones as “Forests and Parks”, “Orchards and Gardens”, “Protection of the Environment and Rational Use of Natural Resources” and the like. From the angle of Environmental education strategy, the list of school subjects ought to be amended with such environmentally-oriented applied subjects as protection of the atmosphere, water, soil, biodiversity, forests, natural resources, etc.

Armenia has twenty state higher educational establishments with ten branches elsewhere and seventy-two private ones. In the majority of universities and institutes environmentally-oriented subjects are taught; it is done even at humanitarian higher schools such as the V.Bryusov Linguistic University, the Grachya Acharyan University, the Gladzor University, etc.

Active in the sphere of Environmental education of the population are environmental NGOs that put out publications and organise environmental activities and various trainings aimed at raising the environmental awareness of the local population.

Teaching lessons in ecology is particularly successful in the lap of nature and in museums. This method has been widely practised in Armenia for quite some time, for instance, at the Museum of Nature in Yerevan and its branch at Gyumri where in the “Winter Garden” children tend their pet animals and also in the zoological museum at the Institute of Zoology and some departments of the Institute of Botany under the National Academy of Sciences of Armenia in Yerevan where there are suitable training grounds for environmental education at various levels. Besides the museums of nature in the Sevan and Dilizhan, national parks located in the marzes of Gegarkunik and Tavush also substantially contribute to the implementation of environmental education in Armenia.

The National Institute of Education under the Ministry

of Education and Sciences of the Republic of Armenia that was founded in 2004 on the basis of the former Centre of Reforms in Education runs extension courses in Yerevan and in the provinces for retraining specialists specifically in the sphere of environment. Currently capable young specialists tend to obtain their education abroad and go through retraining courses also abroad and at home, but strictly follow foreign curricula.

Environmental education is greatly promoted by the UN conventions that have been ratified by Armenia. Back in 1992 in Rio de Janeiro Armenia put its signature under the UN Conventions “On Climate Change”, “On Biodiversity”, and in 1994 – “On Combating Desertification”. In 1998 the Government of Armenia took a number of decisions (Nos. 115 and 620) in approval of a program of action regarding fulfillment of Armenia’s obligations in connection with these conventions. The Program assigns a particular place to practical measures dealing with environmental education. Besides, national reports, action plans, summaries and other publications within the framework of these conventions create favorable conditions for disseminating environmental knowledge, exchanging experience and broadening the flow of information. It is highly desirable that the circulation of these publications be increased so that they should be readily available not only for the needs of specialists, but also for the general public.

The ratification of the Aarhus Convention (on May 14, 2004) has also played a considerable role in environmental education and, consequently, in the increase of the public environmental awareness. A Voluntary Social Centre for Environmental Information has been set up by the Ministry of the Environment of the Republic of Armenia jointly with the Yerevan Branch of the OSCE.

International organisations and their representation offices in Armenia, particularly the Eurasia Foundation, the World Bank, UNDP, UNICEF, IREX, OSCE and many others have also made a sizable contribution to Environmental education. They have been implementing educational programs on introduction of innovations, helping in organising lectures, trainings, discussions of topical issues and other activities and were closely engaged in publication.

It should be mentioned that there are common priorities shared at all levels of education in Armenia. They have been elaborated and identified by the Interdepartmental Commission of the Ministry of the Environment of Armenia and the Ministry of Education and Sciences of the Republic of Armenia in 1998. These priorities were then grouped around the following topical problems: elaboration and approval of standards in education, also of curricula, educational plans and teaching aids; training and retraining teachers, publication of special literature (like textbooks, atlases and the like); dissemination of information among the population. Raising public awareness requires publication of easily available materials, organisation of conferences, seminars, round table discussions, TV and radio transmissions, film shows, etc.

The efficiency of all these basic and top-priority measures in environmental education can be boosted up by coordinated joint activities of the state authorities and social organisations.





## ENVIRONMENTAL UPBRINGING AND EDUCATION IN AZERBAIJAN

by Lia Bayramova

**A**zerbaijan stands for a unique variety of landscapes, natural resources, flora and fauna. On the whole, the Republic possesses favourable ecological conditions, but anthropogenic pressure on the environment has been on the increase from year to year. The area of natural landscapes has been shrinking, especially forests; there is a threat to biodiversity; natural resources are being depleted.

All these necessitates transition to a new ideology, and this first of all calls for a new system of knowledge based on a single theoretical platform and bursting the traditional limits of ecology as the field of biology. This new system of environmental knowledge is to help today's and tomorrow's specialists in organising human activities under the conditions of rigid environmental imperative. And this requires raising the level of environmental literacy and culture of the population.

It is common knowledge that education is the "generator" of skilled specialists. Environmental education will shape the thoughts and actions of the future decision makers in the sphere of environment. Therefore, the present-day situation in Azerbaijan requires concrete and speedy reforms in the existing system of environmental education at school.

According to Mr Ali Shukurov, Director of the Republican Centre for

Environmental Education and Upbringing, resolution of environmental problems is a top priority issue today.

"We should see to it that resolution of environmental problems should become comprehensive. To that end, our Republic has taken several concrete steps: the Milli Majlis of Azerbaijan has adopted about 20 laws on ecology; there are several scores of presidential decrees and government resolutions", continues Mr Ali Shukurov. "Over the recent years our organisation that is dealing with environment has done a lot of work to implement them and translate them into reality. Incidentally, the Republican Centre functions under a special department in the Ministry of Education that takes care of environmental upbringing of the younger generation and plays a significant role in the formation of environmentally-oriented world outlook in the schoolchildren. Also, we have accumulated a lot of experience in elaboration of educational programmes and teaching aids for young environmentalists' clubs and in organising various environmental actions.

Under the guidance of specialists from the Centre 52 young environmentalists' clubs are functioning at schools in Baku. The Republican Centre is working in close contacts with its branches in other cities and towns of Azerbaijan.

Environmental education and ensuring of continued environmental upbringing of the younger generation

is one of the demands of our time. Its implementation is a matter of state importance. The sphere of environment receives a lot of attention on the part of the state: the year 2001 saw the establishment of the Ministry of Ecology and Natural Resources; a Standing Committee for Ecology and Energy has been set up in the Parliament of the Republic; every condition has been created to support the activities of NGOs in this sphere.

The idea of continued environmental education and upbringing was reflected in the Law of the Re-

public of Azerbaijan "On Protection of the Environment" adopted in 1999. On January 27, 2003 President Heydar Aliyev signed a Decree that brought into effect the "Law on Environmental Education of the Population". Under this law the Republican Centre for Environmental Education and Upbringing under the Ministry of Education has been doing intensive work targeted at the formation of environmental awareness and culture in schoolchildren and young people", says Mr Ali Shukurov.

Members of the Centre elaborated and published a number of methodological programmes: "The Surrounding World and Ourselves" programme for kindergartens, a number of programmes on studying environment in the 1st – 9th forms at school, aids on "Aquarium Fishes and the Care They Need" and "Potted Plants and the Care They Need", etc. Also functioning at the Centre is the Acad. Hassan Aliyev Ecological School.

The Centre runs a newspaper "Ekologicheskoye Vospitaniye" ("Environmental Upbringing") that periodically highlights the Centre's activities in the sphere of environmental education and upbringing and published contributions of researchers, educationalists and also children. The Centre cooperates with many state and non-governmental organisations.

In August 2003, the 3rd Regional Ecological Tournament was carried out in Georgia's Kharagauli National Park, with the support of REC Cau-

casus. The two teams of contestants from Azerbaijan won the 1st and the 2nd prizes.

The Centre is closely cooperating with "Exxon Azerbaijan Operating Company LLC" that has rendered financial support for implementation of several projects. One of them was setting up a "Small School Zoo" club at 10 schools in Baku, another one was putting out a poster "Motley Variety of Aquarium Fishes". Also, on the 22nd of every April "Exxon Azerbaijan Operating Company LLC" carries out various actions dedicated to the Earth Day On the 22nd of April 2003, over 200 trees and bushes were planted in the Nizami Park by 300 schoolchildren who also cleaned up the territory of the Park.

In January 2004 the Centre, financially supported by "Exxon Azerbaijan Operating Company LLC", began work on implementation of the project "Bizim Haza" ("Our Caspian Sea") that involved over 4000 school-

children. Competitions were run in two age groups (5th – 7th forms and 8th – 9th forms) for the best drawing, photograph and scientific essay. When the competition was over, the Museums Centre of Baku organised an exhibition of the most interesting works. The winners were awarded diplomas and valuable prizes.

In 2003-2004, jointly with the WWF, the Centre organised an environmental action "Save the Leopards" within the framework of which schoolchildren from the Astara and Lenkoran districts came to the Masalin district and the Naxiçevan Autonomous Republic to participate in the work shops on "Flora and Fauna of Azerbaijan", as well as in the competitions, excursions, film shows featuring leopards, etc.

Specialists from the Centre gave experimental classes on studying the book "Electric Power Supply" put out with financial support of the Norwegian Society for Protection of the

Environment and the book "Humane Environmental Upbringing" published by Azerbaijan Society for Protection of Animals.

