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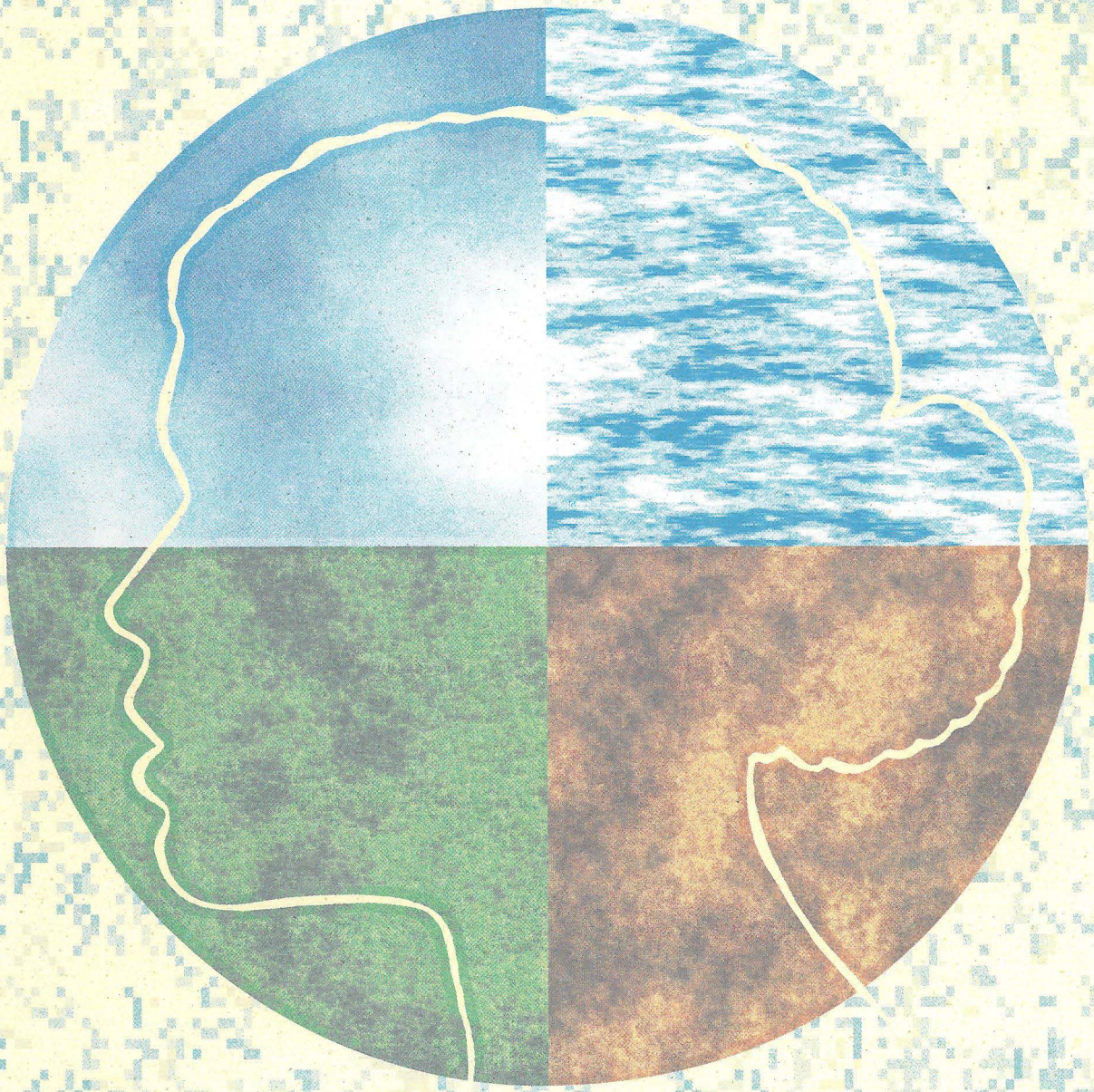

NATIONAL REPORTS
from the Sub-Regional Training Seminar on
WOMEN
ENVIRONMENTAL MANAGEMENT
AND SUSTAINABLE DEVELOPMENT

(23-27 September 1996)

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"Women, Environmental Management
and Sustainable Development"
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FOREWORD

The development agenda for the 1990s poses many challenges for those concerned with Women issues or gender dynamics. *First, the international recognition of the need to promote more sustainable forms of development, exemplified by the UNCED Rio Conference in 1992, was accompanied by a parallel movement that sought to assure that women's environmental roles and participation would be fully considered in the programme of action (Agenda 21) and in policy and programming efforts arising out of UNCED. In a broader context,* the strengthening and implementation of Agenda 21 requires giving "a more focused" attention to the role of women in environmental management and sustainable development.

The linkage between women, environment and sustainable development has been reiterated in various Chapters of Agenda 21- a dynamic, change oriented action programme for the 21st Century, was adopted by the United Nations Conference on Environment and Development(UNCED) Rio de Janeiro, Brazil 1992. **The Rio Declaration** adopted by 172 participating governments is a set of 27 principles whose goal is to establish a new and equitable global partnership through the creation of new levels of cooperation among states, key sectors of societies and individuals.
Principle 20 states that: "Women have a vital role in environmental management and development. Their full participation is therefore essential for achieving sustainable development".

Much must be done to bring this concept to concrete reality, and to elaborate on the closer relationships between economic growth, environment and development; between international trade and financial flows; and above all else, to direct greater attention to the crucial connection between environment, population and development; between women, environment and sustainable development.
The redefinition of geopolitical boundaries throughout Eastern Europe and the former Soviet Union, accompanied by processes of democratization and economic breakdown and transformation, is serving to redefine the scope of the development agenda both in Europe and in "critically" underdeveloped regions. Also in these latter regions there is some indication of a move toward greater democratization within the context of growing economic and social crisis. Whether reference is made to decentralization in the context of a larger Europe, or to the need to generate a less dependent form of development in Africa, *all social and economic indicators point to the urgent need to reformulate the development programmes and processes from the present "business as usual or top-down" practice to a more inter-active "bottom-up" holistic understanding, in which needs and concerns of all participants, SPECIALLY THOSE OF WOMEN are fully incorporated. Such an approach will, certainly, facilitate women's empowerment process, as recommended by the FWCW and reiterated in The Beijing Platform for Action.*

INSTRAW's programme on women, environment and sustainable development is one of the four main pillars of the Institute's research and training programmes. The programme establishes the link between women in the various aspects of environmental degradation and sustainability while also promoting a macro policy in support of women's actions at different levels.

The Institute's programme uses a holistic and inter-disciplinary approach to sectoral issues in the fields of women and environment, women, water supply and sanitation, women and water resources management, women and waste management, women, new and renewable sources of energy. The programme consists of activities in the areas of policy coordination, research, training and information.
On the basis of the above mandate, INSTRAW has taken the lead to organize a seminar on "Women, Environmental Management and Sustainable Development", which was held at the International Training Centre of the ILO, Turin, Italy, from 23 to 27 September, 1996.
The one week seminar was addressed to participants of the following seven Central and Eastern European countries: Bulgaria, Czech Republic, Hungary, Latvia, Poland, Romania and Slovakia and was directed to:

- *Governmental entities and high level decision-makers dealing with environmental and sustainable development issues.*
- University professors, trainers and managers of national training institutes and educational institutions training staff on various aspects of environmental management and sustainable development.
- Representatives of non-governmental and women's organizations involved in environmental projects.

Development planners and representatives of the international agencies and donor community were invited to join the seminar to review the plan of action designed by participants and to highlight their priorities and overall strategies related to environmental concerns in Central and Eastern European Countries.
After the selection process and in order to maximize the impact of the training seminar, prior to attending the session in Turin, the selected candidates were asked to undertake a preliminary research work related to:

- National Environmental Policy;
- The Legal Framework;
- Primary Environmental Factors affecting the health of women (Agriculture, Industry, Energy, Water and Sanitation, Transboundary and International Issues);
- The role of women in the main development sectors;
- The involvement of women in the design and implementation of policies, programmes and projects related to environmental management;
- Success stories showing the role of women in Environmental Management.

The results of the research findings were presented in plenary as National Reports at the beginning of the seminar and were taken as point of departure for the elaboration of the National Plan of Action.

N.B.: The documents here attached are conform to the original versions submitted by the different authors and do not necessarily reflect the views of INSTRAW or ILO

BULGARIA

Prof. Dr. Maria TODOROVA POPOVA

Women, Environmental Management, Sustainable Development

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With the upsetting of the ecological equilibrium in the world, the natural environment is looked at as a factor influencing the qualitative reproduction of human beings, which is of crucial importance for a country like Bulgaria. The anxiety for environmental pollution and its treating as a serious social problem attained broad civil basis at the end of 80ies and the beginning of 90ies.

By data of ecological specialists in 1989 about 1.1 million people were inhabiting areas with ecological contaminants /EC/ significantly exceeding the maximum admissible limits. That refers to poor quality of air due to considerable exceeding of the maximum admissible limits by sulphur and nitrate oxides and other emissions; of river waters contaminated from power engineering, agriculture and public services; a considerable part of the cultivated land is destroyed and polluted by salts, acids, heavy metals, etc.; the big city centres are burdened with noise.

The changes made during the years of transition refer to:

a/ By decision of the Parliament and by Government decrees the production of some enterprises contaminating the environment has been stopped or reduced.

b/ For one half of the "heated" ecological spots a tendency towards reduction of air pollution has been proved compared to 1990.

c/ The quality of spring waters shows a tendency to improvement for 17 out of 22 river valleys. The nitrate content in river waters decreased much below the European Union standards.

d/ The radiation background in our country has constantly been under control, including nuclear power engineering.

A considerable part of the improvement is due to the decrease of industrial and agricultural production. However, there is still a high risk coming from a lot of serious ecological problems.

The favourable conditions for decreasing the ecological risk are:

* A Law for environmental protection was adopted;

* A Ministry of the Environment and regional executive and control structures were established;

* Equipment for control of ecological indices was imported;

* A National Fund for preserving the environment was founded.

The most serious problem is the financial support of the ecological program, because its development requires considerable capital investments. Still the bigger part of the finances is provided by the state budget and only about 10 % (1994) by the National ecological fund.

Table 1

Expenses for Environmental Protection (million levs)

Type of expenses	**1991**	**1992**	**1993**	**1994**
Durables	420	620	641	2233
Ecological Activities	172	164	192	3376
Sum Total	592	784	833	5609

Source: National Institute of Statistics, Environment, 1992-1995.

The unfavourable effect of the primary environmental factors on women's' health and human health in general, can be summarised as follows:

1. In agriculture:

- Climatic negative factor: working in the open or in green-houses; longer working day.

- Chemical factor: heavy metals, pesticides, nitrates, growth regulators, mineral fertilizers and microfertilizers.

- Noise factor

- Dust /dust in the air while at work/.

- Domestic factor /detergents/.

2. In industry:

The stress factors

* Velocity: the speed of the production belts; machine vibration; supersound; radioactivity; noise /exceeded decibels/; night labour; industrial gases /in our country and in Romania/; pollution with dust; unsuitable light, causing headache, poor eyesight, etc.; high humidity /in food-processing industry/; traumas; chemical injures caused by reactive agents and consumables.

* Biological risk factor: physicians and medical staff, chemists, etc.; not following the safety rules.

In 1996 a National plan was developed in our country for the realisation of the obligations assumed by the Republic of Bulgaria at the Fourth World Conference of the United Nation Organisation for women, held in Peking in 1995. That plan includes the problem of encouraging women's participation in activities for environmental protection and providing an access to environmental management.

The long-term tasks which were set refer to:

1. Working out a national strategy for ecological education by interdepartment advisory group. One of the major points in that strategy will be ecological education of women and encouraging their role in environmental protection.

2. Organising a large-scale national social campaign "Ecology at the Bulgarian Home", under the aegies of the Ministry of Environment,

popularising such problems as: safe use of chemicals in everyday life; possible harms from paints, varnishes, glues, etc. and elimination and neutralisation of the harm; economical use of energy; ionizing and non-ionizing radiation at home and their effect on human health; means of filtrating drinking water; the effect of green plants at home, etc.

The medium-term tasks refer to:

1. Organising annual sociological studies on environmental protection, paying special attention to women's attitude to that important social problem.

2. Preparation of regulations for labelling ecologically sound goods and especially for certifying baby's foods, cosmetics and chemicals used at home.

3. Developing a project on "Women in Defence of Biological Diversity" (in their capacity of tradition preservers and educators of their children) with the aim of raising their role in maintaining the protected territories and in the development of eco-tourism in Bulgaria.

4. Enriching the ecological culture of women and their children, as well as a permanent transition towards averting the additional pollution from agricultural activities, which will promote the development of ecologically friendly agriculture in our country.

5. Improving the quality of education in Ecology at the higher education institutions with the aim of enhancing the ecological cultural level.

6. Development of teaching materials for ecological education of students at the primary and secondary schools.

7. Working out a project on "Engaging the unemployed women in ecological activities", in cooperation with the Ministry of Labour and Social Services with the aim of establishing opportunities for seasonal employment of women in areas connected with ecotourism, tree planting and grassing, cleaning, gathering mushrooms and medical herbs, waste composting, etc.

8. Developing a project on "Child Ecology" and including it within the program of "Environment and Health".

The natural endowment of woman to bear life and to look after children, family and household, promotes her ancient responsibility and decisive role in environmental protection. Woman is called upon to contribute actively for the realisation of the concept for sustainable economic development in complete harmony with the environment, which will guarantee healthy and full-value life for her and her children.

About 130 laws and acts from the present legislation refer to a certain degree to environmental protection and reproduction of natural resources. That is in harmony with the natural inclination and interests of Bulgarian woman. At the same time, the possibility of her participation in the process of decision taking in the field of environmental protection on an equal basis with men, is of great importance.

In that aspect we can mention the following examples for participation of Bulgarian women in the legislative and governmental institutions: Two out of the six members of the Bulgarian Parliament from the political ecological club "Ecoglasnost" are women. One of them is a member of the Ecological Committee of the Parliamentary Assembly of the Council of Europe in Strasbourg and the other one is a Chairwoman of the Sub-Commission of waters at the Parliamentary Commission of the Environment. The staff of that Commission includes 3 women out of 15 members.

More than 15 women have been elected municipal councillors in such big municipalities like Varna, Haskovo, Pleven, Tryavna, Gabrovo, Shumen,etc

The acting legislation makes provision of the active participation of society, enabling the inclusion of social groups of different interests and knowledge. The present practice forces the conclusion that women are very active at the public meetings for discussing the ecological problems, no matter whether

they represent professional organisations, departmental units or non-governmental ecological movements. Women specialists are taking an active part in preparing the reports on projects submitted for evaluation. Women-members of a number of non-governmental organizations dealing with environmental protection, take part in different activities, prepare the information materials, organise workshops, act as experts in evaluating projects and proposals submitted to the supreme state institutions. Besides, many women are working in scientific units and companies dealing with environmental protection. In that aspect, it is obvious that women are participating on a large scale basis in the process of decision-taking on ecological problems in our country.

Another aspect of the **women - environment** relation refers to their direct participation in nature preserving activities.

Being mothers and teachers, women are playing a key role in educating the future citizens of our country. They are to make children love nature and apply the principles of ecologically sound behaviour ever since their early childhood. Women take part in policy making for environmental protection and in decision-taking in the process of preserving nature and managing the natural resources, many of the m being directly engaged in the activities for preserving wild life.

At the same time a lot of rural women have valuable knowledge for the traditional ecologically sound use of a number of plant varieties and domestic animal races, of medical plants, wild fruits, mushrooms, etc. Many of them are living in mountainous regions, in the near vicinity of protected areas where a significant part of the plant species and animals are preserved, including some endemic species.

The Bulgarian-Swiss program entitled "Biological Equilibrium" /including the sub-programs: "Damp Areas", "Mountainous Pastures and Meadows", "Organic Farming", etc./ in which the Ministry of Environment is working together with the Ministry of Agriculture and some key municipalities; as well as the project of the Ministry of Environment on "Preserving the Biological Diversity in the Central Balkan and Rila Mountains", financed by the Global Fund for Environment, provide opportunities for extending the participation of women in useful nature-preserving activities.

A direct opportunity for integrating women with the environmental protection activities is offered by the international project on "Agriecology - water quality in the river valley of Yantra near the village of Parvomaitsi", begun in 1993 and financed by USAID /American Department of Agriculture/. The Bulgarian partners are from "Pushkarov" Research Institute coordinated by the Ministry of Environment and Ministry of Agriculture and Food Industry. The project is one of the demonstrative pilot projects for the river valley of Yantra.

Women taking part in environmental protection activities have their specific problems. For example, those of them authorised to carry out control functions and to sanction for breaches are much more in danger of being morally and psychologically threaten by unscrupulous persons and companies than men. Women who are working in the area of studying the status of the environment and their activity is carried out in chemical laboratories and presupposes handling of harmful chemicals and reactive agents, are exposed to a significant risk for their health.

The third important aspect is the effect of the environment on human health, respectively on the health of women and children who are much more vulnerable.

Concerning ecological education, an advisory working group with the Ministry of Environment has been established for coordinating these activities with the aim of improving the ecological education, its quality and efficiency in Bulgaria. A special attention is being paid to raising the educational level of women in the field of environmental protection, on the one hand, and, on the other, the society relies on their constructive role in that process in their capacity of mothers and tutors, who are able to work hard and patiently for moulding ecologically sound view among young people.

Conclusion: The environmental factor will exert a long-lasting effect on some important parameters of quality reproduction of population. The reasons for that are explained by the difficulty in converting the optimising processes in the inhabited and natural environment, as well as by financial and technological problems. However, there are urgent tasks that can be immediately solved at the available opportunities of our society. For their realisation it is necessary:

- to enlarge the legislative basis, adopting a number of normative documents: a law for protecting marine environment, a law for the protected areas, a law of forests, a law of residues;
- enlarging the possibilities for rapid enrichment of the National Fund for preserving the environment and attracting finances from foreign resources within different programs of the European Union, keeping in mind that ecology has no boundaries;
- raising the level of the national and personal self-preservation behaviour of citizens and of the broad social community by better incorporation of the mass media to the ecological problems of the country.

CZECH REPUBLIC

Ms. Zdenka HAJNÁ

Ms. Markéta KLUBALOVÁ

20. září 1996 TURÍN, dr.Hajná

Briefly I will tell you about its activities and aims.

Respect of human rights is the fundamental principle of our society. Equality of women is declared in legal rules.There is declared equality for women in political and work life, including right to vote and right to work in Constitution and following laws. There is problem, that legal rules exist "de jure", but "de facto", in everyday life, in practice, they are broken. We can say the same about the past as about the present.

In the period of changes in our country women belong among more "sensitive" and accordingly more distress social groups. There are problems especially in connection with economic transformation. That why The Czech Women s Union try to contribute so that problems of women will be solved with responsibility. Our aim is defending of justified needs and interests of women, which contribute to eradication of all forms of discrimination and create equal oportunities for women and men and inicite their own efforts to education and self -realization.Our organization has 90 000 members and 250 00 suporters. Women are associated in 2000 basements in the whole Czech Republic and their activities are very various and they depend on local needs and conditions. Ifyou are more rested and you would like to have more information,I can give you informational leaflets.

Now I have to say that our government should openly admit non-discrimination policy and accept participation of members of non-govermental women s organizatios in preparing of neccesary documents. Lack of interest in women s issues of state authorities is reflected in the whole society.There is necessary to pay attention to publications , which inform about situation of women and families.There is necessity to recommend all news, information and materials focusing on women to be published to inform society about women s issues and they should be conforted with representatives of women s movement.

Considering that it was not until last week that I was choosen to attend this seminar, my contribution will be short. I will speak about focusing of our organization on problems of enviroment. This subject is not our main and only objective and main activity of our organization, but it is not even fringe issue, because enviroment is the basic value, which influences any further human development. My participation in this seminar is very useful for our organization. There is very important for us to obtain experience and to have possibility to use them in our activities.

Agenda 21 is about relation between enviroment and health. I have to say, that women s state of health is not good in our country, for example there is a lot of cancer s diseases.Women are not informed enough and they take care of themselves and their health

too little. That why we for example focused on educational activity about health among women. There is very typical for Czech women, that they are ill very often as a result of pernament overwork. Former period had an inauspicious influence to state of health of our population. On the top of it we have to show on fact, that especially women in middle age and older are very afflicted group and they have often problems with health. That why we have prepared and realized activity with the name " Mamma". In the most of regions of our country we arranged lectures about preventions of cancer especially own examination of breast cancer. Our doctors with great regret claim, that Chzech women come very often too late. In connection with solution of this problem we recieved financial grant for making video cassette " Earlier than it is too late". This cassette should help to women to be better informed and especially to mobilize their interests in their own care. In some of our organizations we borrow this cassette to educate women and we continue in lectures. We involved with cooperation with " League against cancer" in signature s activity " Europa DONNA", to get a support of public servants, members of parliament and the whole public to create and effective programme for early detection of breast cancer and so reduction of it.We would like to achieve that checkups would be the part of basic medical care.

For I speak about health , some of our regional ofganizations are involved in programme "National health" which is orientated in subjects like "healthy nourishment", "healthier life style", "healthy community", "healthy school". Activity is orientated particularly in educational lectures for women. We are specialized in the area of health matters because of health of our population is not good and we know that women with her knowledge influences very much healthy life - style of her family.

Activity, where women are active and where they think about others especially is the care of children. Our organization participates in arrangement of summer camps for children and very often in regions, where it is very good for children to change air and / or for children with various allergies. There is paid heed especially to children from social poor families and children from children s homes, who have not chance to change air, even for a short time.We have already realized these camps for 3 years with support of grants from Ministery of Education. For example Opava arranged camp for 22 children from children s home in Melč, in Litoměřice there was realized camp for children from social poor families thanks to good cooperation with sponsors. In Kladno our members help with programme "Summer for children in Kladno. Members from region Mělník realized currative camp for 68 children mainly from social poor families. There were arranged camps also in regions Hodonín , Uherské Hradiště, Nymburk, Strakonice, Prachatice, Tachov, Český Krumlov. Members from Kolín together with the House for children arranged camp near town, where children spent their summer days with various activities, but they slept in their homes. In Frýdek Místrk 13 families took fot currative stay children from Černobyl.

In the beginning I said that activity of basic organizations was depended on local conditions. In many localities women - members of Czech Women s Uniou take care of green, they help to found and unkeep green areas, flowerbeds and parks, they take care of sportsgrounds. There are spring and autumn cleanings in towns and villages especially from women s own iniciatives. I have to say, that people in big cities are not interested in this kind of activities and cooperation. I think it is worth to mention, that there are also activities like " opening and cleaning of fountains" or local lobbying in local authorities for example to find the figures of radonium in water.

Where can women contribute to betterment of enviroment? It is in comodities. Today we have already known, that some products are not friendly to enviroment. In 1993 we advertised among women campaign " Women, buy Czech products" and within the frame of propagation we promote poducts, which are ecologically freindly. We achieve success in propagation and using biological washing products.

Because we are not typical organization, which main objectives are issues of enviroment, I was concentrated only to give you information on activities of our organization in this matter. I hope that this seminar will extend our knowledge how could women engage more to solving problems of enviroment.

CZECH WOMEN'S UNION
Dr. HAJNÁ Zdeňka

View of the Czech Union of Women about realization of Convention on the Elimination of All Forms of Discrimination against women in the Czech Republic

Czech Union of Women is one of the largest women organizations in the Czech Republic. This day it has 86.000 members who are associated in 2.000 basic groups and 75.000 sympathizers. Czech Union of Women organized whole union disscussion about realization of Convention on the Elimination of All Forms of Discrimination against women (CEDAW) as a preparation for the 4 th World conference on Women. This view was drawn up on the basis of results of whole union disscussion and suggestions from seminar which was organized within the framework of preparation for the 4 th World conference on women in Peking CEDAW was ratified 18. 3. 1982 in Czech Republic and promulgated in 1987. We arrived at these conclusions and recommendations:

1/ So, there are created specific institutions and organizations to protect human rights in democratic countries, but there should be also created mechanisms for protection women's rights (which are part of human rights). This mechanism would be created conception on the basis of high-quality and throughly modernize monitoring of actual state and it would guaranteed its realization.

2/ The reality in Czech Republic is, that equality of women is respect de iure, but de facto women are discriminated in all areas of their life. It's because gender equality is implemented formally , without any concrete regulations (norms)which would be obligatory and obtained. In reality woman as weaker partner (in consequence of people's opinion, history, concrete conditions - especially now during transformation of our society which brings them more work) is discriminated. This problem is not solved in our country after social changes. On the contrary, all seems to be, that public avareness deteriorate about this problem, which is promoted by mass media. Even under these pressures, women themselves adapt in passive way and resign for this situation.

3/ We miss specification of women's discrimination which would bring adopting law of anti-discrimination. There is a need to make this specification in that way that there were all facts about women's discrimination. Now, in the time of important changes of society, there is a danger of solving discrimination of one social group would be wrong for other one. We have to keep up of it because it would bring again inequality. Measures against women's discrimination aren't advantage for women, but they are for temporary ensure of balance (equality).

4/ There haven't been adopted any legal obligations to protect realization of Convention in reality and bring right of recovery for discrimination (for example refusal of state's orders to firms which discriminate women, financial and right of recovery etc.).

5/ Because discrimination haven`t been specified yet, there is not possibility to defend from it. There haven`t been created any anti-discrimination mechanism yet which women could turn to in concrete cases /ombudsman?/. Only in the case of breaking law, they can turn to justice, but in usual life to get dicision is impossible.

6/ It`s necessary to make a concrete and controled plan to eliminate existing forms of women`s discrimination.
- filling garanteed by government.

7/ Goverment has to admit responsibility for eliminating discrimination for example: differences in estimation of women - mother and woman without children and acknowledge contribution of women to national accounting system - what is de facto discrimination all working women and also women who couldn`t become mothers.

8/ Now there aren`t conditions for women to realize declarative right for free choose between taking care of family and children /which is now prefered by society as priority/ or professional career Economic conditions force women to enter to work process /and not only women with defendents but most of families have good living standarts if both parents are working/ even that many women would liketo stay at home with children. Society lost very much because many women take less qualification work to have enough time for both: work and household with children. There is very bad situation with kindergardens and after- school places and there is radically lowered traffic network which brings problems especially rural women.

9/ There is a need to prepared new laws of rights and status of children, new family law and marriage`s contracts, divorces officialese gender equal status.

10/ Big women`s discrimination is still in the workplaces, especially inequal salaries for equal work and share of women in leaderships positions. There are not law of protecting women`s health and law against discrimination women in their workplaces. Their housework is not accounted to the GNP /general national product/, society doesn`t value their contribution. There aren`t any law of protecting women against preferential exemption from their work and higher women`s uneployment /often women with small children and female headed households/.

11/ There arise problem of participation of women in political parties /their names on lists of candidates/, in high public and civil offices, leaderships of political parties and non-governmental organizations and their real participation /possibility of participation/ in decision making policy and sharing in power. It`s necessary to say that it is nothing new, there is very low participation of women in public and political life. It is also necessary to study and get out these causes.

12/ Still, there is a gender inequality in international activity - it would seem in their status, dislocating to particular countries and international organizations .

13/ It's necessary to lead active educational campaign for elimination of gender discrimination all stereotypes in people's mind and behaviour for example: very prolonging attitues of the roles ofe men and women in the family. Till the present there is an opinion that "man is the head of the family", breadwinner of the family etc., although there are many families headed by women. Even that woman gets better salary than men, she is better educated, she is more productive at home. Unfortunately, these stereotypes are promoted also by educations in schools - there is enough to look into textbooks, where are these stereotypes presented abready from pre-schools. In the reality it promotes gender discrimination, priority of getting job, progress in the salary and work, higher fee etc. Division to men's and women's works brings usually more interesting, better paid and higher qualification's jobs for men. And it also there where women have same or even better presumptions or abilities (for example international and political activity)

14/ In the field of education and traning there is need to realize various educational and subsidiary programmes for women promoted by state. (Women usually don't know their own rights).

15/ Creation of network of global advice's centres for women which help them to eliminate and protect against

discrimination. The state should promote these kinds of actions.

16/ We are concerned about very bad health condition of women - especially old and middle - age ones - cause pernament overwork. At the same time nobody takes care of this fact.

17/ In our country there have been build a system of protection women against violence yet (sexual harassement, domestic violence, family affairs). Women which acts of violence (except cases, where the final is serious wound or their lives are threated or rude prolonged violence), they haven't guarentee of immediate help of specialists. There is not any educational campaign againts existing scruples which women have when their cases are made public.

18/ Major problem from the view of equality of women is prostitution and its problems and approach of state's administration. and public opinion about it. Considering that in our country there is a high number of prostitutions and it's increasing trend, and relatively high tolerance of society, there is necessity to adopt law of prostitution. It should improve their position and prevent them against forcing into production, violence, and prohibit prostitution of children and children's pornography.

19/ The relationship between government and non-governmental women's organizations is not solved. The cooperation in creative way could help to repair problems which I was talking above. But the cooperation is exceptional and only at that time: when state's bodies recognize their own needs - not needs and subjects of issues of non - governmental organizations. It's necessary to adopt "the law of non - governmental organizations".

20/ Delay and no solving of women's organization subjects are reflecting on general public opinion about women's issues. It is necessary to government promotes overtly non-discrimination policy and the other way round women's organizations should influence public awareness - especially women's one. It means to convience them of needs of increasing women's activity, participation women in policy making process in society and necessity of greater power share.

HUNGARY

Ms. Judit BALOGH

Ms. Gyöngyi MANGEL

Judit Acsády

THOUGHTS ON THE GENDER BIASES OF THE DEVELOPING HUNGARIAN DEMOCRACY

Foreword

> "Liberal democracy allows women to organize but if they fail to organize themselves liberal democratic regimes follow their embedded bias to credit only the stronger and more ably articulated pressures." (Karalin Fabian, 1996)

"The questions of feminism and women's rights are not only women's concerns but should be of men's too, because it is not only women's well being at the stake here but *democracy* itself" said István Eörsi at a recent television interview and thus in the questions of women he proved to be one of the few open minded Hungarian writers.

Examining how women are situated in the so called democratic systems I would join those who say that the market as such is not "woman-friendly". It means that the mechanisms of the system reproduce gender inequalities and do not cease to discriminate disadvanaged groups of society. Men make decisions to on the basis of values which are said to be male. In fact we do not know of any recent society in which women are in the dominant position of public life and in which they create the social order according to "female" values. By saying that patriarchy is universal nothing new is claimed. By saying that there are differences between the degrees in which men use their power and control women, helps us to give a comparative description of different cultures. In this description Hungary would fall somewhere right between the traditionally women oppressing Arabic cultures and the more and more tolerant and women's-rights-conscious Western democracies.

Hungarian Women and the Market

In this article I would like to suggest that the developing market economy in Eastern Europe is unfriendly to women not merely because decision-makers are all misogynist men but because of certain inbuilt mechanisms of the market which favor certain social groups and deprive others. Also I would like to offer a framework in which women's losses can be seen among the losses of other social actors in the processes of the transition to market economy.

A relatively easy way to identify the losers is to say that *whoever refuses to or cannot adopt to the rules of the new game will not be likely to make significant achievements*. To have economic, political or social success one needs to be motivated and needs to have the basics to get into competition with others. I guess those individuals who are not in the front lines of the economic or political elit recently in East-Central European countries, like Hungary, were either not motivated or had no idea how the new game is played. If women are in larger numbers among the ones who do not perform successes or who are

reported to have disadvantaged positions then we can be suspicious that there are ways in which women systematically get pushed out of the game.

The term patriarchy suggests that men are in dominant position in the given society and also that the dominant values of that culture are formulated according to the interest of the dominant group so that it could maintain its power. So, if a culture suggests that competition, strength and self-confidence are essential to win and considers men to have these characteristics primarily, then that culture is designed for men's convenience. The only way the opposite sex can gain benefits is to accommodate to the values it is told to have. And if by being gentle, considerate and nurturing will mean the second place in the rank then accepting it.

These traditionalist and essentialist thoughts about men and women are hardly ever challanged in Hungary today. This is also why it is rather difficult to make any statement about women's discrimination. Even though all statistical data, which will be quoted here, prove women's more rapidly worsening situation in Hungary yet there are several obstacles in the formulation of a critical attitude to it for the general public. First is the above mentioned essentialism, second is that women themselves do not evaluate their position by comparing it to men's. In fact women do not perceive their position as disadvantaged or oppressed. Thirdly in the past few years there were quite a few women who started out successful carriers as enterpreneurs or managers leaving less competitive men behind. That is, as it is usually true for other societies too, women are not a homogeneous group. Furthermore there are two standard arguments in Hungary saying that it is in fact men who are the victims. One is that men's life expectancy at birth is and has been previously also, almost ten years shorter than women's (64,5 yrs for men; 73,8 yrs for women). Heart attack and cancer, alcohol are very frequent causes of death. These are probably all signs of highly stressed lives. What usually follows in Hungary by the mentioning of these sad statistics is that if women required more rirght it would do enormous harm to men it would result an even higher tension and would risk men's lives even more.

The other argument is that straight after the collapse of the centrally planned economy huge number of men working in the heavy industry before, became unemployed. As a result of this the unemployment figures in Hungary still show a more favourable situation for women. Roughly 40% of all unemployed are women that is, 60% are men. So seemingly again women are better of. In fact, as reports say even if in a family a man loses his job and the woman becomes the breadwinner household duties do not cease to be her responsabilities. Men s staying home will not necessarily mean in this case a challange to the good old gender roles.

According to the economist Maria Frey, who has worked on the questions of women's employment for almost decades now says that recently in Hungary at least 1,5 million jobs disappeared. The rate of registered unemployed is reported to be less in 1995 than the year before (about 11%) but it does not mean the increase of the active population, but can mean for example, besides the growing number of unregistered people that more and more women stay at home on maternity leave or child care allowance not because they want to but because they could not find a job. The trend which seems to favour women is likely to turn and in a few years unemployment figures will show similar gender rates to that of the surrounding countries, where there is a higher rate of unemployment among

women. According to the above mentioned Maria Frey the sectors in which women might face mass unemployment will be the sectors of intellectual, secretary work and unskilled labour.

There are two generations among women who are mostly threatened by unemployment. One is teenager girls after their secondary education looking for their first jobs. According to a usual pattern girls complete general secondary education and have no skills at the age 18, while boys mostly go to vocational schools, so they will have an easier way to find a job as skilled workers. The other generation is women above the age 45, especially if they were unskilled. There are no effective programs yet to retrain them and less and less employer will want to bother with "ageing" unemployed women.

Turning back to the question why it is difficult in Hungary to phrase any complaint about the risk of women's losing rights is that any claim concerning emancipation is easily identified with the rhetoric of the state socialist system before 1990. One of the first ideological achievements of the first freely elected government was the blaming of women's emancipation as one of the faults of the communists. Public opinion polls show that women's employment is still considered as something dangerous for the harmony of the family and people share a rather great variety of opinions concerning the necessity of women's work. There is a strengthening trend saying women's true place is at home. (O. Tóth, 1995). Funnily in the case of many families women's staying at home will not be the question of free choice but a brute necessity. In this way one can see this emerging conservative attitude as a justification of the limited freedom.

Given this context one can not be surprised that when the government announced the withdrawal of the three year child care allowance, as a part of the economic stabilisation program, suggested by the Minister of Finance, there was no massive protest from civil society against this loss. It was accepted with the same apathy as the closing of a number of child care institutions, day care centres and nurseries as the state gradually draws back the support from the field of social expenses. The trend of the reduction of child care facilities and allowances could be challenged only with the help of powerful lobbying strategies which women's organizations have not got yet.

The example of the child care cuts illustrates the way in which in the competitive context of market economy those social groups lose which do not have their developed ways to defend their interests. One could argue that family supports and child care grants should not be seen as serving women's interest only. I could agree with that, but as it is now in Hungary women do lose more by the withdrawal of these allowances. As women are still considered to be responsible primarily for the family through the education of the children the reduction of the grants will limit their freedom to chose between alternative life strategies. The previously existing structure allowed women to stay at home with their children for maximum three years after birth and their jobs were guaranteed for them when they decided to return to work. There are no guarantees any more, there might not be any paid leave after the child is older than one year (nor to families with higher income) there are less and less vacancies at nurseries, so a large number of women might end up sitting at home with their child *not receiving any income at all* and depending only on the fathers' money.

It is not only the defenceless position of the woman being dependent financially but also that leaving the work force she might meet extremely big difficulties in finding her way back to work once she wishes to.

The recent economic policies of the government, which have got the euphemistic name "stabilisation program" hits mostly the people who live on regular income, as the value of the real income drops drastically. The inflation is rather high (20, 30 pc), consumer prices become 6-10 times higher as they were in the 1980's. Two third of the population was reported to become "poorer" this year. The number of families living under the poverty line is rising quickly too. In about five years the rate of unemployment grew from almost zero to 10-11%. There are more women than men among the poorest groups of society. This has to do mostly with the great number of widowed and retired women who can hardly make their living on their pensions. The other group of women with the most difficult economic background are single mothers. Related to the facts that more than every third marriages end up with divorce in Hungary, the children stay usually with the mothers after divorce and remarrying is less frequent, a large number of women raise their children alone.

All these economic difficulties cause a rather high tension and increasing presence of conflicts in the private life. Less end less marriages are bond every year (to the great sorrow of conservative, analysts) and because of less births and the growing mortality the number of the population drops also. There is a common discource which makes women responsible for the crises of family lives.

What is closely related here also is the question of violence against women. Officially the domestic violence cases are not documented but the police and also social workers in battered women's shelters suggest that the number of violent cases rises and is in strong correlation with the economic difficulties. The lack of awareness and women's reluctance to report the cases are indicators of the strongly patriarchal public consideration of family life. Also the value system of certain subcultures take the battering of women absolutely normal and acceptable.

Besides the general trends of the economic recession, the evergreen discriminatory patterns which push women out of the dominant positions of society prevail nowadays in Hungary.

In spite of the rapidly growing level of education of women the managing posts are still kept by men. There are more women every year with diploma of higher education (lawyers, doctors, economists etc.) but their rate is still 1/6 compared to men in managing positions. Smaller enterprises and a few smaller local banks tend to have more women as leaders. One third of private entrepreneur are women, but usually there is a huge difference between the businesses run by men or women. Women usually have service oriented enterprises or smaller shops. Yet the traditional expectations towards the women's family responsibilities and household duties often build a barrier for them in getting higher in their carrier.

The traditionally badly paid jobs in the fields of education, health care or public administration are still occupied mostly by women.

Political representation

Political representation is the world in which the discrimination against women is the most spectacular, but yet in which it is the most difficult to trace the

mechanisms which favour men and push women aside. Recently the rate of women representatives in Parliament is 11%. In local government bodies the rate is a bit higher, 16%. Voters are reluctant to trust women as politicians, decision making is still seen as men's work. In fact women themselves show disinterestedness towards politics. Some say it is because they are so much occupied with the everyday survival among the worsening circumstances.

It might be the reason then for not complaining about problems that western feminists have been so loud about like e.g. the flourishing sex industry and the aggressively spreading pornography, or violence against women or the openly sexist representation of women in the medias. Nor do Hungarian women criticize men's dominance in the cultural or the scientific life.

Women neglect to articulate not only their own interest but it seems that unfortunately they do refuse to take part in general in the formulation of the new democratic structures, besides a few organizations, whose publicity does not make them very well known yet. Women's public activity is not evaluated very highly by society.

After 1990 a few dozens of new women s organization were founded all over the country. The first Round Table of the groups in 1993 organized by the Hungarian Women's Foundation showed a great variety of political orientation and a rather diverse spectrum of values concerning women. Emancipation at that time was more or less a taboo word for most of the groups and speaking about women they tried to find wordings which avoided references to the state socialist sysytem. Since then as women s discrimination in the framework of the market has become more evident, the voice of some of the organizations became more radical too. Yet there is still a large number of conservative minded groups whose aim is to support the wage earner family model. Feminism as an idea does not sound good even to most of the women s activists, but I think mostly because of the strong anti feminist propaganda of the press which misuses people s ignorance in this field and feeds their prejudices without providing information about either the history or the different trends of western feminism.

As in most of the places grass root activism even though it is based mostly on voluntary work, largely depends on financial support. Once someone is not clever and quick enough in fundraising, wonderful ideas fail never realised. Many of the organizations struggle with bad working conditions, lack of facilities and in this way often the lack of communication and information as well.

In this situation some of the representatives of women s organizations were sceptic when the formation of the first Secretary to direct Women's Policies within the framework of the Ministry of Labour was formed a few months ago. The antecedent of this office was the working group charged with the preparation for the Beijing conference and the writing on the National Report. To set up the crew of the office took longer as it was expected and there was a risk that party politics might run over women s concerns. Now it started to work and wishes to formulate its strategies on the basis of the *Platform for Action* of the Beijing Conference. The reason why not everyone applouded loud to the establishment of this office is that it is clear that it was rather the political urge of Europe which helped this office to get created than the genuine benevolence and feminist attitudes of Hungarian decision makers. The other reason why some see this office problematic is that so far now there have been no bridges between grass root activism and the institutionalised level of policy making. NGOs are not strong enough to pressure decision makers yet and it can be just hoped that the new office will understand its task as an agency which cooperates with civil society women s groups.

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1. BACKGROUND

1.1 General

Hungary is located in the central part of Europe (latitude 46-48^{0}N, Longitude 16-23^{0}E), in the middle of the Charpatian basin, surrounded by Austria, the Slovak Republic, the Ukraine, Romania, the Serbia, Croatia and Slovenia. The territory covers an area slightly above 93 000 km^2 . The general feature of the land is plains, spreading over the watershed of the Danube what is the only recipient of the basin. The general feature of the country can be characterised by the fact that about 84% of its territory is under 200 m above sea level. The highest peak is the Kékes, with 1015m height. There are several shallow lakes in the country what are very sensitive for pollution. The largest among them is the Lake Balaton. The seasonal temperature average is 20^{0}C in summer and -1^{0}C in winter, with an average precipitation of 630 mm/year.

Hungary has the population of 10.3 million, about 38% of which lives in rural areas. Twenty percent of the population lives in Budapest. The population density of the country is 106 p/km^2.

The country reformed its political system in 1990 and has undergone significant economic, social and institutional changes with the aim of building up a market economy from the used to be centrally planned system. The economy is just recovering from the economic recession due to the changes of market, production profile, ownership, privatisation, and compensation procedures as main governing trends of the changes.

The social effects of the changes are very significant also. The level of unemployment is around 10%, what ranges between 5 and 50% in some layers of the inhabitants. The inflation rate was around 20 - 30 %/year, the increase of GDP is 1 - 2 %/year.

The total surface water resources average about 120,000 million m^3/a, 95 % of which comes from abroad. Thus availability and quality of waters is seriously dependent upon the neighbouring countries. The comparison of available resources with the water uses gives a favourable pattern for national water management. There can be experienced shortages on local or regional level, due to the uneven distribution of the resources. The drinking water supply dependent on groundwater mostly, as 90 % of the total needs are supplied from this source. About 60 % of the groundwater resources is regarded as vulnerable.

Sub-regional seminar on women environmental management, sustainable development
(Turin 23-27 September 1996)

Case of Hungary *

*based on third national information to UN Commission on Sustainable Development " Hungary: Towards strategy planning for sustainable development"

BASIC STATISTICS AND PRINCIPAL FEATURES OF NATIONAL POLICY

The world conference on women and the Hungarian position

According to Agenda 21, the successful implementation of this comprehensive programme depends on the full, equal and beneficial integration of women in all development activities, and the active involvement of women in economic and political decision-making.

A similar objective was expressed by various international programmes and legal instruments, in particular, by the Nairobi Forward-looking Strategies for the Advancement of Women, the Convention on the Elimination of All Forms of Discrimination against Women and several conventions of ILO and UNESCO.

One of the most important prerequisites for these programmes is ensuring all human rights without sexual discrimination. The development of human rights protection under the United Nations has had a crucial influence on the national and international recognition of women's rights, on national jurisdictions, and on recognising "de jure" women's equality.

Initially encompassing civil and political rights, the traditional range of human rights has in the course of its development extended to economic, social as well as cultural rights, which are by nature of critical importance from women's perspective.

