

**Report on the Rio+10 National Assessment Workshop  
Moldova, Chisinau  
June 20, 2001,**

On June 20, 2001 BIOTICA Ecological Society and the Regional Environmental Center of Moldova (REC-Moldova) by the initiative and with financial support of the Earth Council (an International NGO) and with participation of the EU have organized a Conference “From Rio to Johannesburg”. Action was carried out with the purpose to make an assessment of progress on sustainable development for 9 years after Rio Summit and to discuss what is necessary to ensure effective socially and environmentally friendly development of the country.

Participants of the Conference discussed the following issues:

1. Progress assessment of sustainable development in Moldova;
2. Sustainable agriculture and nature conservation;
3. Energy problems of Moldova;
4. Informational and administrative management of sustainable development;
5. Public awareness and participation in decision-making.

93 participants have taken part in the Conference, including:

- 10 – representatives of the Government;
- 12 – representatives of local authorities;
- 6 – representatives of local environmental inspections;
- 20 – representatives of scientific community;
- 6 – representatives of business community;
- 6 – representatives of farmers;
- 33 – representatives of non-governmental organizations (environmental, women’s and youth organizations).

Work passed at plenary session and in workshops. First half of a day was devoted to reports of experts on progress on sustainable development of Moldova for 9 years after Rio Summit, namely:

- Economical and geographical position of Moldova;
- Analysis of the National Strategy for Sustainable Development of Moldova;
- Land use and agriculture in a context of sustainable development;
- Complex water management in Moldova;
- Energy in Moldova as the factor of sustainable development;
- Public awareness and participation in decision-making.

During workshops in second half of a day participants discussed each issue separately and elaborated proposals for the resolution adopted at the end of the Conference.

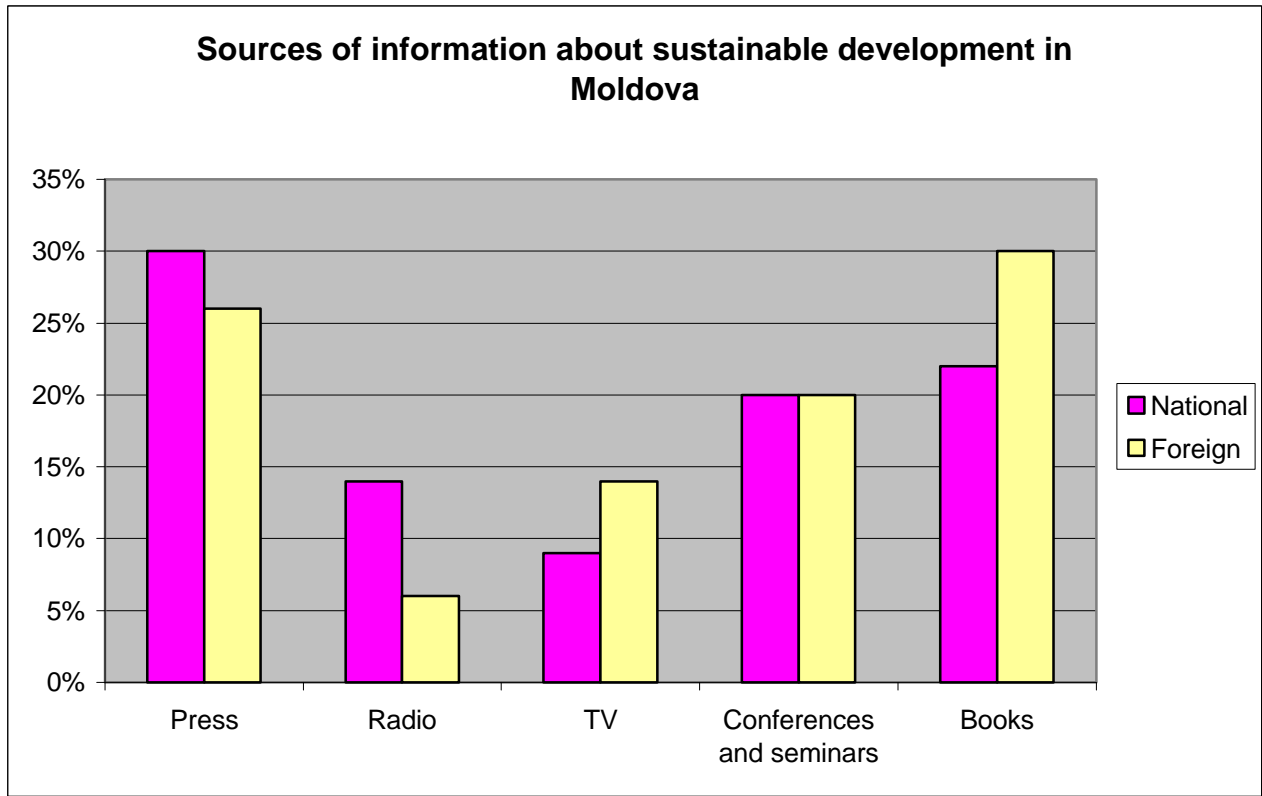
Before the Conference an expert opinion poll on sustainable development in Moldova was organized.

EXPERT OPINION POLL ON SUSTAINABLE DEVELOPMENT IN MOLDOVA

The purpose of the poll was to evaluate the opinion of people, which are more or less involved in the policies on sustainable development, concerning the challenges of sustainable

development in Moldova. The poll covered members of environmental NGOs, scientists, as well as officers of the central and local authorities of executive branch in the country.

This analysis is based on 50 completed forms, which were returned to us out of 200 distributed. 46 persons (86%) answered positively on the question, whether they are aware of the concept of sustainable development. The following sources of information about sustainable development were named: Moldovan press (30%), foreign press (26%), Moldovan radio (14%), foreign radio (6%), Moldovan TV (9%), foreign TV (14%), conferences and seminars in Moldova (20%) and abroad (20%), and books (22% and 30% respectively).



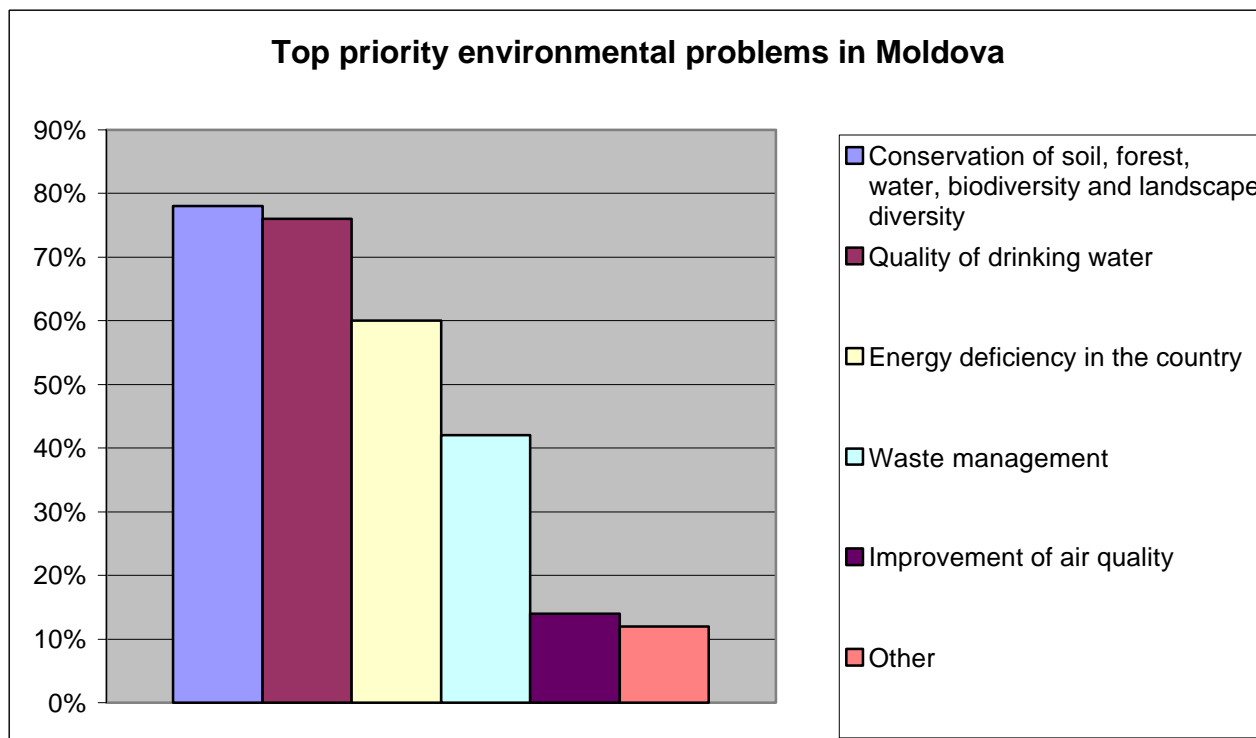
32% of respondents have previously taken part in trainings and discussions of the National Strategy on Sustainable Development in Moldova, 40% have never heard on the drafting of such document. Those who have taken part in trainings and seminars, named the following organizers: UNDP (UNESCO, Agenda 21) – 3; Ministry of Environment – 3; BIOTICA Ecological Society – 3; REC-Moldova – 1; BIOS Association – 1; Odessa regional authorities (Ukraine) – 1. The respondents consider that the following structures are responsible for monitoring of sustainable development in the country:

- State (President, Parliament, Government) – 68%;
- Civil society (NGOs) – 60%
- Businesses – 8%.

96% of respondents are not satisfied with how natural resources are used in Moldova.

The respondents marked the following issues as those of top priority:

- **Conservation of soil, forest, water, biodiversity and landscape diversity – 78%**
- **Quality of drinking water – 76%;**
- **Energy deficiency in the country – 60%;**
- **Waste management – 42%;**
- **Improvement of air quality – 14%;**
- **Other – 12%.**



**As Moldova ratified the Aarhus convention, the respondents were asked whether the authorities sufficiently involve the public in decision-making? The answers were:**

- **yes – 4%;**
- **no – 88%;**
- **I have no idea – 8%.**

**The following answers were received on the question what is the reason for such unsatisfactory situation:**

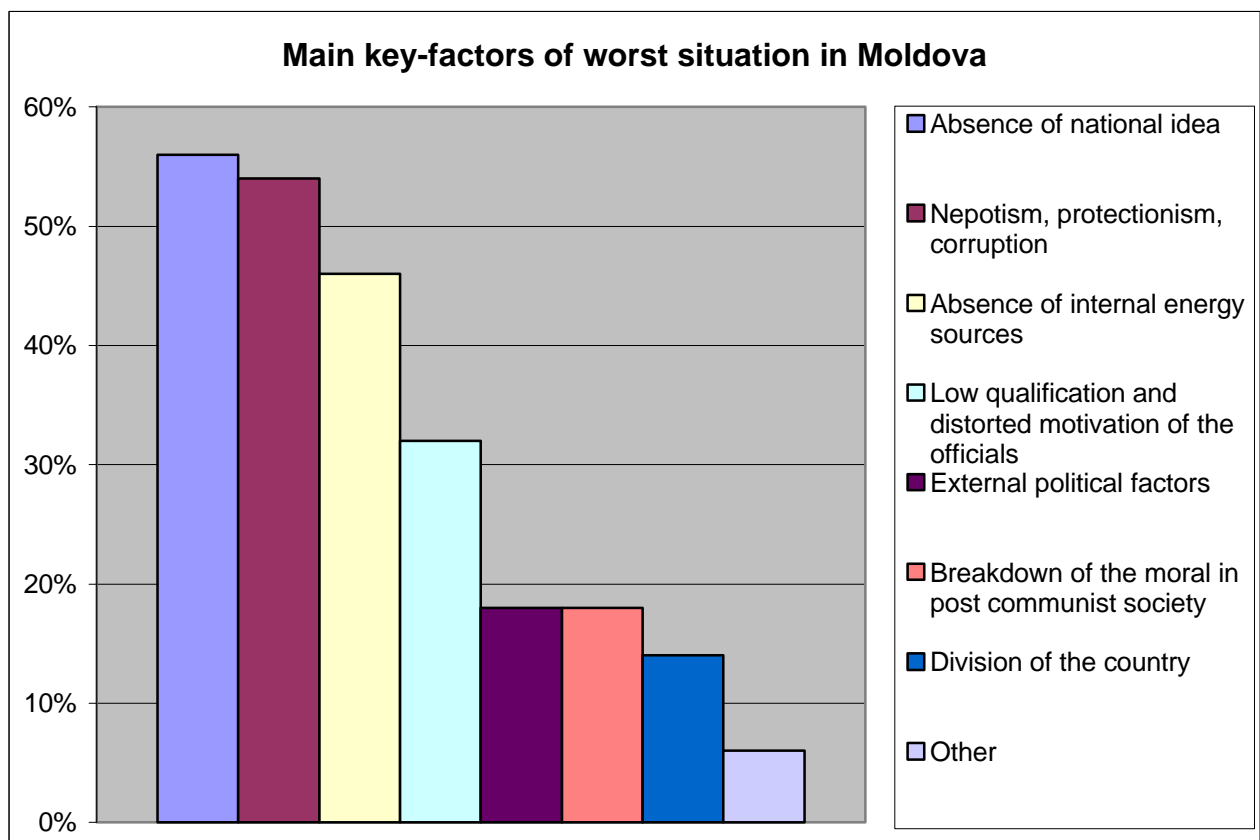
- **The public does not know its rights and does not attempt to realize those rights – 50%;**
- **The legislation had no mechanisms for public participation – 22%;**
- **Decision-makers do not wish to let the public participate or have access to information – 28%.**