"The staff of the Republican Centre for environmental education and Upbringing set themselves concrete tasks aimed at extending their activities in the sphere of environmental upbringing and education of the younger generation. It is well known that the objectives of environmental education at school today are oriented to not only giving environmental knowledge, but also to raising the children in the spirit environmental world outlook. They are to grow to adulthood so as to be able to practically work in the sphere of environment to take good care of Mother-Nature and to be in a position to prevent environmental problems. Given all these, Azerbaijan will have every condition for sustainable development", concludes Ali Shukurov.

## SUSTAINABLE DEVELOPMENT IN THE EDUCATIONAL SYSTEM OF *GEORGIA*

by Manana Ratiani

**H**uman community, state and non-governmental organisations all over the world aim their efforts at rehabilitation of the environment. An important role in this process is assigned to the sustainable development component whose principal approach is oriented to how we are to live today, preserving and improving the present condition of our planet so as not to prejudice the opportunities of the future generations. Organisation and development of more successful and sustainable methods of management of our economic activities call for many years of concerted effort in exercising an overall cultural, economic, political and environmental approach.

The world sustainable development initiative must be reflected in the system of education too. Education for sustainable development should primarily be provided for at schools whose three component stages fi-

nanced by the state – elementary education, basic education and secondary education – cover the overwhelming majority of the population. According to the data of the census carried out in Georgia in 2002, every fourth child (aged from 6 and older) goes to school, which accounts for 23.2% of the total population, 80.1% of whom attend classes at secondary schools. The age group from 6 to 14 years are practically fully covered by the elementary and secondary education curricula. Most importantly, awareness of the general population of the basic approaches of education for sustainable development can be best achieved by precisely this method.

Georgia's Law "On Protection of the Environment" adopted on December 10, 1996, provides for the necessity of raising the population's environmental awareness through the system of education. These requirements are of general nature and do not precisely determine the place of environmental education

in the system of general schooling. Only insignificant steps have been recently made towards improvement of school curricula; in particular, they have been complemented only at the expense of fundamentals of environmental education and that, too, has been introduced without any definite pattern. At higher educational establishments, a special course of environmental and ecological knowledge has been introduced for students of various specialties. The world trends today call for reflecting the sustainable development ideas, tendencies and approaches in the educational system of Georgia at its progressive stages. We are witnessing gradual deepening of environmental education and observing mankind's future prospects reflected in it. This process needs to broaden so as to inculcate environmental awareness into the younger people. It is imperative that they should understand the necessity of rational management of the processes that bring about changes in the environment so that



they should be in a position to prevent depletion of our planet's natural resources, environmental degradation and cultural, social and economic instability. It is just the system of education that is able to bring to the knowledge of the general public precise and reliable information.

The main objectives of sustainable development are to be achieved through relevant textbooks composed on the basis of the standards of education at school. In the process of acquiring knowledge students are to try and master the following skills:

- ▶ analysis of interrelations between man and his environment; learning how to trace the cause-and-result pattern in the phenomena that take place in the environment;
- ▶ assessment of the processes and phenomena against the background of global changes in the human community and the environment;
- ▶ adequate perception of the links between socio-economic development and the environment; formation of proper attitude to the environment;

- ▶ identification of problems and seeking the ways to their redressing with subsequent introduction of the results thus obtained into day-to-day practice;
- ▶ nurturing a sense of one's responsibility to the environment;
- ▶ global vision of local processes.

The existing curricula have been reviewed in this country with a view to improving them for the future. It has become obvious that we need to orient ourselves to the objectives of sustainable development so as to shape the public opinion in the corresponding tenor. Being informed in this sphere of knowledge may well become a pre-requisite for resolution of many problems in the future. It is expedient to redress problems in society and in management with the help of some uniform integrated method and students should be involved in mastering this approach. They are to be trained in acquiring practical skills both in the sphere of rational utilization of natural resources and in sustainable social, economic and political development. In the process of education the instructor needs to bear in mind the student's age and experience and

select such topics which will enable the students to speak his/her mind and propose plausible concrete ways of solution.

It is impossible to resolve today's global problems of interrelations between an individual human being, global community and the environment without previously formed ecological and environmental awareness of the general masses of our population.

International organizations will assist the Tbilisi State University to develop an integrated curriculum for sustainable development in the 2005–2006 academic year to be taught at the Department of Geography where other students will be welcome to join if they so desire. It is also planned to have this course translated into English so as to make it usable at other higher educational establishments of the country and the region.

Despite the fact that no coordinated sustainable-development-oriented policy is pursued by the State in the system of education, this approach is nevertheless slowly penetrating into the educational sphere of this country.







## ECOJOURNALISM: – *is there such a pursuit?*

by Otar Kiria

*“Which of the symbols of the September 11 has been most frequently referred to in the media?”*

*Answer: “The fatal flight of a loving couple when they jumped to their death from one of the Twin Towers that was ablaze”.*

I wonder whether a journalist has a moral right to describe such a fatal jump from a height of several scores of feet as a free flight or soaring in space... We, the journalists, are often accused of finding no means too foul in search of front-page news. But in this particular case, when the journalist sacrificed the untold horror of the situation to the technical task of finding the best metaphor, we have to admit to it.

Hippocrates divided medical knowledge and practice into two constituent components: allopathy that treats diseases and homœopathy that focuses on healing the underlying cause or causes of the disease. Hardly had this statement been made, when it became a branch of philosophic rhetoric.

In our case we should try and find out why journalists have such a zeal for scandal, on the one hand, and to what extent they are precise and accurate in rendering the results of their search, on the other. In the former task we should seek these reasons in the structure of society and in the structure of the authorities and the machinery of the state, while in the part concerning the accuracy of rendering the results of journalistic search the underlying causes ought to be sought in the mass media themselves.

In “The Elements of Journalism” the authors Bill Kovach and Tom Rosenstiel suggest that journalists should take several basic trends. This publication is revolutionary both in its content and in its tendencies. It says nothing about violation of journalist’s rights or, conversely, about damaging the honour and character and hurting the feelings of the respondent; neither does it refer to society being under some general misconception which such publications never miss a chance to do. So, if society believes that a journalist is trying to lead it into a misconception, it is sure to change its attitude after having read the above opus.

A journalist is free in his views and writings, but only so in the milieu where he/she lives and works. In other words, he is supposed to fulfill the orders of his bosses and society. This is the reality as we know it. However, in

the civilized world both these ruling customers, i.e. the bosses and society will set forth several conditions, including quality of the journalist’s work. This, in our case, is a stumbling block, for the level of education of the members of the press corps in this country leaves much to be desired. There are many reasons for this, but one thing is clear, namely that the volume of the mass media has grown vis-à-vis the number of journalists, and this problem is characteristic not only for Georgia or for the South Caucasus countries: it is a problem shared by all countries of the world. Among professional journalists a genuine professional is the one who meets the basic requirement of the trade – possesses the experience of practical work – and only then follows one who has received professional training in journalism.

Understandably, the term “professional” here implies that the journalist improves his skills in the course of doing his job and never fails in following one of the basic “commandments” of the trade: – the information must always be checked for truth and precision over and over again.

While discussing the quality of mass media information, politics often becomes a point at issue, for there is a view that political activism and indolence of the consumer of the “dish” cooked in the media kitchen lead to deterioration of its taste. The rate of growth of political activism in the 20th century is unprecedented indeed. And the 21st century looks even more vigorous in this sense. As for the indolence of society, it is caused by progress of digital technologies and unlimited possibilities of the mass media.

But here an exception to this rule is discernible, namely that in a number of cases mass media fall behind the developments. A good example of this is the present-day state of environmental journalism in Georgia and the South Caucasus or, to be more precise, its practical absence in the area.

There are several reasons for this:

- ▶ Environment becomes the operative word only in case of some political scandal or a drama of everyday life;
- ▶ The media are not interested in investing in environmental education of their members, as inefficient and unprofitable;
- ▶ Journalists and other members of the media are unable to obtain or extend their environmental knowledge, for there is not a single organisation that will offer it; environmental experts are unreliable which has been proved on many occasions; NGOs prefer to have the

- media promote them and are, therefore, self-serving;
- ▶ Environmental issues are always overshadowed by private and business interests;
- ▶ The NGO sector is sluggish and inert.

There may be a plethora of examples to illustrate each of the above reasons, but environmental education of journalists seems to deserve our primary interest. If Georgia has any journalist who writes about the environment and the need to protect it (and there are only a few of them now) – he does it on his own. Ninety-eight per cent of trainings, seminars and workshops for journalists are oriented to media management, politics, public relations strategy, etc., and it is a rare occasion when NGOs and social organisations display interest in extending the knowledge of members of the press corps in the field of environment.

One of such occasions is the REC Caucasus project “Media and Public Participation Techniques” and a few other minor projects that work with the same people. It is practically impossible to involve other journalists in this work. Regrettably, these projects never go outside the

framework of concrete issues on the local level, because providing long-term extensive education will require a lot more funds, time and a greater scale. Most deplorably, the Georgian media seem to turn a blind eye on protection of the environment which accounts for why so little is said here about it and why the quality of the press reports on this subject leaves much to be desired.