Passing through social and political transition, Hungary as one of the "transition countries" of Central-Eastern-European region is coping with severe economic constraints.

These adversely affect the enforcement of economic, social and cultural rights; the effective recognition of women's rights; and the development of an attitude conducive to the full acknowledgement of female equality.

Therefore, it was of great importance that the Fourth World Conference on Women put on its agenda the issue of the uneven development of the world's nations with a special focus on the economic difficulties facing Central and Eastern-European countries, together with the negative impacts they have on women's status.

The Conference held in Beijing in September 1995 underlined the significance of these rights and other (economic, social, educational etc.) circumstances which were crucial for the advancement of women. It also recognised the special conditions of the above-mentioned "transition countries".

These aspects were also well-reflected in the accepted platform for action, especially, in areas related to utilisation of environmental resources and pursuing the goals of sustainable development. It was recognised that sustainable development is possible only through improving the economic, social, political, legal and cultural status of women. Unsustainable, ecologically unsound patterns of production and consumption result in further depletion of natural resources, environmental pollution and degradation of natural systems. The consequences are evident: deterioration of natural resources displaces communities and/or worsens the living conditions, especially for women. Environmental degradation results in negative effects on health, well-being and the quality of life of the population at large, especially women of all ages.

By reiterating the commitment of women to create a new development paradigm that integrates environmental sustainability with gender equality and justice within and between generations (Agenda 21, Ch. 24), the Platform for Action creates clear link between it's scope and that of the Agenda 21 accepted by the UNCED in 1992. The relevant strategic objectives of the Platform have been formulated accordingly. This was done by highlighting the paramount importance of women involvement in environmental decision-making at all levels, the need to ensure gender concerns in policies and programmes for sustainable development (including access to information and resources) and the endorsement of mechanisms to assess the impact of development and environmental policies on women.

Hungarian position on objectives to improve the status of women

Those issues of Agenda 21 of the UNCED and the Platform of Action of the Fourth UNW have been underlined which are especially relevant for our circumstances in Hungary. The Hungarian report and position prepared for the UNW also highlighted these aspects. It devoted higher attention to the acute problems of social and economic rights, recent problems of gender inequity and related aspects of the substantial socio-economic changes than the integration of the gender concerns with the objectives of the sustainable development or the more specific environmental considerations. It is stressed that the citizens of Hungary, men and women have equal rights, but the right to equality is not quite synonymous with equal opportunities. Improving the system, i.e. creating de facto equivalence requires the following proposals to be taken into account.

Recent changes in women's status in Hungary

The change of the political system in 1989/90 gave women an opportunity for free organisation, increased consciousness and wider publicity. For the time being, women tend to use this opportunity to a lesser degree than they could or should (despite continued prejudice and discrimination against them in many instances). Factors which primarily influence the status of women are related to ideology, the economy, and party politics.

Having had no exposure to anything other than the previous dominant ideology, the region has been particularly influenced by the world-wide spread of neo-conservative and neo-liberal thought. Apart from religion, Hungary's first freely elected government restored the traditional family with the mother caring for hearth and home as the centrepiece of its values - as opposed to the ideological pressure in the 1950's for female employment. The already wide range of maternity benefits were further expanded while, with previous state prevalence gone, there was a substantial decrease in subsidies for child care institutions. Although there was a limited reduction in nursery capacity, families were charged more for meals both here and in schools. As a result, the majority of impoverished families are now no longer able to rely on these facilities.

Some demographic features

Of Hungary's population of 10.3 million there are 5.4 million women and 4.9 million men. The population has dropped by 430,000 compared to 1980. This is explained by low fertility and a decreasing number of live births, coupled with high mortality particularly among males between 25-59 years of age. Two thirds of the fall in population have occurred among men, the rest among women. As a consequence there is a gradual ageing of the population. At present there are 104 elderly people per 100 children, which is an increase by 25 from 1980. According to the 1990 census 85.9% of families were full families, i.e. including a couple and perhaps children. Of couple-based families, 12% had the wife as active earner. In 80% of single-parent families it was the mother who lived with the child (or children). In 1990, in 26.5% of all households women acted as principal earners. Three fifths of this type of households were single-person households with mainly elderly women living on their own.

Health condition of women

Mortality figures indicate that women's health condition has improved only in certain areas since 1980. The reasons are in part related to the institutional situation. Institutional restructuring and a reduction in health-care spending in real terms have had an adverse impact on women' health status. Funding constraints imply a falling number of health care facilities including occupational health care units. In addition, environmental pollution and a lifestyle determined by social and economic conditions also have their part in deteriorating women's health. The rising (currently 10 %) rate of chronic respiratory diseases (asthma and allergy) among women and children is evidence of a connection with environmental pollution, and especially with air pollution. Health care problems directly concerning women include infant mortality. This figure has been gradually improving over recent years. The number of within-one-year-of-birth infant-deaths per 1000 live births was 12.5 in 1993, as opposed to 14.8 and 23.2 in 1990 and 1980, respectively.

Social security, forms of family support and social assistance

In Hungary the transition process has led to economic instability, long-term and widespread unemployment, and an increasing scarcity of resources available for social purposes. These are the conditions determining the extent and quality of social services for women. Under social security, as the core institution of social policy, various services based on pension and health insurance are rendered for the majority of women.

About 8% of women who have reached retirement age are not entitled to pension in their own right. Social support is available for them too, though, partly through the social security system and partly through social assistance. The idea of raising the female retirement age to 55 years is currently subject to public debate. In recent decades, services rendered by the social security system have been extended to an ever increasing portion of society against the continued diminishing of revenues caused by demographic and mainly economic factors. Therefore there is little chance of dismissing the idea of a higher female retirement age - the discussion basically revolves around scheduling of it's introduction.

Under the Constitution of the Republic of Hungary "mothers are entitled to support and protection before and after childbirth, as relevant regulations provide". The purpose of support and protection is to ensure that mothers raise their children in their families in appropriate financial and health conditions. The state assumes a share of child care costs. Given the unfavourable age composition of the Hungarian population, the support of motherhood and child care is a social and government priority. The range of supportive and protective measures constitute a complex system. There exists a nation-wide network of institutions to help mothers before and after childbirth, e.g., during pregnancy and until the child is one year old there is a ban on making a mother redundant. There is a nation-wide network of paediatricians and child care nurses, who help mothers care for their babies appropriately. Child care nurses visit young mothers on a regular basis, especially in the first year of motherhood. Paediatricians check children's health until the age of 16.

For social spending to be cut and economic stability restored there is a need for a social policy providing a minimum income and primary health care only for the poorest segments of society. Reforming the family support system is high on the agenda. Mothers have so far been entitled to the following forms of financial support: pregnancy allowance from the fourth month of pregnancy; maternity benefit during maternity leave; and, on the latter's expiry, child care allowance until the child is two years old. Those women who draw, or are eligible for child care benefit, can also apply for child care benefit. The cost implications of these support mechanisms far outweigh the country's financial capabilities. Intended reforms will bring about substantial changes in a system which families have taken for granted as reliable and predictable for many decades. The reforms will place an increased emphasis on a household's' financial standing and will inevitably afflict certain segments of the female population, in particular those with higher than average income.

Women in politics

Women's involvement in politics occurs through a range of various institutions: through political parties in the legislative and the executive branches of power, and through representative organisations. It is difficult to compare the situation before and after the change of the system, given the differing social systems and available opportunities in these two periods. Prior to the change of the political system, the female movement had no real involvement in women's policy or the enforcement of equal rights. Female emancipation was interpreted on the grounds of the Marxist-Leninist ideology and was incorporated into the political machinery serving to perpetuate the system. This explains the emergence and formal entitlements of women (and other segments of society including the young and the working class) in the sphere of politics. This process resulted from economic necessity (i. e. efforts to realise full employment) rather than a female endeavour to gain genuine equal rights.

It was not until 1945 that women obtained universal suffrage. From then on the number of female MP's steadily grew up until 1980, when their nearly one-third proportion in the National Assembly was among the highest in the world. Female MP's began to reduce in number in 1985 and the tendency continued after the changing of the system. The first free elections (1990) ensured seats for 27 women (7%), which remained unchanged until 1994. The 1994 elections raised female seats to 43 (11.2%).

The change in the political system made no difference in terms of handling the female issue or the opportunities of women-MP's. In both eras, women were (and under the new system have remained) active

only within the scope of movement assigned to them by society, never overstepping its boundaries. The female issue has not been, and is still not, on the agenda of any committees of the Parliament. As a result of an initiative launched by all female MP's in all the parliamentary parties, a joint subcommittee on women's issues has recently been set up, which examines bills submitted to Parliament from women's perspective, bearing in mind their interests. There is a wider scope of movement for women in local elections. Through personal contacts they stand a better chance of overcoming prejudice and being successful. In the 1980's, 27-32% of local and regional council delegates were females. In and after the 1990 local elections, their proportion both among candidates and later in municipal assemblies dropped equally to 16%. In standing for high-profile offices women are at a disadvantage against men.

Women in education

The level of women's general educational background reaches and, in young age groups, even exceeds that of men's. In 1990, just as in 1980, in the 15-year-old and older brackets those without schooling represented 1.2%. That includes a somewhat higher female than male proportion (1.4% versus 0.9%). There is no difference between men and women in terms of what percentage completes compulsory education by the age of 19 years (it is equally 94%). Typical education routes part after primary schooling. 37% of students pursue their secondary studies in apprentice schools specialising in a particular occupational area with no degree in general studies but rather vocational qualifications. Grammar schools and secondary vocational schools, both issuing degrees in general studies, are becoming increasingly popular.

In the 1993/94 academic year, 52% of university and college students were females. In 1980/81 both sexes were represented in equal numbers in higher education. This means that women have equal opportunities to obtain higher degrees. The percentage of female students significantly varies by faculty. The lowest proportion they represent is in technical colleges and universities (18%). On the other hand, in medical schools female students continue to outnumber males. The situation is rather similar at the faculties of law. All this suggests that there is no formal obstacle to women's acquiring high-prestige qualifications. Women also dominate special education (98%), primary school teacher training (90%), and secondary school teacher training (66%). In all types of schools the overall majority of staff are qualified teachers.

Women in the economy

Concerning the complexities of social mobility, here we focus only on tendencies in occupational mobility. According to mobility figures between 1973-83, female mobility between generations grew to such an extent that by the early 80's it exceeded men's mobility. The 1983 mobility survey revealed that 73% of men and 76% of women belonged to social segments different from their fathers. This is explained by the slow-down in structural changes for occupations with male prevalence. Women's changes continued at the same rate. Between 1983-92, both men's and women's mobility slightly increased, with 75 % of men and 78 % of women being mobile. However, the effects the change of the political system has had on mobility, are not possible to identify yet.

Among women in managerial positions or coming from families of intellectuals, the percentage of those remaining in this segment of society has been steadily rising, which is not the case with men. The reason for continued increase is that in 1992, 42% of the daughters of men in managerial positions or working as intellectuals became managers or intellectuals themselves, versus 28% in 1973. This tendency is particularly strong among middle-aged women, while there is an increasing number of young women who leave the segment of intellectuals. Since the early 80's there has been a steady decline in the number of those with a working class background entering the intellectual group. At the same time, there has been a rise in the movement into the small business sector. The emergence of businesswomen is a new development.

There has been a long-standing split of 48% and 52% of males and females respectively in the general population. The proportion of working-aged males and females is inverted (52% males, 48% females). Having said that, women represent 50% of full-time active earners. In cohorts assembled by ILO standards (15-74 years), 55% of those in employment were males, 47% were females at the end of 1994. Therefore women's involvement in the economy has remained high. The proportion of women in agriculture, industry and construction, and the services sector is 34, 40 and 59%, respectively. Within services, of those working in health care and social services women represent 76%, and 66%in commerce. In other words, there exist female-dominated occupations.

Following the socialist transformation, Hungary's social policy was aimed at establishing full employment. In the human, social and economic spheres this has led to achievements some of which have proved worth preserving, while others require revising. In early 1980, 88% of the male labour force and 82% of women were in employment, or associated with co-operatives. These figures also include the self-employed. However, historical conditions determined the way full employment was achieved. They led to a maximised but wasteful allocation of available human resources in the existing social framework, leaving no room for alternative forms of employment. (95 % of active earners were hired by large-scale operations of the public sector, in which 2 % of both genders worked on a part-time basis.) The continued expansion of employment was based on two interests determined by socio-economic factors. This resulted in women's economic activity (86 %) exceeding men's (85 %), which was unprecedented even by international comparison.

The labour market has been undergoing dramatic changes in the late 90's. Since 1990 the number of those in the work force has dropped by 1,460,000, which is over a 25 % decline. Half of the reduction has concerned women, which brings down the female employment rate from 49.5 % to 38 %. The same is true of the male labour force. Recent years have seen a substantial decline in female employment in the case of both active-aged women and those generally considered outside the age of employability. Despite the steady decline in female employment, its rate continues to exceed those in advanced market-economies, even when compared against the 15-64-year-old age bracket, benchmark. However, natural demographic shifts will soon erode this advantage since the level of employment among women below 25 years of age is significantly lower than in other countries.

Among blue-collar workers, females earn an average pay of 30-40 % less then males. In white-collar jobs, women earn 50-60 % less than males. Reasons for the income gaps in the two categories differ. While among white-collar employees the gap results from structural differences including: a relatively low number of women in managerial positions, many women in unskilled clerical jobs; a generally shorter length of service than males; and the believe that few women are willing to work unsocial hours, In the case of blue-collar workers these circumstances are only part of the reasons. The rest is explained by discrimination against women.

Female unemployment and the poverty

It was not until the late 80's that the notion of overt unemployment became known in Hungary. Even in the 1990 census, no more than 24,000 people, including 10,000 women, considered themselves unemployed. That was why massive redundancies, peaking at an all-time high of 700,000 in 1993, came as a shock. Since then the unemployment figure has fallen below 500,000 due to an increasing number of people turning inactive rather than re-employment of those concerned. Reduced unemployment has not been coupled with employment growth. On the contrary, the latter has also begun to slow. As in other countries, there are several databases available on unemployment. They all indicate that unemployment hits women to a lesser degree than men. Since 1990 women's proportion among the registered unemployed has stayed around 40 %, whereas they represent close to 50 % of those in employment. The CSO-survey also suggests a 2-3% lower female unemployment rate than that of men, which figures were 9.7 % and 11.8 % in the first quarter of 1993, the period of peaking unemployment, and 7.8 % against 12.2 % in the first quarter of 1995, respectively. This is surprising because in neighbouring countries the situation is reversed.

Women's low-representation among the unemployed is explained by the concentration of job losses in industries with male prevalence. At the same time, job opportunities increased in female-dominated industries. In industries hit by heavy job-shedding women were equally affected. For instance, in agriculture and mining the female unemployment rate was 14% and 24%, respectively, which was higher than the male unemployment rate.

Support for unemployed and measures to promote re-employment have been governed by legislation since 1991. The Employment Act does not distinguish between males and females in terms of available support. Under the law, redundant women are entitled to unemployment benefit and early retirement pension. Unemployment as a factor of poverty is gaining more and more ground. and besides families with disabled heads of family there is an increasing number entering poverty without a single active earner in the entire family.

Women's role in political, economic and public life - a key factor for sustainable development

In view of the present status of women, the improvement of their presence in various aspects of the socio-economic life is considered in Hungary as a key factor to achieve sustainable development. The national position put forward for and presented at the recent UNW has reflected our objectives accordingly. Respectively, Hungary, inter alia:

- *finds it necessary* that women should have a more proportionate participation and more active role in all domains of political and public life including more frequent appointments to leading positions,
- *initiates* that concepts on women's status should become an individual issue in government level policies,
- *finds it necessary* that the civil society assume a more determined role and that women's organisations and movements should enjoy more support and higher level involvement in decision making through various forms of interest reconciliation,
- *considers essential* that in order to encourage the best possible knowledge of the situation, those who order or publish or analyse statistics should always provide all data in a breakdown according to sex,
- *finds it necessary* that in the world of labour, and elsewhere, prohibition of discrimination against women be more strongly enforced either when publishing and evaluating job applications, when deciding on promotions or appointing employees in leading positions as well as when determining wages,
- *encourages* that young women receive their first vocational qualification within streamline education, thereby reducing disadvantages in the labour market,
- *suggests* that the government should upgrade vocational training and retraining in order to prevent the further segregation of the labour market and rising of women's unemployment,
- *foresees as an urgent task* that social policy be placed on a new footing, so that marginalisation already present in society may be gradually eliminated and social detachment avoided.

It should be added that the promotion of women in all programmes for sustainable development involving decision-making, planning, technical management and control of environmental degradation, raising consumer awareness to achieve and/or to switch to (more) sustainable patterns of consumption is particularly significant goal in our present circumstances of substantial socio-economic changes and transition to a market economy.

COMPRHENSIVE NATIONAL ENVIRONMENTAL PROGRAMME

Although Hungary has been involved in the field of environmental policy planning for many years, a comprehensive and integrated environmental programme with strong strategic objectives has been missing. The lack of such a programme has became even more evident as a result of the complicated transition period. This transition is characterized by a large economic restructuring, privatization and the development of new

international relations. As a result, it was decided to begin preparation of an integrated comprehensive National Environmental Protection Programme. The Programme has four primary bases. The first is the "Short and medium term environmental action plan", which was prepared by the MERP in 1991. The second document is the National Environmental and Nature Conservation Policy Concept, which was accepted by the Government in 1994. The third is the "Long-term Environmental Plan of Hungary", which is a scientific background document published in 1994. The fourth is Act LIII of 1995 on the General Rules of Environmental Protection, which was passed by the Hungarian Parliament in May 1995.

The Programme deadline is provided by the new Act. According to the Act, the Government should submit the Programme proposal to the Parliament every six years, and every two years should submit a summary report on the state of the environment and a progress report concerning the implementation of the Programme. The first Programme proposal will be submitted to Parliament at the end of 1996, along with the bill for the 1997 budget of the Republic of Hungary.

Many new tasks must be accomplished in connection with the National Environmental Protection Programme. In accordance with the provisions of a separate act, regional and county environmental protection programmes must be prepared in harmony with the Programme. Local governments must develop a self-contained municipal environmental programme, in harmony with the goals and objectives of the Programme and local and regional development plans.

The national Programme contains realistic targets if it is based on governmental, social and professional consensus. In addition, its objectives will be reached, if cost effective solutions are promoted for the accomplishment of the tasks formulated by the Programme.

International background of the national programme

Hungary takes part in many international environmental cooperative programmes and conventions, and plays a considerable role in Central and Eastern European multilateral environmental programmes. The National Environmental Protection Programme will take into account the most important international environmental policy documents, such as Agenda 21, Towards Sustainability and the Environmental Action Programme for Central and Eastern Europe.

The Programme will follow the path set out in the National Environmental and Nature Conservation Policy Concept, which is based on the environmental policy principles advanced by the developed countries during the last 20 to 25 years. The Programme considers the conventions and recommendations of the United Nations, OECD and the Council of Europe and with the development of its environmental and nature polices and programme implementation, takes into account the requirements that Hungary must fulfill to be offered full membership in the European Union.

Past and present developments in national environmental policy formulation

The development of the Hungarian environmental policy may be divided into three phases. The first phase, from the 1970's to the mid 1980's, was characterized by many declarations with little or no effective action. The first Environmental Act was adopted in 1976. The institutional system was established during this period, as well. The centrally controlled economy and the paternalistic social system, however kept environmental protection from becoming a strong force. As a result of the paradox between state ownership and state environmental protection, the different sectors did not let environmental protection prevail.

The second phase occurred in the late 1980's and was called the "reform socialist period". During this period the Ministry for Environmental Protection and Water Management was created to promote environmental issues at the highest level of government policy. At that point, the new environmental institutional system began to develop essential environmental protection policy instruments, such as economic instruments, tools and the strengthening of regional organizations.

The third phase began in 1990 with the formation of the first freely elected Parliament. This is the period of transition to a market economy and the institutional establishment of a parliamentary democracy. With accelerated privatization, the previously predominant heavy industrial and pollution sectors experienced a crises associated with environmental gratis effects. In the meantime, international relations of the country have changed significantly and foreign trade has increased. An open society and full liberalization require different environmental policies. The elements for this are already in place.

The Programme of the Government of the Republic of Hungary for 1994 to 1998 was approved by Parliament in July 1994 and defines the main goals, tasks and necessary institutional and regulation systems for the next term. In the introductory part of this Programme, the government obliged itself to continue developing a market economy, to support parliamentary democracy, social justice and integration of Hungary into European Institutions. According to this Programme, the treatment of critical imbalances in economy, such as external and internal indebtedness and inflation, and the establishment of preconditions of economic growth could not occur without bringing a stop to further deterioration of the natural and built environment.

The goal of the Hungarian government is to modernize society and the economy. The objective of development is to create a socio-economic model. This model should be based on an efficient market economy, based on private ownership and economic competition and social equality. In order to define and implement these objectives, the Government will rely on the initiative of both society and the economy.

The Environmental chapter is based on the concept of sustainable development, as well as on the principles of the National Environmental and Nature Conservation Policy Concept (NENCPC). The goal of this concept is to meet international requirements and develop gradual harmonization with the EU environmental legislation.

In order to formulate the national environmental programme, existing programmes and action plans must also be considered. The following are the most important achievements and ongoing projects:

- in 1993 the government accepted an intersectoral air quality protection action programme for 1994-1998;
- Parliament accepted the new Water Management Act in 1995;
- the government finalized an Action Plan on Energy Saving and Energy Efficiency in 1995;
- the Nature Conservation Act is in the conceptual phase;
- preparations began for the Lake Balaton Comprehensive Action Plan to improve water quality;
- Hungary, as a member of the UN Commission on Sustainable Development, actively contributes to the relevant international process and has been preparing its national analyses, reports and programme elements based on Agenda 21 and the multi-year programme of the UNCSD;
- the National Environmental and Health Action Plan is being prepared in cooperation with the Ministry of Welfare (which is an WHO pilot project); and
- concrete implementation programmes have been elaborated for the series of international environmental conventions, which Hungary joined.

Basic elements of the national programme

According to Section 40.§, of the Act on Environment, the Programme shall contain:

- the presentation of the state of the environment;
- the environmental goals and targets;
- the tasks to be performed in order to attain the goals, the order and deadline of the implementation;

- the means for the attainment of the goals, including the planned funding sources; and

- the designation of areas in which special environmental measures are required as well as the contents of the measures.

The programme will consist of two main parts. The first part will contain the existing environmental problems and risks and the description of the state of the environment. This will explore the existing environmental problems and analyze the relations between the problems and the state of the environment. The fundamental approach is source-effect oriented and based on problem mapping. The state of the environment may indicate the general problems. This volume will show the causes of the problems and those economic, social and regulatory effects which influenced the formation of the problems.

The second part will contain the detailed Environmental Action Programme. This volume will consist of the environmental policy framework of the programme, as well as those important conflicts which influenced the fulfillment of the Programme. This part of the Programme is media, sector and action oriented. It will examine all possible levels of involvement and solutions. The need for a participatory process and the equitable sharing of burdens are fixed principals in this approach. An independent chapter may contain the potential tasks, tools and implementation skills.

The main goal of the Programme is to manage and solve the environmental problems of Hungary. The Programme is based on the following well known scheme:

pressure- state - response

The Programme may serve as a general guidance for other sectoral and inter-sectoral plans and programmes, such as regional, county and local environmental protection programmes, and may influence other governmental future action plans.

The planned time-table for Programme development is as follows: preparation (1991-1994), establishing (1994-1995), elaboration (1995-1996), implementation and enforcement (1996-2000), assessment (1998), and revision (1998-2002).

LEGAL FRAMEWORK

Tasks and aspects of environmental protection in previous legal instruments

When examining the legal instruments of previous decades in Hungary, we find that they contain many enironmental elements. A relatively advanced framework instrument for the Protection of the Human Environment was adopted in 1976, however, after a short time, it became an outdated and inefficient tool. In regard to concrete environmental protection problems and their relation to other socio-economic sectors, the relevant legislation did not form a comprehensive and consistent legal framework for promoting environmental protection.

The following are the laws and regulations, shown in chronological order, which served as the legal basis for environmental protection:

- Act No. XX of 1949 Constitution of the Republic of Hungary;
- Act No. II of 1976 on the Protection of the Human Environment;
- Decree No. 56/1981 MT on the Control of Generating Hazardous Wastes and the Activities Concerning Their Neutralization;
- Decree No. 55/1987 MT on Importing from Abroad Some Materials Posing Hazard to the Human Environment;

- Order No. 1/1990 MERP on the National Inspectorate for Environmental Protection and the Regional Environmental Protection Inspectorates;
- Order No. 3/1990 MERP on National Park Directorates and Nature Conservation Directorates;
- Decree No. 43/1990 Gov on the Duties and Sphere of Authority of the Minister of Environment and Regional Policy;
- Act No. XX of 1991 on the Duties and Sphere of Authority of Local Self-Governments and Their Administrative Organs, of the Commissaries of the Republic. and of Certain Centrally Subordinated Administrative Bodies;
- Act No. XVIII of 1992 on the Environmental Product Fee of Fuels;
- Act No. LXXXIII of 1992 on Certain Separate Public Funds;
- Order No. 17/1992 MERP on the Implementation of Act No. XVIII of 1992 on the Environmental Product Fee of Fuels;
- Decree No. 86/1993 Gov on the Provisional Regulation of Environmental Impact Assessments for Certain Activities
- Order No. 2/1993 MERP on the Method of Calculating Hazardous Waste Fine; and
- Order No. 20/1993 MERP on the Rules of Managing and Utilising the Central Environmental Fund.

Most recent developments of Hungarian environmental legislation

The new environmental law

The first and most important step in the renewal of Hungarian environmental legislation was the approval of Act No. LIII. of 1995 on the General Regulations Concerning Environmental Protection.

The purpose of this law "shall be to develop the harmonic relationship between man and his environment, protect the elements and processes of the environment, and to ensure environmental conditions for sustainable development." (Ch. I, Article 1). According to this new law, the principles for protecting the environment are:

- precaution, prevention and restoration;
- responsibility;
- co-operation;
- orientation, information, and disclosure.

This new law is actually a code. It is comprised of significant environmental legislation, but is without detailed regulations. It provides guidelines for handling environmental elements and environmental impacts, but does not include detailed regulations for certain fields of environmental protection.

The new law establishes legal norms for environmental protection, which regulate economic activities that use or greatly affect the environment. In contract former passive environment protection, the new law identifies prevention of environmental pollution as the most important of all environmental protection activities.

The new law clearly articulates the tasks, obligations and financial commitments of the state. It also determines the role of local governments. A significant element of the Act is the National Environmental Protection Programme, which gives the state the responsibility for preserving the environmental balance, enforcing prevention and restoration.

There must be significant changes in the system of economic regulation in order to enforce the principles of prevention. The Act establishes a base for this task by introducing fees for the use of the environment.

The new law places environmental impact assessment at a higher level. It is now considered an act, while previously it was only contained within a governmental decree. The Act regulates environmental protection reviews and audits. Environmental protection reviews will be completed in facilities that have been pursuing environmentally damaging activities for years, and had not made environmental impact assessment before starting their operation, but according to our current knowledge and regulations, it would be necessary to carry out environmental impact assessment before starting their operation.

The Act also articulates the rules of environmental responsibility. The law regulates and enforces public participation and awareness and makes it possible to record information, data and facts on state registers. The law also includes regulations concerning environmental education and raising public awareness.

The act on environmental product charges

This act is the continuation of the earlier product fee act. The new act extends the scope of environmental product fees to more product types. The main purpose of this law is to create the necessary financial resources for the mitigation and prevention of environmental damages caused by products loading or posing hazard directly or indirectly to the environment during or following the manufacture or use of the said products. Product charges must be paid for the following products: (i) fuels (as directly polluting products); (ii) tires; (iii) refrigerators; (iv) packaging materials; and (v) accumulators.

According to the Act, the funds collected from environmental product charges are divided in two: one half of the amount is used to support general environmental objectives, the other half of it can be used to support:

- investments and developments that (i) aims to prevent environmental pollution, reduce the environmental load of products which are subjects of this law; or create a system for monitoring environmental loads; (ii) urges the development of environmental friendly consumption habits and the application of environmental friendly products; and (iii) promotes the collection, utilization and neutralization of wastes originating from products which are subject to this law;

- the (i) reuse; (ii) recycling; (iii) energy production; and (iv) recollection of products which are subject to this law because they are composed of waste materials.

Future tasks of environmental legislation

According to the environmental protection framework act, the following sectors must be regulated by separate laws:

- nuclear and radioactive energy;
- mining;
- energy;
- forests;
- the development and conservation of the built environment;
- arable land;
- fishing;
- transportation, by transportation subsectors;
- the prevention of disasters and their consequences;
- regional development;
- wildlife management;
- water management;
- wastes; and
- hazardous substances.

In the interest of biological diversity, habitat protection and the protection and restoration of regions, formations, and structures with scientific, cultural, or aesthetic value; separate laws shall regulate the following:

- the protection of nature and the landscape;
- the protection of livestock, livestock hygiene;
- plant protection and plant sanitation; and
- conservation of historic buildings.

AN INITIATIVE BY HUNGARIAN NGOS: PROGRAMME OF SUSTAINABLE DEVELOPMENT FOR HUNGARY

Along with formulation by the government agencies of the position on the pan-European cooperation and the national programme in the field of environmental protection and sustainable development, representatives of the non-governmental organizations have also initiated to set up - in various aspects - alternative position and programme elements in this regard.

Most notably, the National Society of Conservationist organized a year long process of gathering the views of the NGOs to formulate an alternative programme towards sustainable development for Hungary. The results of this process were presented at the Sofia Conference.

The main criticism of the Environmental Action Programme is due to the fact that the programme stepped back into the environmental protection sector, whereas earlier documents such as Our Common Future and Agenda 21 took a much broader approach. In the NGO view, the Action Programme supported by WB and OECD suggested that switching to a market economy would automatically solve most of our environmental problems and that adopting market measures could successfully stop environmental destruction. It was clear that the current problems in the Western world, and much of the world, were caused by market economies which relied "purely" on economic growth. Consequently, only a programme built upon sustainable development can solve these problems. Sustainable development is conceptually suitable for integrating the real world environment, economy and society.

In the programme initiated by Hungarian NGOs, structural and functional societal changes are recommended with special regard for decentralization of the current power structure. Full analyses of ecological principles should be considered as the principles of society and the economy. There is a high emphasis on the economic aspects of sustainable development in the programme. The programme recommends a new view, the economic valuation of natural resources, the internalization of externalities, and a new tax system to create financial sources for human and natural resource management.

The NGO-initiated programme also gives an overview of the most important issues, such as institutions, education, health, industry, trade, agriculture and traffic. It tries to create a medium run action plan for both governmental and non-governmental organizations. Several of the basic elements are given below.

A new goal of the transition. The goal of Central East Europe's transition is poorly defined. As the result of political changes, a different type of development was created. One of the tools for approaching sustainable development is the eco-social market economy. When comparing the main characteristics of the market economy with the eco-social market economy it is evident that the "pure" market economy moves in an opposite direction from sustainable society. The market economy is the instrument of economic growth in which the value of the environment and its natural resources play no significant role. This market system also shifts the burden of environmental degradation to the future. The eco-social market economy considers the entities and tries to reflect the actual value of the resources. The strategies of the eco-social market economy co-existence with nature and equal distribution of benefits which come from using natural resources.

Understanding the problems instead of analyzing useless data. Instead of just gathering data and postponing real actions, we need to examine the causes and tendencies of the processes. The current Hungarian economy evolved from earlier political and ideological considerations. Dominant features of its inadequate structure are its consumption of imported natural resources, raw materials and energy; the absence of producing-consumer technologies and its lack of environmental tradition. The agricultural structure was evolved in conformity with the demands of the Eastern "market". It was characterized by a low range of products in large volumes. It was easy to maintain mass production through subsidies. In many cases this happened without agro-ecological consideration, and led to an ecologically inappropriate structure of production. Development of large scale activities and monocultures, and the use of too many chemicals and fertilizers, led to unsustainable agriculture. Even after the political changes, ecological conditions have still not been integrated into economic reforms, such as privatization and land use. For the moment we can enjoy low levels of pollution because factories are at low capacity. The privatization of heavy industry, which significantly reduced pollution, is not yet complete. Responsibility for environmental damage has not been satisfactorily determined. It would have benefited the state. to create a fund for the returns from privatization to be used for ending environmental damage for which responsibility could not be assigned.

It is very disturbing that small investments are not considered in terms of ecology. Environmental impact assessments are obligations which do not often affect investments, and are merely administrative formalities. Waste treatment is especially critical because the people involved typically take a business view rather than use professional judgment. There are many imported products, which when used and consumed, can cause ecological damage and health risk. The growth of the service sector, and the increase of commercial relations also stimulate the growth of transportation and traffic. Therefore, because Hungary has many transport routes, the transportation infrastructure must be improved. An inadequate infrastructure can create many risks for the natural environment because these establishments pollute the environment, occupy large areas, and destroy ecological networks and natural habitats both indirectly and directly. An increase in the drinking water supply was not coupled with an urgent defense of drinking-water sources, nor did sewage treatment develop. Because mass transportation is becoming more expensive, the use of private vehicles in increasing. NGOs have expressed concern about the slow development of public awareness and the absence of environmental viewpoints in political and macro economic decisions.

A new view of resources. The policy of sustainable resource use cannot depend on the traditional view of resources. The new view of resources requires that we not only focus on the resources which are directly involved in production, but also those that are indirectly involved. For example, a person is not only a physical resource, but also has a valuable moral attitude and knowledge. A tree trunk is a resource only within the forest because it depends on the forest for its quality. The traditional economic valuation of resources needs to be changed to include not only the natural elements, but also the elements that are indirectly associated. The new policy must regard humans as vital resources, and must provide the social conditions that will optimize resource use. The primary objective is to develop a healthy environment, which is protected by society. Humans as intellectual and physical beings are only able to regenerate in a healthy environment. As a result, the right to a healthy environment is not only guaranteed by law, but is also a productive force.

Economic tools for sustainable development have also been suggested by the NGO programme. The first is the *internalization of externalities*, which implies paying the real resource value. The price is calculated irrespective of the value of the resource, so there is no source for maintaining resources. In addition, a *new tax proposal* is based on adequate resource management, both in terms of human and natural resources. Employers must cover the cost of human resource development, because they have a primary interest in developing and preserving human resources. It is more efficient for the employers to pay this cost to guarantee healthy employees. The costs for the preservation and development of natural resources are covered by the value of the products. This surplus value appears in the price of the product as a consumer cost. Quantitatively, it is necessary to generate as much revenue as needed for the sustainable use of resources. This is just the case for sources which should be divided and levied as a tax in the case of resources. That is, the applied items of taxation stand for provisional and not real value. The classification of natural resources requires two tax categories. The first refers to indirectly applied resources, whereas the other refers to directly applied resources. Moreover, there is a need for creating a regulated system for sustainable development. The taxes paid for the use of natural resources could be contributed to a Natural Resources Fund which can then be applied to preserve and manage natural conservation areas, to provide ecological and green corridors, to reconstruct living waters, and to compensate owners for material loss caused by environmental protection regulations.

LATVIA

Ms. Ilze KIRSTUKA

"Women, Environmental Management and Sustainable Development"
23 - 27 September, 1996

Ilze Kirstuka

1. The National Environmental Policy in Latvia

The National Environmental Policy Plan (NEPP) for Latvia has been prepared by the Ministry of Environmental Protection and Regional Development in 1995.

The state of the environment in a country is a reflection of the level of development of society. Therefor environmental Protection needs a clear-cut development strategy. The National Environmental Policy for Latvia offers such a strategy . A major reason for the preparation of the NEPP was to set long-term policy goals and coordinate planned activities with corresponding basic policy principles.

Policy goals have been set on the basis of two main considerations:

- First, the present quality of the Latvian environment is not generally so bad in comparison to the majority of European countries. While several acute environmental problems do exist, these are mostly in large towns, industrial regions and territories abandoned by the Russian army.
- Second, because Latvia is presently in transition to the market economy, the following must be taken into consideration - resources are limited. As a result, the public is indifferent towards the environment and there is a tendency towards excessive use of already limited resources.

The goals of NEPP are the following:

- to achieve significant improvement of environmental quality and ecosystem stability in areas where it presents increased risks to human health, while at the same time preventing deterioration of environmental quality in the rest of the territory;
- to maintain and protect the current level of biodiversity and landscape characteristics of Latvia;
- the sustainable use of natural resource;
- the integration of environmental policy into all branches and fields of life (the national economy in general, and in the strategic plans of its various branches, in legislation and above all, in public awareness), thereby creating a basis for sustainable development Latvia.

Environmental problems in Latvia are various, interrelated and quite complex. However, since it is not possible to solve all environmental problems in a country simultaneously. The following criteria were used for the determination of priority problems:

- the problem poses a serious threat to human health,
- the problem may create irreversible changes in ecosystems, thus reducing biodiversity or degrading the landscape,
- Latvia's international obligations foresee the taking of active measures to solve the problem.

While 45 problems were identified during the analysis of Latvia's environmental situation, the following were found to be of priority importance:

- transboundary pollution;
- eutrofication of water courses and the degradation of aquatic ecosystems;
- risks caused by economic activity;
- impact of wastes on the environment;
- impact of transport on the environment;
- impact of agriculture on the environment;
- depletion of biodiversity;
- landscape degradation;
- inefficient use of natural resources;
- low quality of drinking water.

It is the start of a process for implementation of environmental policy in Latvia. As Latvian society and the national economy changes, environmental problems and priorities will change too. Accordingly, problem-solving measures will also change.
NEPP is the basis for the development of an Environment Protection Action Programme, which will be accepted at the end of this year.

2. The Legal Framework

At present we have a transition period in the environmental protection legislative system as well as in other legislation branches. There are several bills accepted before the Second World War, several from the former Soviet Union time and several completely new accepted. According to the decision of the Council of Ministry "On Adaptation of the Standards, Technical Rules and Regulations in the Republic of Latvia" (14 August, 1992) there is going adaptation of the old standards and normative bills from the former Soviet Union and Latvian Soviet Socialist Republic time until the new ones will be worked out and the old ones - revocated.

The Ministry of Environmental Protection and Regional Development is the main political and administrative institution dealing with environmental issues.

The main laws on environmental protection were adopted:

- the law "On Environmental Protection" (1991);
- the law "On State Impact Assessments" (1990);
- the law "On Republic of Latvia State Environmental Inspection" (1990);
- the law "On Nature Resources Tax" (1995);
- the law "About Land Use and Organization of Land Exploitation" (1991);
- the law "On Forest Management and Use" (1994);
- the law "On Particularly Protected Nature Areas" (1993); a the law "On Hazardous Wastes" (1993); & the law "On Protection Belts"(1996);
- the law "On Radiation and Nuclear Safety" (1994), etc.

The laws "On Building", "On Air Protection", "On the Conservation of Species and Habitats", "On Protection of Species and Biotopes", "On Bowels of the Earth", "On Regional Development", "On Chemical Substances", "On Tourism" are being drafted.

Latvia has acceded to several significant international conventions:

- Convention on the Protection of the Marine Environment of the Baltic Sea, 1974 and 1992 (Helsinki),
- Convention on the Control of Transboundary Movements of Hazardous Wastes
- and their disposal,
- Convention on the Protection of the Ozone.

During the UNCED'92 in Rio-de-Janeiro Latvia signed the Convention on Biological Diversity and on Global Climate Change.

3. Primary environmental factors affecting the health of human (women).

Health is the natural situation of organism that ensures the optimal interaction with the environment. The environmental situation changes for worse directly affect the health of human. In Latvia the state of population health is endangered by the quality of air in the biggest towns, and there are problems with water delivery, low social-economical level and other municipal problems of pollution.

As main indicators of human health have been considered the following parameters:

- level of birth-rate, dynamics;
- death-rate of babies;
- average life length.

The critical situation is formed with the level of birth-rate. For the last two years it decreases to a level which is 40% less than it must be for normal change of generation. It's not a secret that level of birth-rate defines the social level and individual attitude for family and wedding. The main reason for that is the economic crisis in the country.

Another problem is death-rate of babies and child departure from the norm. For example, in 1994 death-rate had been 15.5 babies on 1000 new-born children. This has a tendency to decrease. For 1995, it was 17.9 babies on 1000 new-born children. It is three times more than in Northern Europe.

High concentration of lead was found in hair and intra-teeths of children. The main reasons for that are pollution of water and air, that is a characteristic feature of Latvia's largest towns - dislocation places for industries. Pollution has a tendency to migrate from their site of outflow.

During the last few years (1989-1991) the average of life length has quickly gone down for male as well as female.

	1989	**1991**
Male	65,2	61,6
Female	75,2	73,8

The main reason for death is a sickness from infection (tuberculosis), sickness of the system of circulation of the blood and the system of nerve. For women cancer of breast, cancer of skin, cancer of womb.

Frequency of cancer for male and female on 100 000 inhabitants:

	Male	**Male**	**Female**	**Female**
Age	1989	1994	1989	1994
0-19	10,8	12,8	8,0	11,2
20-39	33,5	33,0	38,2	55,8
40 - 59	388,0	394,8	309,2	363,2
60 +	980,2	1050,8	497,5	564,8
Average	285,0	317,0	254,0	298,0

At the moment, the Ministry of Social Welfare, in cooperation with the Ministry of Environmental Protection and Regional Development, works out for an Environmental Health Action Plan.

4. The role of women in the main development sectors.

In Latvia the legislation defines equal rights between men and women. But this does not happen in reality. We could see such differences, for example, in leading positions and in salaries. This question starts to be more and more important.

Few years ago the first women's organization have been founded - the Latvian Social Democratic women organization. The general goal of this organization is to catch up women representatives from all levels of power structure. At the moment, in Latvia there are sixteen different organizations.

GENERAL INFORMATION ON LATVIA

Name:
The Republic of Latvia.

Population:
2.5 million, 71% urban.

Capital:
Riga: 804,000 inhabitants.

Area:
64,589 square km, 442 km - from North to South, 210 km - from West to East.

Geographical latitude:
Between 55.54 and 58.04 N, between 20.59 and 28.20 E.

Neighbours:
North - Estonia; East - Russia; South - east - Belarus; South - Lithuania; West - Baltic Sea and Gulf of Riga; Coastline - 475 km.

Languages:
Latvian - Baltic group of Indo-European languages.

Religion:
Approximately 2/3 Lutheran and 1/3 Roman Catholic.

Relief:
Plains - 74% and Highlands - 26%.

Elevation:
Median - 87 m, Maximum - 312 m.

Winds:
Predominantly western and south-western.

Latvian Environment Data Centre, 1995.