**Recently, Moldova realized an administrative and territorial reform, when local authorities got some additional power. Therefore, we asked the respondents what are the obstacles for implementation of effective economical, social and environmental policies by local authorities? The answers were:**

- **Misbalance between central and local budget – 30%;**
- **Lack of well-prepared personnel – 44%;**
- **Insufficient legal framework– 38%;**
- **Nepotism, protectionism, corruption, distorted motivations of decision-makers– 60%;**
- **Other – 12%.**

Despite possessing a substantial intellectual human resource potential, Moldova has become the poorest country in Europe during last 11 years. The question was what are the three key-factors of that?

- **Absence of national idea – 56%;**
- **Specifics of Moldovan society (nepotism, protectionism, corruption) – 54%;**
- **Absence of internal energy sources – 46%;**
- **Low qualification and distorted motivation of the officials – 32%;**
- **External political factors – 18%;**
- **Breakdown of the moral in post communist society– 18%;**
- **Division of the country – 14%;**
- **Other – 6%.**



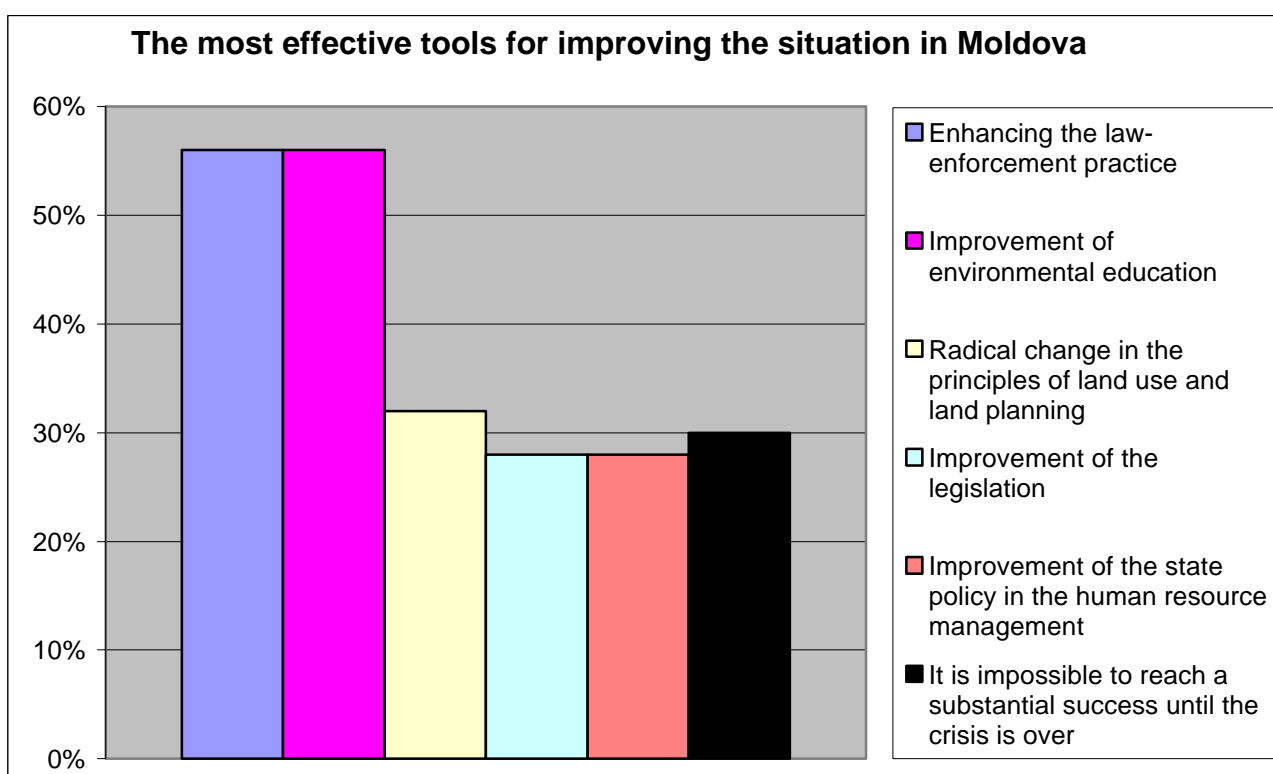
Considering the absence of the substantial internal energy sources in Moldova, what ways should be used for solving the energy problem? The answers were:

- **Development of energy economized technologies – 44%;**
- **Development of the alternative energy sources (biogas, sun, wind energy, etc.) – 56%;**

- The issue of energy can not be solved without overcoming the economical crisis and energy import– 32%;
- Other – 10%.

Considering serious degradation of the environment in Moldova during the last 11 years (significant deforestation, increase of erosion and desertification), we asked about measures, which can be the most effective for improving the situation. The following answers were given:

- Enhancing the law-enforcement practice and making the laws more stringent– 56%;
- Improvement of environmental education– 56%;
- Radical change in the principles of land use and land planning – 32%;
- Improvement of the legislation – 28%;
- Improvement of the state policy in the human resource management – 28%;
- It is impossible to reach a substantial success until the crisis is over – 30%.



The evaluation of the poll results allows us to make the following conclusions:

1. People dealing with the environmental problems are in general familiar with the concept of sustainable development.
2. Mass media and books play the major role in raising awareness, while the seminars and specific actions are less efficient.
3. The respondents are extremely unsatisfied with use of natural sources in Moldova.
4. The following issues are considered to be most pressing ones:
  - Preservation of the soils, forests, water, biological and landscape diversity;
  - Quality of drinking water;
  - Energy deficiency in the country.

5. **The quality of public participation in decision-making in Moldova is unsatisfactory because of:**
  - **The public does not know its rights and does not attempt to realize those rights;**
  - **The legislation had no mechanisms for public participation;**
  - **Decision-makers do not wish to let the public participate or have access to information.**
6. **The human factor was considered by the respondents to be the crucial one for the failure of administrative and territorial reform, namely nepotism, protectionism and corruption, distorted motivation of decision-makers and absence of prepared personnel on the spots. To a lesser extent this failure was caused by insufficient legislation, in particular by the misbalance between central and local budgets.**
7. **The main factors, which, according to the experts' opinion, determined the poverty and crisis in Moldova were the absence of national idea, low qualification and distorted motivation of the officials, followed by the absence of national energy sources. It is worth to note that the majority of our experts do not consider the division of the country as a main contributor to this situation, as well as do not tend to search for the cause of the failures outside the country.**
8. **The respondents name the measures directed at enhancing the law-enforcement practice, making the laws more stringent, improvement of environmental education, reforming the principles of land planning and use, improvement of the state policy in the human resource management as major solutions to get the country out of the crisis. At the same time, there is a substantial group of the pessimists who consider that one may discuss the sustainable development only after the economic crisis is over.**

**It is interesting the first position of the notion “national idea”, which is out of properly economical or technological sphere.**

## **ASSESSMENT OF PROGRESS ON SUSTAINABLE DEVELOPMENT IN MOLDOVA**

### **National Documents on Sustainable Development**

**For the last 10 years in the Republic of Moldova were elaborated and adopted a set of documents concerning the sustainable development of Moldova.**

#### *A. Basic documents, which determine the social-economic development:*

1. **Concept Paper on the Transition of the Republic of Moldova toward Market Economy (1991);**
2. **Concept Paper on the Agrarian Reform and Social-Economical Development of Rural Areas (1991);**
3. **Program of the Macro-Economic Stabilization (1993);**
4. **Concept Paper on the Industrial Politics in the Republic of Moldova (1996);**
5. **Energetic Strategy of the Republic of Moldova till 2005 (1998);**
6. **National Strategy to Combat Poverty (1998);**
7. **Concept Paper on Reformation of Research and Development Sphere (1998).**

**It is necessary to mention that the first three documents were elaborated in the initial period of independence of Moldova. It was a time of political euphoria, and that is why these**

documents do not have a processed concept of the state development. As a result, the need of developing new program documents to reflect the social-economical situation and the created tendency is visible. The past period of time introduced essential amendments into our ideas of state development that is why some essential changes and supplements are necessary for the conceptual idea. However, even the existing documents are slightly known for the community and seldom used for the determination of politics priorities in our state.

The Concept of agrarian reform has a crucial importance for Moldova, in which the part of agricultural land is the highest in Europe. This concept cannot be limited by the agrarian development questions, as: (I) technological aspects, management, legal aspects, marketing, water protection, land planning, and biodiversity conservation (including zoological, botanical and soil components). It includes also some (II) well-known social, ideological and political aspects. As a result, especially the last aspects were in focus of attention in the political circles, large public and international financial-advisory bodies (as the World Bank, USAID), all this being clear from the used indicators in thematic reviews, prepared by these agencies. Technological aspects, which create real preconditions for physical sustainability of ecological components and dynamic processes, and simultaneously create the economical situation, were neglected during the reform implementation.

*B. The main documents that define the environmental policy of the state:*

1. **The National Strategic Action Program for Environmental Protection (1995)**
2. **The National Action Plan for Environmental Protection (1996)**
3. **The Strategy to Combat Desertification (2000)**
4. **The National Strategy and Action Plan on Biodiversity Conservation (2000)**
5. **The National Complex Program on Improvement of Soil Fertility (2001)**
6. **The Concept of New Environmental Policy of the Republic of Moldova (2001)**
7. **The Concept Paper on the National Ecological Network of Moldova (2001)**

The first and the second documents were prepared, under the World Bank financing, by a group of authors, basically from the profile Ministry and its subordinated subdivisions. The documents contain a list of measures, which basically are reduced to legislation and program development, i.e. a plan of plan creation. Besides that, some problems were weakly studied, as for example the biodiversity preservation problem.

The Strategy to Combat Desertification is one of the most balanced documents, with a very serious scientific basis. The main problem is the complexity and difficulty of measures used for combating desertification, which requires strong economic and managerial conditions for their implementation. These conditions are absent now that suggests the necessity to elaborate a step-by-step tactic with a clear priority determination for every step. As a result, The Plan of Measures in the Strategy to Combat Desertification is very general, and listed measures are in essence directions of measures and tasks of a significant degree. All these documents were not public discussed in an open manner. The National Strategy and Action Plan on Biodiversity Conservation was published in the draft stage and a dialogue in scientific and relevant public circles was organized in order to reveal gaps and weaknesses. The results were seriously taken into account. However the traditional mistake could not be removed; that is the substitution of actions by tasks. A characteristic example from the section “Actions for the perfection of politics, legislation and institutional framework” is the Action 9 “Development of institutional and human capacities for CBD”; that development does not represent an action! The Strategy

is in the adoption process. The Concept of Ecological Network officially began the reviewing process, preparing to pass the elaboration stage. The Draft of the National Program on Improvement of Soil Fertility was elaborated following the Government Decision. In July 2001 only the Informative Note on this document has appeared.