One of the answers to this question may be as follows: there practically are no sources of information regarding the sphere of environmental protection. This describes the situation both in the public sector and in the NGOs. Whatever information is available is scarce, or there is none of it at all.

Journalists are totally unaware of hundreds of environmental topics, which means that in the nearest future we will have to “put out the fire” or, according to Hippocrates, will have to resort to the allopathic method, i.e. combat the disease itself and not its underlying causes. Judging by our practice, this approach in most of the cases has proved baneful for the environment both in Georgia and in the whole of the Caucasus.



**Nobel Peace Prize Awarded to Wangari Maathai**

**I**n October, 2004 Wangari Maathai became the first African woman and the first environmentalist to win the Nobel Peace Prize for her work as a leader of Green Belt Movement.

Born in 1940 in rural village Nyeri, Kenya, Wangari Maathai received her higher education in the United States. Later in 1966 she obtained a Master's degree (M.S.) in Biological Sciences from the University of Pittsburgh, USA, and pursued doctoral studies in Germany and the University of Nairobi. Wangari was the first black women in Eastern/Central Africa to receive a Doctorate and the first women in the region to become Chair of the Department of Veterinary Anatomy and Associate Professor in the Department of Veterinary Anatomy.

With the original idea to give the Kenyan women firewood, clean drinking water, shelter and income Wangari Maathai founded the Green Belt Movement (GBM) in 1977. GBM's main activity involved women's groups planting trees to conserve the environment and empower themselves by improving their quality of life.

The Green Belt Movement grew very fast. By the early 1980s there were estimated to be 600 tree nurseries, involving 2,000-3,000 women. About 2,000 public green belts with about a thousand seedlings each had been established and over half-a-million school children were involved. Some 15,000 farmers had planted woodlots on their own farms. By the end of 1993 over 20 million trees have

been planted to fight deforestation.

In 1989, Maathi led a fight against construction of skyscraper in the middle of Uhuru Park. Standing up for the protection of Nairobi's most important public green space she was called subversive and forced to quit her office for ten years. However, because of her efforts foreign investors withdrew their support for the Uhuru Park complex and the project was canceled. For willingness to speak out on critical social matters Maathi received death threats, was arrested more than a dozen times, and once was beaten unconscious by police.

Always a pioneer, in 1997 Maathai decided to run for the Kenyan presidency, but her candidacy was cancelled on a technicality. In 2002 after the ruin of former regime, Wangari Maathai was elected to Kenya's Parliament with more than 98 percent of the votes. She now represents the Tetu constituency, Nyeri district in central Kenya. Subsequently, in January 2003, she was appointed Assistant Minister for Environment and Natural Resources in Kenya's ninth Parliament, a position she currently holds.

Wangari Maathai has been internationally recognized for her persistent struggle for democracy, human rights and environmental conservation.



# OUR FAMILY KHORGO IS ALL WE COULD HAVE BROUGHT OVER FROM SVANETI...

## *An Ecorefugee: – What Does That Mean?*



by Otar Kiria

**T**he Georgian-Georgian Explanatory Dictionary says that *khorgo* is a large winepress or, rather, a gouged out log of wood where grapes are crushed for wine. The term is of Svanian origin, and this viticultural device is widely used in Racha-Lechkhumi, Guria and, understandably, in Svaneti. It is normally made from linden, but other varieties of timber are also used. If a *khorgo* log is allowed to dry well and then looked after with good care, it can serve the family as long as hundred years and sometimes longer, which makes it a conspicuous attribute of Georgian wine-making culture.

Rusudan Liparteliani has been living in the village of Aghayani since 1987, when in the wake of a disastrous landslide and flood that hit Svaneti that year the Georgian government relocated the afflicted population and provided them with housing premises near the villages of Sakadagiano and Aghayani densely populated with Azeris. If you chance to travel to Western Georgia, you can't miss rows of houses of standard architecture with similar yards and roofs made of similar material, and you will unerringly recognize them as a settlement of victims of mass migration.

It is the first one where ecomigrants live in Georgia. The term "migrant" applied to a Georgian in Georgia proper is absurd, yet in this particular case it is justified in describing those people who were forced to flee what remained of their homes, if anything did at all, when the ecological disaster hit them. Therefore we have coined this artificial term and apply it to ecomigrants who do not object to it, because it aptly describes their current status and plight.

Over a quarter of the sixty years of her life Rusudan Liparteliani has lived far from the place where she was born and reared. Several hundreds of kilometers is not such a long distance to travel, and within one's own country too, but not for those whom that horrible catastrophe has left homeless and in whose memory the horror of the raging elements is carved forever. And Rusudan recollects those awful events with tears in her eyes and a rueful smile on her lips.

"That was simply terrible. Terrible to recall it all. With my own eyes I saw torrents of water washing down whole villages. To

be more precise, it was not so much water, but rather flows of mud and slush, a thick mass that nothing could resist, let alone stop. Luckily, the disaster struck at such time when many people were outside in their yards, doing the necessary chores. No one perished from our village, but in the neighbouring villages a few lives were lost to the raging elements. When it all started, I was unable to take in what was going on. Then, when I saw roofs of houses flowing down and bobbing on the waves of mud, I was seized with horror and rushed to my children. We were unable to salvage anything from inside the house. But we came to fully realize that when everything was over, the mudflow had rushed down and we saw that we were all alone on islands of land stripped bare of all vegetation; but most importantly, we were all there, the whole family, alive and unhurt".

"Have you any photos of it?"

"Unfortunately, not."

"It sounds like it must have been a beautiful place where you lived."

"In Svaneti all places are beautiful. I'm sure that now you have a chance to see for yourself that it's true".

"What was your life like after all these?"

"We stayed with relatives in the neighbouring village, although it was difficult to get there: there were no roads. No rescue could reach us, so we had to make do with whatever means we had until, about five days later, we could somehow get to our relatives and stay there for some time. And then a prospect emerged for us to move over here".

"What was your first reaction after resettlement?"

"I need hardly say that these here places compared poorly with those where we came from, but then beggars can't be choosers, as the saying goes, although in fact it was us who have chosen this place to live."

And on top of all that, a few years ago Rusudan was widowed. Nevertheless, she succeeded in raising six children and gave each of them an education, for she is a teacher by training and never gave up her profession. Neither is she going to give it up now, for she insists that she is still in good shape and is fully determined to go on teaching. She scarcely looks her age of 60. She had lost her husband to a disease, and needless to say, it was a great blow to her, but surprisingly, that





made her still stronger. She keeps dreaming of a good and strong family and of a day when the place which is her home now will be named Giosheri. This is also something about a hundred of other Svanian families are looking forward to in the nearest future.

"My poor late husband together with two other men has chosen this place for all of us to settle. The government offered us several options: in Kakheti, in Kvemo Kartli, but somehow or other the men chose this place for us to stay. At that time people even quipped that there was a political idea underlying this choice, as we were going to live at a place densely populated with the Azeris".

"Was it really so?"

"That might have been in the offing, but it was the geographical location of this place that tipped the balance in its favour: it was not far from Tbilisi and the land was fertile. And this is the strongest argument for a peasant."

"Was it easy for you to adapt yourselves to a new place?"

"The first few months were a nightmare. To make the situation still worse, we were housed in barracks, temporarily, of course. And every evening about fifty families came out into the yard outside the barrack and bewailed their hard lot. Things became better when the construction of these houses was finally completed. But "completed" is a wrong word to use in this case, because everything was in a horrible mess then, as you will recall. A few of these houses are still unfinished, and we finished the construction work in our houses on our own, spending our own savings to do that. But, of course, we did not grumble, because now we had a roof over our head, we had a bed to sleep in... Eventually, things took their normal course".

"Was it difficult for you to adapt yourselves to another climate and surroundings?"

"It was very difficult indeed, and for a number of reasons, too: different surroundings, relationships with new neighbours, new means of sustenance, etc. As for the climate, it is the right case when we can refer to the proverb that every cloud has a silver lining. Svaneti has a humid climate which in many instances is not very healthy, while this climate here is dry, and it has put many people back in good shape, including myself. I used to be quite sick and at times was even unable to move about, but now it's gone and forgotten, and I don't even remember what it felt like."

"Will you excuse my indelicacy, but I have noticed a cemetery here, and a rather large one, too".

"There is no indelicacy about it. It is our reality. Over these 18 years we have lost many of those who were dear to our hearts. Very many, indeed."

"Incidentally, do you blame the change of the climate for it?"

"On the contrary. This new climate has turned out to be exceedingly salubrious. We were ruined by stress that later served to bring about a succession of emergencies. Frayed nerves are at the bottom of many a disorder, you know. My late husband was greatly oppressed by all these developments and that oppression eventually drove him to the grave. He could not bear the loss of his brother. But that was not the only reason of his premature demise. The time of trouble afflicted us too".

"I beg your pardon again, but blood feud, or vendetta is often said to be connected with Svans".

"Blood feud is more practised in Upper Svaneti. And here we have few incidents of it, although we are second to none when it's a matter of defending our honour".