Latvian Environment Data Centre, 2 Strazmes street, Jūrmala, Latvia, LV - 2015. Phone: +371-(2)-762282 Fax: +371-2-764439, E-mail: vdc@vide.org.lv

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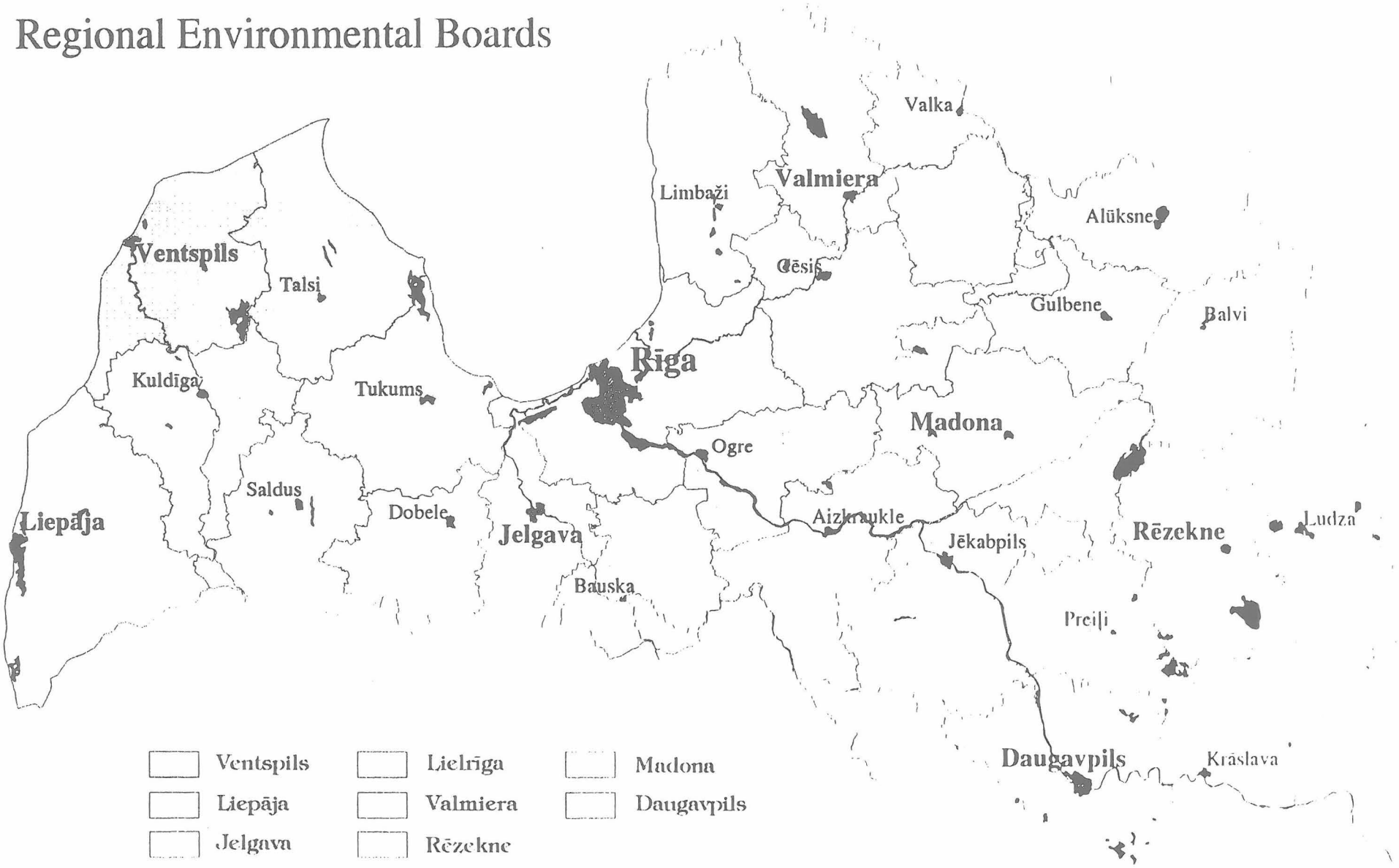
- the law "On Forest Management and Use" (1994);
- the law "On Particularly Protected Nature Areas" (1993);
- the law "On Hazardous Wastes" (1993);
- the law "On Protection Belts"(1996);
- the law "On Radiation and Nuclear Safety" (1994), etc.

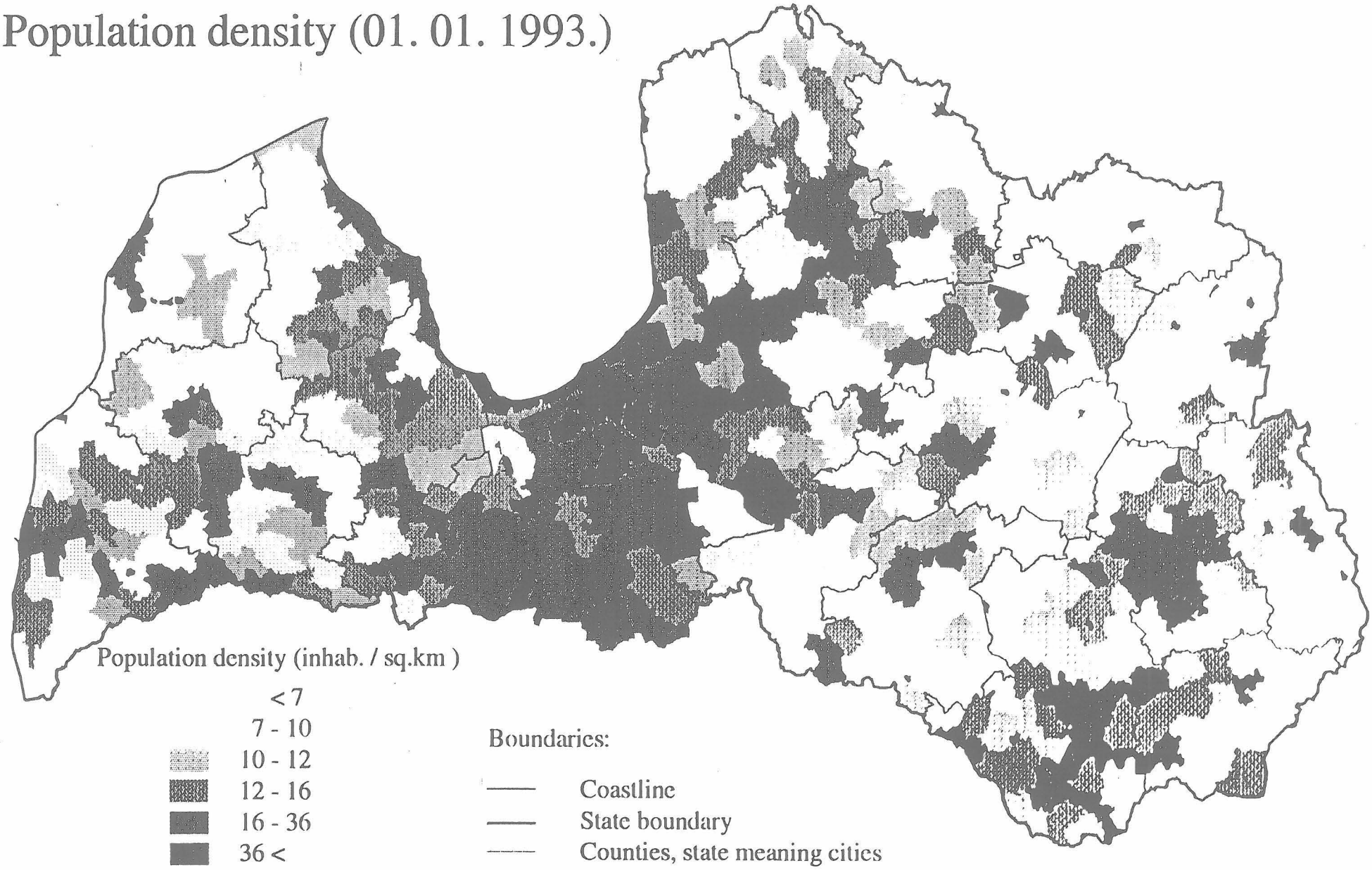
Latvian Environment Data Centre, 1996.

Regional Environmental Boards



Latvian Environment Data Centre, 1995.

Population density (01. 01. 1993.)



Map printed in Latvian Environment Data Centre
Data source: Latvia digital map created by The University of Latvia Institute of Geodesy and Geoinformation

For last few years (1989-1991) average of life length have quickly gone down as for male as for female.

	1989	1991
Male	65,2	61,6
Female	75,2	73,8

Frequency of cancer for male and female on 100 000 inhabitants.

	Male	**Male**	**Female**	**Female**
Age	1989	1994	1989	1994
0 -19	10,8	12,8	8,0	11,2
20-39	33,5	33,0	38,2	55,8
40 - 59	388,0	394,8	309,2	363,2
60 +	980,2	1050,8	497,5	564,8
Average	285,0	317,0	254,0	298,0

POLAND

Ms. Krystyna PANEK-GONDEK

Mrs. Krystyna Panek
Deputy Director
Department for Environmental Policy
Ministry of Environmental Protection,
Natural Resources and Forestry

Sub-regional seminar on **"Women, Management of the Environmental Protection, Sustainable Development"** to be held in Turin on the 23rd - 27th of September 1996.

1. National Environmental Policy

Since 1991 Poland has been implementing the National Environmental Policy, which assumes the integrating of requirements of the environment protection into all sectoral development programmes. The Policy is based on the following principles : lawfulness, neutralisation of pollutants at source, socialisation, "pollutants pays" principle, regionalisation, and common solving European and global problems. In this respect, the Policy complies with the V Programme of Activity for the sake of the environment protection of the European Union. The Policy defines the guidelines for activities to be undertaken in respective branches of the economy that can exert influence upon the improvement of the environment state in short-, medium-, and long-term perspective.

A summary of realisation of the short-term activities proved that the assumed goals have been achieved. The state of the environment in its all aspects has been substantially improved, even though it is still behind the state of the environment in other countries of the European Union. For the short-term horizon, the National Environmental Policy assumed the hampering down of further degradation of the environment and uncontrolled exploitation of both renewable and non-renewable natural resources as a result of working out of appropriate organisational, legal,

and economic mechanisms, as well as reduction of pollutants emitted into. the environment. The National Environmental Policy defined 10 priority tasks, e.g. starting of the programme of desulphurisation of hard coal, appeasement of clean water scarcities, reduction of waste materials arduousness, or depletion of the environment pollution due to transportation.

After four years of realisation of the National Environmental Policy, a balance of the realised short-term goals has been drawn up. A relevant report has been submitted to the Parliament. The report issues that thanks to the construction of depyritisation and coal enhancement works, starting of dust collecting and combustion gases desulphurisation installations in power plants, modernisation of the metallurgy and cement industries, it was possible to deplete dust emissions in Poland by 23 %, SO_2 emission by 15 %, and eventually nitric oxide emission by 14 %. Owing to the construction of some 1000 waste water treatment plants, the volume of waste water being disposed of increased by 30 %. Further 1200 similar facilities are under construction. Thanks to the implementation of utilisation methods, the amount of waste materials being dumped decreased by about 18 %. On the other hand, however, one must emphasise that there is still a lot to be done in the field of communal waste utilisation.

The State Inspectorate for Environmental Protection chose 80 the most arduous for the environment works, and extended special supervision over them. Within this group, in 22 works production has been decreased, and in further 14 the arduous impact on the environment was limited to an extent that excluded them from the above-mentioned disgraceful ranking. So too, was reduced the area of ecological danger within which admissible standards of environmental pollution were infringed. Undeniable positive effects resulting from realisation of the National Environmental Policy have been proved during the Ecological Review conducted in Poland by the OECD experts. Also the international non-governmental ecological organisation Greenpeace noticed the positive output.

Consequently, in the Greenpeace report Poland has been referred to as the "green.tiger of Europe".

Achieving such results was possible through the establishment in Poland a special legal and financial framework serving the needs of the environmental protection. Industrial works were obliged to pay an ecological charge in virtue of the use of the environment and fines in the case of not complying with admissible emission standards. Charges and fines are gathered in accounts of special funds, which then distribute subsidies and low-interest credits for the purposes of realisation of the environment protection investments. Thus, it is a system of a stick and a carrot, which on the one hand, forces industrial works to deplete hazardous influence upon the environment by means of fines, and on the other hand, facilitates realisation of protective investments through financial incentives.

Not only did ecological funds remarkably stimulate activities of "pollutants" for the sake of the environment protection, but affected the market of ecological services as well. Without the system of fines, charges, and ecological funds, in the recent years Poland could not designate that large sums of money for the environmental protection, and could not achieve such remarkable goals. It is estimated that outlays on the environment protection constitute some 1,0 - 1,4 % of the Gross Domestic Product (GDP), which is synonymous to the level observed in the countries of the Western Europe. It best shows how considerable efforts have been made by the Polish society to rescue the environment. However, this only marked the beginning of a string of actions. The results achieved push to additional endeavours.

Currently, we have entered a stage of realisation of the middle-term objectives of the National Environmental Policy. They have been defined and described in great a detail in the Executory Programme to the National Environmental Policy, which was adopted by the Parliament in 1995. Realisation of that Programme will require sums amounting to 20 milliard PLN. In order to obtain the financial means, the Ministry of Environmental Protection is working

on new financial mechanisms, such as taxes on fuel, deposits on batteries and storage batteries, trade with issues, or trust funds (green equity schemes).

Poland is actively taking measures for the purpose of realisation of international commitments, such as realisation of the Agenda 21, the process "Environment for Europe" being an adaptation of resolutions agreed upon at the Earth Summit to the conditions of the continent of Europe. We are constantly realising obligations resulting from international obligations ratified by our country. We pay attention particularly to the Climate Convention, or the Bio-diversity Protection Convention. The output of research carried out by Polish scientists on implementation of principles of integrated management to forestry, and protection of bio-diversity of ecosystems is recognised throughout the world.

It is worth remembering that areas in Poland degraded by industry currently amount to less than 10 % of the country territory. Simultaneously, some 30 % of the Poland's territory is constituted by unique in Europe natural values, such as the Swamps of Biebrza, or the Primeval Forest of Bialowieza. The most valuable regions are included in various forms of protection, i.e. National Parks, Landscape Parks, or Areas of Protected Landscape.

Spatial management plans are being elaborated for the remaining areas. Those plans assume implementation of eco-development, i.e. the socio-economic development of a region in which natural values are preserved. An example in this case is contributed by the programme of development of the north-eastern part of the country, which is popularly referred to as "The Green Lungs of Poland". Another interesting instance are the principles of ecological management in forests implemented within the 7 Promotional Forest Complexes.

2. The Legal Framework

The legal order within the environmental protection is regulated by : the Nature Conservation Act, many times

amended Environment Protection and Shaping Act, Forest Act, Geological Law, and Mining Law. Parliament is currently investigating the Waste Act and the amended Water Law. Supplements to the above-mentioned framework acts are contributed by executory regulations. The Minister of Environmental Protection, Natural Resources and Forestry, as well as the State Inspectorate for Environmental Protection are responsible for the formulating of principles of the environmental policy, but also for the creating of favourable legal and institutional conditions for its realisation. The Minister of Environmental Protection, Natural Resources and Forestry, as well as the State Inspectorate for Environmental Protection are also responsible for evaluating the realisation of the planned tasks.

The field organs' tasks consist in the administrative establishment of conditions for the use of the environment and control of complying with those conditions, as well as defining directions and ways of management within areas allotted to them. It is also the task of the field organs to collect charges for using the environment and fines for violating the settled requirements, as well as carrying out appraisement of environmental impact in relation to chosen categories of investments that are particularly arduous for the environment.

3. Primary Environmental Factors affecting the health of women.

In Poland, there is a considerably rich database of the environmental state, i.e. of the air pollution, surface and ground waters pollution, drinking water pollution, and soil pollution. There is, however, a scarcity of research results as far as the environment pollution combined with the population health state is concerned. This is particularly the case with women. Interrelations between the environmental factors and health are a complex issue. A number of diseases and health deviations result from a simultaneous activity of many factors. At times, it is difficult to differentiate between the impact of work and life hazardous factors, and lifestyle and social-economic factors.

Analysis of epidemiological data, observations made by the State Sanitary Inspection, and data coming from the State Inspectorate for Environmental Protection monitoring, show a certain correlation. Among the chief recognised environmental threats to the health are : winter smog, lead, cadmium, and cancerogenic substances. Lead assimilates enzymes within the human organism, thus decreasing enzymes' activity and causing damage to the central nervous system and haematopoietic system. With no restraint at all, lead penetrates the placenta barrier and is characterised by an ability to cumulate in the embryo organism. A pregnancy is the period when peculiar danger conditions are created due to increased mobilisation of lead from organism deposits. The influence of cadmium on the human organism is connected with its adverse effects brought about to the kidneys. Cadmium and its compounds are toxic. Many-year research showed that there is a number of chemical compounds and industrial processes which lead to cancerogenic activity among people. To be counted among them are : asbestos, benzene, chromium, yperite, vinyl chloride, as well as aromatic hydrocarbons.

Within the region of Silesia, Polish and American doctors conducted a research among 2500 children. Several dozen children revealed such increased volume of lead that they had to undergo detoxication. In the summary of the report on health effects of the environment pollution, the authors team lead by Prof. Jerzy Sokala and Prof. Roman Knapek states, among other things, that the atmospheric air pollution and lead constitute a serious environmental menace in Poland. Those factors exert adverse influence upon the population health. Until the state of excessive atmospheric air pollution is stamped out, scientist circles postulate that medical prevention systems should be implemented and inhabitants of the endangered areas should be supplied with special medical care in the network of the environmental medicine clinics.

Mrs. Irena Norska-Borówka in her work entitled "Indicators of Ecological Calamity in the Voivodeship of Katowice in a Form of an Increased Death Rate and Sick Rate of Children" writes : "The manifestation of threat to the population are death rates and sick rates of babies,

however, a growth of those indicators should be perceived as an effect of the environment influence in a wide social, economic, and medical sense of the word. Apart from the impact of the ecological pollution indicators, which has not so far been deeply researched, prominent are health negligence among the youth and young women, as well as men at reproductive age. Emphasised is importance of social factors like terminating pregnancy, smoking, overuse of alcohol and other condiments, medicines and drugs, and so on and so forth."

Apart from too high death rate and increased sick rate, a result of such occurrences is a phenomenon of quickly growing percentage of disabled and rehabilitation requiring children in a population. Furthermore, analysis of babies death rate indicators (number of deaths in one year of life per 1000 babies born alive) in the voivodeship of Katowice, which belongs to the most polluted regions in Poland, shows substantial increase in comparison to the all-Poland indicator. Despite a relatively good state of the environment, a high death rate was also recorded in the city of Lodz. This is the city where a number of textile and clothing works are located which employ mainly women.

Recently, women working professionally have recorded a rapid increase of professional sick rate. Long-continued vocal organs illnesses rank the first in the list of the most frequently contracted diseases. Infectious and invasion diseases rank the second. Skin diseases are less often. The main cause of sick rate and deaths in the case of women in Poland are circulatory system diseases, virulent cancers, and intoxication. There is no statistical data available that would show a correlation between the environment state and women's health state.

4. The role of women in the main development sectors

The fact that in Poland women work is treated as a natural need enabling them to make use of the acquired qualifications and ambitions, and ensure autonomous social status. Good conditions for learning caused that the same,

or even higher percentage of women, acquired and keep on acquiring further professional qualifications. Jobs like a teacher, seller, doctor are in Poland dominated by women. Women constitute 60 - 70 % of all the employed in these professions. Women were professionally successful in health care, social care, education, upbringing, trade, gastronomy and insurance. In 1983 35,6 % of manager group was contributed by women at the age 30 - 49. A number of women preoccupied with scientific career has been increasing. In the years between 1981 and 1989, about 233 women obtained the title of Full Professor, 753 gained the title of Assistant Professor, 1356 obtained the title of Doctor, and 8085 obtained the title of Doctor of Sciences.

Women occupy higher positions in the governmental administration and in the Parliament. At the present moment, they constitute some 13,4 % of all the Members of Parliament, and 13 % of all the Senators. In the Parliament there is a Parliamentary Women Group, which is of impartial nature. This group got involved, among other things, in the amendment to the Family and Protective Codes. In the years between 1989 and 1995, slightly more women appeared on high, exposed positions. Mrs. Hanna Suchocka was the first woman in the Polish history to become the Prime Minister in the years 1992 - 1993. Woman was the first Spokesman for Civil Rights, another woman was a Deputy Minister of National Defence. Another two women held offices of the Press Spokesmen for the Government. Currently, a woman is a Chairman in the biggest state bank, the Minister of Construction, Spokesman for the Government. About 10 women are Deputy Ministers. There is many more women in the governmental administration. They hold offices of Directors and Deputy Directors of Departments, as well as Chief Specialists.

Similarly to other countries, in Poland an average salary of woman is lower than the one of man. The main reason of this situation should be looked for in low salaries in sectors and branches of the economy where women prevail over men. It is also due to a lower share of women holding offices of directors of the higher rank. Discrepancies

between women's and men's salaries are clearly visible on the scale of the economy. On the other hand, they cease to be so clearly visible when salaries are compared with each other within one workshop. Economic changes of the 90's brought a new problem - unemployment. Women make up a larger group among all the unemployed. Over 60 % of the unemployed women is aged up to 34, and a quarter is aged 35 - 44, i.e. in the years of the greatest life activity. Among unemployed women are graduates from secondary schools, technical schools, and high schools.

5. The involvement of women in the design and implementation of policies, programmes, and projects related to environmental management.

According to data from the year 1993, there are 120 various women groups throughout the country. However, a part of them is contributed by local divisions of all-Poland-range organisations. Among them one can distinguish 31 organisations, federations, and clubs, 2 budget units, 10 foundations, 3 charity organisations, 5 religion-based associations, 8 trade union and political groups, as well as 6 scientific centres preoccupied with women's problems. A great deal of them included in their programmes widely understood elements of the environment protection. Some of them co-operates with non-governmental ecological organisations. Among members of the ecological organisations a lion's share is contributed by women and girls.

There is a number of instances of activities undertaken by women in the field of the environment protection all over the world :

1962 Mrs. Rachel Carson's book entitled "Silent Spring" was a source of great impact on the shaping of pro-ecological attitudes by means of a question about the price of scientific advancement and environmental effects of introducing new economically attractive technologies.

1974 Francoise d' Eaubonne - a French writer became preoccupied with possibilities of women's affecting changes of attitudes towards environmental matters.

1977 Women in Kenya developed a great action of afforesting cleared areas under the Green Belt movement auspices founded in 1977 by Wangarii Maathai.

1978 saw an establishment of the Americans movement directed against fluxing the toxic waste materials. Its equivalent in Great Britain is the "Mothers and Children against Toxic Waste" movement.

The 80's is a period of the Australians' protests against exploitation of uranium deposits. It is also a period of Orkneys inhabitants' protests for the sake of closing down the Dounrey reactor.

For many years now, the British group "Women's Environmental Network" has been fighting against excessive wrapping up of products. The group also stimulates promotions of appropriate consumption models.

Women are playing an important role in promoting the eco-development. Many of them are involved in ecological agriculture, healthy food, health- and education-connected issues, but also management of water resources, and fuels problem. They are made responsible for the appropriate consumption model.

In Rio, the World Bank ascertained that empowering women is the most important single step which should be understood in order to meet the needs of people living nowadays, without endangering the future generations.

POLAND

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Ms. Renata BERENT-MIESZCZANOWICZ

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Environment and health in Poland

The map of ecological conditions in Poland is very differentiated. Environmental state is particularly bad on 11 % area of Poland and it is caused by concentration sources of emission and population concentration. There are twenty seven areas, known as Area of Ecological Hazards. They are rated on a scale of one- to five and five is the worst designation and signifies Ecological Disaster Areas.

Katowice, Rybnik, Glogow,. Legnica and Szczecin are regions of ecological disasters. My region, Opole, has apart of its area separated as Opole Area of Ecological Hazard. This area has one thousand one hundred square kilometers and that is about 30 percents of Opole voivodship- an administrative unit in Poland. Opole receives the rating of four. Opole Area of Ecological Hazards coincides the industry- urbanization zone in regional space planning. Thus, thesis on industry as a main reason of environmental degradation is righful. Tree hundred thirty six thousand people live in Opole Area of Ecological Hazard. Inhabitants health reflects the influence of living in highly contaminated area, as reflected in usually high rates of various mortality such as tumors, neoplastic and cancers. There are economic impacts from these pollution levels which include worker absentee rates as well as capital costs such as corrosion of buildings, machines and other facilities. The outcome is restricted political for economic growth and prosperity in the region caused by devastation of the ecological balance.

Surface water in Poland is classified into three levels of purity depending on bacterial, chemical and physical parameters.

That is,a river or a lake which is accounted to the first, second or third class of this scale is pure water. Water beyond classification is sewage. Some rivers and lakes cannot be included into one of these levels and they are waste waters.

Opole region suffers from industrial generation of air pollution. Several factories including cement, chemical and nitrate fertilizers as well as coal- fired power plants emit dust and toxins. Among emissions are sulphur dioxide, carbon monoxide, nitrous compounds and organic carcinogens. In Opole region , we haven't water in the first class, we have the second class water only occasionally.

In Poland the pine tree, Pinus silvestris, is commonly used as a bioindicator of pollution levels. The conifers are damaged not only in Opole's Area of Ecological Hazard, but throughout the entire Opole voivodship. 94,2 % of the forest land are classified as damaged in Poland. Resistance of Pinus is the same as resistance of people. If trees are dying in a certain area, people are dying slowly too.

The base of health measure is standard mortality ratio that is a number of deaths per 10 000 inhabitants. Measuring of sickliness is impossible in Poland. Mortality ratio in Poland is higher than in others European countries.

Permanent increase of mortality ratios is caused by growth of cancer mortality and circulatory diseases.

The World Health Organization shows, that Poland takes the third place in girl mortality and the second place in boy babies mortality.

The high mortality is often caused by hereditary defects and a half of them is lethal. Chromosomes aberrations cause 80% natural abortions. 10 babies per 1 000 have genetic code mutations in In 1990 cancer mortality rates rose to 21.6 per 10 000, twice the ratio of 1960. At the same time circulatory diseases mortality

rates rose to 52.2 and it is five times the rate of 1960.

Let's compare mortality ratios of degraded and nondegrade voivodships. Growth of mortality is different in men and wome groups. In the group of men who are 22-44 years old, an increas is 3.8, but it is particularly alarming in a group of men who a 45- 64 years old. That is a group of working ages.

It is surprising that there is no difference in mortalit caused by respiratory diseases between degraded and undegrade regions. However, in degraded regions a greater number of peopl die as consequence of gastric diseases.

We established geography of cancer occurrence in Opol voivodship. There is no simple correlation between areas c ecological hazards but pollution do not kno administrativeborders. Environmental pollutions are one with man causes, which act synergic with other factors.

In the degraded areas women show mortality rate increase o 4.6 % at ages 15-24, at ages 25-44 11.3% and at ages 45-6 21.3%.

This data exhibits higher sensitivity of women to environmenta pollution. Women show an increase rate in younger group than men women reactions are at earlier life stages, probably in respons to body organ development.

Younger and younger people suffer from malicious cancers Cumulation of toxic substances causes that cancers lead more an more often to the death. In degraded areas mortality of people a the ages 45-64 is by 21 % higher that in undegraded provinces Thus, we can easily draw a conclusion that quality of lives o both particular people and all communities is really connecte with the problems of environmental protection and health care.

It is expected that human life will become shorter and shorte in Poland. In other European countries an average life becom longer. It is connected with displacement of human population a

" to the right"and reduction of mortality of babies. It means that we cannot effectively counteract dangers to health in Poland. It is known that problems of human health are solved not only by health service (only 20%) but by preventive treatment as well (80 %). Unfortunately, opinion about low standard of health education and health service is rather common.

In such situation ecological awareness seems to be very important. Owing to special programs of education it becomes a little better. People are conscious of industry hazard but they do not know about other sources of danger . From the investigations it results that people are accustomed to some hazard existing in their neighborhood and they are afraid of danger observed far from their residences. It is not easy to change behavior patterns and such a change is dependent on social and economic situation.

Ecological movements can play a very important role but they are not an ecological lobby since they are not united. People are not very active, too. Changes in behavior and consumption patterns are accepted mainly in the family, so greater activity of women is very important. Women should concentrate on problems of health and environmental protection.

We observed increasing of environmental pollution to the end of eighties, air, water and nature state has been systematically deteriorating by the year. But today these processes are stopped a little. Transformation of system and economic changes are cause of this state. Liquidation of factories and limitation of production impact on improving of environmental factors. But these are effects of economical and social problems.

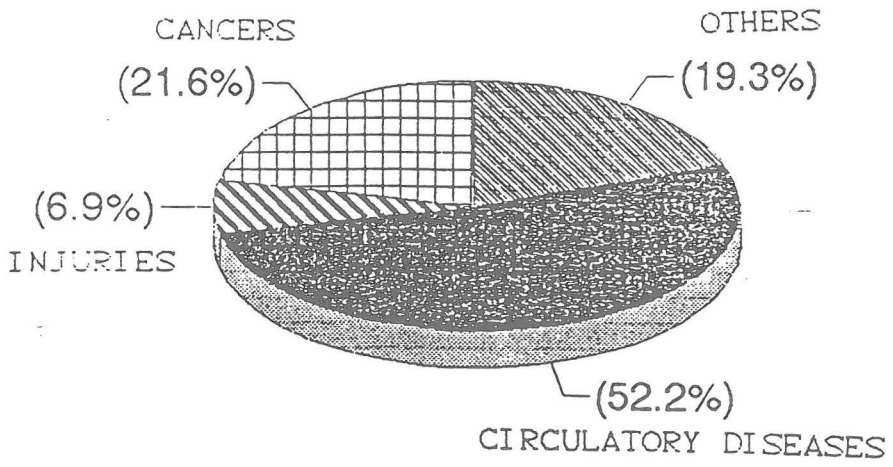
But proceedings of environmental management are not big yet.

Local communities and government authorities have a very difficult time managing the pollution problems. Especially during

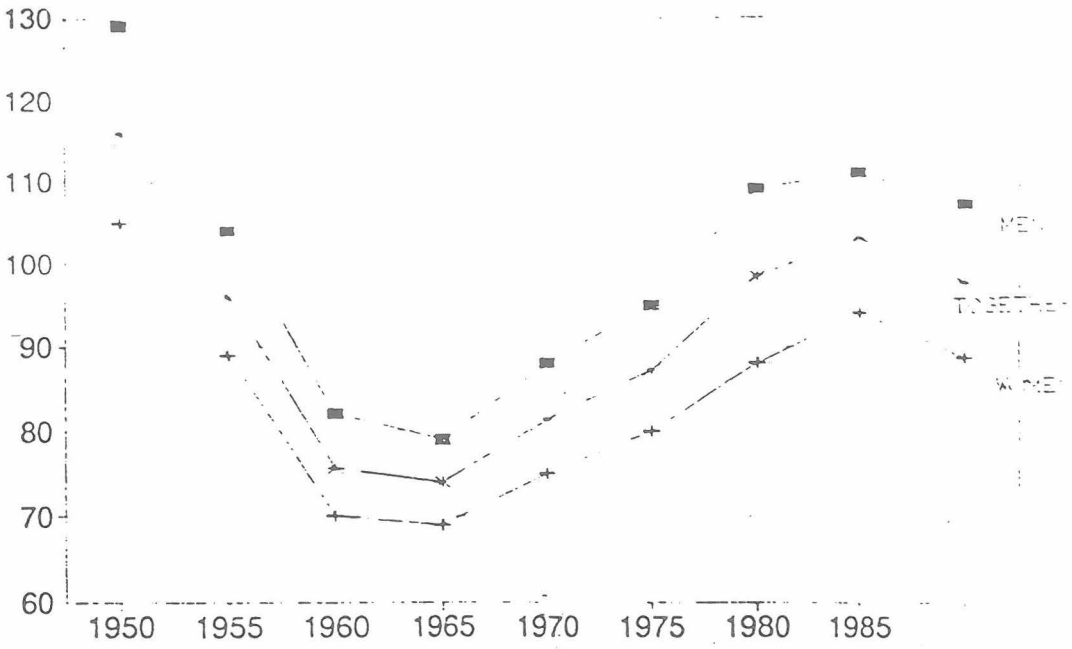
the period of transition, they need support and training.

I believe that the situation will change owing to new ecological organizations in Opole region (for instance Environmental Protection Club, Ecoengineers Club) - specially in public participation in management of environment. We improve ecological education at school and we have started a new specialization at Technical University in Opole. Women are going to play the most important role here.

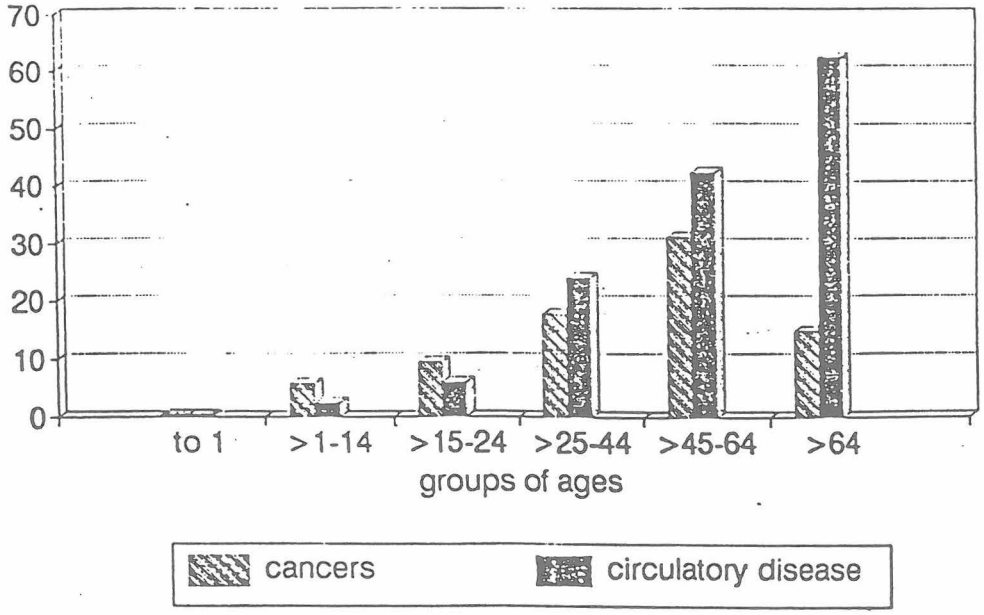
Structure of death causes
in Poland, 1990



Mortality per 10 000 inhabitants
in Poland,



Mortality per 10 000 inhabitants
in Poland, 1990



ROMANIA

Ms. Lucia GEORGESCU

WOMEN.
ENVIRONMENTAL MANAGEMENT.
SUSTAINABLE DEVELOPMENT

Torino 23 - 27 September 1996

presentation of Lucia Georgescu
on behalf of **Prietenii Pamantului**
Galati, Romania

I am honoured to represent here in Torino, at this subregional seminary about **Women, Environmental Management Sustainable Development** the "Friends of the Earth"- **Prietenii Pamantului** (PP) from Galati, Romania.

I am a member of this NGO since 1995.

A local non-governmental organization, founded in 1991, its aims include protection of the environment in relation with human and social values. Its instruments include awareness campaigns directed towards involvement of the population and pressure on political and administrative structures for sustainable development.

The group has 50 active members(80% women), and 1000 suporters(active participants in activities.

Experience:

-national and international campaigning;

-organization of two international seminars in Galati;

-studies and projects on energy efficiency, renewable and waste management;

-environmental education activies in schools and university

-co-organization of a workshop on Organization Structures and Meeting Techniques.

The goals and the various approach of the Friends of the Earth - Galaţi prove that its members aim to :

• contribute to information and knowledge dissemination and promote conscious action of the people for environment protection.

• influence the decision making process on policy and to promote the goals of the organisation by speaking and dialogue with people who may take decisions.

• by a good example on taking personal responsibility for our natural environment conservation and to inculate the same motivations to other people.

OUR PRINCIPLES :

1. One of the fundamental human rights is to line in a clean environment.

2. The Man is not the master of Nature, he is merely a part of It, he is just a link of the terrestrial ecosystem.

3. The welfare doesn' t mean waste.

4. The Earth is yours and ours, but, especially it belongs to future generations.

FRIENDS OF THE EARTH GALAŢI

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WHO ARE WE ?

Volunteers ready to share their scientific and technical knowledge, skills and abilities for the environmental protection activity.

WHAT ARE WE DOING ?

Environmental protection actions with the respect of the human and social values.

HOW ARE WE DOING IT?

Informing us
Informing you
Involving us
Involving you
Co-operating
Inconveniencing

FIELDS

Environmental education
Energy conservation
Non conventional energies
Waste management
Sustainable development
Sustainable agriculture
Agricultural tourism

AFFILIATION

National :

NATURE campaign

International :

YEE - Youth and Environmental Europe
NATTA - Network for Alternative Technologies
SNEEZ - Stop Nuclear Energy in Eastern European Zone
SNORE - Stop Nuclear Operation by Renewable Energy
INFORSE - International Network for Sustainable Energy
ASEED -Action for Solidarity, Equality, Environment and Development

WHAT HAVE WE DONE ?

- Signatures campaign - Petition for the Rights of the Future Generations
- Planting trees
- Cleaning green areas
- Campaign against the toxic waste import
- Organising exhibitions and contests on environmental protection topics
- Curses
- Environmental education in schools
- Brochures and articles in the newspapers
- National and international seminars
- Organising the Bike Tour of the YEE in Romania, 1992
- Co-organising Ecotopia 1994 - the international camp of the youth environmentalists
- Participation to the developing of the National Strategy and National Programme for Environment Protection
- Earth Day, Cernobil day, the day to protest against traffic, the day of the environment, the forest month, the climate day

WHAT WE WOULD LIKE TO DO

- consolidation of the public participation on decision making process concerning environment
- consolidation of the civil society in Romania
- involvement in practical actions with education and advertising in the fields of:
  - energy conservation
  - non conventional energy
  - agriculture
  - consulting in environmental laws for public
  - waste management
  - urban ecology
- developing relationship with local authorities in the environmental protection field
- organising of the energy centre in Galaţi

We are waiting for your suggestions !

ROMANIAN NATIONAL ENVIRONMENTAL POLICY
THE LEGAL FRAMEWORK

After December 1989, following Romania's necessity to line up to Europe's environmental policy, there was founded the legal frame, consisting in adopting - after a period of 5 long debated years in parliament. The Law of the environment protection. This mostly satisfies the international and European legislation's requests, seen such as in the following.

Art.1. The objective of the present low is to establish the environment protection, an objective of major public interest, on the bases of strategic principles and elements which conduct to the lasting development of the society.

Art.2. The strategic principles and elements which lay the foundations of the present law, meant to provide the lasting development, are:

a) the principle of precaution in taking the decisions
b) the principle of preventing the ecological risks
c) the principle of biodiversity conservatism of the ecosystems, specific to the biogeographical natural background
d) the principle with priority "the polluter pays"
e) the remove of the polluting elements which pereclitates seriously and directly the health of the human beings
f) the creation of the motional system of integrated monitorization of the environment
g) the lasting utility
h) the maintain, the improvement of the quality of the environment and the reconstruction of the deteriorated areas
i) the creation of framework so that all nongovernmental organizations and the population should take part in elaborating and applying the decisions
j) the development of the international collaboration for the insurance of the environment quality

Art.3. The implementation possibilities of the strategic elements and principles are:

a) The adoption of the environment policy must be attuned with the development programs
b) The obligatory character of the evaluation proceeding of the impact upon the environment in the initial stage of the projects, programs or activities
c) The correlation of the environment planning with the one of arrangement of the territory and urbanism
d) The introduction of the economical stimulating and coercive key factors
e) The solution on competence levels of the environment problems depending on their amplitude

f) The elaboration of norms and standards attuned with international reglementations and the introduction of the programs of confirmation
g) The promotion of the fundamental and applicable investigation about the environment protection
h) The training and the education of people and the participation of the nongovernmental organizations in elaborating and the application of all decisions

Art.4. The State Acknowledges all the people's right for a healthy environment and with that end in view it guarantees:

a) the access to the information regarding the environment quality
b) the right to associate in organizations for protecting the environment quality
c) the right of consulting in taking the decisions regarding the development of policies legislation and environment norms, the delivering of environment agreements and authorizations including the arranging plans of the territory and urbanism
d) the right to address directly or through the agency of some associations, administrative or judicial authorities in order to frecvent or in case of having a direct or indirect prejudice
e) theright to claim damages for the suffered prejudice

Art.5. The protection of the environment is an obligation of public administrative central or local authorities, as well as all physical and juridical persons.

Art.6. The responsability regarding the environment protection comes to central authorities for the environment protection and its territorial agencies.

The adopted law doesn't yet stipulate the financial mechanisms for the investments which are necessary to be made for the benefit of the environment protection. The law earmarks taxes & fines but the funds which result from the above mentioned join the state budget and aren't directly & properly used for the environment protection

Romania's budget doesn't reserve special funds addressed to the environment protection.

THE ROMANIAN ENVIRONMENTAL POLICY

1. The Law of the environment protection - dated December 1995

2. The National Plan of action for the environment dated October 1995

3. The strategy of the environment protection in Romania - dated October 1995

4. The national plan of territorial arrangement of Romania - the most strategical document it has very long term objectives - 2050 & after wards.

The government's decisions which forces the local communities that, in a period of 18 months, they make up plans of environmental strategy.

THE PARTICIPANTS IN THE PROCESS OF TAKING THE DECISIONS ABOUT THE ROMANIAN ENVIRONMENT PROTECTION

THE POLITICAL LEVEL:

- Government
- The Waters, Forests&Environment protection Ministery
- The Parliament

THE LOCAL ADMINISTRATION LEVEL:

- The Mayor the Vice-Mayor, The Local Council
- Departments of the local administration
- The local Council's Committees

THE EXPERTS LEVEL

- The Institute of Research & Projection in the field of environment protection
- The environment protection Agency
- The Center for Epidemiology & Preventive medicine

THE CONTROL LEVEL

- The communal equipment in the local administration
- The environment protection Agency
- The Consumer's protection Agency

THE CITIZENS LEVEL

- The citizens
- Nongovernmental Organizations - NGO
- other interested groups

WOMEN'S ROLE IN THE DEVELOPMENT OF THE MAIN SECTORS IN ROMANIA

Women represent aproximately 50% of Roumania's population.

In accordance with the Constitution they share equal rights with men(in work, payment, leading positions, etc). Women represent aproximately 40% of the Romanian active working power and they practically work in each and every branch of the economy.

Due to the policy followed by Romania before 1989 concerning women's promotion by all means in leading positions, there was created a negative image of the role which she can play in the development of the many activity sectors.

Therfore, after 1989, during the transition period to the Market economy there has been noticed an increase in the number of unemployed women (60%of the total of unemployed at the moment) and also the tendency to use the high qualified working power of women, especially in cities.

In the countryside women represent the main working power in agriculture (aproximatelly 70%).

Women represent the main working power in fields such as: education, health, justice, light industry, trade, design, social protection, services(public nourishment, tourism), financial field, banks.

In spite of all these, they have a very small number of key-positions in the leadership and development of the main activity sectors.

Thus, in the Romanian Parliament, they represent only:

* 2,7% (13 out of 484);

*6,66% of the ministers are women (1 out of 15);

*in the Local Council of Galati 2,4% of 41 members are female (1 out of 41);

*in the Mairy of Galati aproximatelly 40% of the leading positions are held by women and almost 70% of its employees are women.

This very low female participation as decision factors in the development of the main activity sectors in Romania can be explained by the fact that women, apart from their working activity are very involved in the family life: their children's upbringing and education(because the school system does not provide afterschool education programs), housekeeping, shopping, cooking(most people in Romania can't affort to buy meals in restaurants or fast-food restaurants or to buy food which only needs to be warmed up - so women prefer the traditional cooking for their families, which takes too much of their time).

It is well-known the fact that Romanian women are hardworking, beautiful, house-keepers, good mothers and wives.

From my own experience, I can surely tell that in order to get in a leading position a woman must be twice as capable as a man who wants to get in the same position.

WOMEN'S INVOLVEMENT IN PROJECTING AND IMPLEMENTING THE POLICIES, THE PROGRAMS AND PROJECTS CONCERNING THE ENVIRONEMENT MANAGEMENT IN ROMANIA

In spite of the fact that in Romania women are fairly equal in number with men and the female working power in practically used and every activity sector (even under terrible conditions, as present in the metallurgy example given : at SIDEX Galati from 37.000 employees about 6.000workers are females, mining railroad transports, housing, repairing and engineering roads &highwais, agriculture, etc.),this isn't reflected in the same proportion upon women's possibilities to get into leading positions, into decisional spot. The situation isn't different in the environement protection field

Therefore, the important female presence in research institutes in general - and in this field , in particular as well as in the health, tourism, services, is the proof of female involvement in the implementing the policies, programs and projects reffering to the environement management.

Unfortunately, the reduced number of women involved in leading positions and as decisional factors hinders their manifesting at full capacity and availability in implementing the environement policies.

So, they represent only 10% of the directors and 7.5 % of the chief - inspectors (3 from 40) of the territorial agencies for environement protection in Romania. (4 din 40), though the environement female inpectors are 50% of the total number of inpectors employeed in these agecies.

I mention that in Galati a woman is the director of the agency for environement protection, she is veterinary and 6 of the 12 inspectors are female, as well as 3 of the 7 numbers of the reglememententing service are women.