*C. The integral document for the process – Moldova  $\tilde{O}\tilde{I}$ . The National Strategy for Sustainable Development (NSSD), 2000:*

The document was elaborated under the co-ordination of the Supreme Economic Council under the Administration of the President of Moldova and UNDP-Moldova. The Strategy draft was published and it was officially discussed. The Document was difficult as subject for discussion, being deprived of a real implementation. A frame of aims and slogans substituted the action frame. The essence on how to achieve the prescribed conditions and objectives is totally absent. That testifies an absence of constructive approaches, especially concerning agricultural development, which determine the general land use policy and the biodiversity conservation background.

**I. *The General Provisions of the National Strategy of Sustainable Development in Moldova recognizes in Policy and Development Tools:***

- 1. Economic Policy;**
- 2. The Policy of Human Potential Development;**
- 3. Social Strategy;**
- 4. The Sphere of Researches and Development;**
- 5. Environmental Policy;**
- 6. The Locality Development and Land Planning Policy;**
- 7. The Policy of the International Cooperation and European Integration.**

The limits for natural resources are not defined because of the lack of an appropriate environmental policy and mechanisms. There are present statements of serious environmental problems, however there are some skipped time limitations in the process that gives the possibility to transit to sustainable use of the renewable natural resources. The trouble made by this situation is a result of absence of understanding these critical limits that are scientifically quite predictable and determined, being very rare in the historical scale.

**II. *Main Action Directions for the period of time till 2020 are determined by:***

- 1. Macro economical stabilization;**
- 2. Rehabilitation of the real economics;**
- 3. Reconstruction and assurance of industrial and agricultural production growth;**
- 4. Infrastructure development;**
- 5. Population life level growth;**
- 6. Elaboration of new legal provisions;**
- 7. Creation of the economical mechanism.**

Environmental stabilization is skipped in essence. Elements of environmental concern are sometimes included as subordinated tasks, e.g. orientation towards “an environmentally pure agricultural production” in the chapter on agricultural development. The prevalence of simplified economical approach is characteristic for the document.

**III. Following *Priority Objectives on Development* in time are proposed:**

- 1. Short-term period – stopping of the economical decrease, stimulation of investments and their accumulation in order to provide growth of economics up to 2-5% annually;**
- 2. Middle-term period – stabilization of economical growth by restructuring enterprises and sectors, reorientation of foreign-trade relations and economical collaboration;**
- 3. Long-term period – realization of sustainable development aims: growth in Gross Domestic Product per capita, formation of middle social class, environmental security.**

Thus, the main priorities are oriented to economical and, partly, social stabilization, but the environmental problem is present only as an arrangement, not a basic issue, which makes available economical and social stability. That shows high-level lack of awareness in the society.

**IV. The National Strategy of Sustainable Development in Moldova contains following *Scenarios of Development* (depending on the use of favorable preconditions for the development):**

Scenario I: The medium temp of development with an economical growth of about 5%, which would not provide radical change in the life of population. The value of GDP will constitute about 77% of the 1989 level, being 3000 USD per capita equally to the consuming rate.

Scenario II: The accelerated temp of development with an economical growth 6.5-8.5% (7.5% annually) that could provide the gemination of GDP production per capita every ten year. At the end of this period the value of GDP will constitute about 132% of the 1989 level, or 5700 USD per capita equally to the consuming rate, priority branches – chemical, pharmaceutical, energetic and food industry, telecommunications.

It is presumed that the percentage of industry in the GDP will reach about 19% till 2020, the agriculture – 15%, constructions – 6%, the non-productive sphere – 60%. The economical development is evaluated by the increase of population life quality; as a result, the expected average age will be about 66 years, and the index of human development will reach the threshold of 0.8, that allows including Moldova in the category of countries with a high level of human development.

The first years of independent Moldova were marked by an illusion or a political game of highest authorities and the political powers, which pretended that industrial development is not important for the country, and free agricultural development can provide enough benefits for a flourishing economy. The NSSD shows that economical infantilism is mainly overcome, however the understanding of different roles for agriculture and other economic branches for sustainability was not reached yet, the environmental problems are mainly considered connected to health or decorative.

There is a need to diagnose the strength and weak points of the national planning process and its implementation (the “Action Plan”), focusing on:

- 1. The organizational system: clarity of responsibilities and accountabilities; clarity and adequacy of objectives; criteria and measures for the monitoring and evaluation**

- processes; and openness of the ongoing stakeholders participation (attitude and mechanisms);
2. **Institutional capacity:** mandate; human resource capacities; the strength of strategic leadership; and the extent of inter-institutional co-operation and coherency;
  3. **Resources:** the adequacy of the knowledge, the technology, the financial and social resources available for implementation; and the adequacy of the budgetary or investment program;
  4. **Political support:** the level of informing the political constituency about the issue; and the level to which the political constituency has supported or hindered effective implementation.
  5. **Legislative support:** the level to which the legal or normative framework enables or hinders effective implementation.

Unfortunately, in Moldova till today there is no clear notion on the further ways of development, and as appropriate, the coefficient-indicator system that shows the understanding of the first priority problems of the new generations interests assurance, is absent. The necessity to elaborate this kind of coefficient-indicator system is determined by the possibility of taking decisions, which would take in account the environmental consequences of the economical development. If the indicators, that reflect the stability level of development, have the tendency to get worse and show the negative consequences of the economical development, then this represents for the decision-taking persons, a sign for the use of different mechanisms, beginning with the administrative ones and finishing with the economical stimulations and levers that can assure the environmental and resources potential for the next generations interests.

There is a need to comment on the impacts of this national planning process and its implementation in terms of: (a) changes in policy-making, (b) decision-making, (c) changes in the national budget as a result of this national planning process (does the budget reflect the changes needed to the plan for sustainable development), and (d) decentralization and local empowerment. In each of these areas, should be considered the impacts on different stakeholders, including those that have benefited and those that have been negatively affected.

Here should be recommended the next steps that should be taken to improve the national planning process and its implementation, formulating specific national economic, social and environmental targets, bearing in mind international commitments.

#### Integration and Participation

It is difficult to assess the strength of the bond between the documents of A and B categories, it is necessary a special study for that evaluation, and we underlined already a range of documents. The main links related to economy, tendencies, indexes and prognoses, lately were optimistic, but not realistic, considering economical development of the country. Documents of the B categories contains some logical ideas and repeat many elements describing the environmental background and some necessary directions of activity, first of all in the planning process.

The necessary actions could be properly discriminated as an elementary blotches, e.g. maintenance and development of the field protection belts, implementation of the regulations

on river protection bands, withdrawal of strong eroded lands, afforestation, etc. Besides appropriate economic issues, three directions may generalize all the activity:

1. More separated technical and technological problems of impact prevention, connected with industry and enterprises;
2. Planning of agricultural lands and technological support in productive and humanitarian domains;
3. Planning and realization of national and local environmental networks, which is first of all intersected with agricultural planning.

That approach would orient economical real actions towards sustainability.

It is created in Moldova the basic legislation on access to information and public participation in decision-making process. At the same time, serious gaps exist to realize these rights: the law on access to information does not fully correspond to the Aarhus Convention, but the specific law is not still adopted. Because Moldova was a first country, which ratified the Aarhus Convention, the population is relatively good informed about. At the same time, the practical mechanisms to implement the convention are mostly absent or ineffective.

Thus, the access of general public to the drafts of decisions of authorities is limited, because of no clear procedures of access are established by central government and parliament, as well as local authorities. The legislation does not give responses concerning the procedures. The Government very sporadically uses its own Internet capacities to familiarize general public with law drafts and other planned decisions. Access to the country legal databases in Internet exists, but it is costly. Despite that in accordance with legislation the sessions of public authorities are open, usually there is no access to them. There are no procedures on how member of public can influence to decision. There is no tradition to discuss “green” and “white” papers in the country. Any public hearings more frequent are organizing in frames of projects with international support, like UNDP “Agenda-21” for Moldova in 2000. But drafts, which appear without serious foreign involvement like National Strategy of Sustainable Development of Forestry, were not really discussed by the general public.

It is possible to say, that general public is slowly informed about the sustainable development principles. It is doing by some TV programs, ecological lessons in schools, environmental disciplines in high education institutions, publications in newspapers, bulletins etc. But the problem is, that even broadcasters do not clearly familiarized with the SD concept.

Ministry of Ecology, Construction and Territorial Development is the only central authority, which maintains relations with population through press conferences, round tables etc. The Aarhus convention implementation project is going thanks DANCEE support. The Ecological Information Center has functioning under the Ministry. The law on ecological education is included into governmental agenda.

The Regional Environmental Center is established in Moldova in 1998 and from this time it supports numerous (about 160) eco-NGO community in environmental education of population, access to information and public participation in decision-making.

At the same time, cooperation with the other ministries and agencies (Economy, Social Protection, Public Health, Transport, Energy, Industry, Agriculture, as well as State Forestry Service, Water Agency) on integration of environmental approaches into economic and social decisions is still slow. Many decision makers are slowly informed about Agenda 21. On the

community level the situation is different from case to case. In some villages and counties people are aware of it and trying to resolve own problems taking into consideration Rio principles. But it is happening only occasionally, when advanced personalities occupy the leading position. Thus, the Local Agenda 21 was adopted in Ungheni County. The other bright example is the village of Talmaza, where villagers decide their own problems environmentally friendly together, with understanding, leadership and support of local council.

In these cases the best way is to build multi-stakeholder partnerships, especially with NGOs, the private sector, scientific community, etc., in promoting cooperation in sustainable development.

But such cases are still sporadic. People and even authorities are disoriented by the economic crisis, which leading to ignoring of basic sustainable development principles and to not sustainable use of land, water, forestry and other resources.

It is still more traditional, that responsible central authority (Ministry) develops national plans in the corresponding area, and distributes it for coordination to the other ministries. After coordination the Government validates the document and it is coming into the force immediately or after accepting by the Parliament. Despite existence of provisions of the EIA Law and the governmental regulation on access of public to the environmental decision-making, there are no general provisions on public participation in decision making in national legislation for other areas of activity. In practice, local authorities do not participate in decision making on the national level, and there are no perfect mechanisms for such participation for public both on local and national levels. At the same time, exist some soft mechanisms of access to documents' drafts and possibilities to influence by means of letters to responsible local or central authority, or by lobbying of necessary changes via MPs in Parliament.

At the same time, some governmental bodies, like the Ministry of Ecology, Construction and Territorial Development, sometimes organize public hearings on new country policies in the sphere of environment, with invitation of NGOs and some other stakeholders. Such cooperation existed during elaboration of the local agenda 21 for Ungheni County. Currently multi-stakeholder meetings take place in Tighina County on the local community level on the issue of elaboration of management plans for territories of the future National Park "The Lower Dniester".

In 1993 the National Council for Sustainable Development was created in Moldova by the Presidential Decree. The main aim of this Council was the promotion of Agenda 21 via coordination of different, but mostly governmental stakeholders. In 1996, when new presidential elections took place, the new structure – High Economic Council under the President of Moldova was established. One of aims of this new structure was promotion of sustainable development. But in practice not too much was realized in this direction. The most important moment was elaboration by members of this council and other experts of the National Strategy on Sustainable Development for the Republic of Moldova in frames of UNDP of Moldova project. Currently, in September 2001, the National Committee for preparation to Johannesburg is established by the Governmental decision. The main its aim is the analysis of situation drafting of the national report. It includes representatives of different ministries and governmental agencies as well as one eco-NGO representative, under the presidency and

management of the Ministry of Ecology, Construction and Territory Development and is chairing by the Minister.