"How do you co-exist with the people of another nationality?"

"Very well, indeed. Truly, we've never had any problems or confrontation with them. Neither have they. Although sometimes our children would bristle up when someone calls them "refugees". Nothing serious, though. We just maintain good-neighbourly relations, and that's all there is to it".

"Is there a church here?"

"Of course. It was here when we arrived."

"And a school?"

"And a school, too".

"Do Azeri and Georgian children go to the same school together?"

"Yes, but they have their classes in different groups."

"And have you picked up any Azeri, or your Azeri neighbours know Georgian?"

"They knew Georgian, as much of it as they needed, well before our arrival here. But, of course, younger people are more receptive."

"Pardon me, who is that old lady whose sight I caught in that room?"

"Oh, it's my mother. She would love to talk to you".

The old lady's name is Georgina. She is 84 and a hundred per cent Svanian. She is missing her native place, but is still going strong.

"There already are 140 of us, descendents of my father, and as I look at them, I'm happy, although I still miss my na-



tive place", says the octogenarian with a rueful smile that disappears when she looks at her one-year-old great-grandson Giorgi. He is not her only one, but he is the youngest and, understandably, the most pampered member of the family who at that moment is fully engrossed in his favourite pastime – feeding the goslings.

There is a lot more one can tell about this family, as well as about other ones in the same plight, but we tried to discuss the most essential events in the life of Rusudan who has raised six children and is now taking care of grandchildren. But she wonders about this family will never cease, especially when you get down to their marani or a wine cellar. It is here that the khorgo we began our story with is kept. It is not just any other khorgo, for it is over 200 years old. Anyway, to the best of Rusudan's memory, this khorgo was made by her late husband's grandfather. He passed away in 1840, and this khorgo was the pride of his life. He made it out of a linden log to hold 800 litres of grape juice that will make excellent wine, so this khorgo was the most valuable object that the family has succeeded in bringing over here from their disaster afflicted native village to have and to use forever. God bless and sustain you!



# Unstable Landslides in “Sustainable” Urban Development

by Lia Bayramova

**L**andslides stand quite prominent among hazardous geological processes and phenomena. They destroy engineering constructions and damage the entire infrastructure in the area afflicted. Besides, landslides trigger a succession of the environmental consequences, such as destruction of the topsoil and the vegetation growing upon it, changes of the terrain of the area and its landscape and development of such necessary geological processes as formation of ravines and swamps in the course of the landslide and its movement.

A landslide may be caused by excessive rain and other precipitation, melting of snow, earthquakes, erosion of slopes, as well as by carelessness or rash human activities, such as explosions, all kinds of digging and earth moving, cutting down trees growing on mountain slopes and the like. Chances of a landslide depend on the rate of erosion caused by surface and ground water. The amount of dirt in a landslide can well range from hundreds to thousands and even millions of cubic metres with a speed from a couple of metres a year to several metres per second.

Landslides are not infrequent in Baku and there are many cases even in living memory when they caused serious damage to the capital of the Republic. Baylovo – one of Baku’s districts, frequently suffered from landslides in 1938-1940 and in 1950-1952, but the most destructive of them hit Baylovo in 1972. Shortly before, a zoo had been arranged there on a slope, which eventually became so saturated with water that the soil became all too soggy. So, the land on the whole area slipped down, destroying houses and carrying down a tram line, rails and all. Everything was in ruins, whereupon a decision was made to relocate the zoo to where it is today. Over the period from 1974 to 1994 the slope remained steady and did not show any signs of changes, although the water did percolate into the soil which was otherwise devoid of ground water.

Now the city of Baku is in the midst of a wild rush for land that is rapidly changing owners. There is another rush in progress now – a rush for construction, but not all areas in Baku can take it and many people are in fact living in

houses built on landslide-prone land. To ward off this disaster a whole ramified drainage system was built there back in the Soviet times. However today the people seem to be so engrossed and captivated by a chance to make a fast buck that they seem to have completely forgotten about the landslide hazard and keep building where there is a great potentiality of a landslide.

Landslides have long since been the object of thorough and scrupulous study in Baku, the greatest attention being devoted to the Baylovo slope which is displaying numerous signs of erosion. However, despite long observations and quite a number of preventive measures, the tendency to slip has not just as yet been fully arrested, let alone neutralized.

Prof. Firdousi Aliyev, D.Dc.(Geology and Mineralogy) and Merited Geologist of the Republic of Azerbaijan, had officially informed the state authorities that in some districts of Baku there are geological pre-requisites of the development of hazardous landslide processes.



**Landslides are conditioned by clayey soils that alternate with layers of sand and loam arranged in a slope with a gradient ranging from 15 to 30 degrees, and occur when water appears here and reduces its stability (in other words, the soil becomes suffused with it which turns clay into liquid slush), while fine grained sand is washed away from between the layers of clay.**

There was a precedent on record when leading geologists cautioned the authorities about an impending landslide, for instance, in the district of Baylovo where there was a real construction boom starting from 1995. All these, together with the construction of Milli Majlis buildings and a number of other ones expanded the area of this section of the city and, understandably, boosted the water supply and sewerage systems which ultimately increased the ground water flow down the Baylovo slope.

The stability of this slope left much to be desired. Its foot was broken, and its top part became soggy after it had been cut open on two separate occasions: first for building a petrol filling station in 1995 and later for the construction of a sixteen-storeyed house. Thus, in the course of the first half of the 1990s the slope had been sponging up water, which is a sine qua non for a landslide that was not long in coming and struck in August 1996. Strange as it may be, there was no reaction to that on the part of the authorities who did not bother to take the required measures to prevent further slides which struck again in the spring of the year 2000.

Nobody took it as a lesson to learn from and disregarded the opinion of the experts who performed a set of engineering, geological, geophysical and hydrogeological jobs and who urged the relevant authorities to take preventive measures against highly probable landslides; their admonitions were wasted upon them, and construction work went on and on.

In many districts high-rise houses are built in dangerous proximity to one another in contravention of the existing rules in this regard. Also, these new houses are standing on a slope composed of clayey soil. It is not excluded that eventually the water pipes may develop a leak of leaks and loses their water to the ground which will increase the volume and level of ground waters.

All these is quite serious, which is corroborated by a landslide that took place in January 2005 in another district of Baku where the situation is equally grim: a company of



**Present-day Baku**

developers cut their buildings into another landslide-prone slope, thus putting the lives of hundreds of people into grave jeopardy. A tall high-rise sitting right upon the crown of a hill has already developed an ominous crack. So has a motorway nearby, which was closed to traffic immediately after the disaster.

Paradoxically, housing construction on this hazardous area was permitted by the executive authorities of Baku. This slide-prone slope was cleared of all trees and cut into by numerous foundation pits for the future houses. Thus, all the pre-requisites were created for a landslide which was not long in coming. Analysis of all the cases of landslides shows that the slope was deeply cut into which actively promotes landsliding processes.

Housing construction in Baku is done without taking into account the relief of the terrain on the construction site. As a consequence of this thoughtless approach the natural courses of drainage of the ground water are disrupted; water or sometimes even sewage carrying human faces percolates into the basements of houses or erupts to the surface of the ground. Specialists insist that most urgent measures must be taken immediately to save the city of Baku from destruction, and the first such measure is to necessarily put an end to the appalling practice of arbitrary housing construction.



**Old Baku**



**Present-day Baku**



# Desertification in Armenia



*The Republic of Armenia occupies a territory of 29 740 sq.km., 80% of which is currently under the threat of desertification.*

by **Ruzanna Davtyan**

**D**esertification as a global environmental problem comprises a whole number of untoward and highly undesirable processes and baneful consequences ensuing therefrom. This is why combating desertification implies not only efficient organisation of work on protection and sustainable use of natural ecosystems, their components and natural resources generally speaking, but also efforts aimed at mitigation of the influence of social and economic factors that violate the ecological balance of the environment as a whole.

The social and economic crisis that gripped Armenia over the last decade catalyzed the process of desertification of the Republic's territory. Armenia's geo-

graphic and climate conditions enhance this process and the country is suffering considerable economic losses caused by degradation of the soil with ensuing shrinking of land resources, also by dramatic reduction of biodiversity and bioresources. All these reduce the living standard of the population. For this reason, combating desertification has become a matter of the strategy for survival of the whole country that regards solution of this problem as a guarantee of sustainable development of the Republic.

Manifestations of desertification in Armenia call for measures to keep the process in check. This is one of the top priority issues today, because owing to its geographical location and dry climate, the territory of the Republic is characterized by all the specificities of an arid region.



The impact of the anthropogenic factor upon the territory of this Republic has been on the increase from year to year, causing degradation of the soil and its erosion. Over a half of Armenia's territory often suffers from mudflows which boost up the surface run-off and thus accelerate the process of desertification. Yerevan is under constant threat of being hit by a landslide. Degradation of soil is notably promoted by its salinity. Also prominent is erosion of roads and erosion caused by irrigation water. The basins of many rivers have formed a number of landslide foci. Owing to the anthropogenic impact, the country annually loses lots of arable lands, forests and pastures.