After December 1989 when the legal frame allowed setting up a large number of NGO,
women found the chance to work properly organized and extremelly efficient in the field of inplementing the programs, policies and projects reffering to the environement management.

In Galati there are 5 environmental NGO. Over 70% of the active numbers of the NGOs are women, although the leading positions are mainly occupied by men, but we don't lose hope that the situation will someday change in better.

The large female presence in the nongovernamental field which takes care of the environement is a living proof of their availability and awareness of the importance of the environement, and of the well-being and the healt lifestyle which is propicious for a sustainable development not only of the present generations, but also for the next generations.

Women can feel the danger of an unhealty and unsure environement , as mother, grandmother and wives, and try to find ways to solve the problems which our society deals with, as a result of the mistakes or indiference we were confruntated with up to now.

Only by educating the futur generations in this spirit - and we all know that mother is a child's first tutor and educator - the basical education acquired at home, so-called "7 years education", completed with the school education, wich shapes the child's position and behaviour towards the environement, we'll obtain the desired results.

Women have much to offer: a special knowledge of their environement, an ability to make the most of limited resources, commitement to comunity and family. Women's capabilities and experiences are invaluable resources wich must not be wasted.

My presence here, as a NGO member, teacher, mother as well as our presence - female presence - in this seminary is a living proof of the ideas stressed before.

WOMAN

⇒POLLUTION VICTIM

⇒IMPORTANT RESOURCE IN DEALING WITH THE ENVIRONMENTAL PROBLEMS IN A LONG TERM

THE MAIN ENVIRONMENTAL FACTORS WHICH INFLUENCE WOMEN'S STATE OF HEALTH IN ROMANIA

In order to conceive this material, I only had access to local statistics.

The physicians in Galati aren't interested and probably not even able to connect people's state of health in general and woman's state of health in particular with life conditions, environmental and working conditions.

The experts from the medical research institutes, although having statistically noticed an obvious rising of the cancer cases(breast, womb, lungs, skin and leukemia), shortly after the 1986 nuclear accident in Cernobil, they did not made public the connection between the cause and the effect.

Data about women's state of health, in the region of Galati, was obtained from the regional statistic direction.

THE MAIN ENVIRONMENTAL FACTORS WHICH CAN INFLUENCE WOMEN'S STATE OF HEALTH IN ROMANIA

PHYSICAL ENVIRONMENT

AIR - toxic gas, dust, smoke;

WATER - organic and anorganic suspensions, chemical substances - industrial waste which is hydrosoluble;

SOIL & UNDERGROUND - garbage, industrial and domestic waste, pesticide, insecticide;

RADIATION

SOUND POLLUTION

ANTROPIC FACTORS

STRESS

WORKING CONDITIONS

UNEMPLOYEMENT

FAMILY LIFE

SMOKING

DATA REGARDING WOMEN'S STATE OF HEALTH IN THE GALATI COUNTY OBTAINED FROM THE COUNTY CENTER FOR STATISTICS

DESEASE	1995 Total	sem. I 1996 Total
ABORTIONS	4513	3793
CANCER		
new cases	229	198
kept in evidence	2475	2805
PSYCHIC DESEASES		
new cases	385	387
kept in evidence	2714	3273
TUBERCULOSIS	828	722
CONTAGIOUS DEASESES	4954	3658
HEPATITIS	764	359
ENTHERITIS	1983	1253
ENCEPHALITIS	385	242
OTHER DESEASES	1822	1804
CARDIOVASCULAR DESEASES	3289	2216
RHEUMATISM	5138	4892

STATISTIC DATA REGARDING WOMEN'S HEALTH, OBTAINED FROM THE GALATI MUNICIPAL HOSPITAL NO. 4(MATERNITY)

	1995 sem.I	1995 sem. II	1996 sem.I	sem.I'96/ sem.I'95[%]	sem.I'96/ sem.II'95[%
Births in maternities	1058	1026	1086	+ 2.6 ↗	+5.8 ↗
Born alive	1058	1034	1122	+6 ↗	+8.5 ↗
Index of new-born deaths	0	0.38	0.3	+0.3 ↗	-21 ↘
Index of perinative death rate	0.5	0.5	0.8	+60 ↗	+60 ↗
Index of premature births.	11.2	11.2	11.5	+2.6 ↗	+2.6 ↗
Requested abortion	2198	1745	1271	-42 ↘	-27 ↘
Spontanious Abortions	335	294	238	-29 ↘	-19 ↘
Hysterecto-mia	123	82	110	-10.5 ↘	+34.1 ↗
Sterility	49	57	114	+232 ↗	+ 200 ↗
Total of hospitalized women	5368	4850	5089	-5.2 ↘	+4.93 ↗
Total of hospitaliza-tion days	37174	35046	39034	+5 ↗	+ 11.3 ↗
Medium hospitaliza-tion period	6.8	6.8	7.5	+10.3 ↗	+8.7 ↗

HEALTH

Each of the 56 villages of Galati county possesses a health unit and there are hospitals in every city. Altogether there are 13 hospitals throughout county. The statistics of the 1991 revealed 7,7 hospitals beds per 1000 inhabitants - below average in Romania.

There are 7 hospitals in the city of Galati. There is also, a middle school and a medical college, training medical personnel for vocation skilled work in hospitals and health units.

CONCLUSION

During its long history, due to its position at the crossing of important commercial roads, many merchants coming from all over the world have settled in Galati which was a cosmopolitan city in the first half of the century. Of course the variety of nationalities and their culture influenced people living here. We took the love of expression from the Italians, the appeal for philosophy from the Greeks, the irony from the Turks and the pragmatism from the Jews.

But above all, the residents in these places are hardworking and hospitable people.

There are many attractions in this county, so why not come and visit us ?

The second largest problem is the waste situation (industrial and household). The development of a Free Economic Zone will yield an increase of these two problems and will add extra ones as well.

AGRICULTURE

Agriculture plays an important part in the county's economy, 32,7% of the county's population being involved in this activity.

EDUCATION, SCIENCE

Concerning the educational system we can mentioned that primary and secondary schools exist practically in all locaties of the county.

There are some traditional secondary achools like "Vasile Alecsandri", "Mihail Kogalniceanu", "Alexandru Ioan cuza" in the city of Galati of a long and good reputation, that rpoduced and are still producing prominent figures for the Romanian spiritual, scientific and cultural life.

The University of Galati, created in 1951, prepares highly qualified specialists in the technical, economical and teaching fields. Many faculties are unique in the country as regards their teaching scope, as for exemple: naval, constructions, food chemistry and pisciculture.

CULTURE

There are three theaters and also three museums, public libraries in every school, a big public library available to all the citizens, churches dated since the 17-th century.

LEISURE

There are more than 96 cinemas catering for the population in the country at large showing popular films from the EST and Romanian made films. Residents in the county can spend their leisure time at the houses of culture, which are located in almost every village in the county. These houses include libraries, art clubs and adult-education classes.

The usual promenade places inside the city of Galati are the picturesque bank of the Danube, Domneasca Avenue and Public Garden. Galati has been known for centuries as the city of the linden trees. These trees in the central streets give Galati a unique note among Romanian cities. This image is completed by its superb bank of the Danube adorned with metal monumental sculptures.

RELIGION

Galati is a city of tolerance between nations. The traditional religion in Galati County is the Orthodoxism but there are also many other churches (Catholic, Baptist, Romano-Catholic, Sinagogue. etc).

GEOGRAPHY

The main form of relief in the county of Galati is the plain and the plateau..

CLIMATE

Galati County enjoys a temperate - continental climate characterized by a cold and dry weather in wintertime with predominant North-Eastern winds. The average multiannual is of 10,3 Celsius degrees. In the summertime the temperatures of over 30 Celsius degrees are considered normal, as well as in the winter time the temperatures of 15 Celsius degrees below 0 aren't accidents of nature in these region.

ECONOMY

The county of Galati is situated in the central part of eastern Romania at the confluence of three flowing waters - the Danube, the Siret and the Prut. Despite the fact that the county of Galati represents only 2% of Romanian territory and only 3% of the country's population, it supplies 4,7% of the total Romanian exports. Galati is very well placed in the national hierarchy in the following industrial branches:

- first place for the production of: metallurgic coke, iron, rolled steel sheets;
- second place for the production of: sea-going ships, wine industry;
- third place for the production of: meat, canned fruit and vegetables.

INDUSTRY

Galati: a highly industrialized town with 400,000 inhabitants. Its main industries include the integrated iron and steel works SIDEX, a ship-building yard, machinery industry, food industry and a paint factory. From these, SIDEX, with a maximum annual production capacity of 10 million tones of steel is the most important one. Around 50% of the population of Galati is directly or indirectly dependent on SIDEX, from which 37,000 directly employed (16,2% women).

The geographical position on the left bank of the Danube River makes Galati a potentially important trade harbor, already serving many contacts in the whole world. The town and harbor are now prepared to become a Free Economic Zone (a tax-free-area).

This offers the opportunity for large economic expansion of the region.

Besides ordinary ecological problems, Galati suffers from extremely high air pollution. The main contributors to this air pollution are SIDEX (dust, SO2, NOx, CO, CO2) and the intense traffic (lead, O3, SO2, NOx, CO, CO2).

ROMANIA
GALATI COUNTY
GALATI CITY

Surface: 4.425 sq.km

Population: over 642000 inhabitants

Capital: city of Galati

GENERAL

The county of Galati is situated in the central part of eastern Romania, on the Danube, at the confluence of three large flowing waters - the Danube, the Siret and the Prut - and at the crossing of some important trade ways. It's surface represents about 2% of the total surface Romania. In Galati County there are about 642.000 inhabitants, representing 3% of the country population.

The capital of the county is the city of Galati, with a population of more than 350.000 inhabitants.

HISTORY

From a historical point of view, material traces prove that the region has been inhabited from the most ancient times.

In the period of the Roman Empire, this county was part of the Roman province of Moesia Inferior. The Romans built some Roman Camps such as the fortress of Barbosi or the fortress of Sendreni.

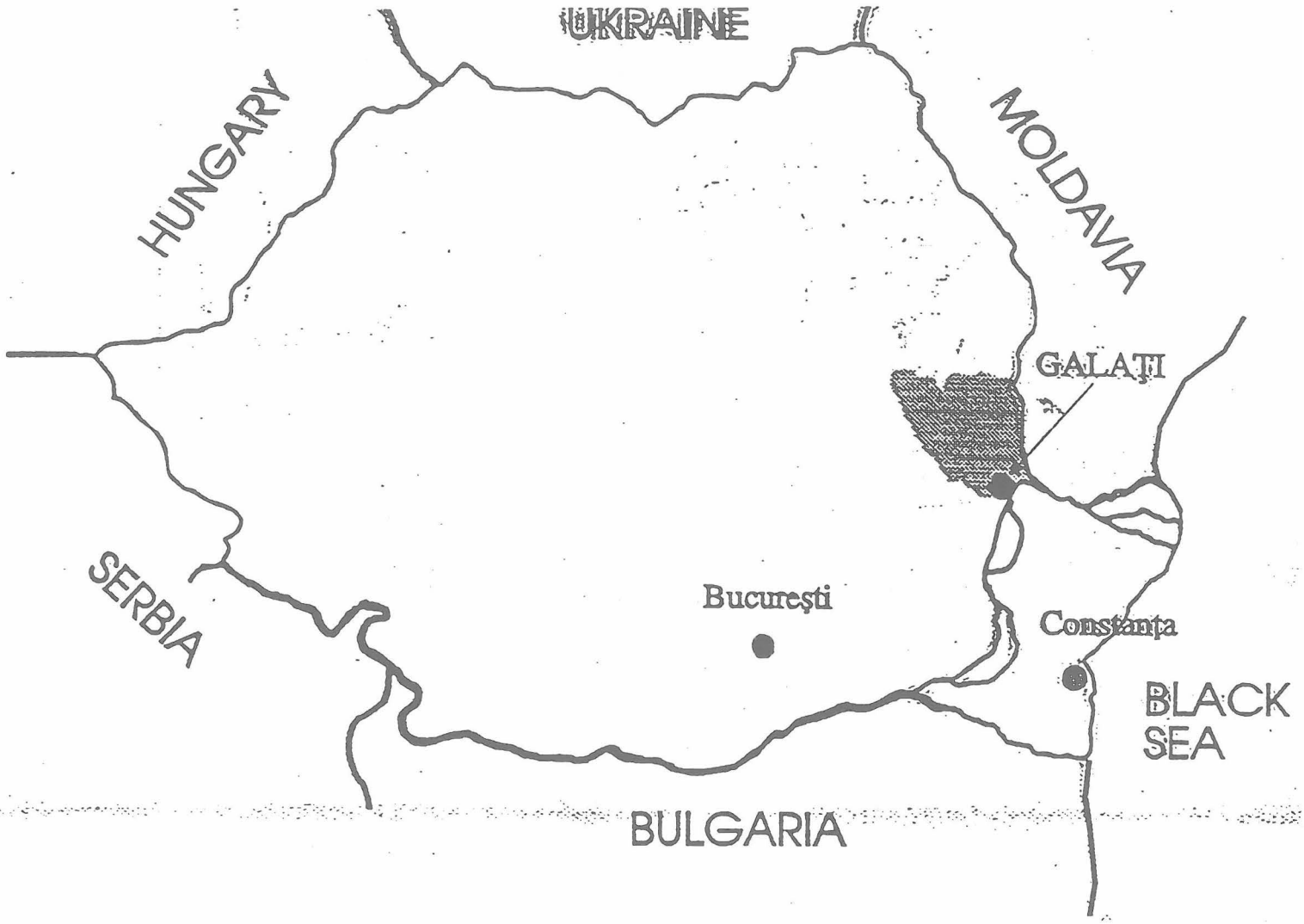
First documentary mention of the city of Galati comes from 1445. That time these lands were part of Moldavia county.

In connection with the commercial activity and with the proximity of the Danube, the shipbuilding activity started in Galati in the XVIIIth century. It was then that were built the first ships for cargo and warships with cannons on board.

Between the two world wars the city of Galati was the largest commercial market in Eastern Romania. Here lived many Greek, Turk, Jew and Italian merchants and also German businessmen.

The city of Galati was partly destroyed during the last world war.

At the end of the II world war, the political and economical conditions of Romania suffered radical changes. The general policy in the economical field was to switch the accent to the promotion of heavy industries like metallurgy and the machine-building. Under these circumstances, the huge integrated Iron and Steel Works in Galati, was built here in the 60's the main producer of metallurgical coke, iron, steel and rolled steel products in Romania.



GALATI COUNTY
ROMANIA

ROMANIA

Ms. Beatrice Irena GULTUREANU

AIR POLLUTION AND WOMEN'S HEALTH

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I. The Influence of Air Pollutants to Human Health

What Are Toxic Air Pollutants?

Toxic air pollutants are substances in the air that, if you are exposed to them, could increase your chances of experiencing health problems. Toxic air pollutants also can cause ecological impacts. An example of a toxic air pollutant is the chemical benzene, which is in gasoline. Inhaling fumes that contain benzene could increase your chances of getting cancer.

Air pollution is defined for the purposes of this paper as the presence in the outdoor or indoor atmosphere of one or more gaseous or particulate contaminants in quantities, characteristics, and of duration such as to be injurious to human, plant or animal life or to property, or which unreasonably interferes with comfortable enjoyment of life and property.(1)

The increase in global population and the associated industrialisation, urbanisation and motorisation have inevitably led to a greater demand for energy . Production and consumption of both renewable and non-renewable energy has increased steadily since the last century. Eighty-eight per cent of total world energy consumption was provided by fossil fuels: oil (37.6 per cent), coal (30 per cent) and natural gas (20.2 per cent) (2). The combustion of fossil fuels for electricity generation, industrial processes, transport, and space heating is the predominant source of primary pollutants in developed and industrialised nations. Industrial processes, such as the smelting of metals and refining of oil, account for significant proportion of primary pollutant emissions.

Generally, pollutant emissions are determined by the method of combustion and the type of fuel used. The combustion of all carboniferous fuels results in the exothermic oxidation of carbon, hydrogen, sulphur and nitrogen. If complete combustion is achieved, carbon dioxide (CO_2), water vapour, SO_2, nitrogen oxides (NO_x) and volatile and non-volatile trace metals such as arsenic (As), cadmium (Cd), lead (Pb) and mercury (Hg) would be the principal emissions. In practice, complete combustion does not occur and additional particulate and gaseous pollutants are produced. These include carbon monoxide (CO), and organic and elemental carbon particulate; polycyclic aromatic hydrocarbons (PAH) may also be envolved, either absorbed on to particulate matter or in the gas phase. Further emissions may be produced by fuel additives such as tetraethyl lead, tetramethyl lead and various hydrocarbons.

Atmospheric conversion of certain primary pollutants such as SO_2, NO and hydrocarbons results in the production of secondary pollutants. These include photochemical oxidants, nitrogen dioxide (NO_2), ozone (O_3) and peroxyacyl- nitrates (PANs) and acid aerosols.

Air pollution problems may vary greatly with the geography, demography, and socio-economic profile of region. These factors will determin the source and emission rate of the pollutant. The climate and topography of a region will influence the distribution and atmospheric processes of the pollution and its effects on the environment and /or human health. We present further a briefly review of some of the major air pollutants of concern(3).

Sources and distribution of pollutants

Particle concentration in urban areas are strongly dependent on source types and emission patterns. Consequently, concentrations may show considerable spatial variability within cities and great diversity from city to city.

Sulphur Dioxide (SO_2)

This pollutant is a colourless acidic gas with a choking taste. Natural emission account for about half of all atmospheric SO_2 (UNEP, 1991). Man-made SO_2 is produced by the combustion of sulphur components which are a natural constituent of coal and oil. Major world-wide sources include domestic fuel combustion, industrial processes and power stations. Small quantities are the produced by diesel powered motor vehicles.

High concentration of this pollutant can irritate the respiratory system, induce coughing or result in changes (usually irreversible) in lung function. This gas also corrodes stonework and other materials, can damage plants and contributes to the formation of acid rain and secondary formed particles.

Ambient concentrations of SO_2 are usually highest in temperate cities where there is significant use of coal for domestic space heating. Ambient concentrations of SO_2 are usually highest in central city areas, in herbside environments and around industrial areas.

Suspended Particular Matter (SPM)

This term covers the range of fine solids or liquids dispersed in the atmosphere, as opposed to larger size fractions which rapidly settle out due to gravity. Together with SO_2, SPM was the first pollutant to be widely studied in urban areas.

SPM can be produced from a wide variety of sources. These include coal combustion, diesel engines, construction and industrial activity, secondary aerosols (formed from ammonia, sulphur and nitrogen oxides by reaction in air), as well as natural sources such as soil blow off and plant pollen. Particles vary widely in terms of size, blackness, chemical composition and their potential for health effects. The larger particles are trapped or removed by the body's own biological defence system. Smaller particles(less than about 10μm in diameter) can penetrate deeply into the lungs resulting in irritating or obstructive effects. Some constituents of fine particulate matter such as diesel smoke may be carcinogenic.

Nitrogen Oxide(NO_x)

Nitrogen Oxides are emitted from natural and man-made sources in nearly equal quantities, but whereas natural emissions tend to be equally world-wide distributed, man-made sources are concentrated in centres of population (UNEP,1991). The most important oxides of nitrogen in urban atmospheres are nitric oxide (NO) and nitrogen dioxide (NO_2). Of the two species NO_2 has the more significant health and ecosystem impacts. It is also readily measured using a variety of measurement methodologies.

The major outdoor sources of NO_2 in urban areas are fuel combustion in motor vehicles, power generation, heating plants and industrial processes. Relatively limited quantities of NO_2 are emitted directly from these sources; most NO_2 in the atmosphere is subsequently formed by oxidation of nitric oxide (NO) emissions.

Nitrogen dioxide is a respiratory tract irritant, and is toxic at high concentrations. It is also involved in the formation of photochemical smog, acid rain, and secondary formed particles. Together with SO_2 and ozone, this pollutant can also damage crops and vegetation.

Concentration in urban areas are usually dominated by traffic emission, being highest in central areas and close to major roads.

Carbon Monoxide (CO)

Carbon monoxide is produced by the incomplete combustion of fossil fuels or organic materials and its major outdoor source is motor traffic. It has a strong affinity for haemoglobin, the oxygen-carrying substance in the blood. When oxygen is displaced by CO,

it can progressively lead to oxygen starvation and, in extreme cases, to death.

The spatial distribution of CO concentrations in urban areas is strongly traffic-dependent, and will therefore follow that for NO_2. Levels are highest at the kerbside but decrease rapidly with increasing distance from the road.

Lead (Pb)

This is the most common of the heavy pollutants, and the largest single source is emissions from motor vehicles using leaded petrol. Emissions from some industrial activities may also be significant over small local scales. Lead is a cumulative poison and, in sufficient body loading, can cause damage to the central nervous system resulting in behavioural changes and intellectual impairment. Since traffic is the major urban source in countries not utilising unleaded petrol, spatial distribution will tend to follow closely those of CO and NO.

Ozone

This is a secondary air pollutant, formed in the troposphere from atmospheric reactions between oxides of nitrogen and volatile organic compounds (VOC's) in the presence of sunlight. Ozone reads readily with biological materials; it can damage vegetation and may cause eye, nose and throat irritation, acute effects on the respiratory tract and breathing difficulties. Ozone also attacks paints, elastomers and rubbers, is involved in the formation of acid rain, and acts as a greenhouse gas.

The spatial distribution of ozone is substantially different from that of other common urban air pollutants. Since its formation in the atmosphere can occur over time scales of hours to days, concentrations are temporally and spatially decoupled from NO_x and VOC emissions. Moreover, chemical scavenging by NO_x emissions in near source areas results in highly variable ozone concentrations over small spatial scales. There is a lack of measured data on such variations, though urban concentration may be expected to be lowest where corresponding levels of other primary pollutants such as NO_x and CO are highest.

In practice, exposure of the population to ozone will tend to be higher in suburban rather than central parts of cities, and in areas downwind of major populated or industrialised regions. Levels will also tend to be high in cities with basin-type topographic situations.

Other Outdoor Pollutants

The air pollutants identified previously have been widely monitored in urban areas. However, increasing attention has recently been focused on Air Toxic and Acid Rain. Air toxic include polyaromatic hydrocarbons (PAH's) - produced by motor vehicles, coke production and coal burning - and volatile organic compounds such as benzene (C_6H_6) , emitted primarily from petrol combustion. The major components of acid air are fine aerosol nitric and sulphuric acid (HNO_3 and H_2SO_4 formed out of NO_2 and SO_2 respectively).

Monitoring methodologies, urban distribution and effects are not well established for those pollutants, and more work is clearly needed in these areas.

Indoor Pollutants

Although air quality is commonly characterised by measurement of ambient (outdoor) pollutant concentrations, it should be recognised that indoor pollutants may have a major influence on population exposure and resulting health effects.

Priority indoor pollutants are often different from those concerned in the outdoor environment. Although indoor air quality can be affected by ambient concentrations, the deposition and removal rates within buildings for most of the pollutants considered thus far are relatively high. As a result, pollutant species with significant sources indoors are usually of most concern.

Key pollutants include radon from building materials and soils, asbestos (and other particulate matter) and formaldehyde from fire proofing, insulation and particle board, CO, NO_2 are respirable particles from heating, cooking and cigarette smoke. Organic materials may also be important: this include volatile compounds from fuel combustion, solvents and

biocides, and viable organisms and allergens from human residents, pets and pests.

Concentration of indoor air pollutants is characterised by extreme locational and temporal variability: the problem can vary widely from building to building, and region to region, as well as with time of year. Exposure can be affected by building ventilation rates, cooking, heating or air conditioning techniques, the presence of smokers and the nature/type of building. Thus, indoor air quality survey must pay particular attention to all these factors.

Impact of Air Pollution on Body Organs and Systems

Air pollution, both indoor and outdoor, is a significant cause of health problems worldwide. The urban and rural outdoor environments contain toxic and irritants that can reduce the quality of life of the citizens.

Even the indoor air is not safe from pollution. Indoor air pollution consists primarily of carbon monoxide, suspended particulate, and volatile organic compounds, mainly from cigarettes and heating and cooking fuels. Environmental tobacco smoke (ETS) is at the top of the list of carcinogenic environmental toxins of concern to physicians. A decrease in indoor air quality also may be the result of reduced ventilation resulting from more efficient construction practices in sealing homes and office buildings from the outdoor environment. Reduced ventilation has resulted in complaints related to the "Sick Building Syndrome" (SBS), which is characterized by symptoms such as headache, fatigue, malaise, mental confusion, eye and throat irritation, and coughing and wheezing. Assessing the relationship between exposure to air pollutants and disease is complicated by the problem of multiple exposure to a multiple pollutants. In fact, an uncommon and very controversial condition, multiple chemical sensitivity (MCS), is thought to arise only through the combined effects of a number of chemicals in concentrations that might not be harmful alone. MCS is clinically defined as an "acquired disorder characterized by recurrent symptoms, referable to multiple organ systems, occurring in response to demonstrable exposure to many chemically unrelated compounds at doses below those established in the general population to cause harmful effects." Research is needed to clarify many of the unanswered questions with regard to MCS.

Effects of Air Pollution

1. The Lungs: Agricultural/Rural

While much attention has been focused on urban air pollution, we must also remember that rural agricultural workers and populations are exposed to many serious air pollutants, including pesticides, herbicides, and organic natural materials, which can cause severe disease.

The industrialization of farming, animal raising, and forestry has resulted in new airborne hazards that cause lung and organ injury by inhalation or by circulation after absorption through the skin or intestine. Inhalation injury can cause inflammatory reactions (bronchitis, asthma, and/or bronchiolitis) in the airway or parenchymal reactions (alveolitis and/or pulmonary edema).

There are distinctive syndromes and diseases caused by organic dusts, such as hypersensitivity pneumonitis (HP), organic dust toxic syndrome (ODTS), occupational asthma, and bronchitis. In addition to these clinical entities, there are several less clearly defined syndromes, such as mucous membrane irritation syndrome due to an exaggerated physiological response; occupational chronic bronchitis; and symptomatic non-specific, non-asthmatic chronic airflow obstruction, all of which have been recognized for years.

Grain dust-induced lung disease results from the dust's biological activity, including its ability to cause respiratory tract irritation, inflammation, and functional change characterized by cough, expectoration, wheezing, chest tightness and dyspnea. Chronic symptoms are most frequently manifested as chronic bronchitis, and were found in 35% of non-smokers and 57% of smoking grain handlers.

Farmers are also exposed to many chemicals that affect exposed skin and may cause respiratory problems through inhalation (ammonia (NH_3), oxides of nitrogen (NO, NO_2, N_2O_4), pesticides, others (e.g., chlorinated hydrocarbons, methyl-bromide, and carbondi-sulphide).

Prevention of these exposures is the key to the maintenance of personal health. The risk of pesticide exposure is reduced by proper clothing and engineering controls, as well as suitable respirators to reduce chemical inhalation and prevent poisoning. Exposure to dust and gas has been reduced by improvements in engineering designs, proper ventilation, personal protective devices, and education of farmers and rescue teams, along with adherence to existing safety regulations.

Future research is needed to establish the prevalence of clinically significant disease among farm workers, to identify important exposures, and to identify ways to reduce exposure or modify behavior to avoid significant reactions. Pest control research using products that are less toxic to humans, and engineering research to reduce exposures are needed as well. Educational programs in disease and risk prevention for farm workers from air pollutants should be enhanced, and there is a need for more research, education, and comprehensive environmental service of those involved in agriculture, animal raising, forestry, and related products industries.

2. Air Pollution Effects on the Upper Respiratory Tract/Nose and Sinuses

The most serious outdoor air pollutants are sulphur dioxide, carbon monoxide, lead, ozone, particulate and nitrogen dioxide. All six are regulated under the 1970 Clean Air Act and amendments, which has kept all but ozone and nitrogen dioxide levels under relatively good control. However, control of these pollutants means keeping their average air content under relatively arbitrary values, without sound medical studies to support the lack of adverse health effects at these levels.

Indoor air pollution can be the result of occupational exposures, hobby or recreational chemicals, carpets and furniture or indolent materials present in the air because of poor building ventilation or contamination. While all of these are potentially harmful, the occupational exposures may be the most risky. At work, volatile organics such as gasoline, cleaning solutions and solvents, and other organic chemicals can have potential health hazards to the upper aerodigestive tract. Acute ingestion or inhalation of a critical level of such substances can lead to airway edema, intoxication and mucosal cytotoxicity. Chronic low-dose exposures may be additive, especially with respect to mucous membrane irritation, but no solid scientific studies on this matter are available at this time.

3. Air Pollution in Asthma and Respiratory Allergy

Air pollution has been shown to induce attacks of asthma in epidemiologic and controlled exposure studies of human volunteers. Ozone is an atmospheric pollutant that enhances the effect of inhaled allergens in asthmatics, suggesting that pollutants influence lung function by increasing airway inflammation.

Continued research of pollutants' effects on airway responses to allergens is essential. It is important to determine how pollutants influence baseline airway inflammation in

asthmatics and to identify other mechanisms by which pollutants may have an effect. We must learn more about the role of particulate matter air pollution in view of the increased death rate associated with increased particulate exposure. The role of indoor air pollutants in asthma, with particular reference to volatile organic compounds, indoor air biological matter (e.g., endotoxins, allergens, etc.), and other agents (tobacco smoke, nitrogen dioxide), needs to be clarified. A multidisciplinary approach involving epidemiological, clinical, animal, and in vitro studies of pollutants on various airway cells, is needed to answer these questions.

4. Air Pollution and Blood

Blood perfuses all of the body's organs and can carry toxic substances as well as beneficial substances, such as oxygen, to them. Air pollution is the source of many materials that may enter the human bloodstream through the nose, mouth, skin, and the digestive tract. Chemicals known to be harmful, such as benzene, lead and other heavy metals, carbon monoxide, volatile nitrites, pesticides, and herbicides, often are contaminants in the air that we breathe. These substances have been shown to produce harmful effects on the blood, bone marrow, spleen, and lymph nodes.

Arsine (arsenic hydride), a gas used in the manufacture of computers, is a well-known cause of anemia.

Benzene and other less well known hydrocarbons are produced in petroleum refining, and are widely used as solvents and as materials in the production of various industrial products and pesticides. Benzene also is found in gasoline and in cigarette smoke. It has been shown that exposure to benzene is related to the development of leukemia and lymphoma. Benzene has a suppressive effect on bone marrow and it impairs blood cell maturation and amplification. Benzene exposure may result in a diminished number of blood cells (cytopenia) or total bone marrow loss. A number of metabolites appear to be involved in this process, and there may be several targets of toxicity, including stem, progenitor, and some stromal cells.

Common air pollutants also have an affect on blood and thus on organs of the body. For example, carbon monoxide, arising from incomplete combustion of carbonaceous materials, binds to the hemoglobin over two hundred times more avidly than oxygen and distorts the release to the tissues of any remaining oxygen. Thus, CO poisoning is akin to suffocation.

Pesticides and herbicides are used in agriculture, industry, municipalities, and in our homes, resulting in a high exposure rate of the population. Pesticide exposure is associated with an increased risk of malignancy, including non-Hodgkins lymphoma, aplastic anemia, and Hodgkins disease.

5. Air Pollution Impact on the Heart and Blood Vessels

Disease of the heart and blood vessels is the major cause of death.

The common element in most chronic heart disease is poor blood flow to the heart muscle, usually because of arteriosclerotic plaques in the coronary vessels and the accumulation of platelets, leukocytes, and other deposits that block the flow of blood to the heart muscle. Recent data implicate several environmental toxins as factors in diseases of the heart and blood vessels. Most of these toxins, including lead, carbon disulfate, asbestos, ozone, freon, fluorocarbons, vinyl chloride, cadmium, pesticides, and arsenic can be found in polluted air. These agents have been shown to produce hypertension and cardiac arrhythmias (irregular heart beat). Environmental tobacco smoke, which contains carbon monoxide, is emerging as a major environmental health hazard and has been reported to cause 35,000 to 50,000 cardiovascular deaths each year.

The toxic chemicals in environmental air pollution stimulate the immune system to activate leukocytes and macrophages that can produce tissue damage, especially to the cells that line human blood vessels.

Investigators are seeking ways to limit the harmful effects of these environmental toxins, but the greatest hope for immediate reduction in their harmful effects is in air pollution prevention. Measures that will reduce environmental air pollution and decrease cigarette smoking in our society deserve increased public support. While there is a great need for more research on the impact of environmental toxins on the heart and blood vessels, it is clear that air pollutants can cause severe health problems, such as hypertension and cardiac arrhythmias.

6. Skin Effects of Air Pollution

Skin cancer is increasing, with an estimated 1 million new cases being diagnosed and 9,100 people dying of skin cancer in 1993 in the United States. The most common skin cancers are basal cell carcinoma, squamous cell carcinoma, and melanoma.

Skin cancers are most closely associated with exposure to ultraviolet B irradiation (UV-B). There are three forms of ultraviolet light (UV) energy of importance to biological systems (UV-A, UV-B, and UV-C). UV-A reaches the Earth's surface and has an important role in biochemical processes. UV-C is absorbed in the upper atmosphere, but would cause severe cellular damage if it reached living organisms. UV-B is normally largely absorbed in the upper stratosphere (about 25 miles above the earth) at the level of the ozone layer. Depletion of the ozone layer allows harmful amounts of UV-B to reach biological systems, where it is believed to cause serious genetic damage. Specifically, UV-B impairs the ability of damaged DNA to repair itself.

Ozone is the primary stratospheric component that absorbs UV-B. Researchers assert that for every 1% decrease in ozone, there will be a 2% increase in UV-B irradiance, and therefore a 2% increase in skin cancer may be predicted. The atmospheric pollution by ozone-depleting chemicals, such as some combustion products of fossil fuels and chlorofluorocarbons (CFCs), is a major concern for physicians because it is predicted that the ozone layer will remain diminished for decades, even after CFCs are replaced by non-ozone depleting substitutes. The banning and prevention of these pollutants is important.

Since our ability to replace ozone in the stratosphere is very limited, we must rely on public education to prevent further increases in skin cancer morbidity and mortality. Most of a person's lifetime UV-B exposure occurs before age 18, so the educational emphasis should be on children and their mothers.

People should avoid blistering sunburns even though this will require changes in occupational and recreational habits. They should also avoid tanning parlors on the advice of physicians. Use of protective clothing and sunscreens must receive greater educational emphasis. In addition, early skin cancer detection screening programs will require additional physician effort.

UV-B is a strong immunosuppressive agent, and therefore, may have very significant systemic effects related to the release of immunologically active molecules from the skin.

In the future, it will probably be necessary to modify many industrial processes as a primary preventive step to decrease exposure to these toxic substances.

Education will change behavior if the message is targeted to the sector you want to change.

7. Impact of Air Pollution on the Central Nervous System and on Mood, Cognition and Behavior

The central nervous system (CNS) is the primary target for many serious air pollutants, such as lead, which is a major environmental hazard. Children are particularly at risk from lead's CNS effects. In many countries, especially developing countries, the use of leaded gasoline continues and is a major source of lead in the air.

Research over the past 10 years has provided evidence that levels of lead exposure associated with central nervous system effects, particularly as manifest in behavioral changes, is far lower than previously realized. Fifteen years ago, blood lead concentrations in children were not considered problematic until they exceeded levels greater than 30 to 40 micrograms per deciliter. Since that time, more sophisticated epidemiological studies have demonstrated changes in cognitive function at blood concentrations as low as 10 to 15 μg/dL.

While children are more susceptible to lead's CNS effects, adults exhibit similar deficits in learning and memory as well. Advanced aging is also a period when enhanced vulnerability to the toxic effects of lead are predicted. In Germany, a large study documented an age-related decline in bone lead concentrations with advancing age. This effect was more pronounced in women than in men, reflecting post-menopausal processes in women which contribute to bone resorption and the release of lead back into the bloodstream. These results mean that lead exposure is actually increased during a period of already heightened susceptibility due to concurrent degeneration of other physiological functions, including both CNS and renal functions.

Whether toxic-induced or stress-induced, these neurobehavioral effects can contribute to serious psychiatric problems. In various studies, increased levels of certain air pollutants have been found to be accompanied by increased psychiatric emergency calls and hospital admissions, behavior changes, and a lessened sense of well-being. Irritating odors and cigarette smoke have been found to increase aggressive behavior, and to decrease helping behavior and altruism, leading to a degradation of social interaction.

8. Air Pollution and the Immune System

An airborne pollutant may enter the respiratory tract as a volatile gas (e.g., ozone, benzene), as liquid droplets (e.g., sulfuric acid, nitrogen dioxide), or as particulate matter (e.g., components of diesel exhaust, aromatic hydrocarbons). These pollutants interact with the immune system and may cause local and systemic responses ranging from overactive immune responses to immunosuppression. Most airborne pollutants are small molecular weight chemicals that must be coupled with other substances (e.g., proteins or conjugates) before they can be recognized by the immune system and cause an effect. Some disorders which may occur because of pollutants in the respiratory system are the following:

1. Ozone is a very common environmental pollutant, and its inhalation in concentrations greater than 1 parts per million (ppm) for several hours causes pulmonary edema and hemorrhage in experimental animals. The effect of low ozone concentrations may be exaggerated when combined with other gases, such as sulphur dioxide (another common air pollutant), because of synergism between the sulfuric acid and ozone. An important aspect of this problem is heightened susceptibility to lung infection after exposure to this latter form of air pollution.
2. Immunologically-specific, cell-mediated (T-lymphocyte) reactions appear to predominate in chronic beryllium disease, a granulomatous form of lung disease.
3. Mercury-induced autoimmune disease in which the immune system attacks self-antigens in the kidneys and lungs has been demonstrated in animal models with changes

similar to those observed in people with Goodpasture's syndrome.

4. Immunosuppression can be demonstrated following exposure to polycyclic aromatic hydrocarbons (e.g., 2,3,7,8-tetrachlordibenzo-p-dioxin).

5. Hypersensitivity reactions (e.g., occupational asthma) can occur following exposure to toluene diisocyanate and certain other volatile chemicals.

9. Air Pollution and the Genitourinary Tract

Environmental pollutants have been found to have harmful effects on the genitourinary system, including compromised cancer development and organ function.

Similarly, several substances have been shown to compromise renal function. Mercury has been associated with renal toxicity and development of the nephrotic syndrome, cadmium and carbon tetrachloride have been associated with similar types of damage.

Cigarette smoke contains the same aromatic amines, 2-naphthylamine and 4-aminobiphenyl, that are associated with certain industries, and has been suggested as the explanation for the fourfold to tenfold increased risk of bladder cancer development in cigarette smokers.

10. Air Pollution Impact on the Endocrine and Reproductive Systems

Certain environmental toxins can interfere with the endocrine (hormone- producing) and reproductive systems to a degree that merits public concern. Harmful effects on these crucial body systems have been observed in people, farm animals, and wildlife. Breast cancer has increased at the rate of approximately 1 percent per year for the past 50 years.

It has been shown that several chemicals present in environmental pollution have the capacity to act as hormones. When these "environmental hormones" are taken into the body through air pollution, they can mimic the effects of the body's natural hormones and disrupt a number of important biological processes.

Environmental pollutants that can mimic the hormone estrogen include DDT, DDE, kepone, heptachlor, PCBs, dioxin, and break-down products of detergents. Many of these compounds can be carried for long distances through air pollution and then deposited into soil and water, and eventually into the food chain. These hormonally active chemicals have been shown to disrupt the reproductive development of fish and wildlife, often resulting in infertility due to feminization of males or masculinization of females.

Offspring may be permanently affected by exposure to these chemicals while they are still in the mother's uterus. For example, we know that exposure to the synthetic estrogen Diethylstilbestrol (DES) produces severe reproductive effects in both the sons and daughters of DES-taking mothers. Prenatal exposure to DES is associated with vaginal cancer, peri-ovarian cysts, abnormalities of the uterus, and reproductive dysfunction in the female offspring.

While there are no easy solutions to these problems, there continues to be a great need for scientific characterization of the specific chemical offenders in our environment. It seems clear that chemicals with hormonal activity have the potential to cause serious health problems. Women must increase their knowledge of these toxins' effects and their understanding of the association between exposure and the present and future health of mothers and children in our society.

Many pollutants mimic estrogen and may be responsible for breast and uterine tumors.

11. Effect of Air Pollution on the Eyes

As mentioned previously, air pollution in the form of chlorofluorocarbons (CFCs) and similar compounds has been responsible for depletion of the stratospheric ozone layer, permitting increased amounts of UV radiation to reach the Earth. Excessive exposure to UV from the sun has a potential contributing role in the development of various eye disorders, including age-related cataract, pterygium (growth of tissue on the white of the eye), cancer of the skin around the eye, photokeratitis (sunburn of the cornea), corneal degenerative changes, and age-related macular degeneration.

These effects are an important issue for ophthalmologists because of the sensitivity of the eye to UV-A and UV-B light, both of which have the capacity to produce painful conjunctivitis and have been linked to cataracts. Educational efforts should be expanded to alert the public to the importance of purchasing glasses which block ultraviolet rays.

12. Air Pollution and the Musculoskeletal System

Bone provides structural support for the body and plays an important role as a reservoir for vital minerals. Bone is continuously remodeling itself (breaking down and reforming), and it is this characteristic that makes bone a prime target for pollutants. And later, if pollutants are stored in bone, the bone becomes a source of toxic substances.

Toxic substances can therefore remain a threat to health for decades, and may be particularly hazardous when they are released into the general blood circulation at critical periods of life (e.g., pregnancy, lactation, menopause, or advanced age).

Bone loss is accelerated during menopause at which time bone mass may decrease by 2% to 3% per year for several years. During this period, stored toxins may be released and cause damage to the nervous system and other organs. This problem is worsened when an individual's diet is calcium- deficient because this deficiency accelerates mineral release from bone.

Lead is the most serious of several hazardous pollutants that affect bone, especially in countries that continue to use leaded gasolines. High levels of lead and cadmium have been measured in cigarette smoke and may contribute significantly to the total lead body burden.

Additional research is needed to clarify the impact of exposure to pollutants during critical periods, such as lactation and menopause.

13. Air Pollution and the Digestive System

Air pollution is a less significant source of hazardous environmental chemicals in the gastrointestinal (GI) tract than is the ingestion of contaminated food and water (which may have been contaminated by air pollution).

Which Toxic Air Pollutants Are of Most Concern?

Government agencies are most concerned about substances that fit one or more of these descriptions:

- Can cause serious health effects, such as cancer, birth defects, immediate death, or other serious illnesses.
- Are released to the air in large enough amounts to be toxic.
- Reach many people.

II. Air Pollution and Women's Health

Women's health is at risk because little attention has been paid to understanding and preventing the harmful effects of environmental toxins on women.

While more research is needed, many diseases affecting women appear to have an environmental link.

Due to women's unique physiology, they may respond differently than men to environmental toxin exposure.

Current risk assessment policy fails to fully consider women's health concerns when setting safe exposure levels.

It is proposed that an aggressive research commitment is necessary to identify and understand the unique way environmental toxins in the air interact with women's bodies. For example, many chemical pollutants have the potential to produce estrogenic effects when absorbed into the body, and may be a factor in breast cancer development. Organochlorines such as DDT, PCBs, and polycyclic aromatic hydrocarbon (PAH) petroleum byproducts have been shown in animal studies to mimic estrogen, and many have induced or promoted mammary tumors in rats. These chemicals can be inhaled as air pollutants resulting from industrial manufacturing, energy production, and traffic exhaust. Many of these toxins are stored in fat and may reside in the body for long periods of time. Storage of toxins in fat is a problem of greater importance in women because of their higher percent of body fat and the hormonal changes that occur during pregnancy, lactation, and menopause, which can result in mobilizing internal stores of pollutants many years after the initial exposure.

A commitment to research is needed to understand the impact of workplace chemical exposures on women's health. Exposure to occupational chemicals may affect reproductive capacity adversely in the form of reduced fertility, spontaneous abortion, low birth weight, birth defects and developmental disabilities. For example, exposure to inhalational anesthetic agents has been associated with adverse pregnancy outcomes in female operating room personnel. Currently, only 30 to 40 chemical, physiologic, and biologic agents have been identified as human teratogens because of the difficulty in proving a causal association, but the Society believes this number is probably well below the final total that will be found.