Because this Committee is created only for preparation to Johannesburg, it can be recommended to grant it the permanent status with function of inter-ministerial co-ordination for sustainable development and implementation of Rio and Johannesburg decisions, on national and local levels. Permanent local committees on county and commune levels should be also established. In present it is doing occasionally, for example, in Ungheni County. UNDP published the Guide for planning of the activities on sustainable development on the local level. It will be good to change the status of the Committee to permanent and grant additional rights, like, for example, co-ordination of the legislative activity in all spheres related to the topic. It has also to supervise the activities of local committees and help them to work effectively.

The only strong point is that great majority of stakeholders are involved to the Committee. The weak points are: “ad hoc” nature, non-clear follow-up procedures and actions, not enough active role and its understanding by others, than the main one, stakeholders. The weaknesses on the local level are related mostly to not enough efforts of distribution of positive experiences and general economic problems.

The completion of the transition process and the integration of the Republic of Moldova in the world economy and its effective involvement in the multilateral institutions will have a positive impact. Thus, it is especially important for Moldova to promote effective cooperation in trade, finance, science and technology with developed countries and neighbors in South-Eastern Europe. In order to bring this integration about in a speedy manner, effective international support for reforms in this country is essential both in terms of financial resources and of institutional and know-how expertise.

The new for Moldova form of the regional cooperation through “*Euro-region*” is meant to stimulate not only a growth of the economy and the living standards of the population in the peripheral zones of the countries, but also to overcome the estrangement that took place in the past. There are 235 regions collaborating with each other in the European community now. 75 out of them are *Euro-regions*, which involve 38 states. The term “*Euro-region*” implies a specific form of the cross-border cooperation at the level of local authorities. An important feature of the euro-region is the existence of multi-ethnic and ethnically related population on both sides of the border.

In the middle of 90’s regional collaboration has intensified between the Republic of Moldova, Romania and the Ukraine. This is explained by the fact that during this period the formation of independent Moldova and the Ukraine begins and multilateral relations between the states of the region are established. Three-lateral cooperation became closer after the Izmail (July 1997) and Chisinau (October 1998) Declarations of the Presidents of the Republic of Moldova, Romania and Ukraine, and after the signing of Protocol on Tri-Lateral Cooperation between the Governments of Moldova, the Ukraine and Romania.

To intensify the cooperation between Moldova, Romania and the Ukraine *Euro-regions* “Upper Prut” and “Lower Danube” have been created. The cooperation embraces not only economic, cultural, and social, but also financial fields. “*Euro-regions*” are intended to attract foreign investments to the local projects that are easier to monitor and to show their results.

*Euro-region “Upper Prut”* was started in 2000 on the territory of two Romanian counties (Suceava, Botosani), two Moldovan counties (Edinet, Balti) and the Chernovtsy district of the Ukraine. Problems that still need to be solved here relate to ecological security, tourism, protection of interests of national minorities and provision of their cultural needs, economy, creation of multi-cultural university in Chernovtsy, etc.

*Euro-region “Lower Danube”* was formed in 1998 on the initiative of the authorities of three Romanian counties (Tulcea, Braila, Galati), one county of Moldova (Cahul) and the Odessa district of the Ukraine. The fields of collaboration include ecology, economy and employment, infrastructure, education, health-care, joint struggle against the natural disasters (floods, earthquakes, etc.). The cooperation of the Cahul University (Republic of Moldova) and the Gataci University “Lower Danube” (Romania) has also begun.

Thus, the neighboring states implement step-by-step programs of good-neighborhood relations and fruitful regional cooperation toward sustainable development of the region.

#### National Critical Issues

According to the "Small and Medium Enterprise Baseline Survey" (NewBiznet/USAID, Center for Strategic Studies and Reforms, 2000), the environment for business in Moldova is unfavorable. It can be observed in the uncomfortable aspect of the legal framework and regulatory methods (regulation, licensing, taxes and inspection), the unfavorable climate for investments, the limited access to bank credits, and weakness of business infrastructure. Not surprisingly, the vast majority of Moldova’s small and medium enterprise sector is a part of the “shadow economy”.

Disappointment was generated also by the property reform, based on rapid mass-privatization through vouchers, oriented towards granting everybody “equal starting opportunities”. In reality, it did little more than turn poor-quality assets over to a large number of poor owners and channel high-quality assets to the “agile and connected”.

The populist privatization method and slow pace of reforms in the agro-industrial sector (a key sector of the national economy of Moldova) did not facilitate the turnover to efficiently working owners or good corporate governance of enterprises, which in its turn had an extremely negative influence on the real sector dynamics, its exporting possibilities and the level of employment. Non-compliance with the laws and decisions of courts has also led to the state’s inability to rein in the underground economy, which has greatly expanded (according to the Department of Statistical Analysis and Sociology of the Republic of Moldova estimates not less than 35% of GDP in 1999), leading to a vicious circle of corruption, hidden firm activity, reduced public revenues, and a dramatic widening of the population’s income inequality. In 1999, the Economist Intelligence Unit published estimates that the black market in 1997 was 51.9 percent of total GDP—the third highest level among the former Soviet states. On the macroeconomic front, the efforts to reduce inflation and the state budget deficit were not so sustainable. Much of the success attained by Moldova by the mid-1990s in the area of macroeconomic stability was subsequently, especially after the financial crisis in Russia in 1998, reversed.

**The low quality of governance is reflected in the spread of corruption, the incidence of which in Moldova puts the country amongst the 25 most corrupt countries in the world (Transparency International Annual Report 2000). Corruption and poverty are the two sides of the same coin. Corruption not only causes severe stress in the everyday lives of the country's people but also stifles private economic initiative and the development of entrepreneur-ship as a driving force in a market economy and a means of "self rescue" during periods of hardship. The low social efficiency of the reforms, the sharp income discrepancy and drawbacks in distributing the fruits of economic development ("newly rich" against "newly poor", "rural poverty") have led to a deepening and critical shortage of state funds for the support of public services, particularly for primary health care and basic education.**

**The completion of the transition process and the integration of the Republic of Moldova in the world economy and its effective involvement in the multilateral institutions will have a positive impact. Thus, it is especially important for Moldova to promote effective cooperation in trade, finance, science and technology with developed countries and neighbors in South-Eastern Europe. In order to bring this integration about in a speedy manner, effective international support for reforms in this country is essential both in terms of financial resources and of institutional and know-how expertise.**

**Taking into consideration current economical situation, the potential for future development after transitional period, it has to be considered, first of all: (a) natural and human resources, (b) geopolitical position, (c) information and managerial capacities as the means to organize and use resources and position. Items (a) and (c) play the main role, because item (b) may only promote or discourage the realization of resources through management.**

#### *Natural Resources*

**Moldova is devoid of significant mineral and energetic resources as metals, oil, gas, etc. However that is the only country of the World, 75% territory of which is covered by the most fertile soils – chernozems, what is the biggest country natural richness from an economic viewpoint. Biological diversity is the other (in some sense) natural resource, which provides functioning of ecological systems, basic for human life. Water supply determines at a significant level the human health on one hand, but on the other, (a) plays an outstanding role in the agriculture, especially in the semi-arid zone, and (b) in the life of ecological systems beginning from the water ones, where is realized water self-purification and biological resources are formed.**

#### **Soil Resources**

**The Quota of arable land composes about 70% and reaches 90% in some local communities. Soil fertility has decreased twice for the last century (together with the yield potential), and the humus loss is about 10-20% for the last 40 years. Average humus content was 5-6 % in 1897, 4-5 % in 1950, 3.5-4.0 % in 1965, and 3.5% in 1990. Pursuant to some data of 1993, the humus content was under the minimal admissible level (2%) on about 10% of agricultural lands. Generalized rate of losses was approximately equal during the 20th century despite wide use of fertilizers during 70th – 80th. However, during these years of intensive use of mineral fertilizers the humus balance became positive. Unfortunately excessive and unbalanced use of chemical fertilizers has led to nitrate impact.**

However, the process of degradation accelerated during the last decade while the decline of fertilizers use (from 1990 to 1995: mineral – about 20 times, organic – 5 times, pursuant to recent data maturing decreased 7-8 times). After 1990 systematic data are absent. Humus balance has become strong negative. Now, 40.6% of agricultural lands have humus content near and below 2%. It is expected that the average content will be 2.5-3.0% in 2025.

The ratio of eroded land was progressive increasing. Average accretion of weakly eroded lands was 0.16% per year between 1965 and 1975, and 0.27% between 1975 and 1995. It is clear the acceleration took place during the 90s. The growth of moderate eroded land was about 0.06% per year any time. Strong eroded soils were enlarged with the rate 0.01% from 1965 to 1975. Between 1975 and 1990 some strong eroded lands were transmitted to the State Forest Fund for afforestation. It was done an activity, which included soil recovering and ravine elimination; as a result, the ravine portion was diminished from 0.7 to 0.3 % in the country land structure. The situation aggravated during 90th; accretion of strong eroded soils reached 0.15% per year (data of 1995-1997), i.e. 15 times more than before 1975!

The share of eroded surface on arable land in 1993 was 46.9%, on perennials – 30.3% and on pastures – 22.8%. To 1997 eroded territories covered 32,7 of agricultural lands, including 4% of strong damaged and 9,7% of moderate damaged areas. In some regions of the country the share of eroded parcels reaches more than 45%, in some districts reaches 56 and 71%. Documents of 1987 presumed the withdrawal of 130,000 ha (5% of agricultural lands) out of agricultural use for afforestation and protective forest planting. About of 300,000 ha (12.9%) of strong and moderate eroded lands had to be directed for restoration by grassing and limited haying use. Documents of the next decade skipped that intention.

The privatization of agricultural lands was done in the limits of «Pamint» («The Earth») Program under the patronage of foreign specialists. More than 1.218.000 inhabitants became landowners. The average private parcel covers 1.75 ha. Technological circles are impossible on such single plot. That property consists as a rule of field parcel, vineyard and orchard situated often in different sites of locality. Even strong eroded lands were not removed from privatization fund. Therefore some owners were provided by clearly defect property, which cannot be profitable. Outlining negative consequences became a land tradition. It was common in hilly Moldova to share parcels along slopes, providing equal property among peasants. The habit did not cause a rapid erosion when was applied the horse tillage and a complex set of cultures, natural economy at last. Now it has some drastic consequences, especially on steep slopes that were transmitted for privatization by a special law, adopted by the Parliament in 1998.

Another tradition is the wide use of corn that promotes degradation. Because of a high share of row crops in the structure of sowing area and insufficient rates of organic and mineral fertilizers the annual uncompensated losses of mineral elements from soil organic matter increased. Before the 90s the share of row crops in the structure of sowing area was about 60% when scientific recommendation was 45-50%. Now the share increased firstly due to individually cultivated parcels.

Hereby, initially the importance of private ownership was overestimated, but the importance of a proper farming system for appropriate sustainable land use was neglected. In order to decide all aspects a holistic approach is required instead of the simplistic (reductionalistic) one.

In Moldova there are economical, environmental and social premises for sustainable agriculture. Like the majority of countries, Moldova followed the common way of technologic intensification based on the increased use of mineral fertilizers, pesticides, new varieties of crops, etc. It is impressive that the initial results have been soon changed. Despite increased rates of fertilizers, pesticides and improved technologies of growing crops together with more productive varieties, the level of yield remained the same or even began to decrease. So, the energetic cost for non-renewable sources of each unit of production increased.

The farmers tolerated such a situation when the costs of non-renewable sources of energy were relatively low. Increased prices for fuel and chemicals together with the negative consequences of their wide use upon environment and human health made the initial achievements of the «green revolution» real problematic.

From social point of view the technogenic intensification in agriculture led not only to a higher expenditures for health improvement of the whole society, but also to the degradation of rural communities. Thus, common unfavorable background at least in the second part of 20th century has led to an unstable farming and the transitional period has aggravated the agrarian-ecological situation.