Among other natural causative factors of desertification in Armenia are frequently recurring droughts and hot winds which are hazardous geometeorological phenomena. Over the recent years hot wind storms have been hitting the country ever more frequently. It is connected with proliferation of hot air masses from the tropical areas, and this hot air hits territories even at alpine altitudes.

The territory of Armenia is not rich in natural water resources which are distributed in an uneven pattern both geographically and seasonally. Lack of precipitation in the latter half of summer is a primary factor of desertification in Armenia.

Other natural factors in this sense are such geomorphological peculiarities of the territory as great variety of terrain, location of mountain slopes and their steepness.

The territory of the Republic of Armenia is characterized by an extremely vigorous development of landslide processes conditioned by a high gradient of mountain slopes, complex geomorphological and geological behaviour aggravated by uncircumspect human activities. According to the assessment made by the Emergencies Department, annual damage caused by landslides to various socio-economic systems of the country amounts to about \$30 mln.

There are about 2000 large-scale landslide areas, many of which are within the skirts of such cities and towns as Dilizhan, Idjevan, Kapan, Vanadzor and a great number of villages. Many railroads and motorways are under constant threat of a landslide, together with high voltage power transmission lines and agricultural lands.

Over half of Armenia's territory is in danger of yet another scourge – mudflows. Yerevan is located on an area where mudflows from the rivers Djrvezh, Berdadzor and Vokhchaberd intersect one another, and this is an increasingly alarming circumstance.

Owing to a shortage of protective engineering structures and an appalling condition of the existing ones, these flows carry away a lot of topsoil which triggers formation of ravines and deep gorges; also, the flows leave behind a lot of mud over the surface of agricultural fields and over whatever has sprouted and grown of what had been sown on them. Altogether, mudflows cause harm and damage to about 2000 settlements on the entire territory of the Republic of Armenia, and experts have identified over 600 sites

where our major railroads and motorways are in danger of being disrupted by mudflows.

Erosion of the soil triggered by showers soon forms mudflows that interrupt river courses, obstruct them, make the rivers burst their banks and then spread over the valleys. Annually mudflows cause damage that costs the country about \$ 3 – 3.2 mln.

Floods are of frequent occurrence on the territory of the Republic, especially in the Ararat Valley where inundated area makes about 30% of all agricultural land with over 80 settlements located there which serve as links along important transport routes and have many structures and enterprises that are of vital importance for the country. Floods have another untoward consequence: they cause salinization of the soil. Patches of salinized soil are to be found mostly in the Ararat Valley and account for some 30% of its area.

Considerable part of erosion is caused by streams of water which is observable in enclosures formed by mud brought over from steeper slopes to where their gradient decreases. Erosion, inundations and wash-outs of the soil are mostly observable where the rivers Aras, Razdan, Vorotan, Agstev, etc. pass across flatlands.

Salinization of the soil in arid areas is a typical manifestation of desertification. It usually takes place in low-lying valleys where the level of ground water comes close to the surface.

Uncontrolled deforestation is yet another serious causative factor of desertification in the Lori, Tavush, Syunik, Gegarkunik districts and elsewhere in the country. This triggers erosion processes and formation of mudflows that also hit urban territories in Vanadzor, Goris, Idjevan together with rural areas (some villages in the Noemberyan and Martuni districts). These mudflows may well be prevented if measures are taken to properly organise and carry out sanitary woodcutting.

Forests are unevenly distributed over the Republic's territory. In the north they occupy 29% of land, in the south – 13%, while in Central Armenia the figure is only 2%, which is accounted for by the negative impact of the anthropogenic factor and unfavourable climate. In the course of the centuries the above factors brought about degradation of forests and reduction of the area they occupy where arbitrary and excessive cutting of valuable species of trees for timber has resulted in undesirable changes: valuable stands of beech, oak, pine and ash were all cut down and the area became overgrown with hornbeam and small sickly and scraggy trees and bushes.

Over the past decade, irrational utilization of land, overgrazing and deforestation have seriously promoted erosion and formation of mudflows.

All the above clearly indicate that negative consequences of deforestation not only tell on the country's economy, but indirectly influence the political, cultural, social and environmental spheres and thus enhance the pressure of some negative factors and aggravate the problems that exist in the above spheres.

# If You Make Plans for a Century Ahead, EDUCATE THE PEOPLE FIRST



**E**cology is virtually becoming a buzzword, for we say it and hear it ever more frequently. The notion it signifies is a sophisticated field of knowledge and research that is exceedingly important, all the more so because man plays a specific role in it. The resources of our Planet are spent faster than they are replenished or renewed; therefore, even those we had in plenty have been petering out for quite some time now. Nature is unable to constantly heal wounds inflicted on it. It is highly probable that over these few weeks yet another mammal has disappeared from the face of the Earth, or another bird, or another starfish, or another plant. We cannot afford to forget that every animal or plant is unique in itself. And this is something that we, the humans, are supposed to bear in mind at all times. The understanding of the uniqueness of each component of Mother-Nature does not come from above: it is to be nurtured from the early childhood.

by **Ashot Gareginyan**

“Once you’re up in the morning, washed and dressed for the day, the next thing you need to do is tidy up your planet”. This phrase of Antoine de Saint- Exupéry, a remarkable French author is what may be described as a refrain that sounds all through the brochure “Be My Companion” which a few years ago initiated the cooperation between the NGO “Ecological Survival” with “HEIFER International”. It came out in Armenian, English and Russian within the framework of the “Peace to Your Home” Programme and presented in a simple and easy-to-read-and-understand language environmentally appropriate principles of agrarian activities. According to representatives of the NGO, this initiative was exceedingly welcomed in Armenia and rallied substantial and enthusiastic support there. It is not fortuitous that today this little

brochure is used as a textbook for extracurricular classes on environmental protection.

In Ahtala, a town in the north-west of Armenia, not far from the border with Georgia and Azerbaijan, such classes feature on the time-table of local schools. Relevant literature and other materials are provided by the Information Centre that has been set up in Ahtala by the “Environmental Survival” supported by the “Eurasia Foundation”. This Centre has a library with up-to-date technical facilities. “We efficiently cooperate with the local authorities”, says Ms. Naira Aybekyan, Head of the Centre. “The Mayor has allocated to us some office space in his administrative building. We keep in touch with schools, carry out seminars and round table discussions. The people here say that all we do is exceedingly useful and important. We take it as an acknowledgement of our efforts”.





The work of this Centre will be discussed in detail at the regional meeting that is expected to be convened shortly in Bolnisi, Georgia. The Armenian specialists are looking forward to fruitful contacts with their counterparts from the Society for Regional Ethnographical Studies of Azerbaijan and from the Caucasus Environmental NGO Network (CENN) who have set up analogous centres within the framework of regional partnership in Qazax and in Bolnisi. According to Ms. Dshkhui Saakyan, Cand.Sc.(Biol.), member of the Board of the NGO "Environmental Survival", pollution of water resources features prominently on the agenda of the Armenian side. This issue becomes particularly important in the light of the fact that Ahtala, Bolnisi and Qazax with their adjacent areas are part of the basin of the river Kura whose ecology plays a key role for that of the entire South Caucasus.

Care for water resources was the key theme of the first publication of this NGO "Boosting up the Environmental Awareness of the Basin of the River Razdan" that was done within the framework of the TACIS project "Raising the Environmental Awareness of the Population of the Kura-Aras River Basin". The main characters of this brochure are imaginary manikins Armen (an Armenian), Ali (an Azeri) and Valiko (a Georgian). The three of them travel down the course of the river Razdan and while doing so they discuss its ecological problems and the environmental measures taken in the riparian villages of Arzakan and Sis. Armen answers Ali's and Valiko's questions. This brochure has been acclaimed the best within the framework of this project.

Our NGO has implemented another project, viz. "Conservation of Arid and Polyarid Ecosystems in Transcaucasia" within the framework of the REC Caucasus Transboundary Grants Program financed by the Swiss Agency for Development and Cooperation.

Together with the NGO "NACRES" (where Georgia is the leader) and the Armenian NGO "Ayots Dprots" ("Armenian School") we have put out a brochure "Learn the Nature of Your Motherland" to serve as a guideline in this very important activity. The brochure generalizes the results of research aimed at conservation of the biodiversity

in the Tavush and Lori marzes (North-Eastern Armenia) and summarizes the results of a competition campaign among schoolchildren on environmental activities. The final competition took place in the village of Shnokh (the Lori marz).

The clean-up campaign of the shores of Lake Sevan where practical work was done by volunteer activists of the NGO "Environmental Survival" is justly regarded as a success story.

"We have been doing it for the last two years", says Ms. Dshkhui Saakyan. "Our activities became so notorious to the holiday-makers that when they sighted us they would shout out: 'The sweepers are here again! Turn over your garbage!' We just dismissed that, for our primary concern was to nurture the children in an atmosphere of taking care of Mother-Nature and the place where they are born and live. And if the grown-ups follow suit, so much the better for them and for all of us, for that matter".