An interagency review should be conducted to evaluate the federal assessment policy and its impact on women's health. Every year, approximately 1,000 new chemicals are developed and added to the 70,000 unique chemicals, and 9 million mixtures, formulations, and blends of chemicals already in commercial use. Few of these chemicals have been adequately assessed for their potential toxicity, either individually or in conjunction with other chemicals. A study by the National Academy of Sciences has been proposed in Congress to determine the science base and research needed to ensure that environmental standards protect the health of men and women.

Women have more chronic illness than men -- partly because they live longer, partly because of the storage of toxins in fat and bone.

III. Air Quality in Romania

The ozone (O_3) is the main pollutant in the industrialised cities. The stratospheric ozone (in a thin layer) is responsable for life on Earth (differing from the tropospheric one, which is very toxic).

To improve the living environment there were established the maximum levels for toxic emissions (NO_x, CO and C_nH_m). In this respect in Romania the maximum levels established for toxic emissions are $NO_x \leq 1.43$ g/km, $CO \leq 2.11$ g/km, $C_nH_m \leq 0.3$g/km; for trucks the CO emission will not exceed 4% from the whole quantity of toxic emissions.

We must note that for the emissions control, stationary sources are more easily to consider. From this point of view, in our country, the attention is straighten on it. It is known that the gas without lead has a toxic emission lower that the conventional one, but the passing to this kind of fuel supposes changes of the engine, not very easy to take into account in our country in this period.

The sulphur dioxide comes from fossil fuels burden (67%), termo and electro power stations on petrol or coal, and the rest of it from refineries, etc. Mobile sources for SO_2 represent 4%.

NO_x (nitrogen oxides). The mobile sources (the vehicles) is responsible for 50% of the total emissions; the other half comes from stationary sources (coal, petrol, natural gas, wood burden).

For NO_2 the maximum level for stationary sources is 0.3 mg/m^3 in 30 minutes, as average for 24 hours, respectively 0.01 mg/m^3 as annual average.

H_2S (hydrogen sulphide). The main sources are refineries, but it is also present in colour, cellulose and artificial fibre industry. For improving the quality of the living environment it is necessary to consider some measures for retaining physico-chemically the hydrogen sulphide and other soluble sulphides.

NH_3 (ammonia).The main source is ammonia waters from steel industry and gas industry or from catalytic synthesis of N_2 and H_2.

The toxic agents from atmosphere can be originally from all sources mentioned; the level of pollution and the bad effects on human health are dependently to the level of inhalation and the accumulation of the polluting agents in the human body.

Air quality standards in protected areas

1. Maximum levels of chemical pollutants in atmosphere air must not exceed the levels presented in the next table:

Polluting Agent	Maximum Level Concentration, mg/dm^3			
	Short Term	Medium and Long Term		
	30 min	Day	Month	Year
HNO_3	0,1	-	-	-
HCl	0,3	0,1	-	-
Acroleine	0,03	0,01	-	-
Aldehyde	0,035	0,012	-	-
Ammonia	0,3	0,1	-	-
Phosphate Anhydride	0,3	0,1	-	-
Arsenic	-	0,003	-	-
Benzene	1,5	0,8	-	-
Cadmium	-	0,00002	-	-
Cl	0,1	0,03	-	-
CrO_3	-	0,0015	-	-
NO_2	0,3	0,1	-	0,01
SO_2	0,75	0,25	--	0,06
Phenol	0,1	0,03	-	-

Fluorine Gaseous inorganic compounds (easy soluble aerosols) Gaseous inorganic compounds (hardly soluble aerosols)	0,015	0,005 0,03	0,0012	-
Smoke	0,15	0,05	-	-
Furfural	0,15	0,05	-	-
H_2S	0,15	0,008	-	-
Mn	0,015	0,01	-	--
Methanol	-1,0	0,5	-	-
Methyl mercaptan	-	0,00001	-	-
CO	6,0	2,0	-	-
O_3	0,1	0,003	-	-
Lead	-	0,0007	-	-
$(SO_4)^{2-}$	0,03	0,012	-	-
Carbon Sulphide	0,03	0,005	-	-
Tricloretine	4,0	1,0	-	-
Suspended Particular Matter (SPM)	0,5	0,15	-	0,075

2. The maximum level for next pollutant agents present simultaneously in air
   - SO_2, NO_2 and NH_3;
   - SO_2 and F;
   - SO_2 and H_2SO_4 aerosols;
   - SO_2 and Suspended Particular Matter (SPM);
   - NO_2 Suspended Particular Matter (SPM);
   - HCl, HNO_3 and H_2SO_4 aerosols

is calculated with the formula:

$$\frac{C_1}{Cma_1}+\frac{C_2}{Cma_2}+\ldots+\frac{C_i}{Cma_i}<1$$

where C_1, C_2, ..., C_i -the concentration of polluting agent, 1, 2, ..., i, in the air;

Cma_1, Cma_2,..., Cma_i -the maximum concentration of the polluting agent, 1, 2, ..., i, in the air.

IV. Exposure Assessment?

Scientists and government officials use a four-step process called risk assessment to estimate people's increased risk of health problems as a result of exposure to a toxic air pollutant. An exposure assessment is one step of that process and is used to determine how much of the pollutant people are exposed to and/or how many people are exposed.

The 4-Step exposure assessment

The exposure assessment is also a four-step process. Step 1 entails identifying pollutants likely to be in the air. In Step 2, the amounts of these pollutants released from different sources are estimated. In Step 3, the concentrations of the pollutants are estimated for the

geographic areas of interest. Finally, Step 4 provides estimates of the number of people who breathe air containing the pollutant at different levels or at some selected level, such as a regulatory standard or a health benchmark level.

Step 1 - Identify Pollutants Released

Many chemicals found in factories, consumer goods, sewage treatment plants, and other sources can be released to the air as toxic air pollutants.

Step 2 - Estimate Releases of Pollutants from Sources

What are the Sources of Pollutants?

Point sources are sources that have a specific location. Point sources include chemical plants, steel mills, oil refineries, and hazardous waste incinerators. Pollutants can be released when equipment leaks, when material is transferred from one area to another, or when waste is given off from a facility through smoke stacks.

Area sources of toxic air pollutants are made up of many smaller sources releasing pollutants to the outdoor air in a defined area. Examples include automobiles, neighborhood dry cleaners, small metal plating operations, gas stations, and woodstoves.

What are the Patterns of Releases?

Routine releases, such as those from industry, cars, landfills, or incinerators, may follow regular patterns and happen continuously over time. Other releases may be routine but intermittent, such as when a plant's production is done in batches. Accidental releases can occur during an explosion, equipment failure, or a transportation accident. The timing and, often, the amount released during accidental releases are difficult to predict.

How Much of a Pollutant Is Released?

To estimate the amount of a routine release engineers sometimes use a monitor to sample the pollutant as it is released. The amount collected in a given time period is measured in a laboratory. For example, if 10 pounds of pollutant XYZ is collected in an average hour and the facility runs 24 hours a day, 240 pounds of XYZ per day would be released.

Alternatively, engineers can use an emission model to estimate the amount of pollutant released by a particular facility. An emission model is a set of mathematical equations that represent the processes that occur when a facility generates a pollutant. Two kinds of Monitoring a Routine numbers are put Into these mathematical equations: (1) "emission factors," or average emission measurements that are made by measuring emissions from a few "typical" facilities, and (2) "depends on" factors, or factors that are specific to a certain facility and depend on how that facility operates. This kind of estimation is similar to determining the fuel efficiency for your car. The manufacturer provides an average miles per gallon rating when you buy a car. Depending on many factors such as how you drive your car, your actual fuel efficiency may differ. In a similar fashion, engineers use various factors to adjust for differences between a "typical" facility and the facility in question.

Step 3 - Estimate Concentration in Air at Different Locations

What Affects the Concentration of a Pollutant?

The concentration of a pollutant decreases as it travels from the site of release because the pollutant spreads out. The amount of this dilution, or dispersion, in the air depends on weather -- especially wind direction and speed. Dispersion also depends on the terrain, whether it is on flat or mountainous land or in a valley.

Other factors can affect the concentration, or level of a pollutant at a given location. The amount of a pollutant at any one location can vary over time depending on the pattern of releases. For example, industrial processes can release some pollutants only at certain times and other pollutants continuously. The location of the release affects the concentration -- a pollutant can be released from smoke stacks high in the air or can leak from equipment or storage tanks near the ground. The ground-level concentration near a facility is generally lower when a pollutant is released from high stacks because the pollutant is more diluted when it reaches the ground. Other factors that affect concentration include the temperature and speed of the gas released through the smoke stack and the location of places in the facility where it is released.

What Is the Concentration of a Pollutant at Different Distances from the Source?

Using a technique called dispersion modeling, engineers can estimate the concentration of a pollutant at different distances and directions from the source. The computer model is used to calculate these estimates from information about the amount of pollutant released, the weather and terrain around the source, and other factors that affect the concentration of the pollutant.

Step 4 - Estimate the Number of People Exposed

For a point source, researchers estimate the number of people living in various areas surrounding the site of release with a computer model that uses census information for wider and wider rings around the point source. For an area source, the computer model uses census information to estimate the population living in the area of interest. Where warranted, census estimates can be adjusted to reflect daily and seasonal population movements.

Using dispersion and population information in models, agencies can estimate the number of people exposed to varied concentrations of a chemical. To aid decision makers, these models can compare exposures to some selected benchmark, such as a state pollution standard or a level with a known health effect. For example (see figure below), someone standing at the northeast fence line of a factory's property might be exposed to 10 times the state standard while someone living a little further from the factory might be exposed to 2 times the standard. Someone living to the southwest may be exposed to very low levels below the state standard.

V. Conclusions

Air pollution affects women in a variety of ways on local, regional and global scale.

The nature of air pollution problems has changed in industrial countries over the past 20 years.

The potential air quality problems facing the developing nations are enormous. The deterioration in air quality will also have regional and transboundary effects.

The introduction of administratively simple policies that encourage the use of cleaner fuels, better land use and strategic planning, and also the promotion of energy efficiency are the first steps in controlling pollutant emissions at a local and national level.

International co-operation to address the problems of developing nations is needed to enable economic and social development which is environmentally benign. The development of renewable energy sources and the introduction of widespread energy conservation measures, particularly in the developed northern hemisphere, offer the most realistic methods of controlling all air pollutant emissions on the long term.

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LEGAL FRAMEWORK ABOUT THE REGULATIONS REGARDING THE AIR QUALITY IN ROMANIA

Nr.	The name of the normative paper	The emission date	The publication date
1.	Romanian Constitution	21.11.1991	1991
LAWS AND DECREES			
2.	The law 9/1973 concerning the environmental protection	20.06.1973	23.06.1973
3.	The law 3/1978 concerning the health assurance for the population	6.07.1978	10.07.1978
4.	The law 2/1987 concerning the preservation and the development of the forests, its rational, economical exploitation and the ecological equilibrium	30.10.1987	9.11.1987
5.	The law 10/1982 concerning the obligations and responsibilities of Local Popular Councils, enterprises and citizens for the management maintenance and cleaning of urban and rural localities; the maintenance of public discipline and order.	9.12.1982	18.12.1982
6.	The law 82/1993 concerning the constituting of the "Danube Delta" Biosferical Reservation	20.11.1993	7.12.93
7.	The law 6/1993 concerning the association of Romania to the International Convention	8.04.1993	18.03.1993
8.	The law 84/1993 concerning the association of Romania to the Convention regarding the protection of the ozone layer adopted in Wien, 22nd of March 1985 and to the Protocol regarding the substances which deplete the ozone layer, adopted in Montreal, 16th of September 1987 and for the acceptance of the appendix to the Montreal Protocol concerning the substances which deplete the ozone layer, adopted at the second reunion of the parts in London from 27-29 of June 1990	3.12.1993	15.12.1993
9.	The law 98/1992 for the ratification of the Convention concerning the Black Sea protection signed at Bucharest in 21st of April 1992	16.09.1992	29.09.1992
10.	The law 24/1992 for the ratification of the United Nations Convention regarding the climate changes, signed at Rio de Janeiro at 5th of June 1992	6.05.1994	12.05.1994
11.	The law 5/1994 for the ratification of the convention concerning the biological diversity signed at Rio de Janeiro at 5th of June 1992	13.07.1994	2.08.1994
12.	The law 6/1991 for the attachment of Romania to the Basel Convention on the control of transboundary movements of hazardous wastes and their disposal	25.01.1991	26.01.1991
13.	The law 8/1991 regarding the ratification of the Convention on long range transboundary air pollution signed at Geneva, 13th of November, 1979	25.01.1991	26.01.1991
14.	The law 61/1974 regarding the development of the activities in nuclear field	30.10.1974	2.11.1974

LEGAL FRAMEWORK ABOUT THE REGULATIONS REGARDING THE AIR QUALITY IN ROMANIA

Nr.	The name of the normative paper	The emission date	The publication date
15.	The decree 466/1979 concerning the toxic products and substances regime	28.12.1979	1979
	GOVERNMENTAL DECISSION		
16.	The Decision of the Govern 348/1993 regarding the metrication of water and of thermal energy for the population, public institutions and economic agents	20.07.1993	10.08.1993
17.	The Decision of the Govern 400/1994 concerning the approval for the organisation and functioning statute of the Romanian Bulgarian intergovernmental Committees for environmental protection	15.07.1994	16.09.1994
18.	The decision of the Government 127/1994 concerning the establishment and the sanction for some trespasses of the environmental protection norms	30.03.1994	12.04.1994
19.	The decision of the Government 655/1990 concerning the reglementation of some rights granted to the employees working in the nuclear fields	4.06.1990	
20.	The decision of the Government 511/1994 concerning the approval of some measures regarding the prevention and combating of the environmental pollution by the companies from which activities result pollutant waste	5.08.1994	11.08.1994
	ORDERS, DEPARTMENTAL RULES		
21.	The order 383/1993 of Water, Forest and Environmental Protection Ministry regarding the approval of the organising and working rules for the Environmental Protection Agencies	2.06.1993	UNPUBLISHED
22.	The order 462/1993 of Water, Forest and Environmental Protection Ministry for the approval of technical conditions regarding atmosphere protection and methodological standards concerning the establishing of the emissions of atmospheric pollutants produced by the stationary sources	1.07.1993	10.08.1993
23.	The Decision of the Environmental Department from Water, Forest and Environmental Protection Ministry concerning the approval of the methodological standards regarding the controlling activity in the environmental protection field	30.09.1993	UNPUBLISHED
24.	The Decision 113/1990 of Water, Forest and Environmental Protection Ministry concerning the approval of the norms containing the reference work for obtaining the environmental accord		UNPUBLISHED

LEGAL FRAMEWORK ABOUT THE REGULATIONS REGARDING THE AIR QUALITY IN ROMANIA

Nr.	The name of the normative paper	The emission date	The publication date
25.	The order 170/1990 of Water, Forest and Environmental Protection Ministry containing the directions concerning the emission procedure of the environmental accord	1990	UNPUBLISHED
26.	The order 437/1991 of Water, Forest and Environmental Protection Ministry concerning the rules for obtaining the environmental license	1991	UNPUBLISHED
27.	The order 619 of Water, Forest and Environmental Protection Ministry for the approval of methodological norms concerning the elaboration procedure and the minimal content of the studies and of the impact level on the environment		UNPUBLISHED
28.	The order 242/1993 of Water, Forest and Environmental Protection Ministry for the approval of republical norms of nuclear security concerning the planning, the preparation and the intervention in nuclear accidents and radiological urgencies	14.04.1993	13.08.1993
29.	The order 122/133/26/1977 of State Committee for nuclear energy Health Ministry and National Water Council for establishing the republical norms for radioprotection	24.05.76	
30.	The order 133/1976 of State Committee for Nuclear Energy regarding the republical nuclear security norms. Work regime with nuclear radiation sources	8.04.1976	16.04.1976
31.	The order 318/1975 of State Committee for Nuclear Energy. Republical norms for nuclear security for radioactive material's transport	15.07.1975	11.08.1975
32.	The order 317/1975 of State Committee for Nuclear Energy. Republical norms for nuclear security. Nuclear reactive and nuclear electrical power plants	15.07.1975	11.08.1975
33.	The order 319 of State Committee for Nuclear Energy. The evidence and the keeping of materials with nuclear interest	15.07.1975	11.08.1975
34.	The order 320/1975 of State Committee for Nuclear Energy. Republical norms of nuclear security for geological, extraction and nuclear materials manufacture research	15.07.1975	11.08.1975
35.	The decision 18/1991 regarding the approval of the instructions concerning the licence liberation for executing the activities in the nuclear field	5.02.1991	UNPUBLISHED
36.	The order 7/1991 of Agriculture Ministry regarding the placing of the whole agricultural activities in the legal predictions concerning the environmental protection	11.02.1988	UNPUBLISHED
37.	The order 55/1984 of the Agricultural Ministry concerning the evacuation, cleaning and using in agriculture measures of used waters provided by the pork raising sectors	14.06.1984	UNPUBLISHED

LEGAL FRAMEWORK ABOUT THE REGULATIONS REGARDING THE AIR QUALITY IN ROMANIA

Nr.	The name of the normative paper	The emission date	The publication date
38.	The order 623/1973 of the Health Ministry concerning the establish of hygienic norms regarding the environmental protection in the populated areas	4.12.1973	1973
STANDARDS			
39.	STAS 12574-87 Air in the protected areas. Quality conditions	1.09.1987	
40.	STAS 12290-85. Gamagraphical installations. General technical conditions	1.01.1985	
41.	STAS 9989/1-86. Apparatus with incorporated sources. Apparatus with intense sources, fix pointed. Construction restrictions for population protection against ionised radiation	1986	
42.	STAS 10811/1-83. Closed sources of nuclear radiation. General technical conditions	1.03.1983	
43.	STAS 10811/2-83. Closed sources of nuclear radiation. Classification		1.03.1983
44.	STAS 10811/2-83. Closed sources of nuclear radiation. Trying methods	1.04.1984	

Air Pollution and Women's Health

by Beatrice Irena Gultureanu

OBJECTIVES

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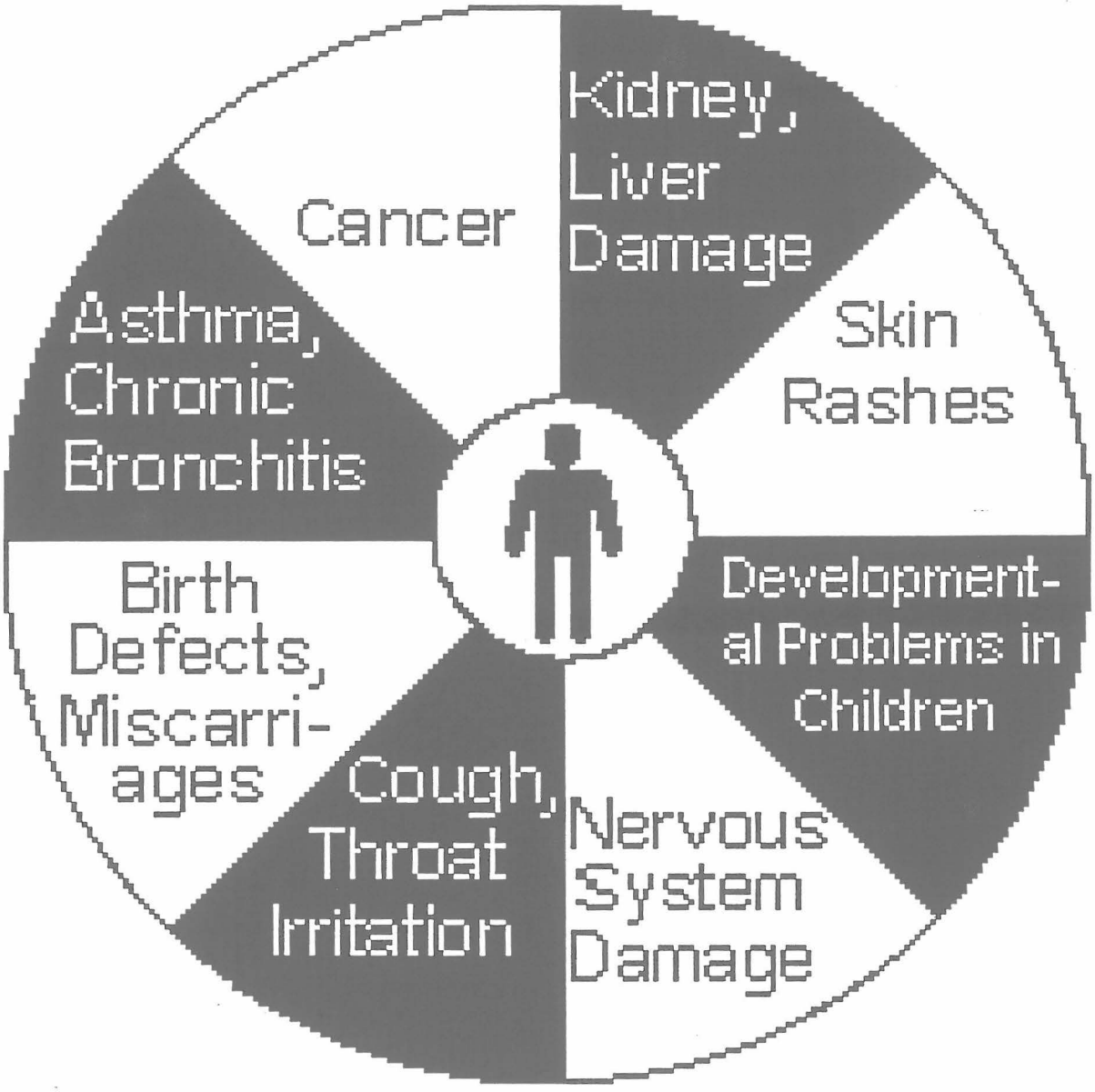
- To find answers for the questions: what are and which are the main toxic air pollutants?
- To explain the impact of air pollution on body organs and systems;
- To point the effects of air pollution on women health.
- To describe the air quality in Romania;
- To discuss a four-step exposure assessment plan;
- Conclusions

The Influence of Air Pollutants to Human Health

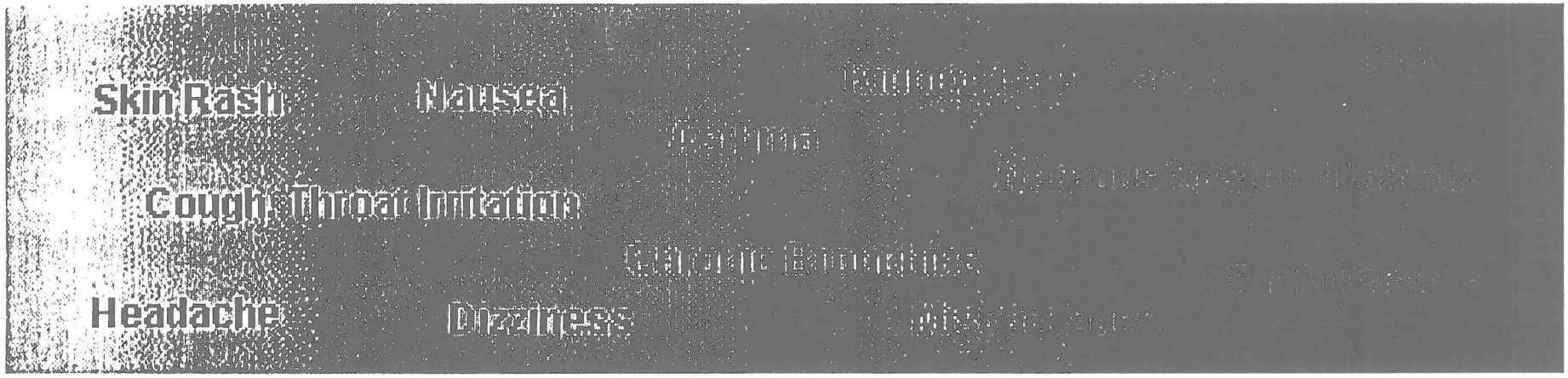
What Are Toxic Air Pollutants?

Toxic air pollutants are substances in the air that, if you are exposed to them, could increase your chances of experiencing health problems. Toxic air pollutants also can cause ecological impacts. An example of a toxic air pollutant is the chemical benzene, which is in gasoline. Inhaling fumes that contain benzene could increase your chances of getting cancer.


Kidney, Liver Damage
Skin Rashes
Developmental Problems in Children
Nervous System Damage
Cough, Throat Irritation
Birth Defects, Miscarriages
Asthma, Chronic Bronchitis
Cancer

Less Serious
reversible
not debilitating
not life-threatening

More Serious
irreversible
debilitating
life-threatening



Air pollution is defined for the purposes of this paper as the presence in the outdoor or indoor atmosphere of one or more gaseous or particulate contaminants in quantities, characteristics, and of duration such as to be injurious to human, plant or animal life or to property, or which unreasonably interferes with comfortable enjoyment of life and property .(1)

The increase in global population and the associated industrialisation, urbanisation and motorisation have inevitably led to a greater demand for energy . Production and consumption of both renewable and non-renewable energy has increased steadily since the last century. Eighty-eight per cent of total world energy consumption was provided by fossil fuels: oil (37.6 per cent), coal (30 per cent) and natural gas (20.2 per cent) (2). The combustion of fossil fuels for electricity generation, industrial processes, transport, and space heating is the predominant source of primary pollutants in developed and industrialised nations. Industrial processes, such as the smelting of metals and refining of oil, account for significant proportion of primary pollutant emissions.

Generally, pollutant emissions are determined by the method of combustion and the type of fuel used. The combustion of all carboniferous fuels results in the exothermic oxidation of carbon, hydrogen, sulphur and nitrogen. If complete combustion is achieved, carbon dioxide (CO_2), water vapour, SO_2, nitrogen oxides (NO_x) and volatile and non-volatile trace metals such as arsenic (As), cadmium (Cd), lead (Pb) and mercury (Hg) would be the principal emissions. In practice, complete combustion does not occur and additional particulate and gaseous pollutants are produced. These include carbon monoxide (CO), and organic and elemental carbon particulate; polycyclic aromatic hydrocarbons (PAH) may also be envolved, either absorbed on to particulate matter or in the gas phase. Further emissions may be produced by fuel additives such as tetraethyl lead, tetramethyl lead and various hydrocarbons.

Atmospheric conversion of certain primary pollutants such as SO_2, NO and hydrocarbons results in the production of secondary pollutants. These include photochemical oxidants, nitrogen dioxide (NO_2), ozone (O_3) and peroxyacyl-nitrates (PANs) and acid aerosols.

Air pollution problems may vary greatly with the geography, demography, and socio-economic profile of region. These factors will determin the source and emission rate of the pollutant. The climate and topography of a region will influence the distribution and atmospheric processes of the pollution and its effects on the environment and /or human health. We present further a briefly review of some of the major air pollutants of concern(3).

SOURCES AND DISTRIBUTION OF POLLUTANTS

Particle concentration in urban areas are strongly dependent on source types and emission patterns. Consequently, concentrations may show considerable spatial variability within cities and great diversity from city to city.

Sulphur Dioxide (SO_2)

This pollutant is a colourless acidic gas with a choking taste. Natural emission account for about half of all atmospheric SO_2 (UNEP, 1991). Man-made SO_2 is produced by the combustion of sulphur components which are a natural constituent of coal and oil. Major world-wide sources include domestic fuel combustion, industrial processes and power stations. Small quantities are the produced by diesel powered motor vehicles.

High concentration of this pollutant can irritate the respiratory system, induce coughing or result in changes (usually irreversible) in lung function. This gas also corrodes stonework and other materials, can damage plants and contributes to the formation of acid rain and secondary formed particles.

Ambient concentrations of SO_2 are usually highest in temperate cities where there is significant use of coal for domestic space heating. Ambient concentrations of SO_2 are usually highest in central city areas, in herbside environments and around industrial areas.

Suspended Particular Matter (SPM)

This term covers the range of fine solids or liquids dispersed in the atmosphere, as opposed to larger size fractions which rapidly settle out due to gravity. Together with SO_2, SPM was the first pollutant to be widely studied in urban areas.

SPM can be produced from a wide variety of sources. These include coal combustion, diesel engines, construction and industrial activity, secondary aerosols (formed from ammonia, sulphur and nitrogen oxides by reaction in air), as well as natural sources such as soil blow off and plant pollen. Particles vary widely in terms of size, blackness, chemical composition and their potential for health effects. The larger particles are trapped or removed by the body's own biological defence system. Smaller particles(less than about 10μm in diameter) can penetrate deeply into the lungs resulting in irritating or obstructive effects. Some constituents of fine particulate matter such as diesel smoke may be carcinogenic.

Nitrogen Oxide(NO_X)

Nitrogen Oxides are emitted from natural and man-made sources in nearly equal quantities, but whereas natural emissions tend to be equally world-wide distributed, man-made sources are concentrated in centres of population (UNEP,1991). The most important oxides of nitrogen in urban atmospheres are nitric oxide (NO) and nitrogen dioxide (NO_2). Of the two species NO_2 has the more significant health and ecosystem impacts. It is also readily measured using a variety of measurement methodologies.

The major outdoor sources of NO_2 in urban areas are fuel combustion in motor vehicles, power generation, heating plants and industrial processes. Relatively limited quantities of NO_2 are emitted directly from these sources; most NO_2 in the atmosphere is subsequently formed by oxidation of nitric oxide (NO) emissions.

Nitrogen dioxide is a respiratory tract irritant, and is toxic at high concentrations. It is also involved in the formation of photochemical smog, acid rain, and secondary formed particles. Together with SO_2 and ozone, this pollutant can also damage crops and vegetation.

Concentration in urban areas are usually dominated by traffic emission, being highest in central areas and close to major roads.

Carbon Monoxide (CO)

Carbon monoxide is produced by the incomplete combustion of fossil fuels or organic materials and its major outdoor source is motor traffic. It has a strong affinity for haemoglobin, the oxygen-carrying substance in the blood. When oxygen is displaced by CO, it can progressively lead to oxygen starvation and, in extreme cases, to death.

The spatial distribution of CO concentrations in urban areas is strongly traffic-dependent, and will therefore follow that for NO_2. Levels are highest at the kerbside but decrease rapidly with increasing distance from the road.

Lead (Pb)

This is the most common of the heavy pollutants, and the largest single source is emissions from motor vehicles using leaded petrol. Emissions from some industrial activities may also be significant over small local scales. Lead is a cumulative poison and, in sufficient body loading, can cause damage to the central nervous system resulting in behavioural changes and intellectual impairment. Since traffic is the major urban source in countries not utilising unleaded petrol, spatial distribution will tend to follow closely those of CO and NO.

Ozone

This is a secondary air pollutant, formed in the troposphere from atmospheric reactions between oxides of nitrogen and volatile organic compounds (VOC's) in the presence of sunlight. Ozone reacts readily with biological materials; it can damage vegetation and may cause eye, nose and throat irritation, acute effects on the respiratory tract and breathing difficulties. Ozone also attacks paints, elastomers and rubbers, is involved in the formation of acid rain, and acts as a greenhouse gas.

The spatial distribution of ozone is substantially different from that of other common urban air pollutants. Since its formation in the atmosphere can occur over time scales of hours to days, concentrations are temporally and spatially decoupled from NO_x and VOC emissions. Moreover, chemical scavenging by NO_x emissions in near source areas results in highly variable ozone concentrations over small spatial scales. There is a lack of measured data on such variations, though urban concentration may be expected to be lowest where corresponding levels of other primary pollutants such as NO_x and CO are highest.

In practice, exposure of the population to ozone will tend to be higher in suburban rather than central parts of cities, and in areas downwind of major populated or industrialised regions. Levels will also tend to be high in cities with basin-type topographic situations.

Other Outdoor Pollutants

The air pollutants identified previously have been widely monitored in urban areas. However, increasing attention has recently been focused on Air Toxic and Acid Rain. Air toxic include polyaromatic hydrocarbons (PAH's) - produced by motor vehicles, coke production and coal burning - and volatile organic compounds such as benzene (C_6H_6) , emitted primarily from petrol combustion. The major components of acid air are fine aerosol nitric and sulphuric acid (HNO_3 and H_2SO_4 formed out of NO_2 and SO_2 respectively).

Monitoring methodologies, urban distribution and effects are not well established for those pollutants, and more work is clearly needed in these areas.

Indoor Pollutants

Although air quality is commonly characterised by measurement of ambient (outdoor) pollutant concentrations, it should be recognised that indoor pollutants may have a major influence on population exposure and resulting health effects.

Priority indoor pollutants are often different from those concerned in the outdoor environment. Although indoor air quality can be affected by ambient concentrations, the deposition and removal rates within buildings for most of the pollutants considered thus far are relatively high. As a result, pollutant species with significant sources indoors are usually of most concern.

Key pollutants include radon from building materials and soils, asbestos (and other particulate matter) and formaldehyde from fire proofing, insulation and particle board, CO, NO_2 are respirable particles from heating, cooking and cigarette smoke. Organic materials may also be important: this include volatile compounds from fuel combustion, solvents and biocides, and viable organisms and allergens from human residents, pets and pests.

Concentration of indoor air pollutants is characterised by extreme locational and temporal variability: the problem can vary widely from building to building, and region to region, as well as with time of year. Exposure can be affected by building ventilation rates, cooking, heating or air conditioning techniques, the presence of smokers and the nature/type of building. Thus, indoor air quality survey must pay particular attention to all these factors.

Impact of Air Pollution on Body Organs and Systems

Air pollution, both indoor and outdoor, is a significant cause of health problems worldwide. The urban and rural outdoor environments contain toxicants and irritants that can reduce the quality of life of ther citizens.

Even the indoor air is not safe from pollution. Indoor air pollution consists primarily of carbon monoxide, suspended particulates, and volatile organic compounds, mainly from cigarettes and heating and cooking fuels. Environmental tobacco smoke (ETS) is at the top of the list of carcinogenic environmental toxins of concern to physicians. A decrease in indoor air quality also may be the result of reduced ventilation resulting from more efficient construction practices in sealing homes and office buildings from the outdoor environment. Reduced ventilation has resulted in complaints related to the "Sick Building Syndrome" (SBS), which is characterized by symptoms such as headache, fatigue, malaise, mental confusion, eye and throat irritation, and coughing and wheezing. Assessing the relationship between exposure to air pollutants and disease is complicated by the problem of multiple exposure to a multiple pollutants. In fact, an uncommon and very controversial condition, multiple chemical sensitivity (MCS), is thought to arise only through the combined effects of a number of chemicals in concentrations that might not be harmful alone. MCS is clinically defined as an "acquired disorder characterized by recurrent symptoms, referable to multiple organ systems, occurring in response to demonstrable exposure to many chemically unrelated compounds at doses below those established in the general population to cause harmful effects." Research is needed to clarify many of the unanswered questions with regard to MCS.

Effects of Air Pollution

The Lungs: Agricultural/Rural

While much attention has been focused on urban air pollution, we must also remember that rural agricultural workers and populations are exposed to many serious air pollutants, including pesticides, herbicides, and organic natural materials, which can cause severe disease.

The industrialization of farming, animal raising, and forestry has resulted in new airborne hazards that cause lung and organ injury by inhalation or by circulation after absorption through the skin or intestine. Inhalation injury can cause inflammatory reactions (bronchitis, asthma, and/or bronchiolitis) in the airway or parenchymal reactions (alveolitis and/or pulmonary edema).

There are distinctive syndromes and diseases caused by organic dusts, such as hypersensitivity pneumonitis (HP), organic dust toxic syndrome (ODTS), occupational asthma, and bronchitis. In addition to these clinical entities, there are several less clearly defined syndromes, such as mucous membrane irritation syndrome due to an exaggerated physiological response; occupational chronic bronchitis; and symptomatic non-specific, non-asthmatic chronic airflow obstruction, all of which have been recognized for years.

Grain dust-induced lung disease results from the dust's biological activity, including its ability to cause respiratory tract irritation, inflammation, and functional change characterized by cough, expectoration, wheezing, chest tightness and dyspnea. Chronic symptoms are most frequently manifested as chronic bronchitis, and were found in 35% of non-smokers and 57% of smoking grain handlers.

Farmers are also exposed to many chemicals that affect exposed skin and may cause respiratory problems through inhalation (ammonia (NH3), oxides of nitrogen (NO, NO2, N204), pesticides, others (e.g., chlorinated hydrocarbons, methyl-bromide, and carbondi-sulphide)).

Prevention of these exposures is the key to the maintenance of personal health. The risk of pesticide exposure is reduced by proper clothing and engineering controls, as well as suitable respirators to reduce chemical inhalation and prevent poisoning. Exposure to dust and gas has been reduced by improvements in engineering designs, proper ventilation, personal protective devices, and education of farmers and rescue teams, along with adherence to existing safety regulations.

Future research is needed to establish the prevalence of clinically significant disease among farm workers, to identify important exposures, and to identify ways to reduce exposure or modify behavior to avoid significant reactions. Pest control research using products that are less toxic to humans, and engineering research to reduce exposures are needed as well. Educational programs in disease and risk prevention for farm workers from air pollutants should be enhanced, and there is a need for more research, education, and comprehensive environmental service of those involved in agriculture, animal raising, forestry, and related products industries.

Air Pollution Effects on the Upper Respiratory Tract/Nose and Sinuses

The most serious outdoor air pollutants are sulphur dioxide, carbon monoxide, lead, ozone, particulates and nitrogen dioxide. All six are regulated under the 1970 Clean Air Act and amendments, which has kept all but ozone and nitrogen dioxide levels under relatively good control. However, control of these pollutants means keeping their average air content under relatively arbitrary values, without sound medical studies to support the lack of adverse health effects at these levels.

Indoor air pollution can be the result of occupational exposures, hobby or recreational chemicals, carpets and furniture or indolent materials present in the air because of poor building ventilation or contamination. While all of these are potentially harmful, the occupational exposures may be the most risky. At work, volatile organics such as gasoline, cleaning solutions and solvents, and other organic chemicals can have potential health hazards to the upper aerodigestive tract. Acute ingestion or inhalation of a critical level of such substances can lead to airway edema, intoxication and mucosal cytotoxicity. Chronic low-dose exposures may be additive, especially with respect to mucous membrane irritation, but no solid scientific studies on this matter are available at this time.

Air Pollution in Asthma and Respiratory Allergy

Air pollution has been shown to induce attacks of asthma in epidemiologic and controlled exposure studies of human volunteers. Ozone is an atmospheric pollutant that enhances the effect of inhaled allergens in asthmatics, suggesting that pollutants influence lung function by increasing airway inflammation.

Continued research of pollutants' effects on airway responses to allergens is essential. It is important to determine how pollutants influence baseline airway inflammation in asthmatics and to identify other mechanisms by which pollutants may have an effect. We must learn more about the role of particulate matter air pollution in view of the increased death rate associated with increased particulate exposure. The role of indoor air pollutants in asthma, with particular reference to volatile organic compounds, indoor air biological matter (e.g., endotoxins, allergens, etc.), and other agents (tobacco smoke, nitrogen dioxide), needs to be clarified. A multidisciplinary approach involving epidemiological, clinical, animal, and in vitro studies of pollutants on various airway cells, is needed to answer these questions.

Air Pollution and Blood

Blood perfuses all of the body's organs and can carry toxic substances as well as beneficial substances, such as oxygen, to them. Air pollution is the source of many materials that may enter the human bloodstream through the nose, mouth, skin, and the digestive tract. Chemicals known to be harmful, such as benzene, lead and other heavy metals, carbon monoxide, volatile nitrites, pesticides, and herbicides, often are contaminants in the air that we breathe. These substances have been shown to produce harmful effects on the blood, bone marrow, spleen, and lymph nodes.

Arsine (arsenic hydride), a gas used in the manufacture of computers, is a well-known cause of anemia.

Benzene and other less well known hydrocarbons are produced in petroleum refining, and are widely used as solvents and as materials in the production of various industrial products and pesticides. Benzene also is found in gasoline and in cigarette smoke. It has been shown that exposure to benzene is related to the development of leukemia and lymphoma. Benzene has a suppressive effect on bone marrow and it impairs blood cell maturation and amplification. Benzene exposure may result in a diminished number of blood cells (cytopenia) or total bone marrow loss. A number of metabolites appear to be involved in this process, and there may be several targets of toxicity, including stem, progenitor, and some stromal cells.

Common air pollutants also have an affect on blood and thus on organs of the body. For example, carbon monoxide, arising from incomplete combustion of carbonaceous materials, binds to the hemoglobin over two hundred times more avidly than oxygen and distorts the release to the tissues of any remaining oxygen. Thus, CO poisoning is akin to suffocation.

Pesticides and herbicides are used in agriculture, industry, municipalities, and in our homes, resulting in a high exposure rate of the population. Pesticide exposure is associated with an increased risk of malignancy, including non-Hodgkins lymphoma, aplastic anemia, and Hodgkins disease.

Air Pollution Impact on the Heart and Blood Vessels

Disease of the heart and blood vessels is the major cause of death.

The common element in most chronic heart disease is poor blood flow to the heart muscle, usually because of arteriosclerotic plaques in the coronary vessels and the accumulation of platelets, leukocytes, and other deposits that block the flow of blood to the heart muscle. Recent data implicate several environmental toxins as factors in diseases of the heart and blood vessels. Most of these toxins, including lead, carbon disulfate, asbestos, ozone, freon, fluorocarbons, vinyl chloride, cadmium, pesticides, and arsenic can be found in polluted air. These agents have been shown to produce hypertension and cardiac arrhythmias (irregular heart beat). Environmental tobacco smoke, which contains carbon monoxide, is emerging as a major environmental health hazard and has been reported to cause 35,000 to 50,000 cardiovascular deaths each year.

The toxic chemicals in environmental air pollution stimulate the immune system to activate leukocytes and macrophages that can produce tissue damage, especially to the cells that line human blood vessels.

Investigators are seeking ways to limit the harmful effects of these environmental toxins, but the greatest hope for immediate reduction in their harmful effects is in air pollution prevention. Measures that will reduce environmental air pollution and decrease cigarette smoking in our society deserve increased public support. While there is a great need for more research on the impact of environmental toxins on the heart and blood vessels, it is clear that air pollutants can cause severe health problems, such as hypertension and cardiac arrhythmias.

Skin Effects of Air Pollution

Skin cancer is increasing, with an estimated 1 million new cases being diagnosed and 9,100 people dying of skin cancer in 1993 in the United States. The most common skin cancers are basal cell carcinoma, squamous cell carcinoma, and melanoma.

Skin cancers are most closely associated with exposure to ultraviolet B irradiation (UV-B). There are three forms of ultraviolet light (UV) energy of importance to biological systems (UV-A, UV-B, and UV-C). UV-A reaches the Earth's surface and has an important role in biochemical processes. UV-C is absorbed in the upper atmosphere, but would cause severe cellular damage if it reached living organisms. UV-B is normally largely absorbed in the upper stratosphere (about 25 miles above the earth) at the level of the ozone layer. Depletion of the ozone layer allows harmful amounts of UV-B to reach biological systems, where it is believed to cause serious genetic damage. Specifically, UV-B impairs the ability of damaged DNA to repair itself.

Ozone is the primary stratospheric component that absorbs UV-B. Researchers assert that for every 1% decrease in ozone, there will be a 2% increase in UV-B irradiance, and therefore a 2% increase in skin cancer may be predicted. The atmospheric pollution by ozone-depleting chemicals, such as some combustion products of fossil fuels and chlorofluorocarbons (CFCs), is a major concern for physicians because it is predicted that the ozone layer will remain diminished for decades, even after CFCs are replaced by non-ozone depleting substitutes. The banning and prevention of these pollutants is important.

Since our ability to replace ozone in the stratosphere is very limited, we must rely on public education to prevent further increases in skin cancer morbidity and mortality. Most of a person's lifetime UV-B exposure occurs before age 18, so the educational emphasis should be on children and their mothers.

People should avoid blistering sunburns even though this will require changes in occupational and recreational habits. They should also avoid tanning parlors on the advice of physicians. Use of protective clothing and sunscreens must receive greater educational emphasis. In addition, early skin cancer detection screening programs will require additional physician effort.