A more general economical basis delay the movement to a sustainable development and this reflects especially on the possibilities of an agricultural country as Moldova. The distribution of profit among the three component elements of agrarian-industrial complex (the production of production means – tractors, agricultural machines, fuel, pesticides, mineral fertilizers, etc; processing, storage, transportation and marketing; production itself in farm conditions) during the last century, in majority of the countries, including in Moldova, increased for the first two components and decreased for the last one. In other words, the created share of profit, in time returned back directly in farm conditions, but it has decreased. This has evident consequences on the stability of rural communities and the migration of people from villages to cities. The centralized economics as well as the market, produce underestimated prices of the fertile land despite the fact that only the fertile soil maintains mankind life.

Unfortunately the existing economic mechanism does not take in consideration the consequences of our agricultural activity on the environment and on the health of people. Very often the price of a farm management is unaffordable for the nature and people.

So, the agriculture of Moldova is not sustainable. Sustainable development of agriculture can be achieved only in the frame of a holistic approach to the development of rural communities and agriculture. Overestimation of one of the factors, even a very important one, doesn't help to the establishment of a sustainable farming system. The farm should be examined as a whole organism, where all component parts are related and interrelated to each other.

The results obtained in long-term experiments from different countries, including from Moldova, proved the limiting influence of soil fertility on the productivity and long-term sustainability of farming systems. The history of farming system development is the history of soil fertility reproduction. Soils are living organisms, which should be treated in accordance with the conditions of soil formation.

Principles of sustainable land use must be subdivided into (1) rules for land users, which are in (1.1) technological and (1.2) ethnic spheres and (2) state obligations vis-à-vis users and society,

which are (2.1.) in the spheres of legislation and control and (2.2) managerial-advisory service. The point 2.2 is especially important in connection with the mentioned above disproportion in profit distribution and the responsibility for biological diversity (including soils), being followed by the state sovereignty with these resources and responsibilities. The sovereignty and these responsibilities are confirmed by the Rio-de-Janeiro Convention, however they issue from the significance of biodiversity for mankind life and the security of population in states.

Main principles are in the area, where rules for users must be promoted, monitored and controlled by the state:

- Land organization according to the environmental particularities of the landscape with a differentiated utilization of land;
- Determining the optimal ratio between forests, arable lands, pastures, ponds, taking into consideration the particularities of the landscape for every locality;
- Obligatory planning of land organization and the reproduction of soil fertility in limits of any ownership in order to optimize the land use;
- Non-deficit balance of soil organic matter in the limits of each crop rotation (ownership);
- Settlement of an optimal ratio between crop and animal husbandry.

A complete negligence of these principles and the distribution of land was characteristic for the land reform, for the passed decade in Moldova.

#### **Terrestrial Biological Resources**

At the beginning the territory of Moldova was represented generally by forests, silvosteppe and steppe, and also enough large swamps. Nowadays wood represents the main remainders of natural areas. Pursuant to official data the total forest cover is about 9.6% and lands of the Forest Fund reach 12.5% of the country, occupying from 6.1 to 27.5% in 12 natural districts of Moldova. Oldest registered data belong to 1840 when forest surface in the Dniester-Prut space was 366,200 ha (about 12%), and in 1918 only 230,000 ha. Restoration was mainly carrying out during 60-80th years.

There are two main permanent problems concerning the recent forests. A big part of them has shoot out the regeneration of several generations and therefore reduced resistance potential. Many artificial forest plantings, especially with protective function, are robinians and have short life longevity; additionally to that, they make poor communities from the point of view of biodiversity. The ripe forest constitute only 12,5% and coming to be ripe –17.5%, therefore forest productivity is less than 60% from the possible, in the following 20-40 years it will be increasing. Now forest culture brings 0.3-0.4% of GDP. Main part of the Forest Fund is under state management; local authorities manage about 11% of forest and that forests are especially damaged by illegal logging and pasturing. Pursuant to the data of central forest administration, forest sector supplies with 70-80% of fuel wood the needs of the rural population. However, following to some evaluations, only 35% of these needs are satisfied through official channels.

Due to high level of territorial transformation, problems of biodiversity are strongly tied with agriculture, it is revealed first of all upon the haying and grazing lands as well as the protective planting. Among biological resources of direct agricultural concern, can be listed

between the first of all the soil-forming biota and agents of pests' stabilization, pollinators and components of grassy cover.

Natural and semi-natural habitats are strongly fragmented in Moldova, and protective field belts of an appropriate construction are very important for the defragmentation of populations, as well as being refuges or temporal shelters for many permanent inhabitants of the agrarian landscape. Forest belts embraced in 1990 about 30,000 ha or around 40% of the necessity to promote the overcompensating effect on the yield occupying 4% in arable areas of the temperate zone with unstable damping. Unfortunately many forest belts had a very limited biocenotic value being of unsatisfied composition but keeping an agrarian-ameliorative importance. Approximately 30% of them were lost to 1995 because of the illegal logging and pasturing while the planting process decreased 50-100 times i.e. till insensitive level. Further degradation continued.

Pasturing lands occupy 10.9% of the country (including some lowlands), but haying meadows – 0.1% only. Pastures mainly passed 3-4 stages of vegetation degradation and many on the last stage. Thus, once very rich resources began to disappear, owing it to an overuse increased the last decade. Simultaneously it stipulates very limited plant source for the environmental rehabilitation of pastures and diminished refuges to stabilize the ecosystem components as the invertebrates, which also normally play a tremendous role in the circles of organic material and chemical elements.

Soil biota was significantly suppressed in the period of extensive use of artificial fertilizers and pesticides, etc. The erosion and the deficit of organic substances pressured the soil inhabitants, but there was a declining influence of the soil invertebrates upon the soil processes in turn.

#### **Special Protected Territories for Biodiversity, Landscape Conservation and Territories for Support of the Geosystemic Balance**

Special Protected Natural Areas (SPNA) have at least triple special significance for the environmental and resource sustainability in the context of region or country:

1. Conservation of species and ecosystems to maintain them out of protected sites through spontaneous population processes;
2. Conservation of genetic resources both in quantitative and qualitative aspects for artificial restoration on lands of production use;
3. Satisfaction of human aesthetic and recreation needs including through recreation business that has a significant economical importance in many countries but absolutely undeveloped in Moldova.

In 2000 the total area of SPNA amounted to 66467 hectares (1,9 % of the total area of the country), including 5 scientific reserves (19,378 ha); 130 nature monuments (2906,8 ha); 63 nature refuges (8009 ha); 41 landscape refuges (34 200 ha); 13 resource reserves (523 ha); and 32 territories of multifunctional use (1030,4 ha). Thus total relative area of reservations is the smallest in Europe, besides the scientific and some landscape reservations that are very small. Besides rocky and ravine geological and paleontological monuments, there are forest reservations, including flood lands. However meadow and especially protected steppe areas are only a few and poorly protected. Only scientific reservations possess the staff and special guard, other categories are under local authorities and users, which in current economical situation have a lack of financial facilities. Because of the growing lack of budget, even

scientific reserves support themselves through the forest culture, using different options for sanitary and restorative logging.

There is known a few about the current estate of flora and fauna in most SPNA. During the elaboration of the Paper Concept of the National Ecological Network were recognized 62 protected and non-protected core areas (for the conservation of biological and landscape diversity) at the European, national or local levels with a total area of 73145 ha (2.16% of the country area). Some of them cannot be transmitted to SPNA being large water reservoirs of industrial or agricultural concern with surrounding habitats.

Enough large natural and semi-natural areas including reservations brought the functions of ecosystem stabilization:

- Air purification and consumption of carbon oxides and delivering oxygen;
- Large-scale water protection and climate stabilization;
- Accumulation of sun energy in organic substance;
- Support of large floral and faunal populations and maintenance of the intra-population and inter-population processes at regional scale.

Such territories excluding core areas are named geosystemic buffers. Taking into consideration the state of grasslands – pastures, which are the centers of desertification in essence, only forest areas might be accounted as geosystemic buffers after a generalization at the country scale. The threshold by area was used – 50 ha. Despite this low border, only 26315 ha (0.78%) were recognized in 107 sites. In different 12 natural districts they were distributed absolutely irregularly, from 90.2 to 9416.6 ha. The integrity of the national eco-network cannot be kept without the restored areas, which are lands and pastures strong degraded arable.

The tale of agricultural privatization from the viewpoint of landscape is optimized towards sustainable use. Privatization was done:

1. Without simultaneous implementation of European experience on cooperation of small-scale owners;
2. On the background of a drastic devaluation of financial resources, which was very difficult for potential farmers;
3. Without withdrawal from privatization of the special degraded lands fund, which ought to be included in the restoration fund immediately;
4. Without planning of protective field plantings where they were absent;
5. Without effective mechanism to determine the responsibility for the state of objects of special environmental concern.

Realized reforms caused the next consequences, which discourage transition to environmentally balanced development of the Republic:

1. Lands, whose agricultural use is ungrounded from economical and ecological viewpoints, were included in the circuit. The state experiences a financial deficit preventing their redemption.
2. The possibility to plan new protective field plantings was lost, but the environmentally and psychologically grounded system of responsibilities for conservation of the present plantings is absent.
3. The possibility to implement means of financial responsibility is limited by the existence of many small-scaled proprietors who are enabling to pay.

4. The option to apply soil-protecting technologies during plant cultivation is absent before the post-privatization reconstruction of land-ownership or land use.
5. The circle of physical and juridical persons possessing a potential from the positions of territorial management is very narrow among the land-users.
6. A row of objects from the Fund of Natural Territories protected by the state, which were under the authority of some liquidated agricultural enterprises, were not taken under another authority.

### **Water Resources**

The water surface of the country is about 1% of its dry land. The density of river network is variable from 0.84 in the North of the country to 0.2 km<sup>2</sup> in the left part of Dniester and in the South. The lakes water mirror is about 62 km<sup>2</sup> and different reservoirs – 333 km<sup>2</sup>. Besides Dniester and Prut rivers flowing along Moldova's territory and Danube that touch it, 7 rivers having length from 97 to 286 km exist here but 2 of them are drying up on significant extent. Many of about 3000 small rivers and streams are temporary too, especially in the South. Although more than 95% of state forest fund has curative and protective functions, only 8,200 ha are forests for water protection. Small rivers are stripped as a rule besides forestry areas.

Water quality in the Dniester and the Prut is second class mainly (“moderate polluted”) but in the same sector the quality worsened till the 3rd class (“polluted”) and the 4th one (“very polluted” – in the Prut). Small rivers water generally is 3rd and 4th class. The bottom in reservoirs of different types is usually very muddy and the eutrophication gives rise to the appropriate herbage. However some native wetland biocenosis as floodplain are almost destroyed owing to drainage and so on. The last decades water mineralization, biogenic elements and pesticide pollution has increased. Waters of small rivers are intensively polluted with nitrates. The crisis in production suspends some negative processes but did not remove their base causes.

Many problems in the environmental status and agriculture development are connected with instability of the territory wetting. The average rainfall values decreases from 560 mm in the North to 370 in the South. The annual rainfall norm variation is in amounts of 400% and more.

Hydrological regime of the main rivers that are the Dniester and the Prut as well in the majority of other streams was changed and the most retained riparian wetland are influenced by the deficit of water supply. Mouthparts of their principal tributaries are deprived of natural ecosystems.

As the result of agricultural development in the flood-lands, the country was generally impoverished in wetlands and a big share of water bodies exist without natural framing of native riparian and terrestrial ecosystems. Even main flows (the Prut, the Dniester and the Raut Rivers) and many large water reservoirs are not protected for a long distance by woods, forests plantations or grassy communities of acceptable safety inclusively the limits of water-protective zone and also river-side protective belt.

Not numerous remainder wetland areas are under a threat issued from a strong forest use and illegal cutting, livestock grazing out of control, poach fishing and hunt, etc.