The Armenian NGO "Environmental Survival" intends to implement yet another project in the sphere of Environmental education of the population in Agberk and Drakhtik – two villages in the Gekharkunik marz of the Republic located close to the border. To that end we have already applied for assistance to the representational office of the "HEIFER International" in Armenia. "Our choice of these villages is not fortuitous", says Ms. Susanna Akopyan, Cand.Sc.(Biol.), member of the Board of this NGO. "They are practically cut off from the rest of Armenia and live in isolation under strenuous conditions. They have a very vague idea, if any at all, about the environment and the need to protect it. Therefore, when it is a matter of meeting their needs, they would unknowingly cause any damage to their own environment. We are determined to educate them and open their eyes to the hazardous side of damaging flora and fauna. In the framework of this project we plan to carry out competitions, seminars, trainings and research actively involving the local residents, particularly the young people. These activities are aimed at revealing the degree of human impact on the environment, as well as at elaboration of measures to reduce this impact ad minimum."

**S**ince recently the word combination “sustainable development” seems to have become buzzwords, especially when laws, national programs, business projects are being drafted, and in reports and research papers.

The terms “sustainable”, “sustainability” have a very broad sense. Definition of “sustainability” includes innovative approaches to energy saving technologies, economic development, agriculture, building of democratic society, clean watersheds and many other spheres and disciplines. By definition announced by the world Commission for the Environment and Development (a.k.a. the Brundtland Commission) in 1987, sustainable development is such economic and social development that meets the needs of the present generation and allows the subsequent ones to meet theirs. Sustainable development is based on integration of the following three components: economy, society and environment. This integration can be possibly achieved primarily via informing the general public about the values of sustainable development that promotes harmonization of the attitude of the business sector to the environment.

Unfortunately, the general public of Azerbaijan and especially its younger generation today are inadequately informed about the concept of sustainable development, its principles and its significance for the environment of the whole planet generally and of Azerbaijan in particular, while the current condition of the water, mineral, biological (flora and fauna), land, agroclimatic and recreational resources of this country and its future cannot help causing gravest concern in any thinking individual.

## Role of NGOs in Environmental Upbringing of the Younger Generation

by Elçin Sardarov

A responsible and humane attitude to one's country's natural resources is to be nurtured since school years. Education of children and adolescents, together with their parents and instructors should be done through such information programmes as “The Earth Day”, “World Environment Day”, “Animal Protection Day”, “World Water Day”, international conventions, etc.

The Humanitarian-environmental Information Analytical Agency “SANIYA” and its partners in the socio-environmental forum “SEFA” –the environmental organisations “The Caucasus”, the union of women-journalists environmentalists “Gülüm” and “Ecosphere” – have an experience of marking an annual “Earth Day” in Baku and in the provinces of Azerbaijan.

In their projects the Azeri Society for Protection of Animals, “Ecores”, “Pilgrim”, “Ecoscope”, the Centre of Sustainable Development, the Centre of Environmental Forecasting, “Fovgal” and other organisations also devoted great attention to environmental education of the younger generation and of representatives of communities, helping them to apply in practice the knowledge they obtained in the course of training sessions and information campaigns.

Students and other representatives of youth communities in Baku, Sumgayit, Gəncə, Qusar, Bərdə, Mingəçevir, Lənkəran, Zaqatala together with other participants in observing the “Earth Day” were informed by the activists from the “SANIYA” about such measures as rational use of vulnerable ecosystems, methods of combating desertification and droughts, sustainable development of mountainous areas, sustainable methods of agriculture, preservation of biodiversity in forests, at sea and in riv-

ers, protection of the atmosphere from pollution, preservation of good quality of fresh water resources, water management, the baneful effect of toxic and radioactive waste; the participants in the “Earth Day” met with environmental experts, as well as with representatives of the state authorities and business structures, also with journalists; they planted trees and bettered public parks and gardens, submitted their compositions, drawings and photographs dedicated to environmental themes for competition, etc.

In the course of these information sessions and trainings, the students and representatives of communities cast additional light upon the environmental problems of their regions and sought ways for their redressing on the basis of the principles of sustainable development.

The existing lacunae in the curricula for Environmental education at school can be filled by carrying out measures aimed at raising the environmental and legal knowledge of students, also by campaigns of tree planting, cleaning-up school yards and adjacent territories, arranging new and bettering the existing playgrounds for younger children, protection of animals and birds, protection of the mineral and biological resources of the Caspian Sea, the rivers Kura and Aras, national parks and reserves, rational water management and energy saving and other public campaigns. However, all this is unable replace a special course of training in sustainable development and raise the level of teaching biology at school.

The formation of a socially active stance in this respect in the future masters of the natural resources of this country is an issue of paramount importance. The existing vacuum in this respect needs to be filled in the nearest future, and the role of NGOs here is unquestionable indeed.



# Ecoestrogens and Reproductive Health of Humans

by **Dr. Konstantin Chichinadze, M.D.**

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**O**ur present-day industrial society obtains a great deal of chemical compounds which find their way into the environment and cause various untoward effects in the human organism by impairing many of its organs and systems. According to various researchers, anthropogenic factors (i.e. the factors generated as a result of human activities) are responsible for 10% to 57% of deviations from normal healthy state of the population of our globe. The list of ecopathologies is very long, but most frequently ecotoxins negatively affect:

- ▶ the physical development of a person, boosting up the number of people with the mircosomatic type of development, while simultaneously decreasing the number of people with the harmonious type of development and causing other pathologies;
- ▶ the immune system, suppressing cellular and humoral immunity, etc.;
- ▶ the respiratory system, affecting the ENT, etc.;
- ▶ the hematic and he+\_+matopoietic system, causing anæmia, etc.;
- ▶ the excretory system (for instance, the incidence of pathologies of the urogenital system, particularly pyelonephritis, in children from environmentally unfavourable territories is a lot more frequent than elsewhere).

The reproductive system is often afflicted by unfavourable environmental conditions. It has been established

that various factors in the natural-technogenic environment produce similarly negative effect on human health; in this context, impairments of the reproductive system are of the same type wherein non-specific or general pathologies are predominant whose severity depends on the time and intensity of the pathogenic factors the person has been exposed to, as well as on the efficiency of the adaptation processes of the human reproductive system.

Technogenic activities of man generate a great deal of chemical compounds that possess an estrogenic and sometimes an antiandrogenic effect (estrogens and androgens being the female and the male sex hormones respectively). These compounds became known as ecoestrogens. They comprise a big group of pesticides, medical drugs, oil products, some kinds of plastics, additives to food, etc. and have been discovered in sufficiently large quantities in lakes, rivers, seas and in the soil. Over the last decades the problems of the influence of these compounds on the development of man and animals has become increasingly topical.

Particularly, the burgeoning agriculture requires the use of ever greater amounts of pesticides. The DDT pesticide that became so popular after World War II turned out to be an agent exerting a toxic effect, namely that it produced an estrogenic effect on the human population. DDT was banned. Yet many other pesticides that are in use today possess analogous properties exerting both a feminizing and a demasculinizing effect.

It is known beyond any doubt that when estrogens find their way into animals, they cause various changes in the function of their life supporting systems and separate organs and alter the behavioral patterns of their progeny.

There are certain data that these agents cause similar changes in the humans.

One of the most serious hazards of estrogens is that they are not so potent as to disrupt the pregnancy, but they do affect the foetus, primarily the development of its reproductive system.

High doses of estrogens deteriorate the quality and reduce the quantity of the sperm in men, and in women they boost up the incidence of mammary cancer. Especially vulnerable in this context are developing organisms, both in utero and after birth.

The problem of a negative effect of estrogen compounds upon the reproductive system of an embryo first came to light when the physicians discovered adverse side effects of diethylstilbestrol (DES) – a synthetic estrogen, which was widely used for sustaining pregnancy back in 1945-1971 and which resulted in the birth of *about 4.5 million children whose mothers received DES during pregnancy*. When these women's daughters reached the reproductive age, they suffered from reproductive dysfunction, various anomalies of pregnancy, depression and a number of other disorders. These women's sons also suffered from reproductive disorders, such as cysts of the epididymus, cryptorchidism and other disorders that reduce fertility.

Research on experimentation animals has revealed that estrogens produce an effeminizing effect on the organism. A plethora of facts have also been obtained proving reduction of the reproductive potential, disorders of the development of the sexual function and other untoward changes in representatives of various species of the fauna born under the conditions of the environment polluted with ecoestrogens. Of particular interest are the investigations which have revealed disorders also in the pattern of sexual behaviour of these animals, namely that the males were no longer able to normally and successfully accomplish coitus because of disorders of various stages of its course. All this resulted in a reduction of fertility in animals.

This effeminizing effect of estrogens manifests itself in people, too. In our view, this effect is, at least partially, responsible for the advanced feminization of men in eco-

nomically developed countries of the world that is observable today.