UV-B is a strong immunosuppressive agent, and therefore, may have very significant systemic effects related to the release of immunologically active molecules from the skin.

In the future, it will probably be necessary to modify many industrial processes as a primary preventive step to decrease exposure to these toxic substances. Education will change behavior if the message is targeted to the sector you want to change.

Impact of Air Pollution on the Central Nervous System and on Mood, Cognition and Behavior

The central nervous system (CNS) is the primary target for many serious air pollutants, such as lead, which is a major environmental hazard. Children are particularly at risk from lead's CNS effects. In many countries, especially developing countries, the use of leaded gasoline continues and is a major source of lead in the air.

Research over the past 10 years has provided evidence that levels of lead exposure associated with central nervous system effects, particularly as manifest in behavioral changes, is far lower than previously realized. Fifteen years ago, blood lead concentrations in children were not considered problematic until they exceeded levels greater than 30 to 40 micrograms per deciliter ('g/dL). Since that time, more sophisticated epidemiological studies have demonstrated changes in cognitive function at blood concentrations as low as 10 to 15 'g/dL.

While children are more susceptible to lead's CNS effects, adults exhibit similar deficits in learning and memory as well. Advanced aging is also a period when enhanced vulnerability to the toxic effects of lead are predicted. In Germany, a large study documented an age-related decline in bone lead concentrations with advancing age. This effect was more pronounced in women than in men, reflecting post-menopausal processes in women which contribute to bone resorption and the release of lead back into the bloodstream. These results mean that lead exposure is actually increased during a period of already heightened susceptibility due to concurrent degeneration of other physiological functions, including both CNS and renal functions.

Whether toxic-induced or stress-induced, these neurobehavioral effects can contribute to serious psychiatric problems. In various studies, increased levels of certain air pollutants have been found to be accompanied by increased psychiatric emergency calls and hospital admissions, behavior changes, and a lessened sense of well-being. Irritating odors and cigarette smoke have been found to increase aggressive behavior, and to decrease helping behavior and altruism, leading to a degradation of social interaction.

Air Pollution and the Immune System

An airborne pollutant may enter the respiratory tract as a volatile gas (e.g., ozone, benzene), as liquid droplets (e.g., sulfuric acid, nitrogen dioxide), or as particulate matter (e.g., components of diesel exhaust, aromatic hydrocarbons). These pollutants interact with the immune system and may cause local and systemic responses ranging from overactive immune responses to immunosuppression. Most airborne pollutants are small molecular weight chemicals that must be coupled with other substances (e.g., proteins or conjugates) before they can be recognized by the immune system and cause an effect. Some disorders which may occur because of pollutants in the respiratory system are the following:

1. Ozone is a very common environmental pollutant, and its inhalation in concentrations greater than 1 parts per million (ppm) for several hours causes pulmonary edema and hemorrhage in experimental animals. The effect of low ozone concentrations may be exaggerated when combined with other gases, such as sulphur dioxide (another common air pollutant), because of synergism between the sulfuric acid and ozone. An important aspect of this problem is heightened susceptibility to lung infection after exposure to this latter form of air pollution.

2. Immunologically-specific, cell-mediated (T-lymphocyte) reactions appear to predominate in chronic beryllium disease, a granulomatous form of lung disease.

3. Mercury-induced autoimmune disease in which the immune system attacks self-antigens in the kidneys and lungs has been demonstrated in animal models with changes similar to those observed in people with Goodpasture's syndrome.

4. Immunosuppression can be demonstrated following exposure to polycyclic aromatic hydrocarbons (e.g., 2,3,7,8-tetrachlordibenzo-p-dioxin).

5. Hypersensitivity reactions (e.g., occupational asthma) can occur following exposure to toluene diisocyanate and certain other volatile chemicals.

Air Pollution and the Genitourinary Tract

Environmental pollutants have been found to have harmful effects on the genitourinary system, including compromised cancer development and organ function.

Similarly, several substances have been shown to compromise renal function. Mercury has been associated with renal toxicity and development of the nephrotic syndrome, cadmium and carbon tetrachloride have been associated with similar types of damage.

Cigarette smoke contains the same aromatic amines, 2-naphthylamine and 4-aminobiphenyl, that are associated with certain industries, and has been suggested as the explanation for the fourfold to tenfold increased risk of bladder cancer development in cigarette smokers.

Air Pollution Impact on the Endocrine and Reproductive Systems

Certain environmental toxins can interfere with the endocrine (hormone- producing) and reproductive systems to a degree that merits public concern. Harmful effects on these crucial body systems have been observed in people, farm animals, and wildlife. Breast cancer has increased at the rate of approximately 1 percent per year for the past 50 years.

It has been shown that several chemicals present in environmental pollution have the capacity to act as hormones. When these "environmental hormones" are taken into the body through air pollution, they can mimic the effects of the body's natural hormones and disrupt a number of important biological processes.

Environmental pollutants that can mimic the hormone estrogen include DDT, DDE, kepone, heptachlor, PCBs, dioxin, and break-down products of detergents. Many of these compounds can be carried for long distances through air pollution and then deposited into soil and water, and eventually into the food chain. These hormonally active chemicals have been shown to disrupt the reproductive development of fish and wildlife, often resulting in infertility due to feminization of males or masculinization of females.

Offspring may be permanently affected by exposure to these chemicals while they are still in the mother's uterus. For example, we know that exposure to the synthetic estrogen Diethylstilbestrol (DES) produces severe reproductive effects in both the sons and daughters of DES-taking mothers. Prenatal exposure to DES is associated with vaginal cancer, peri-ovarian cysts, abnormalities of the uterus, and reproductive dysfunction in the female offspring.

While there are no easy solutions to these problems, there continues to be a great need for scientific characterization of the specific chemical offenders in our environment. It seems clear that chemicals with hormonal activity have the potential to cause serious health problems. Women must increase their knowledge of these toxins' effects and their understanding of the association between exposure and the present and future health of mothers and children in our society.

Many pollutants mimic estrogen and may be responsible for breast and uterine tumors.

Effect of Air Pollution on the Eyes

As mentioned previously, air pollution in the form of chlorofluorocarbons (CFCs) and similar compounds has been responsible for depletion of the stratospheric ozone layer, permitting increased amounts of UV radiation to reach the Earth. Excessive exposure to UV from the sun has a potential contributing role in the development of various eye disorders, including age-related cataract, pterygium (growth of tissue on the white of the eye), cancer of the skin around the eye, photokeratitis (sunburn of the cornea), corneal degenerative changes, and age-related macular degeneration.

These effects are an important issue for ophthalmologists because of the sensitivity of the eye to UV-A and UV-B light, both of which have the capacity to produce painful conjunctivitis and have been linked to cataracts. Educational efforts should be expanded to alert the public to the importance of purchasing glasses which block ultraviolet rays.

Air Pollution and the Musculoskeletal System

Bone provides structural support for the body and plays an important role as a reservoir for vital minerals. Bone is continuously remodeling itself (breaking down and reforming), and it is this characteristic that makes bone a prime target for pollutants. And later, if pollutants are stored in bone, the bone becomes a source of toxic substances.

Toxic substances can therefore remain a threat to health for decades, and may be particularly hazardous when they are released into the general blood circulation at critical periods of life (e.g., pregnancy, lactation, menopause, or advanced age).

Bone loss is accelerated during menopause at which time bone mass may decrease by 2% to 3% per year for several years. During this period, stored toxins may be released and cause damage to the nervous system and other organs. This problem is worsened when an individual's diet is calcium-deficient because this deficiency accelerates mineral release from bone.

Lead is the most serious of several hazardous pollutants that affect bone, especially in countries that continue to use leaded gasolines. High levels of lead and cadmium have been measured in cigarette smoke and may contribute significantly to the total lead body burden.

Additional research is needed to clarify the impact of exposure to pollutants during critical periods, such as lactation and menopause.

Air Pollution and the Digestive System

Air pollution is a less significant source of hazardous environmental chemicals in the gastrointestinal (GI) tract than is the ingestion of contaminated food and water (which may have been contaminated by air pollution).

Which Toxic Air Pollutants Are of Most Concern?

Government agencies are most concerned about substances that fit one or more of these descriptions:

- Can cause serious health effects, such as cancer, birth defects, immediate death, or other serious illnesses.
- Are released to the air in large enough amounts to be toxic.
- Reach many people.

Air Pollution and Women's Health

Women's health is at risk because little attention has been paid to understanding and preventing the harmful effects of environmental toxins on women.

While more research is needed, many diseases affecting women appear to have an environmental link.

Due to women's unique physiology, they may respond differently than men to environmental toxin exposure.

Current federal risk assessment policy fails to fully consider women's health concerns when setting safe exposure levels.

It is proposed that an aggressive research commitment is necessary to identify and understand the unique way environmental toxins in the air interact with women's bodies. For example, many chemical pollutants have the potential to produce estrogenic effects when absorbed into the body, and may be a factor in breast cancer development. Organochlorines such as DDT, PCBs, and polycyclic aromatic hydrocarbon (PAH) petroleum byproducts have been shown in animal studies to mimic estrogen, and many have induced or promoted mammary tumors in rats. These chemicals can be inhaled as air pollutants resulting from industrial manufacturing, energy production, and traffic exhaust. Many of these toxins are stored in fat and may reside in the body for long periods of time. Storage of toxins in fat is a problem of greater importance in women because of their higher percent of body fat and the hormonal changes that occur during pregnancy, lactation, and menopause, which can result in mobilizing internal stores of pollutants many years after the initial exposure.

A commitment to research is needed to understand the impact of workplace chemical exposures on women's health. Exposure to occupational chemicals may affect reproductive capacity adversely in the form of reduced fertility, spontaneous abortion, low birth weight, birth defects and developmental disabilities. For example, exposure to inhalational anesthetic agents has been associated with adverse pregnancy outcomes in female operating room personnel. Currently, only 30 to 40 chemical, physiologic, and biologic agents have been identified as human teratogens because of the difficulty in proving a causal association, but the Society believes this number is probably well below the final total that will be found.

An interagency review should be conducted to evaluate the federal assessment policy and its impact on women's health. Every year, approximately 1,000 new chemicals are developed and added to the 70,000 unique chemicals, and 9 million mixtures, formulations, and blends of chemicals already in commercial use. Few of these chemicals have been adequately assessed for their potential toxicity, either individually or in conjunction with other chemicals. A study by the National Academy of Sciences has been proposed in Congress to determine the science base and research needed to ensure that environmental standards protect the health of men and women.

Women have more chronic illness than men -- partly because they live longer, partly because of the storage of toxins in fat and bone.

Air Quality in Romania

The ozone (O_3) is the main pollutant in the industrialised cities. The stratospheric ozone (in a thin layer) is responsable for life on Earth (differing from the tropospheric one, which is very toxic).

To improve the living environment there were established the maximum levels for toxic emissions (NO_x, CO and C_nH_m). In this respect in Romania the maximum levels established for toxic emissions are $NO_x \leq 1.43$ g/km, $CO \leq 2.11$ g/km, $C_nH_m \leq 0.3$g/km; for trucks the CO emission will not exceed 4% from the whole quantity of toxic emissions.

We must note that for the emissions control, stationary sources are more easily to consider. From this point of view, in our country, the attention is straighten on it. It is known that the gas without lead has a toxic emission lower that the conventional one, but the passing to this kind of fuel supposes changes of the engine, not very easy to take into account in our country in this period.

The sulphur dioxide comes from fossil fuels burden (67%), termo and electro power stations on petrol or coal, and the rest of it from refineries, etc. Mobile sources for SO_2 represent 4%.

NO_x (nitrogen oxides). The mobile sources (the vehicles) is responsible for 50% of the total emissions; the other half comes from stationary sources (coal, petrol, natural gas, wood burden).

For NO_2 the maximum level for stationary sources is 0.3 mg/m^3 in 30 minutes, as average for 24 hours, respectively 0.01 mg/m^3 as annual average.

H_2S (hydrogen sulphide). The main sources are refineries, but it is also present in colour, cellulose and artificial fibre industry. For improving the quality of the living environment it is necessary to consider some measures for retaining physico-chemically the hydrogen sulphide and other soluble sulphides.

NH_3 (ammonia).The main source is ammonia waters from steel industry and gas industry or from catalytic synthesis of N_2 and H_2.

The toxic agents from atmosphere can be originally from all sources mentioned; the level of pollution and the bad effects on human health are dependently to the level of inhalation and the accumulation of the polluting agents in the human body.

AIR QUALITY STANDARDS IN PROTECTED AREAS

1. Maximum levels of chemical pollutants in atmosphere air must not exceed the levels presented in the next table:

Polluting Agent	Maximum Level Concentration, mg/dm^3			
	Short Term	Medium and Long Term		
	30 min	Day	Month	Year
HNO_3	0,1	-	-	-
HCl	0,3	0,1	-	-
Acroleine	0,03	0,01	-	-
Aldehyde	0,035	0,012	-	-
Ammonia	0,3	0,1	-	-
Phosphate Anhydride	0,3	0,1	-	-
Arsenic	-	0,003	-	-
Benzene	1,5	0,8	-	-
Cadmium	-	0,00002	-	-
Cl	0,1	0,03	-	-
CrO_3	-	0,0015	-	-
NO_2	0,3	0,1	-	0,01
SO_2	0,75	0,25	--	0,06
Phenol	0,1	0,03	-	-
Fluorine Gaseous inorganic compounds (easy soluble aerosols) Gaseous inorganic compounds (hardly soluble aerosols)	0,015	0,005 0,03	0,0012	-
Smoke	0,15	0,05	-	-
Furfural	0,15	0,05	-	-
H_2S	0,15	0,008	-	-
Mn	0,015	0,01	-	--
Methanol	-1,0	0,5	-	-
Methyl mercaptan	-	0,00001	-	-
CO	6,0	2,0	-	-
O_3	0,1	0,003	-	-
Lead	-	0,0007	-	-
$(SO_4)^{2-}$	0,03	0,012	-	-
Carbon Sulphide	0,03	0,005	-	-
Tricloretine	4,0	1,0	-	-
Suspended Particular Matter (SPM)	0,5	0,15	-	0,075

2. The maximum level for next pollutant agents present simultaneously in air

- SO_2, NO_2 and NH_3;
- SO_2 and F;
- SO_2 and H_2SO_4 aerosols;
- SO_2 and Suspended Particular Matter (SPM);
- NO_2 Suspended Particular Matter (SPM);
- HCl, HNO_3 and H_2SO_4 aerosols

is calculated with the formula:

$$\frac{C_1}{Cma_1}+\frac{C_2}{Cma_2}+\ldots+\frac{C_i}{Cma_i}<1$$

where C_1, C_2, ..., C_i -the concentration of polluting agent, 1, 2, ..., i, in the air;

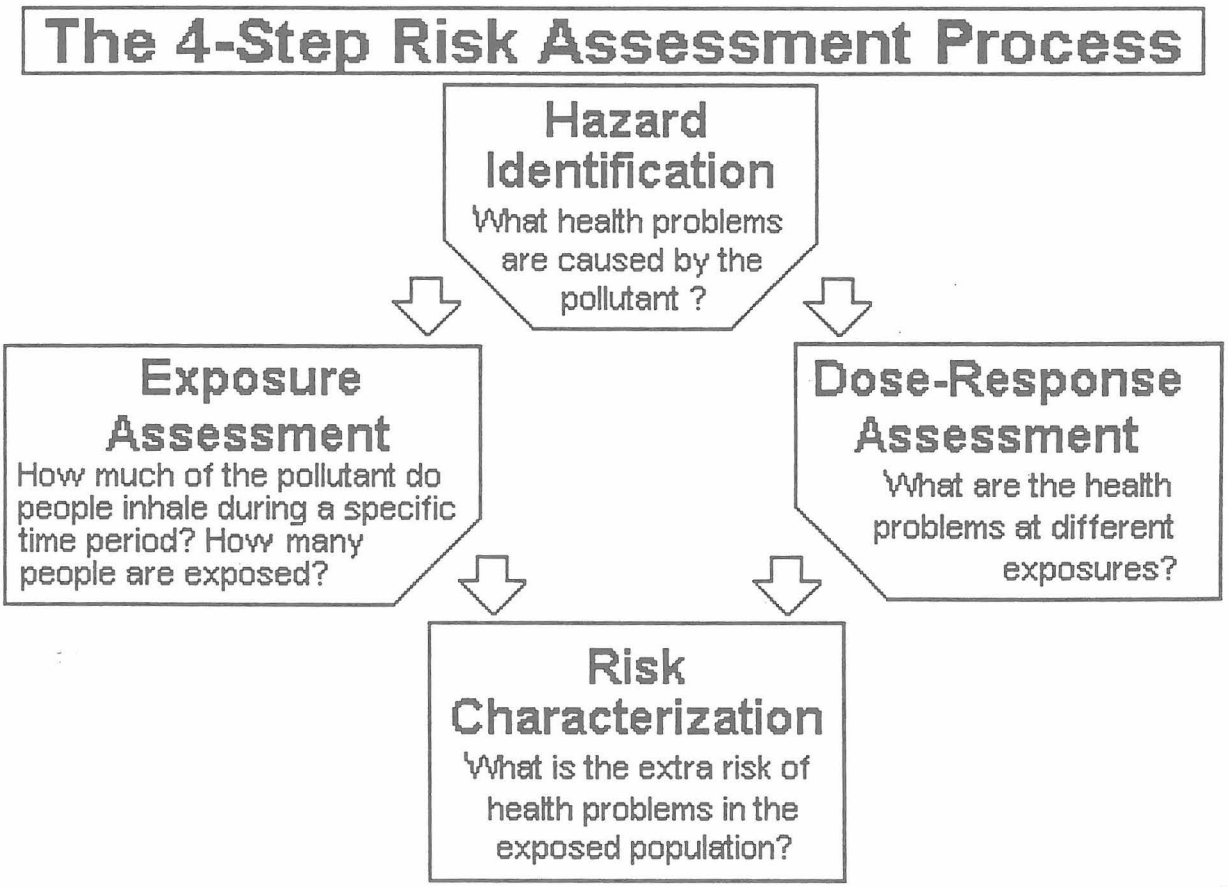
Cma_1, Cma_2,..., Cma_i -the maximum concentration of the polluting agent, 1, 2, ..., i, in the air.

Exposure Assessment

Scientists and government officials use a four-step process called risk assessment to estimate people's increased risk of health problems as a result of exposure to a toxic air pollutant. An exposure assessment is one step of that process and is used to determine how much of the pollutant people are exposed to and/or how many people are exposed.

THE 4-STEP EXPOSURE ASSESSMENT

The exposure assessment is also a four-step process. Step 1 entails identifying pollutants likely to be in the air. In Step 2, the amounts of these pollutants released from different sources are estimated. In Step 3, the concentrations of the pollutants are estimated for the geographic areas of interest. Finally, Step 4 provides estimates of the number of people who breathe air containing the pollutant at different levels or at some selected level, such as a regulatory standard or a health benchmark level.



Step 1
Identify Pollutants Released

Many chemicals found in factories, consumer goods, sewage treatment plants, and other sources can be released to the air as toxic air pollutants. These are some chemicals typically released in many countries:

- Perchloroethylene from dry cleaners
- Methylene chloride from degreasers and consumer products, such as paint strippers
- Benzene from gasoline, released when you fill your tank and drive your car
- Chromium from metal plating operations

Step 2
Estimate Releases of Pollutants from Sources

What are the Sources of Pollutants?

Point sources are sources that have a specific location. Point sources include chemical plants, steel mills, oil refineries, and hazardous waste incinerators. Pollutants can be released when equipment leaks, when material is transferred from one area to another, or when waste is given off from a facility through smoke stacks.

Area sources of toxic air pollutants are made up of many smaller sources releasing pollutants to the outdoor air in a defined area. Examples include automobiles, neighborhood dry cleaners, small metal plating operations, gas stations, and woodstoves.

What are the Patterns of Releases?

Routine releases, such as those from industry, cars, landfills, or incinerators, may follow regular patterns and happen continuously over time. Other releases may be routine but intermittent, such as when a plant's production is done in batches. Accidental releases can occur during an explosion, equipment failure, or a transportation accident. The timing and, often, the amount released during accidental releases are difficult to predict.

How Much of a Pollutant Is Released?

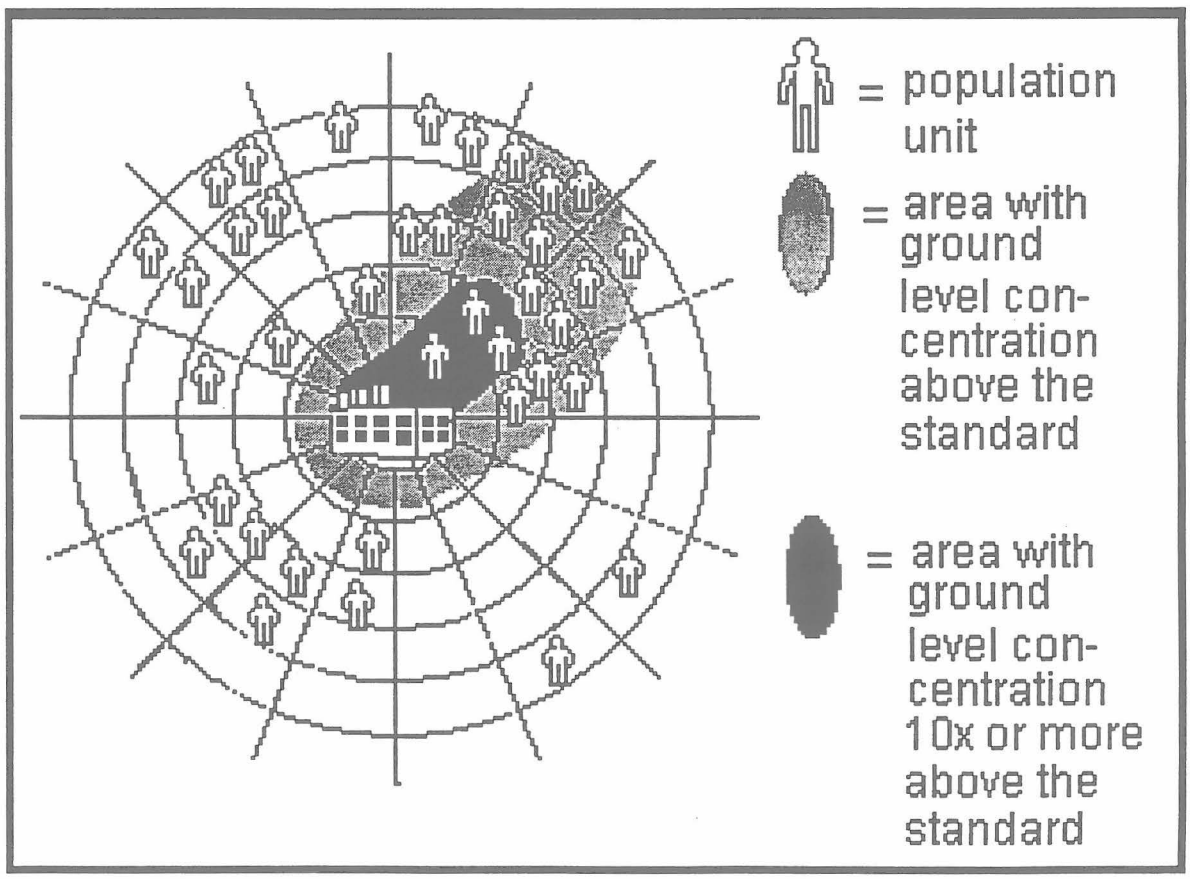
To estimate the amount of a routine release engineers sometimes use a monitor to sample the pollutant as it is released. The amount collected in a given time period is measured in a laboratory. For example, if 10 pounds of pollutant XYZ is collected in an average hour and the facility runs 24 hours a day, 240 pounds of XYZ per day would be released. Alternatively, engineers can use an emission model to estimate the amount of pollutant released by a particular facility. An emission model is a set of mathematical equations that represent the processes that occur when a facility generates a pollutant. Two kinds of Monitoring a Routine numbers are put Into these mathematical equations: (1) "emission factors," or average emission measurements that are made by measuring emissions from a few "typical" facilities, and (2) "depends on" factors, or factors that are specific to a certain facility and depend on how that facility operates. This kind of estimation is similar to determining the fuel efficiency for your car. The manufacturer provides an average miles per gallon rating when you buy a car. Depending on many factors such as how you drive your car, your actual fuel efficiency may differ. In a similar fashion, engineers use various factors to adjust for differences between a "typical" facility and the facility in question.

Step 3
Estimate Concentration in Air at Different Locations

What Affects the Concentration of a Pollutant?

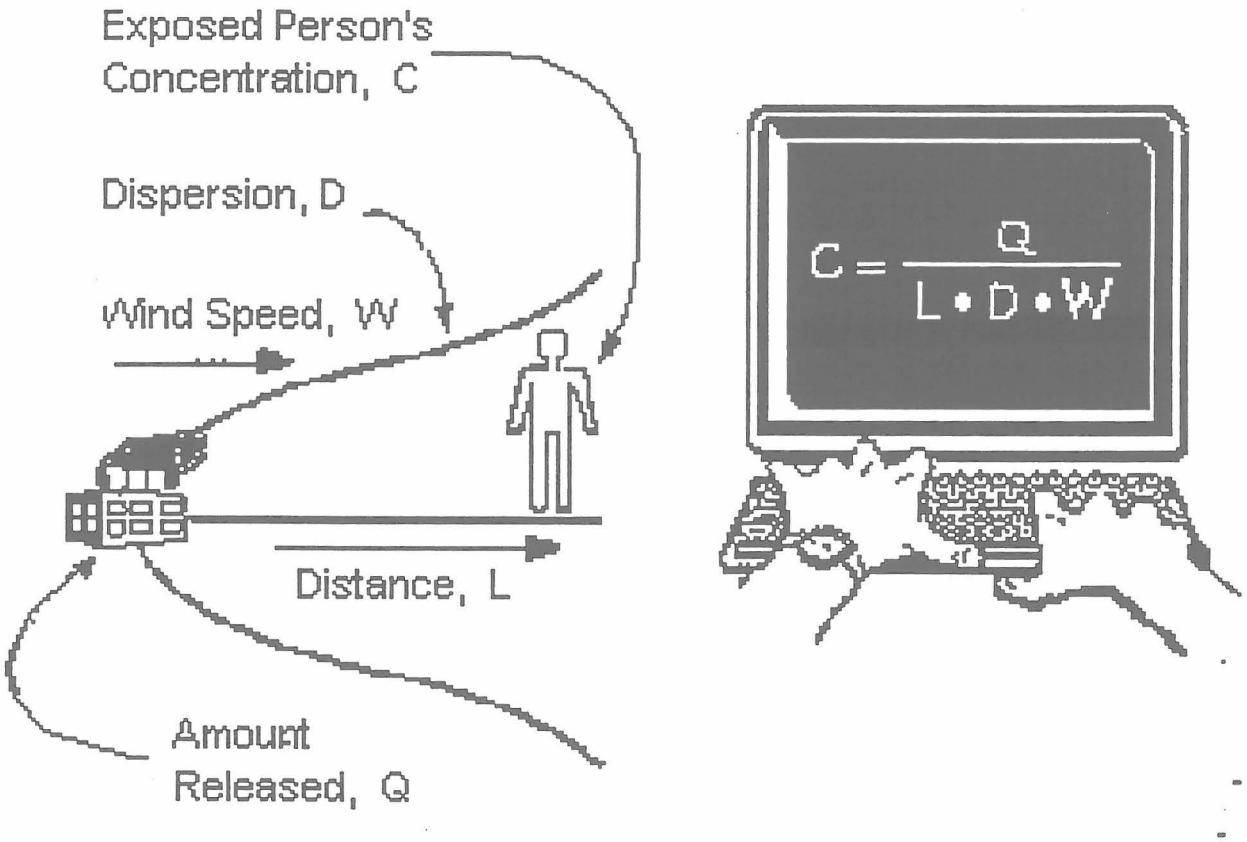
The concentration of a pollutant decreases as it travels from the site of release because the pollutant spreads out. The amount of this dilution, or dispersion, in the air depends on weather especially wind direction and speed. Dispersion also depends on the terrain, whether it is on flat or mountainous land or in a valley.

Other factors can affect the concentration, or level of a pollutant at a given location. The amount of a pollutant at any one location can vary over time depending on the pattern of releases. For example, industrial processes can release some pollutants only at certain times and other pollutants continuously. The location of the release affects the concentration -- a pollutant can be released from smoke stacks high in the air or can leak from equipment or storage tanks near the ground. The ground-level concentration near a facility is generally lower when a pollutant is released from high stacks because the pollutant is more diluted when it reaches the ground. Other factors that affect concentration include the temperature and speed of the gas released through the smoke stack and the location of places in the facility where it is released.



What Is the Concentration of a Pollutant at Different Distances from the Source?

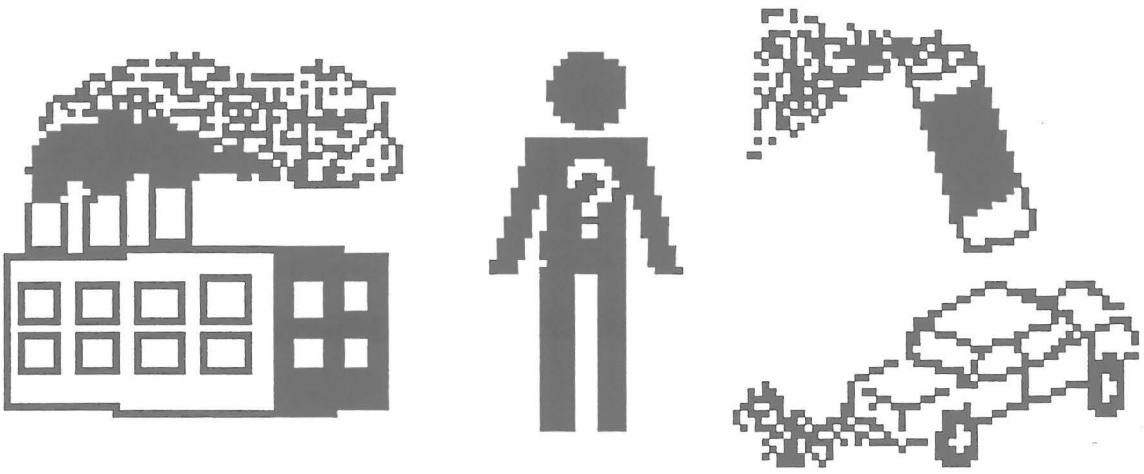
Using a technique called dispersion modeling, engineers can estimate the concentration of a pollutant at different distances and directions from the source. The computer model is used to calculate these estimates from information about the amount of pollutant released, the weather and terrain around the source, and other factors that affect the concentration of the pollutant.



Step 4
Estimate the Number of People Exposed

For a point source, researchers estimate the number of people living in various areas surrounding the site of release with a computer model that uses census information for wider and wider rings around the point source. For an area source, the computer model uses census information to estimate the population living in the area of interest. Where warranted, census estimates can be adjusted to reflect daily and seasonal population movements.

Using dispersion and population information in models, agencies can estimate the number of people exposed to varied concentrations of a chemical. To aid decision makers, these models can compare exposures to some selected benchmark, such as a state pollution standard or a level with a known health effect. For example (see figure below), someone standing at the northeast fence line of a factory's property might be exposed to 10 times the state standard while someone living a little further from the factory might be exposed to 2 times the standard. Someone living to the southwest may be exposed to very low levels below the state standard.



CONCLUSIONS

Air pollution affects women in a variety of ways on local, regional and global scale.

The nature of air pollution problems has changed in industrial countries over the past 20 years.

The potential air quality problems facing the developing nations are enormous. The deterioration in air quality will also have regional and transboundary effects.

The introduction of administratively simple policies that encourage the use of cleaner fuels, better land use and strategic planning, and also the promotion of energy efficiency are the first steps in controlling pollutant emissions at a local and national level.

International co-operation to address the problems of developing nations is needed to enable economic and social development which is environmentally benign. The development of renewable energy sources and the introduction of widespread energy conservation measures, particularly in the developed northern hemisphere, offer the most realistic methods of controlling all air pollutant emissions on the long term.


DAILY NEWS
PESTICIDES!
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Ms. Ioana SIMINEA

Seminar
"WOMEN ENVIROMENT MANAGEMENT
SUSTAINEBLE DEVELOPMENT"
Turin 23 - 27 september 1996

REDUCEING ENVIRONMETAL POLLUTION BY SOWED BIODEGRADABLE GEOTEXTILE UTILISATION

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Coal termoelectric power station are produceing over 27 milion tones of coal ash by year. This large quantity is largely exceeding the possibilities for the cement industry, materials of buildings. The coal ashes existing accumulations aproximatively on 1830 ha, are leading to the elimination of large areas from the agricultural circuit and are contributing to landscape degradation. Morover the dump heap easily spread by the wind leading this way to atmosphere pollution by large quantities of dusts, plant and soil pollution near the damp heaps.

The modalities for tilling the damp heaps can be relayed as following:

– covering with a 10-15 cm thickness vegetal sol layers and tilling with field plants;

– doing a soil-ash mixture on the surface, having 10 cm thickness and tilling it with plants;

– moisten the damp heaps surface for preventing ashes spreading especially while the plants young

–Chemical stabilization by using substances that are reacting with the chemical components of the ashes and are forming a crust at the surface of the damp heaps.

1. Biodegradable geotextile characterization

The collaborative researches by S.C. CERTEX S.A. Bucharest and researches from the University of Agricultural Sciences and Veterinary Medicine, Faculty of Land Reclamation and Environmental Engineering, a geotextile named BIOIUTA have been produced. The BIOIUTA physic-mechanical characteristics are shown in tab. 1

Caracteristics	U.M.	Level	Romanian standard
Total weight	g/mp	800+/-80	STAS 142/73
Wet weight	g+/mp	7000+/-700	
Initial thickness	mm	7.5+/-1	STAS 139/86
Wet thickness	mm	8+/-1	
Initial porosity	%	93+/-5	
Water saturation capacity	%	40+/-5	STAS 12150/89
Saturation capacity	%	700+/-100	STAS 6143/85

Draining strength L min. kgf		1.3	
(initially)	T min. kgf	2	
Breaking elongation		%	20+/-0.5
Air permeability		l/m^2sec	800+/-0.50
Resistance to microorganisms action		medium behavior Stas NFx 41 601/71	

As a result of the researches concerning the use of this product, it was proved that it can be used with good results in environmental arrangements especially for ash dump heaps covering for preventing environmental pollution.

The geotextile BIOIUTA have been produced from flaxen and humped offal's, organically materials, that are decaying in time. The product is included in unworn geotextiles.

For sowing have been used graminaceae and vegetables seeds.

The plants have been tilled in single and mixed crop growing.

The researches have been conducted in lab. Conditions (vegetation House) and the field (the dump heap from CTE Isalnita).

2. The technology for laying the geotextiles

– The equalizing of the ash dump level.

– Laying geotextile by edges will be overleaped by 5 cm.

– The band will be fixed with wood stake of 3-4 cm thickness and approximately 30 cm long.

– On the geotextile surface are spreaded chemical fertilizers.

– The surface of the geotextile is watered to saturation (the water should go through the geotextile).

– The watering will be made 2 to 2 days until the plants are raising up. After that when the roots are fixed into the geotextile the watering will be made in accordance with the needs.

The haymaking will be handmade or by haymaking machine.

Each year fertilizing is recommended than haymaking will not be allowed.

3.Obtained results

In the Vegetation House the researches have been conducted in laboratory conditions for establishing the plant spaces that are developed on the ash dump . The ash dump from CTE Isalnita and CTE Mintia have been studied as support layer for sowed geotextile.

The ash dump from CTE Isalnita is from (basiacool-bearing) of Motru and it is representative for the lignite cinders of our country, in the coal thermoelectric power station are burned brow coal and pitfall.

Even the cinder's are not a recommended medium for the plant growing and developing by using geotextiles and improved area for plant cultivation.

From the results obtained in the Vegetation House, in two Years period, an non homogenous developing of plants have been noticed influenced by several factors :

– the material–as a support on which the geotextile have been layer
– the type of the geotextile – sowed or unsowed
– if fertilizers have been sprayed or not
– plant species that been cultivated

As a result of issues obtained from the laboratory the experiments have been extended in the field. The ash dumps from CTE Isalnita have been choose because on the ash dump Mintia the plant developed poorly and started to turn yellow.

Result obtained on the ash dump from CTE Isalnita

The geotextile have been layed directly on the ash, perennial plants have been tilled.

The experiment have been followed in the field during three years. From the observations made in the field have resulted :

In the first year, the plants raised and developed but their density was not homogenous. In the gaps between the plants, the geotextile represents a protection against the cinder spreading.

By periodical haymaking, the plants blossomed and a vegetal cover have been created, forming a protection against cinder spreading.

In the second year of vegetation the plants haven't been hayed to follow the selfsowing process.

In this year the vegetal cover was rich and complete. The nature plants richer 1-1,5 m high. It was no haymaking.

In the next year the surface have been cleaned of dead plants resulted from autumn. In this year the vegetal cover was rich with high blossomed plants.

The selfsowing process was evident for alfalfa.

Following the geotextile behavior during years, in the first year a light decaying have been observed but in the second year when the vegetation was permanent (a certain humidity have been maintained), the geotextile decayed 80%.

Under the geotextile the humidity of the ash is important. This organic layer is maintaining a high humidity supporting a favorable microclimat for plant development.

In the third year the geotextile totally decayed but the vegetal layer do not allowed any more the ash spreading.

5. Conclusions

For environmental protection, in the coal dump heap areas are recommended geotextiles using.

On the surface of the dump heap because it is an efficient way for fixing the ash and for improving the landscape.

The geotextile is replacing the soil layer supposing to be layer on the surface of the dump heap if used biological fixing methods.

The geotextile is maintaining the necessary humidity for plant root development.

The ash dump is a high permeability material.

By decaying the geotextile is increasing the biological, chemical and physical quality's of the superior layers of the dump heap ash.

The surface protected by the geotextile is not under direct solar radiation resulting a real protection against severe evaporation.

In the first period for plant vegetation the geotextile is supporting the plant root development of all kind of plants tilled or spontaneous groaned.

ROMANIA

LAW

on the environmental protection

General principles and provisions

The principles and strategic elements that lay at the base of the law for the purpose of assuring a sustainable development are the following:

- principle of precaution in decision-making;
- principle of prevention of ecological risks and damage occurence;
- principle of conservation of biodiversity and eco-systems specific to the natural biogeographical structure;
- "polluter-pays" principle;
- the removal on a priority basis of the pollutants that directly and severely jeopardize public health;
- setting up of the integrated national environmental monitoring systems;
- sustainable use
- maintenance,improvement of environmental quality and reconstruction of damaged areas;
- setting up of a framework for the participation of non-governmental organizations and of the population in the decision-making and implementation;
- developing international collaboration to ensure the quality of the environment.

The ways of implementing the principles and strategic elements are:

- adopting of environmental policies harmonized with the development programs;
- compulsory procedure for environmental impact assesment in the initial stage of the projects,programs,or activities;
- correlation of environmental planning with the territorial and urban planning
- introduction of economic incentive-based or coercive instruments;
- resolving of environmental problems on levels of competence, depending on their extensiveness;
- elaboration of rules and standards,and introduction of compliance programs;
- promotion of basic and applicative research in the environmental protection field;

- training and education of the population as well as the participation of the non-governmental organizations in the decision - making and implementation.

Environmental protection shall be an obligation of the central and local public administration authorities as well as of all natural and legal persons.

The responsability for environmental protection shall be incumbent on the central environmental protection authority and on its local agencies.

Protection of natural resources and conservation of biodiversity

The central environmental protection authority,in consultation with the central specialized authorities which manage natural resources, shall draw up, on the basis of the present law,technical regulations regarding the measures for the protection of ecosystems,conservation of biodiversity,sustainable management of natural resources and for assuring the human health.

On designing the works which may change the natural environment of an area, the procedure for the impact assessment on that area shall be compulsory,followed by the submitting of technical solutions to maintain the natural habitat areas,to conserve the ecosystem functions,and to protect the vegetable and animal organisms,including the migratory ones,by observing the alternative and the conditions imposed by the environmental agreement and/or permit,as well as by the own monitoring until their fulfilment.

The terrestrial and aquatic areas that are subjected to a conservation shall be managed by the legal title holders only in the case in which they commit themselves to apply the conservation measures set forth by the central environmental protection authority

The holders of any title who apply such measures shall be exempted from tax; the private holders shall be compensated according to the value of the rehabilitation works undertaken.

The protection of some rare and endangered organism species,the conservation of biodiversity,and the setting up of protected areas,as well as the measures established by the environmental protection authorities shall have priority as against other interest.

The central environmental protection authority,in consultation with the Romanian Academy and UNESCO National Commission,shall establish the criteria for the setting up of protected areas and for the biodiversity conservation.

Regime of protected areas and of natural monuments

For the conservation of some natural habitats, of the biodiversity that defines the biogeographical specific of the country,as well as of the natural structures and systems of ecological,scientific,and landscape value,the national network of protected areas and natural monuments shall be maintained an developed.

The protected areas and natural monuments shall be declared by normative acts or regulations,including by forest planning; those declared until the date the present law comes into force shall maintain such quality.

The protected areas shall be indicated in the urban and territorial planning projects,approved according to the law.

Protection of human settlements

In the process of social-economic development of social-economic development,of urban,territorial,and human settlement planning, the ecological principles shall be compulsorily observed to assure a healthy living environment.Towards this end, the local councils as well as the natural and legal persons, as the case may be,shall be responsible for:

- the improvement of the urban microclimate by managing and maintaining springs and water mirrors within the localities and in adjacent zones,improving the beauty and protection of the landscape, and maintaining the street cleanliness;

- the location of the industrial objectives,of ways and means of transport,of sewerage systems,water treatment plants,domestic, street and industrial waste storage,and of other objectives and activities,without causing prejudice to public health,environment, resting,treatment and recreation places, to the health and comfort state of the population;

- the observance of the special protection regime of balneary and climatic localities,zones of tourism and recreation interest, historical monuments,protected areas, and natural monuments. The location of objectives and performance of damage generating activities within their perimeter and in their protection zones shall be forbidden;

- the adoption of adequate architectural elements,the optimizing of the density of the dwelling houses concurrently with the maintaining and development of verdure spots,parks,tree alignments and protective street belts, of landscape arrangements with ecological, aesthetic,and leisure functions;

- the regulating,by temporary or permanent prohibition inclusi-

vely, of the access of certain types of motor vehicles or of the carrying out of discomfort generating activities for the population in certain zones of the localities with living space predominance, zones meant for treatment, rest, recreation, and leisure;

- the adopting of compulsory measures for all natural and legal persons regarding the maintenance and adornment of buildings, yards and their surroundings, of the verdure spots in yards and between buildings, of decorative trees and shrubs;

- the initiating at local of some projects for the se up of hygienic-sanitary facilities and for road sewerage maintenance and development.

Prerogatives and responsibilities of other central and local authorities

The central and local public administration authorities shall be obliged to convey all the data requested pursuant to the central environmental protection authority, to the territorial agencies respectively, and to enforce the provisions of the present law.

The central public administration authorities shall have the following obligations:

- to assure within their organization structure departments with environmental protection duties and specialised personnel;

- to develop, with the central environmental protection autorityś assistance, restructuring programs in agreement with the national environmental strategy and environmental policies, and to assist the subordinate economic agents in the implementation of the compliance programmes;

- to elaborate the norms and regulations specific to the environmental protection field of activity and to submit them to the central environmental protection authority for approval;

- to notify on the extent to which certain provisions can prevent any authority form effectively acting for the protection of the environment and to concurrently indicate the progress made by the enforcement of the present law.

The Ministry of Health shall have the following prerogatives and responsibilities:

- to survey the evolution of the population´s state of health in connection with the quality of the environment;

- to control drinking water and food product quality;

- to draw up environmental hygiene standards in collaboration

with the central environmental protection authority and check for the observance of such standards

- to draw up periodical reports on the influence of the environment on the populations health and collaborate with the central environmental protection authority in setting up and applying life quality improvement measures.

Such reports shall be published yearly;

- to collaborate with the other ministries having their own health network for ensuring an accurate awareness of the state of public health and environmental protection in their scope of activity.