**In the same time some arable lands, earlier taken out from natural flood-land regime, are abandoned by enjoyed agents because of remoteness from settlements and significant changes of the fuel prices, or owing to economical impossibility to maintain drainage systems and connected secondary salinization.**

**The natural ecosystems, bordered with wetlands, especially grassy ones are represented by narrow residuals; often these are habitats of endangered plant and animal species and also of rare communities; their protection is possible only in the totality with proper wetland territories.**

**Simultaneously water-protective legislative provision promotes conservation of biotopes and ecosystems target, forming some preconditions for wetland conservation in the case of the establishment of a rightful order.**

**Following measures should be developed toward sustainable water management in Moldova on the river basin approach:**

- **A justification of the Law on Water-Protective Zones and Belts of Rivers and Water Bodies in which are determined ways and orders of use in these zones, is especially for the bank-protective belt, as well as for mechanisms of responsibility.**
- **The perfection of the elaboration and endorsement in vigor of the two-sided Moldovan-Ukrainian Convention on..**
- **The correction of the Law on the Fund of Natural Areas, Protected by the State, in the reference to: (a) the possibility to keep this kind of property of the land anew involving it in the Fund, (b) zoning systems in some types of protected areas, (c) development and implementation of mechanisms of responsibility.**
- **There is a need of consolidation of the environmental reasons in the decision making process for water discharges from the Novodnistrovsk hydro-power station in the Dniester River and the problem resolution concerning the thermo-cline of these waters.**
- **Creation of the “Lower Dniester” National Park, containing the Ramsar site, and enjoyment of Manta-Beleu wetland including the “Prutul de Jos” scientific reservation in the system of the Danube River biosphere reservation.**
- **The ecosystems have to be reconstructed in the mouths of the main tributaries of the Dniester and the Prut Rivers.**
- **The searched and recognized wetlands are considered necessary to include in the Fund of Natural Areas, protected by the State.**
- **The study of wetlands, which are in the Fund, must create programs in order to make the monitoring and the management.**

## Energy

**Among the most pressing difficulties facing the republic's economy is a near total lack of energy resources. Moldova's own primary energy sources consist of small hydroelectric power plants on the Dniester River at Dubasari and on the Prut River at Costesti. Moldovan production of electricity is predominantly from fossil plants burning imported fuels. These plants had a combined 996 MWe of installed capacity and hydroelectric power plants presently have a combined capacity of 22 MWe.**

**Moldova has an extensive power transmission and distribution system, but much of the equipment is obsolete and poorly maintained. The high voltage transmission system has 214**

kilometers of 400 kilovolts (kV), 530 kilometers of 330 kV, and 4,070 kilometers of 110 kV. There is also a lower voltage system, with 2,385 kilometers of 35 kV lines. One 400 kV interconnection with Bulgaria exists, as well as three 110 kV interconnections with Romania, and five 330 kV interconnections and nine 110 kV interconnections with Ukraine. In addition, there is also a 750 kV line passing through Moldova to connect Ukraine with Romania and Bulgaria, but this line is not directly connected into the Moldovan power system.

Moldova imports 97-98% of its primary energy and, although investigating domestic and gas sources, has at present no chance of becoming self-efficient. Moldova has lost its preferred place in energy trade with Russia and must pay close to market prices for Russian oil and gas in hard currency and barter. Primary and secondary energy use is extremely inefficient. Energy demand is expected to fall precipitously over the next decade, and a shift from coal to natural gas in the urban economy is expected. Moldova power plants consume up to 50% of all imported natural gas.

The main energy suppliers are the Russian Federation (100% of gas imports), Ukraine (with the Russian Federation it accounts for 100% of the country's coal imports), Romania and several European countries.

Moldova is totally dependent on imports for its supply of gasoline, distillate and residual oil. Moldova's natural gas system has 1,737 kilometers of high-pressure and 1975 km of low-medium pressure distribution pipelines. The gas transmission lines have a transit capacity of approximately 43 billion cubic meters per year, of which 20 billion cubic meters per year is currently used to send gas through Moldova to southern Europe. There are 87 gas handling plants and 165 gas distribution stations. At present, Moldova does not have its own gas storage facilities.

The consumption of coal decreased by over 90% that of liquefied petroleum gas (LPG) by 80%, and that of thermal energy by about one third. At the same time, consumption of electricity grew considerably (up 10% or, if unpaid consumption is added, up 65%), as did that of methane (up 64%) and wood (up more than 700%). The decreasing consumption of coal and liquid gas resulted in the first place from price increases, which were twice as big as the price increases on the world market.

Some 60% of final energy consumption is in the form of electricity and heat, of which industry is the main consumer (41% and 47%, respectively).

The energy supply level per capita in Moldova is below the average of OECD Europe and lower than in all neighboring countries. The consumption of primary energy dropped by more than 50%. Electricity consumption decreased for 57%. There was a significant decrease (about 62%) in heat consumption.

Energy consumption in the residential sector fell down from 1991 by 42%. Heat represents 29.3% of residential energy consumption. About 300 000 flats are connected to district heating systems. The total thermal capacity of district heating plants is 7 373 000 Gcal, of which 78% come from combined heat and power plants, the rest from heating plants. The share of final energy consumption by the population in total energy consumption increased by 11.7%.

Moldova's district heating system has financial problems. The heating system is not metered and people mostly don't pay their heating bills. The way the system configuration currently stands, individual users cannot be cut off for non-payment. Meanwhile, USAID has distributed \$9 million in free coal to the poor in the last two years and they are working on an alternative program to subsidize electricity for needy individuals.

Energy consumption in the transport sector decreased considerably, from 17% of total final energy consumption to 11%. The share of construction in final energy consumption decreased by 0.7%.

Industrial manufacturing is the main energy consumer among the economic sectors. Energy consumption in industry decreased from 1990 by 66.5%, and that of agriculture by 64%. The share of industry in total final fuel consumption decreased from 5.5% in 1990, while that of agriculture remained almost constant during the same period.

Electricity losses in total energy losses increased by 8.7 % from 1990. The energy efficiency can also be shown by the ratio between finally consumed and primary energy. This index decreased by 11%. It compares to selected market economies as follows: Japan - 0.717, France - 0.651, Republic of Moldova - 0.708 (1990), 0.59 (2000).

The medium efficiency coefficient in electricity generation in Moldova decreased from 35.5% in 1990 to 28% in 2000, which is equivalent to annual losses of approximately US\$ 9 million. Heat use decreased by about 50%. However, total losses in heat transport increased by 25%.

Energy prices have increased substantially over recent years. However, natural gas and district heat subsidies continue to exist, and electricity tariffs are generally significantly below long-term marginal costs. In particular, cross-subsidies to natural gas, with the industrial and power sectors paying more than households provide little incentives to substitute natural gas for highly polluting HFO and coal in these sectors.

The prices of petroleum products and coal are now unregulated for private importers. For the State sector, a mark-up system, which does not fully cover depreciation, has been adopted. Increases of electricity and heat tariffs constitute a major problem, as they relate to a high proportion of household expenditures.

According to World Bank calculations, industry paid more than three times the minimum cost recovery level of electricity, whilst household tariffs were only a quarter of this minimum. For example, consumer tariffs for electricity were just over half the minimum cost recovery, while for gas, consumers were charged about 90% of the cost recovery. Industrial tariffs were in both cases around 135% of the minimum cost recovery level.

Before the break-up of the Soviet Union, Moldova's energy intensity was high by international standards. Despite a substantial increase in real energy prices, it is still high, but decreased at an impressive average annual rate of 8.25%. The decrease was primarily caused by the growing share of agriculture in GDP, giving higher weight to the relatively low specific energy consumption in agriculture as compared with industry. As a result, energy intensity is about twice as high as that for upper-middle income OECD countries. It is likely that the unfavorable economic development has led to a further reduction in overall energy intensity in Moldova, although at a somewhat reduced rate.

The main reasons for the still unsatisfactorily high level of energy intensity are the lack of investments in improved efficiency in the power plants and district heating utilities, the so far limited scope of industrial restructuring, the lack of incentives for energy conservation in the household sector, primarily due to the lack of metering, and the social unacceptability of cutting off non-paying energy customers from supply. Nevertheless, a clear downward trend in energy intensity prevails.

The situation in the energy sector has been worsening during the entire period of the transition to a market economy, which is the result of the following three major factors:

- Fuel prices are increasing rapidly as they approach the world market level and are far too high for Moldovan consumers;
- The involvement of the state in the contractual relationship between suppliers and consumers. Suppliers were obliged to continue supplying energy to consumers who did not pay for its consumption. Owing to unpaid bills, supplier companies had to apply for credits to continue their activity. Interest on these credits again had to be included on consumer bills, thus creating an upwards spiral in prices;
- The practice of barter transaction as a method of payment for energy has put additional pressure on the consumer and the economy as a whole, because it conceals exaggerated prices for energy services provided.

All of the above has led to enormous debts from consumers to the energy companies, which in turn have huge debts to the suppliers of energy resources. For example, the Republic of Moldova owes Russia US\$ 308 million for the consumption of natural gas on the right bank of the Dniester River. Its debt to Ukraine for electricity amounts to US\$ 85 million.

Due to the lack of funds, the quality of services provided by the energy companies has continuously deteriorated. Electricity supply is frequently interrupted and the distributor does not bear any economic or administrative responsibility for doing so. Electricity supply to villages usually stops during peak hours (i.e. at the end of the day, when light and electrical devices are most needed), which affects education, communication and economic activity rural areas.

The lack of an efficient policy of energy conservation has also contributed to the aggravation of the situation in the energy sector. Due to the inefficient consumption of energy resources the Republic of Moldova has to spend around 30% of its GDP on fuel and energy purchases. This ratio is much higher than in many other countries. Thus it stands at 18% in Romania, 9.8% in Bulgaria, 4.2% in Germany and 4.1% in the USA.

The government, acknowledging the seriousness of the situation, accepted in 1996 the Memorandum on SAL II of the WB and the IMF on the restructuring of the economy, including the energy sector. According to the restructuring plan for the national energy sector, the vertically-integrated energy monopolies will be abolished, and the production and distribution of electricity, heating energy and natural gas will be separated and subject to privatization during the following stage of reform. This will exclude the state from the contractual supplier-consumer relationship, considered to be the main cause of the present financial. It should also ensure healthy competition in the production and import of energy resources and should lead to the provision of these services at minimal prices.

**Following legal framework on energy issue exists today in Moldova:**

- **Governmental Decision “On Strict Energy Saving” (1993).**
- **Law on Transportation through Main Pipeline (1995);**
- **Law on Energy Conservation (1998).**
- **Electricity Act (1998).**
- **Gas Act (1998).**
- **Energetic Act (1999).**

**Also there were elaborated different programs for energetic sector development:**

- 1. Energy Sector Development Program (1994) with following aims:**
  - **Stabilizing the supply of energy;**
  - **Increasing the use of electricity and heat;**
  - **Increasing the use of non-conventional energy;**
  - **Reducing energy consumption per unit of production.**
- 2. Plan for the demonopolization of the energy sector (1997) for creating of independent joint stock companies;**
- 3. Energy Efficiency Program (1998);**
- 4. Program of Actions for the Diminution of the negative impact of Power Production on the Environment (1998).**

**In the Indicative Plan of Activities in Energy Sector (Section V “Energy conservation”) of the National Strategy of the Republic of Moldova for 2000-2010 as activities for 2000-2001 were included:**

- **Establishment of the National Fund on energy conservation;**
- **Elaboration and implementation of the national programs on management of the energy consumption and its monitoring;**
- **Increasing of the efficiency of the activity of the National Agency on Energy Conservation.**

**A series of measures aimed at restructuring the energy sector has already been implemented. The energy system was de-monopolized, as a result of which a couple of new, separate enterprises were created. Also, the National Agency on Energy Regulation (ANRE) has been created to regulate the energy system. One of its main goals is to protect the interests of the consumers in the electric energy market. The National Agency on Energy Conservation (ANCE) was also created to manage the National Fund on energy conservation and to implement national programs on management of the energy consumption and its monitoring.**

**The restructuring of the energy sector is expected to build the necessary credibility for obtaining credits and attracting foreign investors which would contribute to the solution of the strategic problems, one of the most important ones being the diversification of both the suppliers of energy resources as well the types of energy and fuel consumed in the country.**

**Under the new conditions, the role of the state changes substantially. It is no longer responsible for calculating and establishing charges and will no longer be involved in economic relations in the energy and fuel markets. Its task will be to formulate and monitor the implementation by various economic agents of the rules established by law; to promote, though different economic tools, the strategy of the sector’s development; to develop efficient energy policies and protect the disadvantaged groups of society.**

With regard to energy savings, the implementation of a Program on Energy Conservation, which has already been elaborated, will allow the saving of up to 30% of the total energy resources annually consumed in the country until 2005. Thus, the debts on imported energy will diminish substantially, which, in turn, will reduce the cost of goods produced in Moldova thus making them more competitive both in the national as well as the world markets. Increased energy efficiency is also expected to have positive effects on energy and fuel charges for consumers.