Stress sustained during pregnancy is also known to affect the progeny of animals that may manifest itself in deviations from the normal patterns of their sexual behaviour when they attain the reproductive age (for instance, males may display elements of homosexual behaviour). One of the basic mechanisms underlying these deviations is the violation of the ratio of the male and female sex hormones in the mother's blood, and inasmuch as estrogens affect just this ratio, one may wonder whether this violation may feature as one of the causes responsible for the increase of homosexuality and other deviations from the normal pattern of sexual behaviour we are witnessing today on our planet?

Estrogens may also play a role in the lesion of the germinal function in men which was first discovered by the Danish researcher E.Karlsen. Having analyzed spermogrammes from 61 laboratories in different countries of the world collected over a period from 1938 until 1991, he concluded that the concentration of the spermatozoa for the period was twice weaker. Scores of subsequent investigations only corroborated the general trend:– decrease of spermatopoiesis, especially in younger males. For instance, in Denmark men show an average decrease of the number of spermatozoa in their semen from 100,000,000 to 50,000,000 over the last fifty years. To make things still worse, examination of what is known as "practically healthy" men in industrial centres of various countries of the world shows a decrease of the steroid activity of their testes; in other words, men today have less and less testosterone – the basic male hormone – in their systems. And there are grave suspicions that estrogens as antiandrogenic agents also play a role here.

Pollution of the environment with ecoestrogens is now ubiquitous in the industrial world. Some researchers dub our environment as "an estrogen sea".

In view of the above, quest for environmentally safe reproductive biotechnologies that could weaken or altogether neutralize the negative impact of ecoestrogens on humans and animals appears now to be the best option.

The theme of World Health Day 2005 is healthy mothers and children.

This is also the subject of the World health report 2005, which will be launched on World Health Day.

The well-being of societies is directly linked to the health and survival of mothers and children. When mothers survive and thrive, their children survive and thrive. When both mothers and children survive and thrive, the societies in which they live prosper.

Too many mothers and children in the world are dying or suffering from the effects of ill - health, poor nutrition and inadequate health care. Each year more than half a million mothers die in childbirth. At the same time 10.6 million children under the age of five years die from a handful of preventable and treatable conditions. Nearly all these deaths occur in low and middle income countries – and mainly amongst the poorest of the poor in these countries. Many of these deaths could be prevented using existing knowledge and affordable tools.

**World Health Day 2005 is a unique opportunity to raise awareness of this needless tragedy, and of the efforts needed by all to ensure life and good health among these precious members of society. It is also an occasion to stimulate action; to compel national governments, international donors, nongovernmental organisations, the private sector, the media, community-based groups, and individuals alike to learn about, plan for and undertake sustainable activities that aim to improve the survival, health and well-being of mothers and children.**

For additional information visit [www.who.int/world-health-day/2005/en](http://www.who.int/world-health-day/2005/en) or [www.who.int](http://www.who.int)



# SAVE CASPIAN STURGEON

**F**ish of the sturgeon family (*Acipenseridae*) is indeed a wonder of Nature and the pride of the Caspian Sea. Sturgeons are one of the most ancient and enigmatic species of marine fauna that have survived on our planet since the time of the dinosaurs.

*The sturgeon family (Acipenseridae) is a relict species in the ichthyofauna. Some varieties are anadromous or migratory; others are semi-anadromous, while still others are non-anadromous. Having come into being in the Jurassic Period, sturgeons spread out liberally all over the seas of the north hemisphere of our planet. However, already in the 19th century ichthyologists came to be alarmed by dramatic depletion of the sturgeon populations all over the globe. This depletion and complete disappearance of some populations of sturgeons was then theorized to be due to their "primitive" organisation vis-à-vis fishes with a bone skeleton. It was held that sturgeons disappeared because they failed in competition with fish that had bones in their body. However later it was shown that in a number of factors sturgeons are much better developed than their competitors with bones in their body and, moreover, are in the midst of a definite stage of biological progress.*

by Rafik Kasimov

Currently the sturgeon family is represented by four genera comprising 30 species, but it is the Caspian Sea which remains today the basic sturgeon breeding and harvesting area that is the habitat of five species of sturgeon: the great Russian beluga (*Huso huso*), sturgeon (*Acipenser guldenstadti*), sevryuga or starred sturgeon (*Acipenser stellatus*), glassy sturgeon (*Acipenser nudiiventris*) and sterlet (*Acipenser ruthenus*). Suf-



ice it to say that the Caspian Sea yields over 75% of the world catch of sturgeon. Our knowledge about the biology of the sturgeon is still full of lacunae. These fishes are known to attain reproductive age at the 12th to 14th year of their life, and unless they become victims of poachers, their life expectancy is from 60 to 70 years. Some individual belugas live to be 100 and older, with a weight exceeding one metric ton (1 000 kg).

All varieties of sturgeon are most valuable commodities, their caviare and flesh fetching highest prices in the world market. For this reason they have always been vigorously harvested. However, not everyone knows that that sturgeons mean only caviare and flesh; their organs and tissues yield most valuable medical drugs and a whole number of other products obtained from them are widely used in many spheres of human activity:

- ▶ *Their air bladder has since most ancient time been used as a primary source of the best clarifier of grape wines;*
- ▶ *Their spinal chords yield a substance that is used for restoration of paintings and mosaics;*
- ▶ *Their spermaries are the source of Polydan (sodium nucleospermat) obtained from them to stimulate leucopoiesis and thus increase the number of mature leucocytes in the blood;*

- ▶ *Milt of sturgeons is used as a source of Derinat (sodium deoxyribonucleate) – a most potent stimulant of cellular regeneration and stabilizing factor of hæmopoiesis. It is also used as a versatile modulator of the metabolism.*
- ▶ *And finally, from the hard roe of the sturgeon family the Regenerating Ulma Balm is obtained, that enhances the immunity and triggers rejuvenating processes. Besides, it also produces a nutrient, germicidal and antiphlogistic and vasotonic effect promotes resolution of indurations, normalizes the functioning of the central and the peripheral nervous systems.*

So, the significance of the sturgeon family of fishes for the humans is not confined only to their gastronomic qualities. However, in the course of the 20th century world harvesting of this fish varied considerably from year to year influenced by a number of biotic, abiotic and particularly anthropogenic factors.



Biologists and ichthyologists spared no effort in elaborating a system of measures aimed at regularisation of fishing and efficient reproduction of sturgeon stocks. Relevant action has been taken to improve the environmental conditions at the natural spawning grounds of this fish, which resulted in stabilisation of the numbers of the populations of these unique species at least for some time.

However, we have been observing with regret dramatic decrease of the stocks of this fish. The catch of sturgeon in the Caspian Sea in 2004 decreased 15 times, as compared with that in 1980-1985, which genuinely alarms the academic circles of the Caspian Sea area and the world community as a whole. The unique in every respect biocenosis of the Cas-

pian Sea is under the threat of complete disappearance from the face of the earth. The Caspian sturgeon can only be saved by an integrated pragmatic and scholarly approach to resolution of this problem.

To that end, it is imperative that:

- ▶ fishing should be properly organised;
- ▶ reproduction of sturgeon population should be intensified;
- ▶ rivers that are spawning grounds for sturgeon should be protected from pollution.

The last item on this list is particularly important, for researchers from the Caspian countries have proved that sturgeons are exceedingly vulnerable to unfavourable environmental factors at the early stage of their development, i.e. when they are still in the river.

This circumstance is all the more significant for Azerbaijan, because basic sturgeon fisheries and their natural spawning grounds are in the river Kura that empties into the Caspian Sea. The Kura and its tributary the Aras are transboundary rivers that, besides Azerbaijan, also flow across the territories of Turkey, Georgia, Iran and Armenia, where their water becomes strongly polluted with



both untreated municipal sewage and industrial waste. Therefore, the life of these unique species of fish largely depends upon reduction of polluting run-offs from the territories of these countries that contaminate the water. And protection and preservation of the sturgeon population for the future generations is a sacred duty not only of the people living in the Caspian Sea area, but also of mankind as a whole. Otherwise, our descendants will never forgive our negligent attitude to this problem.

## The Entire Periodical Table of Elements IN OUR KITCHEN GARDEN

From **"Medinform"** News Agency

*Strenuous economic situation forces many city dwellers living in the outskirts of major cities to grow their own vegetables and fruit on their plots of land. However, research shows that these vegetables and fruits contain substances that are hazardous to health, because the soil in the vicinity of cities and towns and especially close to big industries is heavily polluted. Cities and industries grow, and so does the threat to human health that will put the future generations in jeopardy. Under these circumstances one can't help wondering whether vegetables and fruit are still to be kept on our menu, and if they are, then how can a consumer protect his/her organism from penetration of these harmful substances into it?*

**T**he Centre for Econospheric Research under the National Academy of Sciences of the Republic of Armenia has, since 1996, been studying the vegetables growing in the urbanised areas of Yerevan, its capital city. Samples of beans, peppers, tomatoes, aubergines, basil and parsley that predominantly feature on the menu of city dwellers have been thoroughly studied with a view to revealing the chain of events that bring harmful substances into the system of the consumers of these plants. It was found out that the vegetables growing on urbanised land are tainted with heavy metals. Among other metals, such as mercury, silver, copper, nickel and magnesium, lead is predominant because it is present in the car fumes.