The Ministry of Education shall ensure the adaptation of education plans and syllabi at all levels, for the purpose of acquiring knowledge on ecology and environmental protection notions and principles,to assure the awareness,education,and training in this field.

The ministry if Research and Technology shall promote study themes and research programmes answering the priorities set forth by the central environmental protection authority in this field.

The Ministry of Tourism and the Ministry of Youth and Sport shall develop educational programmes for the purpose of designing and environmental responsible behaviour and shall encourage the application of the principles of ecotourism.

The local public administration authorities shall have the following prerogatives and responsibilities:

- to supervise the enforcement of the provisions under the urban and territorial planning,in agreement with the environmental planning.

- to supervise the subordinate economic agents with a view to preventing accidental pollutant discharges or uncontrolled waste depositing,and develop reusable waste collection systems;

- to adopt programmes for the development of sewerage networks rain water collecting,drinking water supply locality waste water treatment plants,as well as for public transport;

- to assure services with town ecology and environmental protection specialists and collaborate towards this end with competent environmental protection authorities;

- to promote an appropriate behaviour of the communities with respect to the importance of the environmental protection.

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Preliminary research work

for

Sub-regional Seminar on

Women, Environmental Management, Sustainable Development

Turin, September 23 - 27, 1996

Dagmar Rajčanová, Slovak Republic

National Environmental Policy

The Slovak Constitution is unique in its overriding concern for the country's environment. It dictates that the Slovak economy will be based on a socially and environmentally sound market oriented economy. The state is required to ensure environmental balance, the conservation of natural resources and environmental protection. All citizens are required by the Constitution to preserve and protect their environment and cultural heritage.

The Slovak Republic is committed to a fundamental philosophy of sustainable development. This means that economically sound environmental principles and policies must not only be found in the Ministry of the Environment, but also in other key ministries such as finance, economy, health, transportation, energy and forestry.

The country's environmental policy and strategy is identified in the primary framework document titled „The Strategy, Principles and Priorities of Governmental Environmental Policy", approved by Government and the National Council in September 1993. The document is based on a comprehensive analysis of the environmental conditions in Slovakia. The document includes an overall assessment of environmental policy and the orientation of Slovakia with respect to international relationships. It also forms the basis for determining priorities for the state environmental policy and formulation of the strategic objectives for the long-term, medium-term and short-term. There are 10 principles which provide the overall framework for the national environmental strategy. Included in these principles are the preference for the prevention over corrective measures, application of the polluter pay principle and respect for life in all its forms.

Consistent with the principles of sustainable development, environmental objectives can be found in other sector strategies. For example, the energy strategy, also adopted in 1993, requires energy to be produced not only at the minimum price, but also with a minimum impact on the environment. The energy policy also contains specific targets, such as a 20 % reduction in CO_2 emissions by the end of 2005, using 1988 as the base year.

Similarly, the forestry strategy recognizes the importance ekological balance and landscape stability. Slovakia´s agricultural policy contains measures to improve the environment, for example, the rational use of fertilizers is required.

Environmental sensitivity can also be found in certain tax measures introduced by the Ministry of the Finance and in the strategy and principles of the Ministry of the Economy.

In 1993 the Ministry of Health adopted the „Concept and Principles of Health Policy", which provides for a continuing concern for environmental issues in the health care field.

Environmental Legislation

The environmental legal framework is already in place, and include over 15 laws and more than 700 regulations. However, the Ministry of Environment continues to develop additional legal tools. Two recent examples are found in the adoption of the „Environmental Impact Assessment Act" which addresses issues of prevention and planning, and the „Nature and Landscape Protection Act", which provides measures to conserve and protect Slovakia´s most important natural heritage. Both of these acts are consistent with internationally accepted principles and have been specifically designed to be comparable with similar legislation in the European Union.

Proposed legislation which is currently being drafted, includes a new water act, amendment to the clean air and waste management acts, a packaging act, urban and regional planning legislation, and access to environmental information law. While legislation is developed for the specific conditions in Slovakia, international relationships are considered. For example, the legislative agenda generally follows the EU guidelines on environmentally oriented legislation.

International Programs and Agreements

The Slovak Government is an active participant in international organizations. Slovakia has signed bilateral agreements with more than 10 countries. International conventions and agreements are reflected in the Government's basic environmental policy and in Slovakia´s laws and regulations. The Ministry of Environment works closely with long term resident advisers provided by USAID for work on policy and economic issues. A Project Implementation Unit from PHARE provides support for co-operative programs in many areas of the Ministry's responsibility.

Selected examples of international agreements and co-operation by sector include:

Air Protection

- Convention on Long - Range Transboundary Air Pollution and the Control of Emission of volatile Organic Compounds, Geneva (1991)
- Vienna Convention for the Protection of the Ozone Layer, (1990)
- Montreal Protocol on Substances that Deplete the Ozone Layer, (1990) and its London annex (1993)

- UN Convention on Climate Change, New York, (1993)

bilateral co-operation with Austria, Denmark, Czech Republic, Finland, Luxembourg, Norway, Poland, Romania, Sweden, Switzerland, USA

Water Protection

- Convention on Co-operation for Protection and Sustainable Use of Danube River, Sofia (1994)
- bilateral co-operation with Austria, Canada, the Czech Republic, Croatia, Denmark, Hungary, the Netherlands, Norway, Poland, Romania, Sweden, Switzerland, Ukraine, USA

Waste management

- Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Basel (1991)
- bilateral co-operation with Austria, Denmark, the Netherlands, Poland, Switzerland, Ukraine

Environmental Impact Assessment

- Convention on Environmental Impact Assessment in a Transboundary Context, Espoo (1993)

Nature Protection

- Convention on Biological Diversity, Rio de Janeiro (1993)
- Convention on Protection of the Work Culture and Natural Heritage, Paris (1991)
- Convention on International Trade in Endangered Species of Wild Fauna and Flora, Washington (1992)
- Convention on the Conservation of European Wildlife and Natural Habitats, Bern (1994)
- bilateral co-operation with Canada, Luxembourg

Health State of Population of the Slovak Republic

Review of statistical data and

In 1995 the total population of the Slovak Republic was 5 356 000 inhabitants of which 51.3% were women. The natural rise of population is 15 000 people. This figure represents almost a 30 % decrease in comparison to the previous year.

The age structure of the population is as follows:

22.9 % of population were children younger than 14 years of age, the rate of population in so-called productive age was 59.6 % and the rest 17.5 % was the population of so-called post productive age. In comparison to the previous year there was moderate rise of the number of people in productive and post productive age and the decrease in the category of children younger than 14 years.

The medium life expectancy at birth has achieved 68.34 years for men and 76.5 years for women. In all western Europe countries the average life expectancy exceeds 77 years for women, in many of them it is as high as 80 years. On the other hand, in each post-communist country the medium life expectancy of women is lower than 77 years. Generally, the differences in the women life expectancy are not so dramatic as in the case of men.

As there are differences of medium life expectancy between individual countries there are also differences between individual regions within the Slovak Republic. The difference between the regions of the longest and the shortest medium life expectancy is almost 5 years. ~~Relatively high mortality of~~ infants results in the shorter medium life expectancy especially in some regions of Eastern Slovakia. There is a paradox finding - with increase of air emissions the medium life expectancy is rising. The case are two biggest centers of the Slovak Republic - Bratislava and Košice. In these two centers there is, however, significantly higher educational level of inhabitants. It seems that the most important factors influencing the medium life expectancy are education and the life style. The majority of inhabitants of the former socialist countries got used to the life style which has not been of much benefit to their health state.

According to the expertise of the Ministry of Health of the Slovak Republic only 45 % of population live in environment of high or appropriate quality, 26 % in conditions of seriously devaluated environment. A question arises: "how do the inhabitants themselves see this state?" In spite of the quite high environment damage, according to the inhabitants of the Slovak Republic, the environment does not belong among the dominant problems of Slovakia requiring urgent solution. On the basis of data from public opinion poll on the hierarchy of the current problems of society the environment was assigned position number 11. The inhabitants

underestimate pollution of the environment, they see it as it was not so bad which does not respond to reality. Only 34 % of respondents thought they lived in the environment threatening their health, while according to the expertise the dammage to the environment threatens 55 % of the population. Of all the population 62 % does not see threat to the environment in their locality. As for the differences of opinions on the environment of men and women, they were very similar and age and education do not seem to influence it. More important factor is the size of the locality: the opinions of men and women living in bigger cities expresses more criticism. The majority of the population in the Slovak Republic does not diminish the need for the environmental preservation. Almost two thirds of men and women felt that everyone, within their own capabilities, should contribute to the preservation of the environment. There was, however, quite high proportion of those (in fact over one third) who moved all responsibility for the environment from the citizen to government and big enterprises. More than two thirds of respondents were of the opinion that the environment should be preserved for future generations and refused the rise of the life standard causing more dammage to the environment.

According to the degree of the environmental awareness the population of the Slovak Republic could be divided into three categories:

37 % of high environmental awareness

52 % of indifferent position on the environmental issues

12 % of low or none environmental awareness

The differences in the opinions of women and men are negligible. There are, though, important differentiating factors among both groups. The higher degree of environmental awareness in both groups of men and women raises with higher education. It is also higher in the group of people doing intellectual work and those who belong to upper or medium classes of society. Very generalized conclusion: younger people living in bigger cities are of a higher environmental awareness.

The result of the opinion pool on the quality of the environmental education were also very interesting. Relatively high portion of respondents were satisfied with the educational influence of family, schools and electronic media. Only one quarter think that schools do not pay enough attention to the problems of the environmental preservation. The views of men and women are in principle the same. According to the answers it was found out that keeping the nature and the environment tidy is usually understood to be the scope of environmental education.

The role of women in the main development sectors

Transformation process in Slovakia has mostly had a positive impact on the position of women in society. Among most positive aspects there is the plurality of ideas, the freedom of speech, development of human rights and open discussion on these issues, the intensification of international collaboration, creation of new opportunities in economy, introduction of the elements of democratic citizenship into society, introduction of education in such areas as ethics, preparation for parenthood. For women very important point was the ratification of the UN Convention on abolishment of all forms of women discrimination.

The Constitution of the Slovak Republic (approved on the September 1, 1993) ensures fundamental rights and freedoms to all citizens, it eliminates the discrimination of women and men. For women it ensures the protection against discrimination and inferior treatment. A high rate of full time employment of women (97.7%) is typical for the Slovak Republic. Women are represented in all sectors of national economy and all kinds of governmental organizations. In 1994 out of 150 deputies of the Slovak national Council 23 were women and one woman was in government at the position of the deputy prime minister of the government.

Women are frequently employed in education and health care organizations. Out of all employees in the education sector 76 % are women (elementary schools - 82 %, secondary professional schools 61%, comprehensive secondary schools 68.4 %). At schools with higher grade of education the over-feminization is lower. In the health sector there are 117 802 people employed, 79.3 % of which are women. Women have become recognized experts in the areas of work with youth, in finance and banking and accounting services. Not less important is the increasing participation of women on the decision-making processes in organizations like the Ministry of Soil Economy, the Ministry of Economy, the Ministry of Environment, The Ministry of Finance and the Ministry of Social a Family Affairs.

The Constitution ensures the education rights both for men and women. The level of education in the Slovak Republic is high. For example in 1994 there were 4 304 students studying at three Medical Universities in Slovakia of which 2 699 were women. At the Faculty of Pharmacy as much as 81.4 % of the students were women. Of all graduates of natural sciences the share of women achieved 52.8 %, the share of women gruaduating from technical sciences was 31,21 %, agriculture and forestry science 34.4 % and humanities 54.2 %.

After 1989, when the society started the process of transition to market economy, the development of private sector has started. Women are frequently engaged in small and medium sized businesses. Very often the woman entrepreneur employs herself in her business.

Representation of women in the justice was as follows: According to the data of the Ministry of Justice from 1994 52 % of 1 072 judges were women, 41.5 % of 562 prosecutors were women. In 1993 there were 111 (13 %) of women attorneys at law. Women employed in the army represent 4.5 % of the total employees and in the police corps it is 6.9 %.

The involement of women in the design and implementation of policies, programmes and projects related to environmental management

One of the structural characteristics of the labor market in the Slovak Republic is a relatively high level of the women education. Actually there is more women than men who completed the full secondary level professional or comprehensive type of education. The portion of women who achieved the university education is 41 % of all employed population. Less favorable aspect however is the fact that 58% of women on all employed population have only elementary education.

Sharp increase of women employment from the period of the building up of socialism in 1950-1989 has presently been leveled on the 49 % of women of the total working population. Women represent more than one half of all working forces in sectors like for example: clothing industry (90 %), health and social care (80 %), textile industry (79 %), education (78 %), finance and insurance business (70 %), hotels and restaurants (66 %), trade (60 %), food production (58 %).

Statistical data which would show the rate of women employed in the environmental sector are missing. I base my assumptions solely on my personal knowledge on women employment in the area of public administration of the environment, represented by the Ministry for the Environment, the environmental departments of district and regional offices of the public administration, the Slovak Environmental Inspection, and specialized organizations at the Ministry for the Environment such as the Slovak Environmental Agency, the Slovak Hydro-meteorological Institute, the Slovak Geological Service, the Management of National Parks, the Management of the Slovak Caves and non-governmental organizations and citizens associations focused on the protection of the environment and health of citizens. In all above mentioned organizations there is a high rate of women employment, which according to my personal knowledge is about 60 % Although the rate of women in the top management bodies is only 20 % of the total number of all management positions. Nevertheless women are involved to a large extent in the process of environmental projects and programs preparation and implementation.

At the Ministry of Environment 55 % of all employees are women. They are involved in preparation of environmentally analysis, strategies and concepts and in formulation of different proposals of legal regulations and other documents.

Women at positions like Directors of the Departments (in one case even the director of Section) fully participate on the tasks of international collaboration issuing from the contracts and projects which are often of highest priority for the State Environmental Policy. The chairman of the committee for the environment in the Slovak National Council is a woman She is at the head of a team consisting exclusively of men. The situation of the women employment at the regional and district environmental management is similar to the one described at the ministry.

The Slovak Environmental Agency was established by the Ministry of the Environment. It is a specialized organization with the seat in Banská Bystrica the activity of which covers all area of Slovakia. There is a considerable amount of women - 55 % of the total of 505 employees - employed in this Agency. Women participate at the preservation and creation of the environment and on definition of the principles for the sustainable development. Women are at the head of three departments. There is the Department of Environmental Education, the responsibility of which is to disseminate the ideas on environmental education among the all layers of society of the Slovak Republic. This department significantly participated at the organization of the international film festival dealing with environmental issues -Emvirofilm. Another woman is at the head of the Department of the Environmental Risks Management and Assessment, which closely cooperates with the Environmental Protection Agency of the United States at the preparation of case studies concerning individual components of the environment in the regions of the Slovak Republic. The position of the head of the Department of the Territorial Planning and the Landscape Creation is also held by a woman. This department is focused on the spatial optimization and the ecological stability which is elaborated in the special documentation "Territorial System of Ecological Stability". Women are directors of four Protected landscape areas and at the head of 11 local branch offices of the Slovak Environmental Agency.

The situation is similar at the environmental offices and the Slovak Inspection of the Environment, where women are in charge of the supervision of the environmental protection according to special regulations governing water management, air management and the waste management. As for participation at the international projects and studies women are actively involved in following projects: Study of Waste Management of the Slovak Republic, Information Center for the Hazardous Waste, Protection of the Natural Resources in the Carst areas, and the EU PHARE - EC/EDU/19 project on the Environmental Education and the Environmental Awareness of inhabitants.

In the area of rising environmental awareness of inhabitants for the benefit of the environment, different foundations and citizens associations play a very important role In this area tens of different organizations, specialized societies and funds have been registered

Their activities are mostly focused on the implementation of particular programs at the regional or local level, fund rising and the support of local activities. As for women representation, women are active members in all the Boards of Directors of these Foundations There are mostly women who work with enthusiasm on everyday operations and run of these non-governmental organizations. They are in direct contact with local governments and work in order to achieve the specific goals of their organizations.

Success stories showing the role of women in Environmental Management

At it was mentioned in the former chapter, women of the Slovak Republic are involved actively in the national income creation in every department and all positions.

As successful example of a woman active in the field of environment, I would like to introduce the director of the State Specialized Hygienic Institute in Banská Bystrica - Mrs. Dr. Fabiánová. Mrs. Fabiánová who is the director of this Institute focused on the hygiene of work, nourishment and environment, on analysis of inhabitants' state of health and working environment, she is also a member of the Administration Board of the Foundation „The healthy city" and she is the main organizer of this Foundation's programme.

Community foundation „Healthy city - Banská Bystrica" is a voluntary, non-profit-making organization. Its goal is to strengthen public participation in solving problems of the city and the region, to promote increasing of life's quality in the city and its neighbourhood.

The Foundation's support is earmarked for :

- improvement of the environment's quality,
- environment aesthetization,
- development of spiritual sources and partnership,
- care for physical health and healthy nutriment.

The Foundation uses the obtained funds to support public activities focused on solving of urgent problems of Banská Bystrica and its surroundings. Foundation provides grants to non-profit-making organizations and public activities up to the amount of 8.000 Sk in quarterly cycles.

The Foundation's Administrative Board decides on grants allotment taking into accounts:

- project contribution to the environment improvement and aesthetization,
- strengthening of peoples' solidarity
- applicant's ability to implement the project.

All grants are given in public.

Youth Programme

The Foundation has established a separate Youth Fund supporting especially projects of secondary school students that comply with the Foundation's objectives. Advisory Committee consisting of young people carries out its own research of youth's requirements and problems

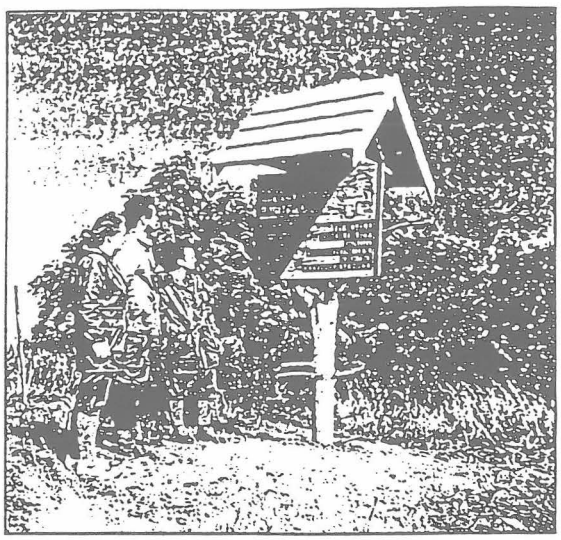
in the city and its region, evaluates grants proposals and prepares recommendations for the Foundation's Administrative Board.

Programme for Residential Districts

The objective of Programme and Fund for Residential Districts is to strengthen and support public activities in residential districts and villages of the region. Advisory Board of a residential district makes selection and recommendations of grant proposals, prepares programmes and projects with the aim to solve the most important programmes of residential districts and villages of the region in the sphere of the environment improvement and public communities development.

Women's programme

Women's Fund was established to promote projects that solve problems of women in the city and in the region. Its objective is to achieve participation of as many women as possible in solving of these problems. Advisory Committee of women tries to identify the main problems of women in the city and in the region, priorities and prepare proposals and recommendations for the Foundation's Administrative Board.



STRATEGY OF NATIONAL ENVIRONMENTAL POLICY

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The Ministry of the Environment has been entrusted with analyzing the conclusions of **the UN Conference on the Environment and Development** and incorporating the principles contained therein into the environmental policy of the Slovak Republic by the Resolution of the Slovak Government 718/1992; the ministers and directors of other central administrative authorities were likewise entrusted with employing and incorporating the conference conclusions in the environmental programs of their respective ministries. The strategy of national environmental policy as prepared in conjunction with conference materials, aimed at reaching permanently **sustainable development,** the strategy of national environmental policy was prepared. The Updated Program of the Slovak Government following Slovak Independence was formulated accordingly and approved by the Slovak Parliament as Resolution 202/1993, recommending to the Slovak Government that the principles of environmental (ecologic) policy be submitted to Parliament by June 30, 1993.

The strategy of national environmental policy derives from the analysis of the state of the environment and its components in Slovakia and from an evaluation of the overall background of national environmental policy. It also guides the Slovak orientation in international affairs, determines **NATIONAL ENVIRONMENTAL POLICY PRIORITIES** and formulates its **LONG-TERM (STRATEGIC), MEDIUM-TERM, AND SHORT-TERM OBJECTIVES.** These are focused on resolving the protection of environmental compo-

nents, selected set of problems or the care of the environment in general. **The 10 PRINCIPLES OF NATIONAL ENVIRONMENTAL POLICY** depend to a large extent on achievement of these objectives.

The time required to accomplish some of **the long-term (strategic) objectives** leading to fundamental positive changes in the whole environment and to achieving permanently sustainable development in the socio-economic and environmental conditions in Slovakia may be 15-20 years, 20-50 years (2010-2030), or possibly longer (as, for example, with the replacement of damaged forest vegetation by healthy growth, reclamation of devastated areas, and decontamination of the soil and underground).

The medium-term objectives, attainable by the years 2000-2010, focus on slowing the processes of deterioration and mitigating the impact of the damaged and polluted environment, on life expectancy and public health, as well as eliminating activities that increase the burden of environment compared with the current state. This consists primarily of identifying and implementing effective systems and legal and economic instruments in the transition from a centrally-planned economy to a market economy.

Establishing and putting these systems and provisions into practice are **short-term obejctives** to be attained by 1996. Also included among short-term goals are the resolution of problems which because of their immediate negative effect on the life and health of the people and on our priceless cultural and natural heritage cannot be postponed. In such cases it means eliminating not only the immediate threats but also the consequences of past ill-advised disruption of the environment.

Terms of reference for the individual objectives were fixed in conjunction with international conventions, EC guidelines, the recommendations of the OECD, CSCE, and UN agencies (UNEP, WHO FAO, UNESCO, UNDP), as well as applicable Slovak laws and legal regulations provided for their execution.

Implementation of the strategy through attainment of objectives identified thus fulfill the preconditions for Slovak convergence with European environmental standards and admission to European organizations. Issues are too complex and responsibilities too divided, however,,for this to remain the responsibility of a single

ministry at the national level only. The strategy must be incorporated and detailed in the environmental policy provisions of individual ministry departments and further developed at the regional level with the participation of local governments and citizens groups, to which endeavour the Concept of Environmental Care (Green Concept) will hopefully contribute.

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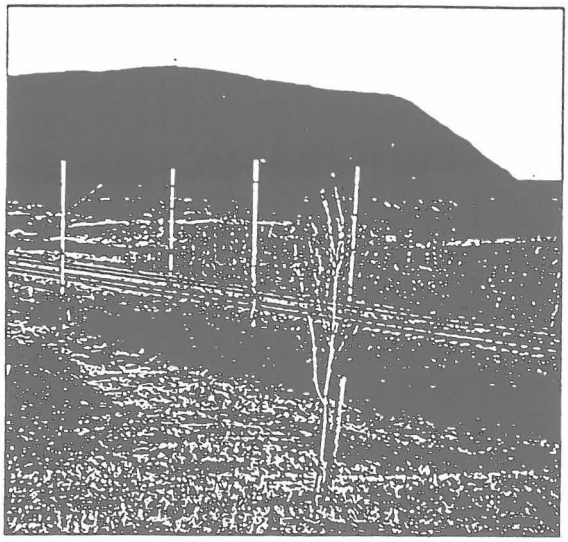

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ORIENTATION AND PRIORITIES OF NATIONAL ENVIRONMENTAL POLICY

The national environmental policy, deriving from the preceeding overview of the environmental situation, should focus preferentially on the following:

1. mitigating the negative impact of components of the polluted and damaged environment on life expectancy and public health;

2. preventing the rise of further undesirable and irreversible changes in ecosystems and other damaging phenomena destabilizing the environment and causing a decline in the value and ecologic destabilization, lower productivity, or habitability of the land;

3. reducing or preventing the growth of the environmental liability; in the privatization process, determination of liability for the environment liability of the units privatized;

4. increasing polluter participation in improving the state of the environment and increasing enterpreneurial interest in providing environmental products and services; reduction of the disparity between environmental needs and the resources available for the environment and for effective, low-cost measures;

5. creating conditions for transformation of the economic structure from one with high energy and raw material demands to one characterized by conservative and rational raw material and energy use, a higher product to input ratio, utilization of decontamination procedures, and modern, environmentally safe technologies, modes of transport meeting environmental standards, proper storage of material extending their life and re-usability, and more accurate evaluation of peoples work and abilities;

6. greater reliance of non-traditional energy sources (solar, wind, geothermal) and conservation of natural resources; utilization of biological processes in agriculture, revitalizing damaged forests, river basins, and devastated areas, greening of the towns and countryside, optimizing the land use;

7. increasing public environmental awareness with emphasis on young people, the business community, and their level of

informedness concerning the state of the environment in the Slovak Republic and possibilities and measures taken to improve it;

8. closer international cooperation in the field of development and environmental protection and creation in the process of reaching sustainable development, especially for the fulfillment of commitments deriving from international environmental legislation.

Preference will be awarded activities effecting the greatest and quickest improvement in the state of the environment and reduction of its negative impact on wildlife, development, global environmental security, and public health and life expectancy.

In accordance with this criteria and the preceeding overview of the environmental situation, **national environmental policy is oriented toward eliminating the causes of air, water, and soil pollution.** The quality of these elements of the environment most significantly affects the other components of the environment, determining the state of the environment and directly or indirectly impacting all forms of life. Closely related to this is the influence of the level of technology used for minimizing the effect on the environment and in particular minimizing waste production, capturing pollutants, utilizing of waste directly in production, and so forth.

Therefore the following have been designated the **PRIORITIES OF NATIONAL ENVIRONMENTAL POLICY:**

I. Global environmental security and protection of the atmosphere against pollutants.

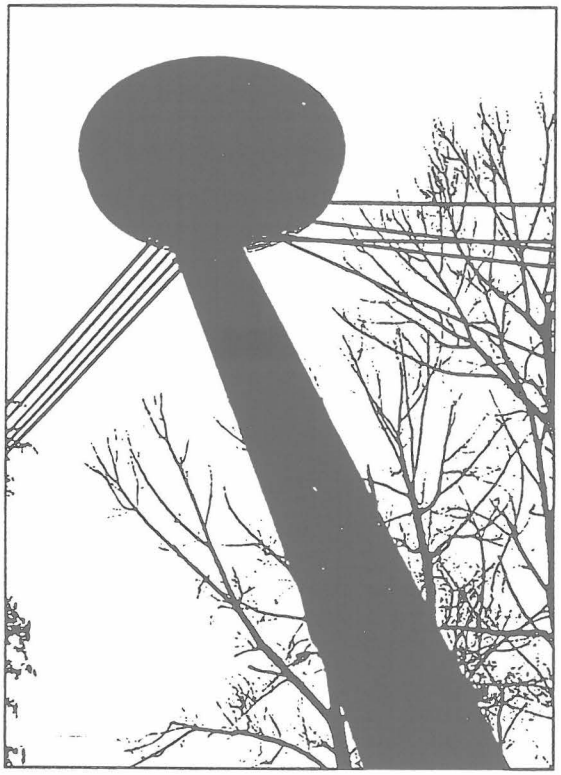
II. An adequate supply of drinking water and reduction of water pollution to acceptable levels.

III. Soil conservation and the purity of foodstuffs and other products.

IV. Proper disposal or utilization of waste and minimizing its production.

V. Preservation of biodiversity, conservation and rational use of natural resources, and optimizing of land use.

The above priorities are comparable to those of the states with which we share the longest borders, namely Hungary and Poland. Hungary has selected five priorities; in Poland the priorities are classified as short- to long-term and stated as short- to long-term objectives. At most five to seven priorities are identified in the developed countries, as for example in Canada, the environmental policy of which - parallel to ours - is oriented primarily toward clean air, land, and water, and toward global environmental security.



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PRINCIPLES OF NATIONAL ENVIRONMENTAL POLICY

Implementation of the strategy of national environmental policy as a general precondition for application of and compliance with the following **TEN PRINCIPLES OF NATIONAL ENVIRONMENTAL POLICY:**

1. Precedence of preventive over corrective measures, a parallel shift in focus from consequences to causes, which will require a change in approach in all areas including our prevalent lifestyle;

2. Implementation of national environmental policy in all areas of the economy and in the service sector especially, introduction of environmental protection as an integral part of their development; environmental policy is inherently intersectorial and cannot remain the concern of one ministry alone;

3. An understanding of the resolution of the environmental problems as the resolution of economic problems of the society, the state of the environment being reflection of the state of the economy and vice versa;

4. An awareness that our generation bears a responsibility to future generations for the environment; the unfavourable state of the environment is not only an inheritance from the distant or recent past but also a present phenomenon;

5. Resolution of complex environmental problems through systematic elimination of the synergic effects of existing and newly-produced pollutants and other negative phenomena; an awareness, despite the need for step-by-step solutions of environmental problems, of their interconnection and dependance on their location and place in the overall scheme of the environment in Slovakia;

6. Payment of expenses connected with polluters eliminating

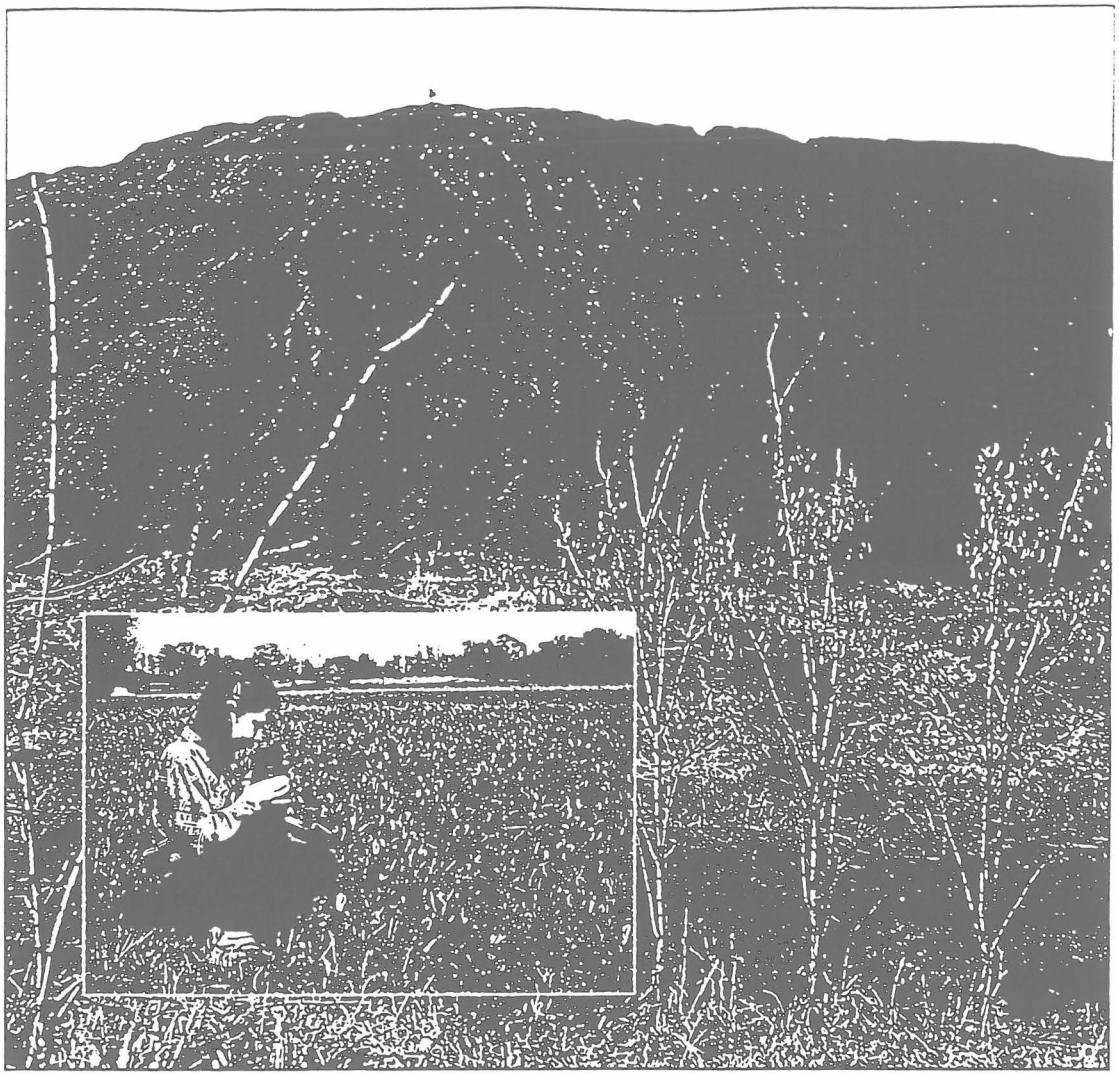
environmental damage for which they are responsible;

7. Assessment of the effect and impact of disruptions of nature on public health, the land, and other aspects of the environmental situation, including the threat to living organisms and to our priceless, irreplaceable natural and cultural heritage, the threat of exhausting non-renewable resources and the possibilities for more rational use of renewable resources; temporary profit is unacceptable if it leads to irreversible loss or to greatly increased expenses in the near future;

8. An understanding of environmental conservation as a basic condition for halting the unfavourable trends in the state of public health; reduction of the claims on therapy via preventive measures;

9. A new approach to forests as the primary eco-stabilizing factor in the countryside and to soil as a component of the environment vital to biodiversity, nutrition, and the existence of life; a shift of emphasis from simply preserving soil area to preserving the quality of the soil and woods; understanding the productive function of soil and forest as a part of their environmental function;

10. Respect for life in all its forms and for all natural and cultural values; not even property rights entitle the owner to damage or destroy such objects worth or to pollute the environment beyond legal limits; the right of the community has for centuries taken and will continue to take priority over property rights. The environment of the individual is a part of the environmental of all.



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OBJECTIVES OF NATIONAL ENVIRONMENTAL POLICY

I. LONG-TERM - STRATEGIC OBJECTIVES

The strategy of the national environmental policy focuses on achieving the following **general long-term - strategic objectives:**

- extending life expectancy and reducing the rate of sickness to West European averages;
- reduction of environmental pollution to acceptable levels (that is, to within the set limits) not exceeding the limit of tolerable stress on the land in individual regions and eventually in all of Slovakia;

- renewal of the damaged environment, especially the elimination of great to extreme environmental disruption in hazardous-to-health and otherwise threatened areas; preventing increased disruption of other areas and establishing the optimal organization and use of land and the countryside;

- establishing legal, economic, ethical, and management systems and barriers of preventive nature to check activities threatening or damaging the environment above permissible limits;

- halting the reduction of biodiversity as a precondition for preserving ecological stability and non-renewable genetic reserves;

- increased protection and rational utilization of natural resources evaluated on the basis of environmental value as well as their public utility function;

- achievement of an economic structure favourable to the environment and of nationwide territorial system of eco-stability, likewise of conditions ensuring a better quality environment, the protection of our natural and cultural heritage, and the diversity of conditions and forms of life inhabiting the countryside;

- convergence of socioeconomic and environmental interests; broad-based application of the philosophy of sustainable development and the principles of environmental policy in the activities of state administrative bodies, local governments, corporations, institutions, and citizens.

The following may be considered **partial long-term-strategic objectives:**

- 80 % reduction in SO_2, NO_x, and dust emissions, reduced emissions of volatile organic compounds (VOCs), persistent organic pollutants (POPs), heavy metals, CO_2, and other greenhouse gas emissions, in accordance with international conventions;

- more accurate evaluation and more rational utilization of coal in connection with minimizing coal combustion;

- elimination of the use of halons and fully-halogenated hydrocarbons, and, by the year 2030, of production and consumption of partially-halogenated hydrocarbons as well;

- using vehicles with gasoline engine equipped with controlled 3-way catalytic converter;

- greater reliance on alternative fuels and means of transportation reducing environmental pollution (gas, electricity, unleaded gasoline, trains, bicycles);

- reducing the electric energy consumption in production and water consumption to the average of countries European Union;

- reduced levels of carcinogens, teratogens, mutagens, and other hazardous substances (PCBs, nitrates, nitrites, heavy metals, polyaromatic hydrocarbons) in the environment with special regard to their elimination or reduction to acceptable levels in water and the food chain;

- strict safety regulations for nuclear facilities and radioactive materials;

- effective and permanent disposal of radioactive waste from nuclear power facilities and other sites with sources of ionizing radiation;

- reduction of the effect of radiation, noise vibration, electromagnetic field, and thermal pollution on the public to acceptable levels;

- minimizing the negative impact of waste on the environment and public health and ensuring maximal valuation of waste as secondary raw material;

- establishment of managed landfills and incinerators for the disposal of unusable waste;

- enforcement of the ban on use of groundwater for agricultural purposes where substitution with surface water is possible;

- provision for the purification of 80-90 % of discharged waste water, and reduction of the difference between the volume of water extracted and discharged to a minimum;

- elimination of the pollution of flowing water of IV-th and V-th class purity in connection with the liquidation of pollution sources, introduction of measures for their revitalization, and comprehensive reduction also for the pollutedness of II nd and III rd class purity flowing water by one full class;

- decontamination of the most contaminated soil and underground;

- reclamation of areas of large scale deforestation and erosion;

- agricultural use of chemical substances, particularly pesti-

cides (herbicides, insecticides, and fungicides), according to predictions and indicators, in compliance with regulations protecting plants and forests against their natural enemies in the broader biological struggle;

- elimination of damaging compounds synergic effect on forest ecosystems, and an overall increase in the resistant potential of forest wood;

- optimizing tree harvesting and the density of the forest road network, renewal of natural composition of forest growth and use of less-disruptive harvesting and re-planting methods;

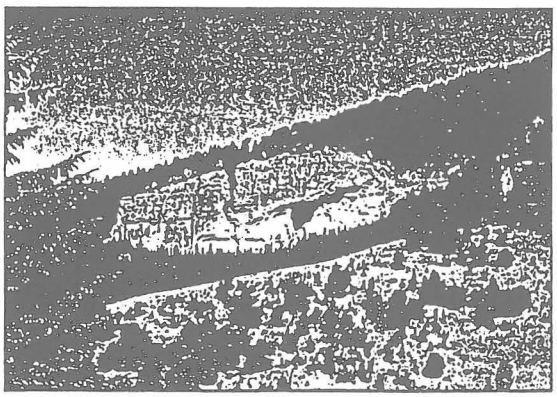
- removing errors in the urbanization of countryside and lowering its endangeredness by assessment of effects of some activities (construction, transit traffic, etc.) on the environment;

- local and regional registration of biocenters and their protection within the system of class IV and V protected areas;

- class II and III protection for environmentally important areas comprising approximately 30 % of Slovakia, and the completion of a territorial system of ecological stability in the lowlands and plains;

- reduction of the threat to wildlife and rescue of critically endangered species;

- completion of the integrated environmental monitoring and information systems of the environment of the Slovak Republic.