Alternative energy sources, like biogas, solar energy and wind energy only in private use and small heating plants are being developed in Moldova. It is necessary to elaborate a special program on alternative energy development in Moldova that will create a new approach for sustainable development of energetic sector in Moldova.

## Human resources

### Demographic situation

The demographic situation constitutes an integral indicator of a country's social development, as a reflection of its socio-economic and moral state. The demographic situation of Republic at the present moment is characterized both by positive and negative processes.

In accordance with "National Human Development Report. Republic of Moldova 2000", as of January 1, 2000, Moldova's population was of 4,281,500 persons, of which 1,968,500 persons (46%) – urban population and 2,313,000 persons (54.0%) – rural one.

The distribution of population by sex is as follows: 52% (2,235,000 persons) are women and 48% (2,046,500 persons) are men. Compared with the previous year, the size of the country's population has diminished by 11,500 persons. The cause of the population decline was a natural decrease that was recorded in Moldova in 1998; the emigration of the population continues as well.

The decisive factor in the natural decrease of the population is a low birth rate. Compared with the beginning of the '90s, the birth rate has diminished almost twice and constituted- 10.1 in 1999. Also during this period, the average number of children a woman gave birth to until the end of her fertility (total fertility rate) diminished from 2.4 to 1.4, the rate that does not guarantee even a simple reproduction of the population. The increase in the share of children born out of wedlock, as % of the total born children, constituted 18.8 % in 1999, compared to 11% in 1990.

Birth rates to a considerable extent depend on the number of marriages and divorces. Last year an increase in the number of marriages and a decrease in divorces were registered. Should these tendencies persist in the future, there is a possibility of halting negative tendencies in reproduction of the population. Another positive trend consists in a decrease in the share of children born to women under 20 years.

The second component of the natural change in the size of the population is mortality. For the last 9 years, the general mortality rate has grown by 17.5% and in 1999 constituted 11.4 deceased per 1000 inhabitants. In rural areas the mortality level exceeds considerably the level of this indicator in urban localities, which results in an increase of the elderly population.

Analyzing the dynamics of the general mortality rate in Moldova, one should mention some improvements, which are reflected in a slow decrease of this indicator. The highest level of the general mortality was registered in 1994 and 1995, but there has been a decrease during the last years, manifesting itself in a reduction of the mortality caused by external factors (95 deceased per 100,000 inhabitants in 1999, vis-à-vis 14 per 100,000 in 1995); by malignant cancers, respectively, 126 and 131; digestive system diseases, 99 and 111; and respiratory system diseases, 71 and 78.

The mortality structure by cause of death in 1999 shows that the most number of deaths (55.0%) were caused by circulatory system diseases, followed by malignant cancers (11.1%); digestive system diseases (8.8%); accidents, poisonings and traumas (8.4%); respiratory system diseases (6.3%).

### **Education**

The institutional structure of education is in the process of reform, diversification and adjustment to Western standards. The total number of pupils/students enrolled in all levels of education (1999-2000) constitutes 771,00, which makes 71 % of the school age population and one fifth of the total population. Compared to the gross enrolment ratio of the previous year there has been a slight decrease; the total number of students diminished by 18,4 00.

The compulsory primary education enrolment (9 years), during the academic year of 1999-2000 is 93%. The enrolment in non-compulsory education is only 42% of the 16-22 years old population.

Pre-school education covers at present about 33% (1-6 years) and 40% (3-6 years) of the total number of children of the respective age. A series of classes on the preparation for school makes a compulsory component of the pre-school education that was affected by the difficulties of the transition more than any other education levels. The number of pre-school institutions has been reduced, as well as has the number of teachers and children. Between 1992-1999, 38% (more than one third) of kindergartens were closed; the number of institutionalized children decreased by 53%; and the number of teaching staff decreased by almost 57%. Only 52% of children are enrolled in preparatory groups as compared to the total number of the children of the respective age (5-6 years).

During the academic year of 1999-2000 there were 1,739 institutions of daytime education.

Primary education covers 252,200 students, which constitutes 96% of the respective age group. On average, there are 22 students per teacher in primary education. The number of students decreased by 5% and that of teachers increased by 2% between 1992-1999. The absolute majority of primary education institutions are state-funded public schools. All these institutions are subordinated to the Ministry of Education and Science.

General secondary education includes 393,100 students; 85% of them are enrolled in the compulsory general education (5-9 grades). The coverage rate of the school age population in the general compulsory education is 90%. There are 14 students per teacher in secondary education (5-1 1/12 grades). The parallel functioning of two networks – lyceums (10-12 grades) and general secondary schools (10-1 I forms) have a negative impact on the educational system as a whole. Specific measures are being taken to modernize the educational system, with the

priority being accorded to lyceums. Thus, 10 lyceums were opened in 1999. Compared to 1998, the share of lyceum students in the total number of students has doubled and constitutes 18%.

Secondary professional education is provided in craft-schools and professional polyvalent schools. There were 18,000 persons in 52 polyvalent schools in 1999-2000, or 78% of the total number of those enrolled in the professional education (in 1998/99 – 18%).

Higher education (public and private) covers 102,700 students (1999-2000) registered at 43 universities and 57 colleges. There are 2,820 students per 100,000 inhabitants, of which 2253 are in public education. The student/teacher ratio in the university system is 14/1. Of the total population of the respective age, 42% were enrolled in higher education in 1999. Every second student in the higher education has to pay for his/her studies. In comparison with the respective period of the previous year their number grew by 21 % and now constitutes 40,400 persons. Out of all those enrolled in institutions of higher education, graduates of lyceums and secondary general schools constitute 79%; every fifth is a graduate of a college and only 2% are graduates of institutions of the technical professional education.

### The Urban-Rural Divide

Poverty alleviation is an urgent problem for Moldova now. Meanwhile, inhabitants from the rural areas have found themselves in the worst shape. Transformations promoted in the rural area bring more losses than advantages. Villagers perceive their current situation as a threat to their perceptions regarding behavior and life style, perceptions that have been established over several generations. During the transition decade the level of the rural population's well-being dropped, and the gap between the latter and the urban sector has increased. According to Household Budget Survey, in 1997 villagers' total monthly net income accounted for 64.8% of the income earned by city dwellers, in 1998 it was 60.4%, and in 1999 – 52.1 %. Villagers' poverty did not only show up in decreased income, but also in its extremely unfavorable structure. Incomes from savings calculated per member of a rural family are 3.5 times less than in the cities, and make up only 21.0% of the total net incomes, compared with 37.8% in urban areas. Villagers' possibilities to earn current incomes are also very limited. Their main sources are incomes from private agricultural activity (67.2%) and from employment in salary labor (15.3%). For people in cities these incomes are also important but their significance in the income structure is totally different compared to the one of the rural population. At the same time, social payments, just as other transfers, play a more significant role in income creation for urban individuals than they do for villagers. If the amount of pensions, family benefits, scholarships, compensations, material assistance allocated from various sources make up more than 30% from incomes of an average earning townsman, then for a rural based person – only 16%. Extremely unsatisfying is the function of the system of social assistance to the rural population; many social assistance programs put townsmen into a more favorable situation.

The correlation between the monetary and natural parts of the income has also formed as unfavorable for the rural population. Agricultural households have received 68.2% of income in barter, whilst city households – 15.6%. This fact seriously limits villagers' solvency. Keeping in mind almost the double amount of total net incomes of the townsmen compared to the villagers level, the monetary part of the city dwellers' income, and thereof, their purchasing power and the possibility to realize monetary accumulations, came out to be 4 times larger than those of the people that live in the village.

The fact that the rural population keeps falling backwards takes place against a background of the worsening of the differentiation of income of the urban dwellers, the level of which is dependent on the size of the city. Big cities create relatively favorable conditions for the realization of the educational and professional potential of the individual, they possess greater possibilities for employment and provide better social assistance. In small towns (that make up the majority of Moldova) poverty is more widespread, unemployment has taken a chronic character, and the lifestyle of the people living in those towns is more like that of the ones in villages. If in 1997 total net incomes of large cities' inhabitants surpassed the amount of incomes of the small urban areas by 1.6 times, then in 1999 – already by 2.3 times. At the same time the disproportion between total net incomes of the small cities' dwellers and of the villagers dropped from 12.9% to 10.5%. Moreover, during the last few years current villagers' income, even though not by much, surpassed available incomes of the small cities' dwellers.

In such a situation the majority of rural inhabitants become incapable of realizing their rights. They are severely isolated from social goods and professional possibilities. That's why an indispensable condition for sustainable development in the Republic of Moldova is the protection and respect for the elementary rights of the human being, including the right to a decent life for the rural population.

The limited volume of incomes and the weight of in-kind income had a negative effect on the consumption possibilities of different social facilities of rural population. In 1999 the current expenses of rural households constituted 62.3% compared with the volume of means allocated for town families. Moreover, an alarming tendency was a decrease of the share of cash means in the total volume of current expenses. If in a city household it remained stable and constituted almost 86.0%, in villages – it decreased to 35.5%.

In the structure of rural household expenses, food produce expenses occupy the main position – 73%. The rural population is not assured balanced nourishment, a great share of which is low nutritive value products like bread and potatoes. The disproportionate decrease in the food expense ratio may lead to negative results with regard to the intake of albumin, fat, carbohydrates, vitamins and macro elements. This tendency is not so pressing for townsmen.

The differences between the urban and rural endowment are not limited only by discrepancies in revenue and quality of nourishment. The low solvency of rural households made difficult the replacement of TV sets, refrigerators, washing machines and other old equipment that have been already used. This “preserved” the situation in the area of rural population provisioning with household technology, which had been bought in the ‘80s.

Communal infrastructure of the rural locality that creates an environment of comfort for the population in conditions of the crisis temporarily remains intact. In general the provision of the rural population with dwellings is satisfactory. There are problems — an insufficient level of communal arrangement. If all rural households have electricity then half of them have natural gas, only 1% have piped water supply (aqueduct) and 17.5% have telephones.

The access of children from villages to public education is harmed by several considerations. First of all, rural localities have a poor technical-material basis. The village schools do not compare with the urban ones concerning their endowment with computers; if 72.5% of urban schools have computers then in rural areas the percentage of such schools is only 48.7%. A lot of village schools need major overhauls. The staff level of rural school systems is lower than in

other places. The share of teachers without higher pedagogical education and teachers of pension age is very high; low salaries and their delay for several months do not encourage young people to remain in rural localities.

Pupils spend a lot of time taking part in agricultural works and in housekeeping. Extra schoolwork has a negative impact when discussing home tasks and school programs at all. The low nutrition level of pupils, albumin energy insufficiency, the deficit of some microelements, especially iron and iodine, have an extremely negative effect on the development of children's abilities.