The environment polluted with various noxious substances that find their way into the human organism with food produces an untoward effect upon our health.

In the recent years strong winds afflict Europe raising clouds of dust and carrying it over extensive territories. Dust also contains large amounts of the above harmful substances which accumulate in the soil and stay there for a long time.

Asmik Ovannesyanyan, leader of the project "Ecological Assessment of Kitchen Vegetables and Plants Growing on Urbanised Territories" says that since 2001 the Ecocentre has also been studying the soils and about 10 different kitchen cultures from Gyumri, next largest city of Armenia after Yerevan. All the studied samples have shown the presence of magnesium, nickel, copper, lead, cadmium, chromium, silver in concentrations that exceed the maximum





admissible norms many times over. Yerevan is also facing the most serious problem today, because the presence of about eight harmful metals has been discovered in its atmosphere, tin, copper and zinc being predominant among them.

*Suffice it to remember that most of the heavy metals are carcinogens which accumulate in the organism and years later cause various disorders some of which are transmittable to the future generations. For instance, large concentrations of lead cause anæmia, trigger tuberculosis and irreversible changes in the liver, the kidneys, etc., affect the immune system and so on.*

*Heavy metals tend to accumulate in the soil, waste run-off, atmosphere, plants, dust, etc. and thus stay in the landscape for scores of years on end. Therefore, their amounts are on the increase.* There is a number of plants that accumulate pollutants and thus clean the air, but some of them have a short life span, while others are hardier, they better withstand the harmful effect of the polluted environment and can be described as “octogenarians”. In this connection it should be observed that even reduction of the harmful emission will not produce desirable results. Therefore, comprehensive measures need to be taken, like not allowing industrial enterprises to be built near the areas good for agriculture and cattle breeding.

The spread of industrial pollution that is hazardous to human health and the environment as a whole has come to be sensed more acutely over the recent years owing to large-scale deforestation. Besides, on plots of land for private housing construction in urban areas and their outskirts, also along major motorways the owners have started cultivating vegetables in kitchen gardens and hot-houses; these vegetables are thus grown in areas of intensive technogenic pollution. Other poorer people grow vegetables and fruit on the polluted soil of small plots near their house, and their produce becomes a source of harmful substances that find their way into the human system.

Monitoring has revealed that the soil and the vegetables growing along the course of the river Razdan and in the Shengavit community are heavily polluted.

Three years ago the potatoes grown in various provinces of the Republic were checked for the presence of harmful substances in them. It was discovered that owing



to a thick skin the potatoes contained small amounts of these substances. Only in the potatoes grown in Ashtarak the concentration of these substances was in excess of the maximum admissible amounts.

Some plants are able to accumulate heavy metals in large quantities. However, that does not reflect on their appearance.

“Radioactive elements, like heavy metals, also tend to accumulate and exert a negative effect upon human health”, says Dr. Armen Sagatelyan, Director of the Centre for Econospheric Research under the National Academy of Sciences of the Republic of Armenia. According to the expert, radioactive elements may cause oncological diseases, and since the presence of these elements cannot be revealed by either specific smell, taste or colour (for they have none of these), they can only be detected by special machinery and equipment.

If the presence of even a small amount of radioactive substances is revealed and necessarily documented, they are to be kept under control and researched into, however small. Such substances are mostly released in the process of manufacturing gold and silver articles.

“It is no secret that the production of articles in silver is on the increase today, with ensuing emission of radioactive elements into the environment” says Dr Armen Sagatelyan.

Radioactive substances also tend to accumulate in the biosphere. For instance, their content in the water and the air may not be so large, but they may achieve high concentrations in plants. From foreign special literature we know that large amounts of them are accumulated in swallows’ eggs. Combined with heavy metals, radioactive elements affect the organism with added strength.

*Research shows that some vegetables, like beans, peppers and also kitchen herbs tend to accumulate more heavy metals than others. Their concentration in the kitchen herbs exceeds the admissible norm 10-fold. Strawberries and mulberries so relished by the people absorb and accumulate not only toxic substances, but also radioactive elements.*

#### **How can one protect the organism from hazardous elements?**

First of all it is necessary to inform the population about the perilous prospects of doing farming on polluted soils. Also that is imperative to thoroughly wash the vegetables, fruits and berries before eating them. Our organism can be protected from penetration of hazardous substances into it by complete and thorough cooking of our food, all the more that the national cuisines of the South Caucasus countries are so rich in the relevant culinary traditions and techniques. And yet that alone is not enough.

Regional departments of the Hygienic and Anti-epidemic Inspection are to impose control over penetration of vegetables and fruits tainted with heavy metals to the market. Although markets have special laboratories to test foodstuffs, it is not clear to what extent they meet today’s requirements.

It is necessary to carry out reforestation which, if done appropriately, will bring down the level of pollution of the environment by 40 per cent.

## April

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### 1 - International Birds Day

The history of the date began in 1906 when the International Convention for the Protection of Birds was signed.

### 7 - World Health Day

On April 7, 1948 a Charter of the World Health Organisation (WHO) was adopted. World Health Day is commemorated on the day of establishment of WHO. Additional information on World Health Day is available at p. 29.

### 21-22 - Regional Workshop on Strategic Environmental Assessment

### 22 - Earth Day

Earth Day is celebrated by millions of people around the world. This year is its 35th anniversary. This year Earth Day Network's theme is "Protect Our Children and Our Future". Many nongovernmental organisations, governments, teachers, and people concerned worldwide will declare that they are part of a worldwide movement to protect our planet, our children and our future. Additional information is available at: <http://earthday.net>

## May

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### 9 - Europe Day

In 1950 the Minister of Foreign Affairs of France Robert Schuman presented his proposal on the creation of an organised Europe, hence, May 9 is commemorated as EU establishment idea anniversary. A commencement is an agreement on European Coal and Steel Union of 1951 – the first "Six" that was established back in 1951 today is a union of 15 states.

### 15 - World Meteorological Day

World Meteorological Day commemorates the coming into force on 23 March 1950 of the Convention of the World Meteorological Organisation (WMO). Each year, WMO celebrates the day by focusing on a theme of topical or current interest to humankind.

### 22 - International Day of Biological Diversity

The United Nations General Assembly assigned the 22 of May of each year as the International Day for Biological Diversity - a day to reflect on the state and the importance of biodiversity. In the beginning the day was celebrated on December 29 - the day when in 1992 the Convention on Biological Diversity was adopted in Rio de Janeiro.

### 31 - World No-Tobacco Day

World No-Tobacco Day is commemorated every year in an entire world on May 31. Countries – members of the World Health Organisation (WHO) declared World No-Tobacco Day in 1987 to attract global attention to tobacco epidemic and deaths and diseases it causes that may be prevented. An international community faced a challenge – eliminate tobacco addiction problem by the XXI century. This annual event informs the community about threat of tobacco, product promotion methods used by tobacco companies and what WHO does to fight tobacco epidemic and what people around the world can do to exercise their right onto a healthy lifestyle and protect future generations. Additional information is available at [www.who.int/tobacco/communications/events/wntd/2005/en/](http://www.who.int/tobacco/communications/events/wntd/2005/en/)

## June

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### LEAPs Final City Conferences

### REC Caucasus Board Meeting

### 1 - International Children's Day

International Children's Day was declared in November 1949 based on a decision by the Session of International Democratic Federation of Women. The first International Children's Day was commemorated in 1950. This is a day of noisy children games and festivities as well as a reminder to a community of an importance to protect and respect children rights as a required prerequisite for establishment of a humane, fair and prosperous community.

### 5 - World Day of the Environment

World Day of the Environment – a major environmental UN activity annually held on June 5 in over than 100 countries worldwide. It was declared in 1972 by UN General Assembly and conducted by UNEP. The purpose of World Day of the Environment is to attract international community's attention toward the problems in the area of environmental protection and foster political interest and relevant actions to be taken. In 2005 the subject of World Day of the Environment is Green Cities. Slogan of this day will be "Planning for the Planet".

### 8 - World Oceans Day

June 8th will once again mark a global celebration of the planet's marine environment, in the form of World Oceans Day. Since first being held at the Rio de Janeiro Earth Summit, World Oceans Day has been extremely successful in raising awareness of the World's oceans and their importance for wildlife and all life on earth.

### 17 - World Day of the Fight against the Desertification and Drought

World Day of the Fight against the Desertification and Drought was declared by the UN General Assembly in 1994. UN Convention on Fight against the Desertification was approved same year. States were invited to dedicate this day to increased outreach regarding importance of international fight against desertification and results of drought and implementation of the Convention on Fight against the Desertification.

### 26 - International Day against Drug Abuse

In 1987 the UN General Assembly decided to commemorate June 26 as an International Day against Drug Abuse and Illicit Drug Trafficking to prove its readiness to further expand its activities and cooperation in order to establish an international drug-free community. A decision was made on December 1987 based on a recommendation by International Conference against Drug Abuse and Illicit Drug Trafficking held in 1987 that on June 26 adopted a Comprehensive Plan of further activities to fight Drug Addiction and Trafficking.





news from

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