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II. MEDIUM TERM OBJECTIVES

The following objectives are proposed for the year 2000 - 2010:

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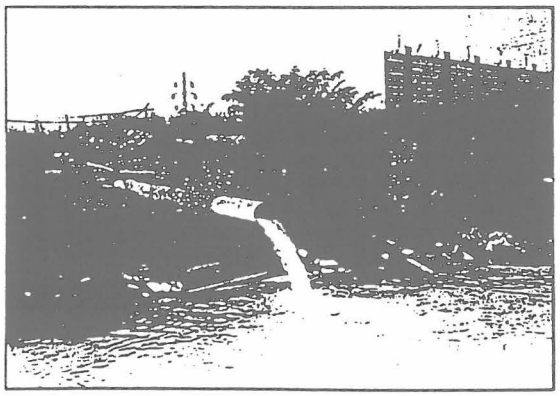
a) in air protection

- reduction of SO_2 emissions by more than 50 % (from 438 000 tons in 1991 to 216 000 tons in the year 2000), of NO_x emissions by more than 35 % (from 233 000 tons in 1991 to 152 000 tons in the year 2000), of solids by 65 % (226 000 tons in 1991 to 80 000 tons in the year 2000), and of other emissions of substances (CxHy, dioxines, etc.) harmful to the atmosphere;
- implementation, compliance with, and enforcement of the ban on production and use of materials depleting the ozone layer;
- reduction of the consumption of partially-halogenated hydrocarbons by 35 %;
- implementation of national programs reducing CO_2 and other anthropogenic greenhouse gas emissions not covered by the Montreal Protocol on Substances Depleting the Ozone Layer, as well as reduced VOC, POP, and heavy metal emissions;
- prevention on conditions favourable to winter smog;



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b) in protection and rational use of water

- 50 % reduction in the amount of pollutants in discharged waste water;

- halting the growth of the gap between the volume of water extracted and discharged, and, where the extraction of surface water can be substituted for groundwater;

- reduction of the agricultural use of underground water to 3-5 %, with exceptions for the food and pharmaceutical industry, watering of livestock and poultry, and use of geothermal waters;

- boosting the proportion of total waste water purified with high-efficiency methods (biological, chemical) and of small waste-water treatment plants by 20 %;

- 30 % decrease in consumption of drinking water, to be achieved by measuring consumption (for example, installing water meters), eliminating at least half of the leakage in the water distribution system (to 10-15 % of total volume), and more conservative consumer practices;

- assigning priority to the completion of waste water treatment plants under construction, and the construction of treatment plants near sources of enormous water pollution impossible to eliminate (for example, in the municipal sphere);

- 60 % increase in the volume of waste water purified;

- resolving the deficit of drinking water in 16 districts, with priority for Kosice-country, Velky Krtis, Lucenec, Rimavska Sobota, Prievidza, Spisska Nova Ves, and Roznava districts;

- promotion of both the natural and articificial retention of water within the Slovak territory and general slowing of water run-off, particularly from the catchment area of water deficit regions (by means of re-forestation, landscaping, dams, pools, and by other such measures);

- a one-third reduction in the contamination of class IV. and V. purity water;

- creation of conditions for the revitalization of dead rivers and lakes in sites where the sources of contamination have been eliminated;

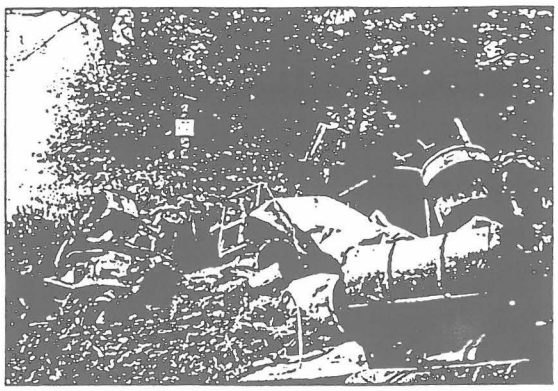
- substantial reduction in the accident count by means of more accurate inspection of potential causes, any by other preventive measures;

- increasing to 60 % the percentage of the population living in

residences connected to sewage lines;

- identification and elimination of the causes of deterioration in groundwater quality, using monitoring systems at the most important sources to follow changes in water quality;

- more effective coordination of ground- and surface water sources in a more extensive water supply systems, especially where conditions for that are the best (the Eastern Slovakia, Roznavska, Spissko-Popradska, Central Slovakia, and Nothern Slovakia water supply systems;



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c) in waste management

- disposal of all improperly stored hazardous waste and protection against the undesirable import of waste;

- construction of network of hazardous waste recycling centres and a container system for handling hazardous waste;

- disposal of all hazardous and medical waste with appropriate procedures and equipment;

- processing of at least 80 % of biodegradable waste to organic fertilizers;

- economic incentives for expanded collection and utilization of secondary raw materials (for example, used oils, glass, metals, paper, etc.);

- by introduction of separated collection, a 50 % reduction of the volume of municipal waste designated for disposal;

- construction of a network of waste sorting equipment for separating out secondary raw materials;

- disposal of all unusable municipal waste in landfills meeting technical standards and not threatening the environment;

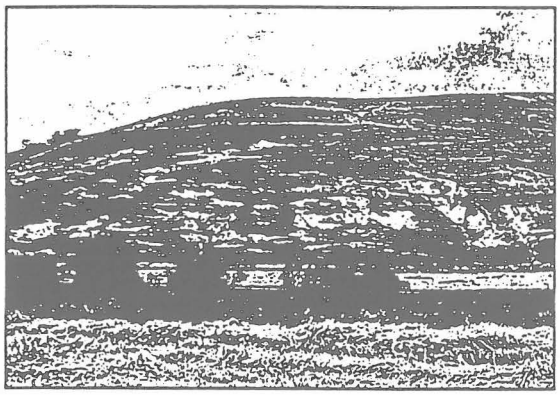
- systematic clean-up and reclamation of landfill areas threat-

ening the environment;

- reduction of the number of recorded dumps in half; increased use of waste for economic purposes, in particular ash and cinders from power and heating plants, mine tailings, and waste from the lumber, paper, metallurgical, rubber, and chemical industries, utilizing modern minimal waste or waste-free technologies, recycling, etc.;

- establishing waste management programs at all levels and evaluating their effectiveness;

- implementation of a special Concept of disposing of radioactive waste from nuclear power facilities, other facilities, and other workplaces with sources of ionizing radiation, and asessment of its effectiveness;



d) in soil and forest conservation

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- landscaping measures, especially windbreaks, vegetation on banks and slopes, terracing, and changing appropriate vegetation; reduction of the area of great to extreme soil erosion (160 000 hectares) by half;

- reducing the intensity of arable land use where growing conditions are most costly, and harmonization of the economic and environmental aspects on farming;

- sodding of 150-180 000 hectares of steep slopes and plowed areas threatened by erosion, converting them to pasture or meadowland;

- re-forestation of approximately 60-80 000 hectares of the least productive meadowland returning to the wild, of pastureland, and inaccessible or otherwise unprofitable plots of land, taking into account the protection of certain rare ecosystems;

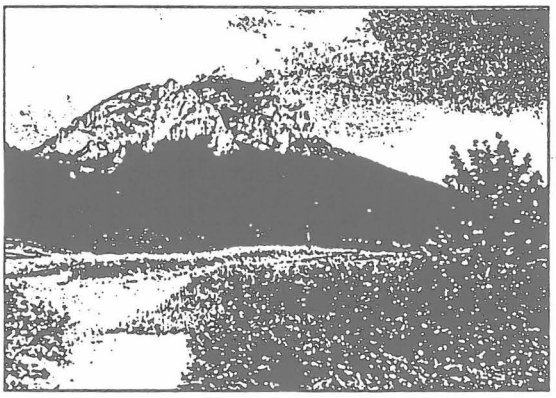
- designation of approximately 300 000 hectares of pastureland in their natural state for pasturing purposes only;

- designation of approximately 80-100, 000 hectares of emission-damaged land for non-human consumption purposes only, with their gradual decontamination;

- minimizing use of chemicals, introduction of biotechnologies and alternative methods of soil management, above all in zones of hygienic protection, in protected regions of natural curative waters, and sources of natural mineral drinking water, and in protected areas of classes II. - IV. protection;

- increased support for enterpreneurial activities aimed at fulfilling the esthetic function of landscaping, increased ecological stability of the land, and application of elements of traditional farming methods in hilly or mountainous areas with low-density farm settlements;

- assessment of the practical application of environmental priorities summarized in the Principles of National Forestry Policy (Resolution of the Slovak Government 9/1993) and the Strategy and Concept for Development of Forestry (Resolution of the Slovak Government 8/1993), focusing on making forestry environmentally responsible;



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e) in preservation of nature and the countryside

- reduction of the stress on the environment in nine regions declared unsuitable for habitation to tolerable levels and elimination of extreme disruptions of the environment by means of revitalization projects and programs;

- implementation of revitalizing measures in the Danube River basin, the Eastern Slovakia lowlands, and selected plains;

- construction, on the basis of the General Territorial System of Environmental Stability of the Slovak Republic (Government Resolution 319/1992), of a system of national parks and protected countryside areas; provision of the protection of all major biocentres as well as lesser biocentres located on the paths or at the intersections of major biocorridors; creation of conditions for the renewal of disrupted or obliterated major biocorridors paths;

- the creation of systems of bilaterally or trilaterally protected areas in cooperation with neghbouring states;

- application of legal and economic instruments regulating intrusions in nature and incentives for owners of protected areas, protecting them or damaged areas through limitations on current management;

- establishment of a system of admissions, instructional trails and sites, and information centres, regulating visitation to protected areas;

- maintaining and improving the condition of these specially protected natural areas, particularly natural parks, by carefully managed development and preservation of natural ecosystems;

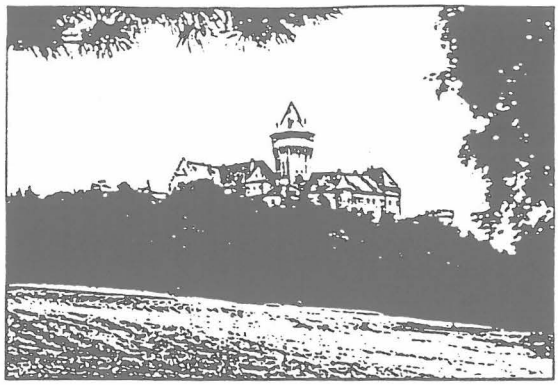
- completion and implementation of land planning documentation for the larger territorial units, arising from the need to optimize land use and achieve environmental stability;

- implementation of a program for greening residential areas and agricultural and industrial facilities;

- elimination of all known damage to the environment caused by units of the Soviet Army at 18 different locations with the expenditure of SK 931,5 million;

- improving the quality of the environment in towns and the surrounding countryside, especially by humanizing the prefabricated panelak appartment buildings, industrial areas, roads and intersections, the technical and social infrastructure, and by planting entire areas of trees and shrubbery, by the renewal and upkeep of cultural objects, and by encouraging architecture that incorporates hygienic, esthetic, socio-psychological, cultural, and ecological perspectives, thus relieving the monotony of structure and correcting errors in the urbanization of Slovakia over the last 40 years;

- orienting science and technology toward the solution of environmental problems in areas of great to extreme environmental disruption;



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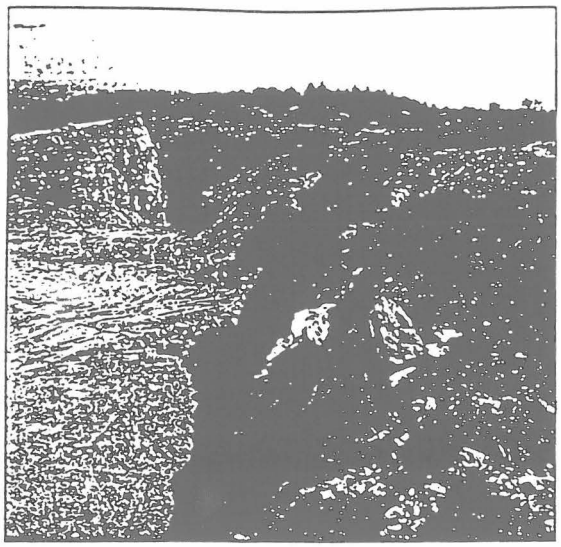
f) concerning the whole environment

- management of chemical substances and preparations, including a system of record-keeping, inspection, regulations, and assessment of the risk that chemical substances pose to the environment; implementation of the chemical substances law;
- evaluation and labelling of the environmental acceptability of technologies and products, the purity of foodstuffs, and the level of harmfulness of other products;
- ensuring citizens' systematic informedness concerning the state of the environment of the Slovak Republic in various regions and its impact on their health, based on objective data from monitoring of the environment, utilizing an environmental information system constructed for nationwide monitoring of basic indicator values;
- completion and introduction into practice of an integrated, modern system of legal regulations with environmental to physiotactical goals comparable to the legal systems found in Western Europe and their implementation;
- establishment of a complete system of environmental publicity and environmental education and training, both in and out of school.



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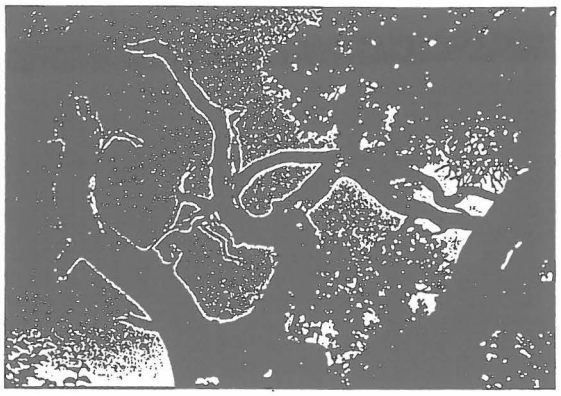
III. SHORT-TERM OBJECTIVES

Short-term objectives, grouped as above, are preconditions for achievement of long-term and medium-term objectives. They are as follows:



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a) in air protection

- substantial reduction in the emissions of basic substances polluting the atmosphere (SO_2, NO_x, CO, CxHy, solids) and concentrating on the worst polluters and twelve areas most affected by pollution;

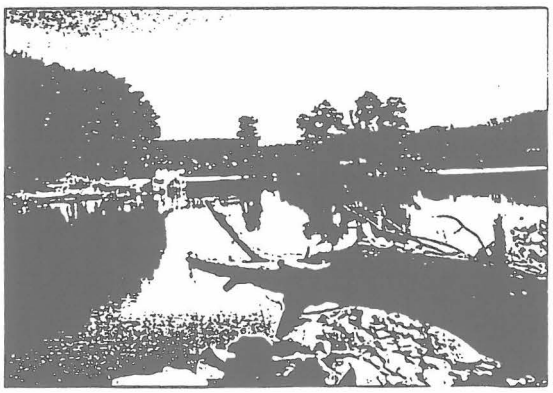
- introduction of a ban on halon use effective 1994 and a ban on partially halogenated hydrocarbons, carbon tetrachloride, 1,1,1, - trichloroethane, and partially halogenated bromohydrocarbons effective 1996;

- a cap on the consumption of methylbromide effective 1995 and reduced consumption of partially halogenated hydrocarbons;

- development of national programs aimed at reducing anthropogenic emissions of CO_2 and other greenhouse gases not covered by the Montreal Protocol on Substances Depleting the Ozone Layer, as well as reduction in emission of VOCs, POPs, and heavy metals;

- introduction of smog early warning and monitoring systems and a uniform industrial accident early warning system;

- preparation and implementation of Parliamentary Law on Substances Depleting the Earths Ozone Layer and updating of Parliamentary Law 309/1991 on Protection of the Atmosphere Against Pollutants (Clean Air Law) as amended by the Law 218/1992;



48

b) in protection and rational use of water

- 25 % reduction in the amount of pollutants in discharged waste water, especially in districts experiencing water shortages and in the areas of greatest pollution;

- reducing utilization of groundwater for agricultural purposes to 5 - 10 % of the current level in areas where surface water can be substituted for groundwater and with exceptions for food and pharmaceutical production and use of geothermal energy;

- introduction of measures promoting the retention of water of Slovak territory, particularly in the Velky Krtis, Lucenec, and Rimavska Sobota districts, as well as the overall elimination of the water shortage in this region of southern Slovakia, with such measures as reforestation, landscaping, and retaining walls;

- introduction of measures for measuring and reducing water consumption, reducing of leakage in the ater distribution system,

of the average accident count, and of the pollution of class IV. and V. purity water by 10 %;

- support by municipalities and other legal entities for the construction of waste water treatment plants, equipment for retaining water, and sewage lines;

- launching the Danube Catchment Area Environmental Program;

- preparation and implementation of the new water law and of regulations provided for its execution, particularly government decrees, with which will be regulated water pollution indicators;

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c) in waste management

- 20 % reduction against 1992 levels in the volume of hazardous waste designated for disposal;

- expanded collection and utilization of secondary raw materials, economic incentives, and introduction of separated collection with reduction in the volume of municipal waste designated for disposal by 20 % against 1992 level;

- introduction of separated collection of problem materials in such a way that 20 % is diverted from municipal waste;

- disposal of 50 % of all municipal waste in landfills meeting technical standards;

- protection against import of hazardous waste;

- undertaking the construction of a network of regional medical waste disposal facilities, including eight incinerators;

- launching a three-phase systematic clean-up and re-cultivation of landfill areas threatening the environment;

- evaluation of the possibilities for and initiating the re-use of suitable materials (heavy metals, construction materials, etc.) from

waste accumulated in landfills;

- provision for environmentally safe handling of radioactive waste and spent nuclear fuel, including the identification of suitable storage methods and sites;

- selection of geologically suitable sites for the construction of managed landfills;

- a 100 % increase in the number of managed landfills;

- implementation of legal and economic instruments for the disposal, utilization, and reduced production of waste in individual fields;

- developing and starting the application of waste management programs at district and corporation levels based on the Program of Waste Management of the Slovak Republic (Resolution of the Government of the Slovak Republic 500/1993);

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d) in soil and forest conservation

- preferential re-forestation of areas of great to extreme environmental damage;

- implementation of the Principles of National Forestry and the Strategy and Concept of Forestry in Slovakia; the completion, in accordance with these documents and the principles of national environmental policy, of forest management plans developed and approved in 1992-93 and of changes in management policies outlined in older plans;

- the completion and implementation, in accordance with the principles of environmental policy, of the bills on the following: soil; forests and forest administrative bodies; livestock feed; inspection of fertilizers, soil, and fertilizing practices;

e) in preservation of nature and the countryside

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- fulfillment of provisions for establishing the General Territorial System of Ecostability of the Slovak Republic;

- creation and implementation of revitalization programs and projects to reduce the stress on areas of extreme environmental disruption, especially Ziarska kotlina, Horna Nitra, Sered-Sala, Stredny Spis, Rudnany-Krompachy, Hacava-Hnusta-Jelsava, Bratislava, and surrounding areas;

- evaluation of the environmental tolerance of the Ziarska kotlina and the Horna Nitra region;

- preservation of abandoned immovable cultural sites;

- determination of land use (creation and re-organization of production zones, designation of routes, categories, and capacities of through traffic, the technical infrastructure, and so on) within the overall process of developing territorial planning materials in order to reduce the burden on the environment and assist in harmonizing human activities with nature;

- preferential completion and updating of territorial-planning documents for areas of great to extreme environmental damage;

- completion of the structure of cargo and personal traffic so as to reduce the impact on the environment in densely populated areas;

- development and implementation of the Concept of Territorial Development of the Slovak Republic and continuation of the Village Renewal Program in Slovakia;

- approval and implementation of the Parliamentary bill on Protection of Nature and Countryside;

- development of the Parliamentary bill on Authorization of Selected Construction Activities;

- implementation of programs to save populations of selected critically endangered species of flora and fauna, and development of a Nationally Biodiversity Protection Strategy;

- development of a model for preserving protected areas especially in national parks;

- action plans for biosphere reserves of Slovakia, national park management programs;

- participation in the Convention on the Conservation of Wildlife Migratory Species (Bonn, 1979) and the Convention on the Conservation of European Wildlife and Natural Habitats (Bern, 1979);

- development and implementation of a concept governing the mining of ore and non-ore materials with special regard to providing raw materials in an environmentally sound way;

- assessment of geothermal regions with regards to possibilities for economically effective application of geothermal energy, and of areas of natural radiation in the interest of protecting the public;

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f) concerning the whole environment

- specification of indices of economic instruments (taxes, fees, tariffs, fines, etc.) useful or usable in solving the environmental problems of the Slovak Republic; regular monitoring and assessment of their effectiveness;

- development of financial policy in the area of the environment;

- introduction of environmental parameters into the tax system and of the environmental impact coefficient into economic planning;

- supplementing of the law on public competitions and financing of environmental liability;

- assessment of organizations' environmental liability, particularly unprofitable or liquidated corporations, and quantification of environmental liability in the privatization process;

- creation and application of the business eco-audit;

- implementation of a system for generating and utilizing state funds and the Slovak national budget for environmental protection and for monitoring the effectiveness of their use;

- implementation of a financial return on resources expended on the environment (the Revolving Fund) and their gradual orientation towards solving environmental problems on a national scale;

- establishment of environmental municipal funds and commercial environmental funds oriented especially toward waste management, improvement of air and water quality, and the greening of residences and the other areas of urbanized countryside;

- application of a system for assessing natural resources that takes into account their environmental value and expenses needed for their protection;

- creation of a system of environmental risk assessment and labelling of environmentally suitable technologies and products, of food purity, and of the level of harmfulness of other products;

- creation of a system of technical standardization and pricing exerting a positive influence on the environment and a system of incentives for manufacturers of environmentally safe products reducing environmental damage and pollution;

- publishing a list of chemical substances and provision for use of data from the InChem database supplemented with information on the possible negative side effects of individual chemical substances on the environment in accordance with the Resolution of the Slovak Government 487/1993 concerning the inventorying of chemical substances and preparations in Slovakia;

- assessment of risks of selected chemical substances on the environment and organisms;

- development of the chemical substances bill applying regulations protecting the environment against certain hazardous chemi-

cal substances;

- preference for projects and investment focusing on conservative and rational energy and raw material use, recycling and utilization of waste, greater reliance on environmentally safe forms of energy (hydro, solar, wind, etc.), expended use of biological processes in agriculture, and elimination of the release of contaminants into drinking water and the food chain;

- creation of conditions for reducing the noise level in traffic and workplaces, and the negative effects of urbanization, radiation, thermal pollution, and radon hazard on public health;

- provision for official announcement at all depository sites of conventions from which obligations have been accepted by the Slovak Republic as one of the successor states to the Czechoslovak Federal Republic;

- accession to the Convention of Civil Responsibility for Damages Caused by Activity Hazardous to the Environment, upon the Council of Europeas initiative;

- subsequent provision for obligations deriving from the Convention on Protection of the World's Cultural and Natural Heritage (the World Heritage) with priority for the programs that were developed in accordance with Government Resolution 439/1991 for preserving the sites proposed for inclusion in the World Heritage;

- application in the Slovak legal system of EC guidelines on protection of the work environment and people at work, special guideline 82/501/CEE on personal accident risk associated with certain industrial activities and guideline 80/1107/CEE on protecting employes against danger from chemical, physical, and biological substances at work;

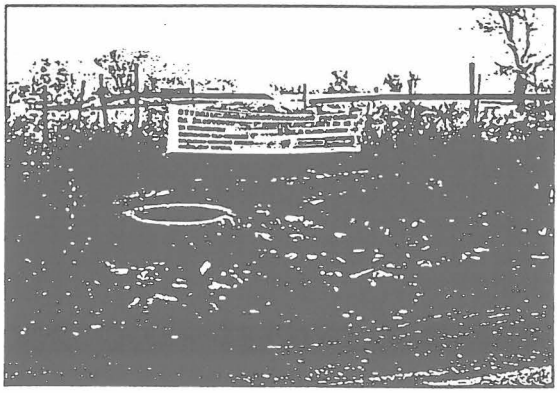
- the creation and supplementing, in the process of building a complete environmental monitoring and information system, of a central information base of representative and objective environmental data comparable to the ones found abroad; and, on this basis, annual evaluation of the state of the environment in Slovakia, adjustment of environmental policy priorities at the national and regional levels, of the tolerable level of environmental stress, of acceptable levels of pollution, and of the step-by-step environmen-

tal division of Slovakia;

- development and implementation of Parliamentary bills on the following: environmental impact assessment, provision of environmental information, protection and support for public health and foodstuffs, tobacco products, and cosmetic preparations;

- improvement in the performance of the state environmental administrative bodies at all levels and the effectiveness of their control system, especially the Slovak Environmental Inspectorate with its expanded responsibility for the protection of nature and countryside; establishment of autonomous environmental offices in the new territorial-administrative system of organization;

- establishment of the Slovak Agency for the Environment in such a way so as to enable it to profesionally coordinate to execute environmental protection assignments.



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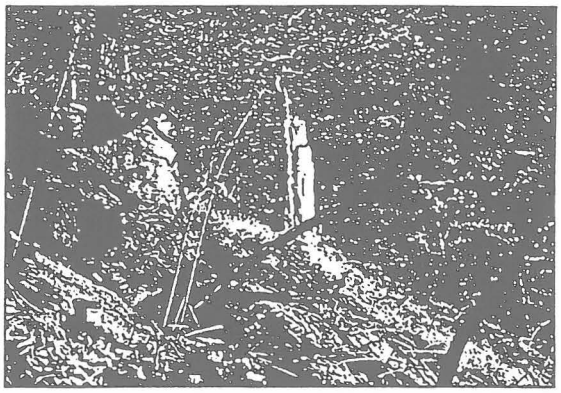

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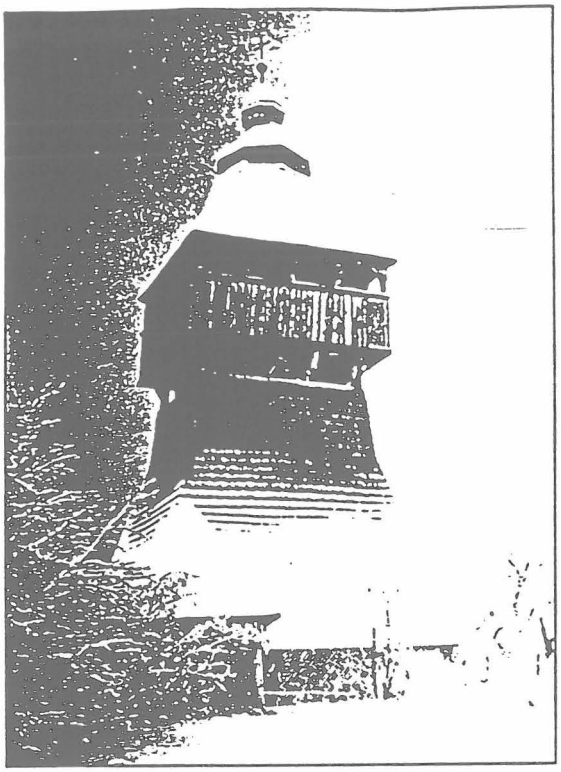

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LIST
of Laws and Regulations of the Presidium of the Slovak Parliament, Governmental Acts, and Acts Relating to the Evironmental and Physiotactical Aspects

XX

CONCERNING THE WHOLE ENVIRONMENT

1. Law 17/1992 on environment.
2. Parliamentary Law 595/1990 on state administration for the environment as a ended by the Parliamentary Law 494/1991 and Law 134/1992.
3. Parliamentary Law 128/1991 on the State Environmental Fund of the Slovak Republic as amended by the Parliamentary Law 311/1992.
4. Parliamentary Law 347/1990 on organization of ministries and other central governmental bodies as amended by later regulations.
5. Act of the Slovak Government 163/1992 stipulating preconditions for performing functions in environmental governmental bodies requiring professional capacity.
6. Act of the Ministry of the Environment of the Slovak Republic 176/1992 on terms and conditions of providing and using the funds of the State Environmental Fund of the Slovak Republic.

STATE PROTECTION OF NATURE

1. Parliamentary Law 1/1955 on state protection of nature as amended by the Parliamentary Law 7/1958, Law 72/1969, Law 100/1977, Law 72/1986, Law 595/1990, and Law 128/1991.
2. Parliamentary Law 11/1949 on Tatry National Park as amended

by the Law 1/1955, Act of the Government of the Slovak Socialist Republic 12/1987.

3. Act of the Slovak Government 5/1952 on the Tatry National Park.

4. Act of the Presidium of the Parliament 5/1967 on establishing the Pieniny National Park.

5. Act of the Government of the Slovak Republic 119/1978 on the Nizke Tatry National Park.

6. Act of the Government of the Slovak Socialist Republic 23/1988 on Slovak Raj National Park.

7. Act of the Government of the Slovak Socialist Republic 24/1988 on Mala Fatra National Park.

8. Act of the Ministry of Education and Culture 211/1958 specifying protected kinds of plants and terms of their protection.

9. Act of the Ministry of Education and Culture 212/1958 on voluntary workers in state protection of nature (conservators and reporters).

10. Act of the Presidium of the Parliament 125/1965 on protection of wildlife as amended by the Act 156/1992.

11. Act of the Ministry of Culture of the Slovak Socialist Republic 149/1980 stipulating details on protecting trees growing outside forests, on procedures in granting exceptional permissions to harvest the same, and the way of using timber from these trees.

12. Act of the Ministry of Culture of the Slovak.Republic 60/1986 on protected kinds of minerals.

13. Act of the Ministry for the Environment 192/1993 on social assessment of selected parts of nature.

14. Act of the Ministry of Culture of the Slovak Socialist Republic 120/1978 publishing the Statute of the Nizke Tatry National Park.

15. Act of the Ministry of Culture of the Slovak Socialist Republic 110/1973 declaring a protected region of Slovensky kras.

16. Act of the Ministry of Culture of the Slovak Socialist Republic 8/1974 declaring a protected region of Velka Fatra.

17. Act of the Ministry of Culture of the Slovak Socialist Republic 9/1974 declaring a protected region of Vihorlat.

18. Act of the Ministry of Culture of the Slovak Socialist Republic 64/1976 declaring a protected region of Male Karpaty.

19. Act of the Ministry of Culture of the Slovak Socialist Republic 9/1977 declaring a protected region of Muranska Planina.

20. Act of the Ministry of Culture of the Slovak Socialist Republic 70/1977 declaring a protected region of Vychodne Karpaty.

21. Act of the Ministry of Culture of the Slovak Socialist Republic 110/1977 declaring a protected region of Horna Orava.

22. Act of the Ministry of Culture of the Slovak Socialist Republic 124/1979 declaring a protected region of Stiavnicke vrchy.

23. Act of the Ministry of Culture of the Slovak Socialist Republic 97/1981 declaring a protected region of Polana.

24. Act of the Ministry of Culture of the Slovak Socialist Republic 68/1984 declaring a protected region of Kysuce.

25. Act of the Ministry of Culture of the Slovak Socialist Republic 58/1985 declaring a protected region of Ponitrie.

26. Act of the Ministry of Culture of the Slovak Socialist Republic 220/1988 declaring a protected region of Zahorie.

27. Act of the Ministry of Culture of the Slovak Socialist Republic 14/1989 declaring a protected region of Strazovske vrchy.

28. Act of the Ministry of Culture of the Slovak Socialist Republic 65/1989 declaring a protected region of Biele Karpaty.

29. Act of the Ministry of Culture of the Slovak Socialist Republic 113/1989 declaring a protected region of Cerova vrchovina.

30. Act of the Slovak Committee for the Environment 278/1990 on protected region of Latorica.

31. Act of the Slovak Committee for the Environment 166/1991 on state natural reservations and protected sites in the Tatry National Park.

32. Act of the Ministry for the Environment 83/1993 on state natural reservations.

33. Act of the Ministry of Education, Science, and Art 102449/1951.IV/3-80/1951 on natural managed reservation "Arboretum in Mlynany" in the cadastres of Mlynany and Vieska nad Zitavou, district Zlate Moravce.

34. Act of the Ministry of Culture 4701/1964-HSO on establishing a natural reservation "Apali".

35. Act of the Ministry of Education and Culture 25/1958 on establishing a protected Botanical garden of the Technical School of Forestry in Banska Stiavnica.

(Note: any other protected regions were declared by the acts, amendments, regulations, and orders by local governments.)

AIR PROTECTION

1. Law 309/1991 on air protection against pollutants (Air Law) as amended by the Law 218/1992.

2. Parliamentary Law 134/1992 on state management of air protection.

3. Parliamentary Law 311/1992 on penalties for air pollution.

4. Act of the Slovak Committee for the Environment 407/1992 stipulating the list of classes of pollution sources and the list of pollutants and their limits, and stipulating details in setting emission limits for existing sources of air pollution.

5. Act of the Ministry for the Environment 111/1993 on issuing expert opinions in the matters of air protection or waste, appointing persons authorized to prepare such opinions and verifying professional abilities of such persons.

6. Act of the Ministry for the Environment 112/1993 on specifying areas requiring special air protection and on operation of smog warning and regulatory systems.

PROTECTION AND RATIONAL USE OF WATER

1. Law 138/1973 on waters (Water Law) as amended by the Parliamentary Law 238/1993.

2. Parliamentary Law 135/1974 on state administration in water management as amended by the Law 238/1993.

3. Parliamentary Law 318/1991 on the State Water Management Fund of the Slovak Republic.

4. Act of the Czechoslovak Government 35/1979 on payments in water management as amended by the Act of the Czechoslovak Government 91/1988 (complete version 2/1989).

5. Act of the Slovak Government 242/1993 stipulating coefficients of admissible water pollution.

6. Act of the Slovak Government 31/1975 on penalties for violating obligations set for the water management.

7. Act of the Slovak Government 32/1975 on protection against floods.

8. Act of the Slovak Government 46/1978 on protected region of natural accumulation of water in the Zitny ostrov as amended by the Act 52/1981.

9. Act of the Slovak Government 13/1987 on some protected regions of natural water accumulation.

10. Act of the Ministry of Forestry and Water Management 169/1975 on professional technical and safety supervision at some water management works and on technical and safety supervision of national committees.

11. Act of the Ministry of Forestry and Water Management 170/1975 on obligations of organizations to deliver reports on findings of underground waters and to report information about supplying the same.

12. Act of the Ministry of Forestry and Water Management 66/1976 on water managers.

13. Act of the Ministry of Forestry and Water Management 117/1976 of Slovak Water Management Inspection.

14. Act of the Ministry of Forestry and Water Management 158/1976 on water guards as amended by Act 112/1978.

15. Act of the Ministry of Forestry and Water Management 10/1977 determining water flows and their catchment areas and the list of flows important for the water management.

16. Act of the Ministry of Forestry and Water Management 23/1977 on protection of the quality of surface and underground water.

17. Act of the Ministry of Forestry and Water Management 24/1977 on water management records.

18. Act of the Ministry of Forestry and Water Management 34/1977 on use of surface water for the sail of motor boats.

19. Act of the Ministry of Forestry and Water Management 6/1978 stipulating obligations of water flow managers and some issues related to water flows.

20. Act of the Ministry of Forestry and Water Management 154/1978 on public water pipes and public sewage as amended by the Act 15/1989.

PROTECTION AND RATIONAL USE OF MINERAL RESOURCES

1. Law 44/1988 on protection and use of mineral resources (Mine Law) as amended by the Parliamentary Law 498/1991.

2. Parliamentary Law 51/1988 on mining activities, explosives and state mining administration as amended by the Law 449/1991 (complete version Law 336/1992).

3. Parliamentary Law 52/1988 on geological works and the Slovak Geologic Office as amended by the Law 497/1991.

4. Act of the Slovak Government 520/1991 on terms and conditions of using deposits of non-selected minerals.

5. Act of the Sloval Government 532/1992 on payment for mining area and payment for mined minerals.

6. Act of the Ministry of Finance, State Planning Committee, and the Central Geological Office 9/1967 on designing and financing of geological works.

7. Act of the State Mining Office 71/1988 on explosives as amended by the Act 534/1991.

8. Act of the State Mining Office 79/1988 on protected deposit areas and mining areas as amended by the Act 533/1991.

9. Act of the State Geological Office 86/1988 on procedure in searching and inspecting exclusive deposits from the aspect of protection and rational use of minerals and on reporting on deposits of minerals, payments and indemnification of incurred costs as amended by the Act 3/1991.

10. Act of the State Mining Office 89/1988 on rational use of exclusive deposits, on granting permissions and notifying about mining

activities performed in a mining manner as amended by the Act 16/1992.

11. Act of the State Geological Office 97/1988 on administration of exclusive deposits and on records and depreciations of their stock as amended by the Act 4/1992.

12. Act of the State Geological Office 9/1989 on registration of geological works, on submitting and making available the results of the same, on finding old mining works and keeping their register as amended by the Act 5/1992.

13. Act of the State Mining Office 104/1989 on verifying professional capability of workers in mining activities performed in mining manner.

14. Act of the State Mining Office 535/1991 specifying districts of district mining offices.

15. Act of the State Geological Office 6/1992 on classification and calculation of stock of exclusive deposits.

16. Act of the State Geological Office 415/1992 on granting permissions to perform geological works and on the way of verifying professional capability of workers.

17. Act of the Ministry of Economy 78/1993 specifying the requirements for ensuring security and health protection in production and processing of explosives.

18. Act of the Ministry for the Environment 217/1993 on designing, performing, and evaluating geological works.

19. Act of the Ministry of Finance 305/1993 on the manner and scope of financing geological works and procurement or liquidation of old mining works and their consequences from the state budget.

PROTECTION AND RATIONAL USE OF SOIL AND FOREST

1. Law 61/1977 on forests as amended by the Law 229/1991 and the Parliamentary Law 183/1993.

2. Parliamentary Law 100/1977 on management in forests and the state administration of forest management as amended by Law 510/1991, Law 131/1991, and Law 183/1993.

3. Parliamentary Law 131/1991 on state fund of forest advancement of the Slovak Republic as amended by Law 183/1993.

4. Law 61/1964 on development of plant production as amended by Law 132/1989 and Law 184/1993.

5. Parliamentary Law 307/1992 on conservation of farmland.

6. Law 122/1975 on co-operative farms.

7. Law 123/1975 on exploiting land and other farm assets for production.

8. Parliamentary Law 70/1986 on agricultural and food inspection

as amended by the Law 271/1991.

9. Parliamentary Law 330/1991 on land reform, land ownership records, land offices, land fund, and land associations as amended by Law 293/1992, Law 323/1992, and Law 187/1993.

10. Law 229/1991 on titles to the land and other farm assets as amended by Law 42/1992, law 93/1992, Law 330/1991, and Law 186/1993.

11. Parliamentary Law 259/1993 on Slovak Forest Chamber.

12. Parliamentary Law 184/1993 on fodders.

13. Law 132/1989 on protection of rights related to new kinds of plants and animals.

14. Order of the Slovak Government 19/1992 on basic rates of surrenders for exclusion of farmland from agricultural soil fund.

15. Order of the Slovak Government 76/1993 stipulating terms and conditions and the way of granting funds from the State Fund for Protection and Advancement of Farmland.

16. Act of the Ministry of Forest and Land Management 102/1977 on forest guards.

17. Act of the Ministry of Forest and Land Management 103/1977 on procedure in forest conservation.

18. Act of the Federal Ministry 12/1978 on protection of forest land in land planning activities.

19. Act of the Ministry of Forest and Land Management 7/1978 on acknowledging forest growths and trees for growing forest seeds.

20. Act of the Ministry of Forest and Land Management 14/1978 on categorization of forests, ways of management and economic treatmenet of forests as amended by Act 65/1981 and Act 69/1984.

21. Act of the Ministry of Forest and Land Management 57/1992 on terms and conditions of providing and using funds from the State Fund of Forest Advancement of the Slovak Republic.

22. Act of the Ministry of Forest and Land Management and the Ministry of Justice 62/1964 stipulating regulations to the Law on development of plant production as amended by Law 132/1989.

23. Act of the Ministry of Forest and Land Management 63/1964 on protection against disseminating pests and plant diseases and weeds in import, transport, and export (external quarantine).

24. Act of the Federal Ministry for the Environment 134/1989 specifying the list of economically important kinds of plants and animals as amended by Law 515/1991.

PROTECTION AND RATIONAL USE OF ANIMALS, BEES, GAME AND FISH

1. Law 23/1962 on hunting as amended by Parliamentary Law

100/1977, Law 131/1991, Law 510/1991, and Law 99/1993.

2. Law 102/1963 on angling as amended by Law 229/1991.

3. Law 87/1987 on veterinary care as amended by Law 239/1991 (complete version Law 215/1992).

4. Parliamentary Law 11/1992 on organization of veterinary care in the Slovak Republic.

5. Parliamentary Law 10/1992 on private veterinary physicians and the Chamber of Veterinary Physicians of the Slovak Republic.

6. Act of the Ministry of Agriculture 59/1967 stipulating regulations to the Law on hunting.

7. Act of the Ministry of Agriculture and the Ministry of Culture 171/1975 changing the game calculation.

8. Act of the Ministry of Agriculture 172/1975 on protection and time, way and terms of hunting some kinds of game.

9. Act of the Ministry of Forest and Land Management 37/1963 on protection of bees, fish, and hunting game in destroying pests by pesticides as amended by Act 35/1978 and Act 130/1982.

10. Act of the Central Administration of Water Management 137/1957 on construction of facilities and other measures for protecting angling and indemnification of costs connected therewith.

11. Act of the Ministry of Forest and Land Management 103/1963 stipulating regulations to the Law on angling.

12. Act of the Ministry of Land Management 342/1951 on bee fertilizing stations.

13. Act of the Ministry of Agriculture 117/1987 on care of animal health.

14. Act of the Ministry of Agriculture 118/1987 on veterinary care of the state area.

15. Act of the Ministry of Economy 69/1993 specifying indemnifications and support in overcoming infections and other mass animal diseases and providing free-of-charge professional veterinary services.

PUBLIC HEALTH CARE

1. Law 20/1966 on public health care as amended by the Parliamentary Law 196/1990, Law 419/1991, and Law 27/1992 (complete version Law 96/1992) as amended by Law 193/1992, Order of the Presidium of the Parliament 305/1992, and Law 295/1992.

2. Parliamentary Law 53/1975 on penalties for violating legal regulations in creation and protection of sound living conditions as amended by Law 419/1991.

3. Law 174/1968 on state professional supervision over labour safety as amended by later regulations.

4. Parliamentary Law 193/1992 on State Health Fund.

5. Parliamentary Law 46/1989 on protection against alcoho-lism and other toxicomania.

6. Act of the Slovak Government 206/1988 on poisons and some other substances harmful for health as amended by the Order of the Slovak Government 232/1990, Order of the Slovak Government 83/1992, and Order of the Slovak Government 92/1983.

7. Act of the Ministry of Health 45/1966 on creation and protection of living conditions.

8. Act of the Ministry of Health 15/1972 on protection and development of natural curative spas and natural curative resources as amended by the Act 77/1983.

9. Act of the Ministry of Health 103/1984 on measures to prevent contageous diseases.

10. Act of the Slovak Office for Labour Safety 59/1982 stipula-ting essential requirements for ensuring safety of labour and technical equipment as amended by the Act 484/1990.

11. Act of the Ministry of Health 42/1966 on providing medical and preventive care.

12. Act of the Slovak Office for Labour Safety and the Slovak Mining Office 111/1975 on keeping records and register and on reporting about accidents and defects of technical equipment as amended by the Act 483/1990.

13. Act of the Ministry of Agriculture 121/1987 on ensuring medical non-harmfullness of animal products.

14. Act of the Ministry of Health 123/1993 on health protection against harmful effects of electromagnetic field.

15. Act of the Ministry of Health 14/1977 on health protection against harmful effects of noise and vibrations.

16. Act of the Slovak Mining Office 536/1991 on pyrotechnic products.

FIRE PROTECTION

1. Parliamentary Law 126/1985 on fire protection as amended by Law 525/1990, Law 490/1992, and Law 48/1993.

2. Act of the Ministry of Interior 50/1983 on cleaning chimneys, control, and testing chimneys and fuel appliances.

3. Act of the Ministry of Interior 446/1991 exercising some provisions of the Parliamentary Law on fire protection.

NUCLEAR SAFETY AND PROTECTION AGAINST IONIZING RADIATION

1. Law 28/1984 on state supervision over nuclear safety of nuclear

facilities.

2. Act of the Ministry of Health 65/1972 on health protection against ionizing radiation.

3. Act of the Czechoslovak Nuclear Power Committee 28/1977 on keeping records and controlling nuclear materials as amended by the Act 100/1989.

4. Act of the Slovak Office for Labour Safety 66/1989 for ensuring safety of technical equipment in nuclear facilities as amended by the Act 31/1991.

5. Act of the Czechoslovak Nuclear Power Committee 100 on safety protection of nuclear facilities and nuclear materials.

6. Act of the Czechoslovak Nuclear Power Committee 436/1990 on ensuring the quality of selected facilities from the aspect of nuclear safety of nuclear facilities.

7. Act of the Ministry of Health 406/1992 on requirements for limiting radiation by radon and other natural radionuclides.

8. Act of the Czechoslovak Nuclear Power Committee 191/1989 stipulating the manner, time periods, and terms of verifying special professional capability of selected workers in nuclear facilities.

9. Act of the Ministry of Health 61/1974 on non-dissemination of nuclear weapons.

10. Act of the Ministry of Health 62/1974 on the Agreement on prohibition to store nuclear weapons and other weapons of mass destruction on sea and ocean bottoms and undergrounds.

11. Act of the Czechoslovak Nuclear Power Committee 67/1987 on ensuring nuclear safety in handling with radioactive waste.

12. Act of the Slovak Office for Labour Safety 7/1979 on state professional supervision over selected pressure equipment in nuclear power facilities.

WASTE MANAGEMENT

1. Law 238/1991 on waste as amended by Parliamentary Law 255/1993.

2. Law 494/1991 on state administration in waste management as amended by the Law 309/1992, Order of the Presidium of the Parliament 371/1992, and Law 255/1993.

3. Parliementary Law 309/1992 on payments for waste storing.

4. Order of the Slovak Government 605/1992 on keeping records of waste.

5. Order of the Slovak Government 606/1992 on waste disposal.

6. Act of the Slovak Committee for the Environment 76/1992 on waste management programs.

CONSERVATION OF HISTORICAL MONUMENTS

1. Parliamentary Law 27/1987 on state care of historical monuments.

2. Parliamentary Law 95/1991 on State Culture Fund Pro Slovakia as amended by the Law 495/1991 (complete version Law 95/1992) as amended by the Law 562/1992.

3. Order of the Slovak Government 479/1990 on declaring historical reservations in the town of Jur pri Bratislave and in the village of Plavecky Peter.

4. Order of the Slovak Government 300/1991 on declaring historical reservation in the village of Podolinec.

5. Order of the Slovak Government 299/1990 on declaring and cancelling some national historical reservations

6. Order of the Slovak Government 478/1990 on declaring national cultural monuments.

7. Act of the Ministry of Culture 21/1988 exercising some provisions of the Parliamentary Law 27/1987 on state care of historical monuments.

8. Act of the Slovak Government 78/1963 on historical reservations.

9. Act of the Ministry of Education and Culture 249/1959 on natural cultural monuments.

10. Act of the Presidium of the Parliament 11/1964 on exporting historical monuments and object of museal value.

(Note: Any other historical reservations and national cultural monuments were declared by resolutions of the Presidium of the Slovak Parliament and the Slovak Government).

TERRITORIAL PLANNING, BUILDING ORDER, AND COUNTRYSIDE CONSERVATION

1. Law 50/1976 on territorial planning and building order (Building Law) as amended by the Law 103/1990 and Law 262/1992.

2. Parliamentary Law 138/1992 on authorized architects and authorized civil engineers.

3. Act of the Federal Ministry Technical and Investment Development 83/1976 on general technical requirements for construction as amended by the Act 45/1979, and the Act of the Federal Committee for the Environment, the Ministry of the Environment of the Czech Republic, and the Slovak Committee for the Environment 376/1992.

4. Act of the Federal Ministry of Technical and Investment Development 84/1976 on territorial planning documents and territorial planning background as amended by the Act of the Federal Committee for the Environment, the Ministry of the Environment of the Czech Republic,

and the Slovak Committee for the Environment 377/1992.

5. Act of the Federal Ministry of Technical and Investment Development 85/1976 on detailed provisions related to territorial proceedings and the building order as amended by the Act 155/1980 and the Act of the Federal Committee for the Environment, the Ministry of the Environment of the Czech Republic, and the Slovak Committee for the Environment 378/1992.

6. Act of the Slovak Committee for Scientific, Technical, and Investment Development 186/1990 on permission to manage designing activities.

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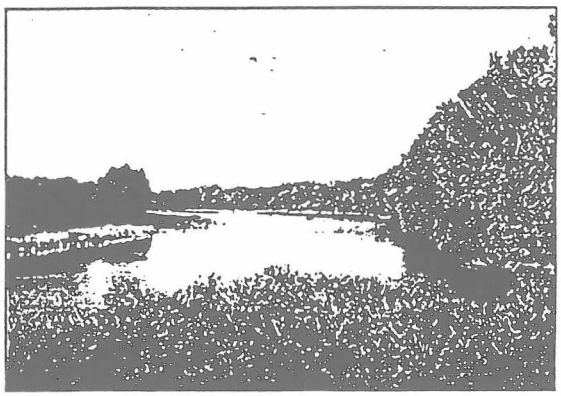

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