In 1999 the expenses of an urban family member for education were 3.9 times higher than the ones of a rural family member. The influence of all these negative circumstances has created serious obstacles for the rural families' children in getting qualified educational services. In the country, the number of children who abandoned school constitutes 4.7 thousands, of which 79% of children are from the rural areas.

The result of a disproportion between the welfare of urban and rural families represents the increase of differences between the starting position of children from towns and villages at the very beginning of their lives. The competitive capacity of rural school graduates is lower than of the urban ones at the same age. Expansion of the paid system of education at the post-gymnasium level and at the post-lyceum level led to the fact that every second student studies on the tuition basis, and in 1999 their number increased by 21 %. The reduction in the financing of the state higher education and the reservation of 50% of the places for the rural entrants by the budget financing do not allow them equal possibilities for enrolment in the higher institutions. Living out of their families, unsuitable living conditions during the period of studies (only 37% of students get stipends and 65% are provided with hostels), high transport expenses, and few scholarships – all these factors have a negative impact on rural entrants.

Sustainable development requires multilateral actions in the sphere of education, which should not depend on the living location. In Moldova it is necessary to formulate a “second education” – knowledge of common living – alongside with the sustainable development principles, which are implanted with the “first education” and provided by the general culture. Therefore, a total orientation to education constitutes the basis for the realization of the sustainable development principles.

The sphere of health protection in Moldova is very problematic. The rural population is in the worst situation – as a result of fundamental changes the rural mortality exceeds urban mortality in 1.5 times per one thousand people.

The destruction of the general system of public health protection transferred responsibility for the health of citizens to them. Introduction of the paid services, which were with reductions or free in the previous years, became sensitive first of all for the poor families, the majority of whom cannot permit supplementary expenses for medical services. Expenses for health maintenance for one rural family member are 2.6 times lower, than for an urban family member.

The reorganization of the network of medical institutions caused their consolidation, closing a lot of “medical points” and forcing the rural population to address the county centers for

medical assistance. The poverty of the rural population and high transport costs led in a lot of cases to the impossibility to receive qualified medical treatment because of its inaccessibility. Thus, the majority of rural' inhabitants have no possibility of making use of their principle social rights and their poverty has a versatile nature. If one takes into consideration that villagers constitute more than half of the total population of the country and an overwhelming part of them is of the majority nationality, then bringing the countryside and cities closer by living conditions is already a national problem, the solution of which must become an important task of the state social policy.

The population is inclined to solve independently a part of its financial problems, displaying characteristics of self-preservation. Characteristic is the aspiration for a certain independence from the social economy and politics of the authorities, for self-provisioning of the minimal requirements for existence. Even in better times many managed personal subsidiary holding and worked at small gardening plots. Now this activity has become a mass phenomenon, a means of survival for many families, including urban ones. Though during the last years a large part of the able-bodied citizenry lost their jobs, appealing to the state labor agencies did not become a traditional norm of behavior for the unemployed. They try to find places of work by themselves, including work outside the country's frontiers.

Due to the country's traditions and the population's mentality, society shows so little assertiveness that, to a certain extent, an explanation maybe sought in a slight spread of dependent psychology as well as in the precept to rely on one's own powers. At the same time, the population is not indifferent to what is happening in the country, and comprehends very personally the economic difficulties of the state, crisis phenomena in the society and the dire situations of the poorest strata. Understanding and sympathy for the hard fate of villagers is characteristic of the urban population too, a large part of whom are natives of the countryside and are only the first or second generation of city dwellers.

### **Crime as a Reflection of Social Tensions**

The transformations undertaken by the Republic of Moldova in '90s led to diverse and controversial changes in social life. Under these circumstances, the social activity of people has increased considerably. New moral criteria for behavior underlie this activity and, to a large extent, these criteria have not been agreed on yet. People's behavior is oriented towards adapting to new realities and processes in the society. Diversification of social activity has determined the existence of a multitude of new social norms and, consequently, a variety of forms of peoples' behavior within people's relations. People began to act according to personal motivation and interests, according to their individual capacities, and to their individual goals.

In this new social environment, often marked by a legislative vacuum and by a weakness of public institutions, a number of citizens confuse liberty with the right to ignore legal norms. Poverty also motivates the respective behavior. The society faces an expansion of criminal phenomena that are also determined by the unsettling of the system of values and social relations.

Without doubt, the society lives in the conditions peculiar to the societies "shaken" by significant social crises. The phenomena of deviancy, delinquency and failure to adapt are generators of discomfort. Social conflicts, reflected in the insecurity of the citizen and the society, are also determined by an explosive manifestation of criminality. Through these

negative social relations, citizens manifest an attitude of negation of the dominant current reality in society, which demonstrates the presence of a state of a permanent conflict.

The current social relations are characteristic of periods of historic turbulence and are manifested through boundless distrust, intrigue and deliberate lie, political self-seeking and a constant fight for exclusively personal interests. A significant increase in criminality represents one of the most telling and alarming tendencies in society.

A simple presentation of the data, which reflects the state of criminality in '90s, demonstrates an obvious increase in the level of criminality and serves as a sample of the conflicted state of society. In the last five years, more than 188 thousand crimes were registered in the country. In the year 1999, approximately 39 thousand crimes were committed, thus the level of criminality reached the number of 103.7 crimes per 10 000 citizens – the highest criminality index in the last nine years. The structure of the crimes (1999) shows that more than 9,000 out of the total number of crimes included serious crimes, which mark an increase in aggression and violent manifestations known as social convulsions. The amplification of this antisocial attitude is witnessed by a rise in criminal acts above the total registered for the previous years.

Criminal phenomena of this period have evolved with an increased share of violent criminal acts, in unjustifiably large proportions. In the last seven years, 2,749 murders and attempted murders were committed. The number of rapes, attempted rapes and robberies is high, too.

Under the negative conditions of the transition period, society quite often remained unprotected from the new forms of crime: from organized economic crimes, from fiscal evasion, customs frauds, unfair competition, from smuggling and illicit reports circulated among economic entities with state capital and private companies, and all other mechanisms that support the underground economy. Through various means, a considerable amount and value of public property was passed to the benefit of some mafia or criminal groups. The dangerous level of criminality does not statistically reflect the growth of the underground economy, where illegal funds are found and which results in acts of fiscal evasion, corruption and smuggling, illegal exploitation of labor force and trafficking of humans.

Unfortunately, a concept predominates in the transition society that the only way to accumulate private capital is by theft, lying, abuse, falsification and corruption. More than 70% of registered crimes constituted those dealing with property, including 51 % of thefts of personal property (1999). Unfortunately, so far, only few people are convinced that a society based on a market economy offers sufficient grounds for honest behavior and social stability. The many that do not share that attitude generate negative attitudes that, very often, take a form of criminality. Tolerance towards abuses and illegality is manifested not only by political operatives, but also by the bodies in charge of law enforcement. It is a wrong-headed reality, from a “deformed” perception of the above-mentioned bodies, of the post-socialist society.

Society is facing changes in rules and common norms of living. Intolerance, aggression and ignorance of the law, when dominant, lead to chaos. In this situation, criminal and uncommon behavior come to the fore. In 1999 more than 4,000 major economic-financial crimes were registered, a considerable increase in comparison to the 2,000 registered for 1994. At the same time 113 financial-banking crimes were registered. It is obvious that the picture of economic-financial criminality involves corruption, an extremely harmful phenomenon with roots deep in the social structure, a real cancer damaging the central nerves of the social body.

It is evident that the aggression against the public economy, whether taken as complex or viewed as large thefts, is a form of economic gangsterism. Abuse and thefts committed by organized groups of criminals, through skilful methods, basically entail different forms of corruption. Bribery occurs basically in public structures. In 1999 there were 117 cases of bribes registered, of these 17 police functionaries were accused, 14 functionaries of the Department of Customs Control, 3 fiscal inspectors, 10 judges, prosecutors and attorneys, 9 others were functionaries of public bodies. Simple statistical data do not reflect the whole dimension of the phenomenon of corruption. In reality, the number of cases is much greater. At present, there is practically no sphere of economic-social life in which such activities would not take place.

Criminality within the family remains an alarming situation. Murders and attempts at murder may follow excessive consumption of alcohol, as well as the existence and amplification of other conflict situations within the family.

The organization of a stable network of drug consumption has become more evident. The number of teenagers and young people integrated in the crime networks increases rapidly. They are mostly used in trading the drugs, executing theft orders and practicing prostitution in and out of the country. The number of cases of involving criminals in the drug business increased from 122 in 1992, to 2101 in 1999. According to some estimates, the real number of such crimes might be ten times higher than the official one. A proof for the above-mentioned facts may be that in 1999 the majority of thefts were committed in public places. A more alarming situation is in Chisinau where 62.2% of such crimes were committed in public. There is a marked and increasing dynamic of teenagers brought to trial for committing crimes. In 1999, there were 15 murders, 35 thefts, 105 drug-related crimes, and 1,515 thefts of personal property committed by teenagers or with their participation.

An unstable state of society, the existence of legislative obstacles, disorder in some sectors, inconsistency or passivity of institutions towards the wave of crimes and organized criminality — all these are profitable for underground economic forces and degrade the social environment. In 1999, of the identified criminals, 89.8 % committed crimes for the first time. This constitutes an increase of 4.4% compared to the year 1998. The reforms taking place in all spheres of the Republic of Moldova during the last years could not fail to be taken advantage of by representatives of the criminal world. But an alarming fact is that professionals and intellectuals join the criminal world and the structures of the organized crime. Thus, an increasing number of crimes committed by people with higher education grew from 13% in 1993 to 19.2% in 1999. Another fact is that the role of the state has been decreased in the economy. This factor affected growing unemployment and poverty that directly influence the level of criminality. It should be stated that in 1993 the percentage of crimes committed by unemployed persons constituted 21% of the total number of disclosed crimes. In 1999 this category of citizens committed more than 51 % of the total number of crimes.

Antisocial behavior is seen in the explosion of existing social tensions and violent demonstrations by a large number of citizens. The demonstrations have involved the destruction of some property and the promotion of a climate emphasizing disobedience to law and the norms of social coexistence.

**In summary, Moldavian society endures the “hard times”. Criminality has become a permanent component of many aspects of society’s resources, bringing disintegration into the life of people. Criminality may incur danger to the equilibrium and stability of the society, seriously affecting the future stability and democracy in the Republic of Moldova.**

**Looking back on the decade of transition, one could conclude that many social conflicts in the society are emerging from economic reasons. In order to overcome them and to create an environment for the culture of peace in Moldova, at least five conclusions are important for solution modeling for the future:**

- 1. It is necessary to ensure a society-wide consensus with respect to the content of reform and inter-relationships between its different components. Political stability and new economic order can only be sustainable if supported by the population.**
- 2. The country requires strong and effective governance that is able to enforce law and to maintain institutions, norms and practices essential for democracy, genuine market economy and sustainable human development. Weakness of governance increases non-compliance with laws and official regulations, tax evasion, etc. Weak government is more likely to be corrupt.**
- 3. Breaking the vicious circle of recession is possible only through increased attention to the real sector of the economy. This essentially requires creation of an effective system of incentives benefiting both businesses and the state; improvement of corporate management of newly privatized enterprises; effective protection of the rights of investors and ensuring transparency of commercial tenders; support for the small and medium enterprises sector which serves as a basis for the development of the middle class – the main social force behind reforms. Concomitant with these efforts should be the measures aimed at eliminating the gap between the banking and manufacturing sectors of the economy, through reducing the influence of certain lobbies and special interest groups on the decisions concerning import/ export transactions, energy sector, privatization, and demands for higher budgetary outlays.**
- 4. The human being and his basic needs should be placed in the center of policy makers’ attention, and should be considered as a major objective of the reforms. In the course of transition from the centrally planned to a market economy, the state has retained its social responsibilities. Management methods in the area of social security, however, need to be changed. Of primary importance for Moldova are now the issues of poverty eradication, reform of social insurance system, health care reform, education and labor market formation. The principal difficulty associated with the social sector reform lies in the need for the new arrangements to be both socially just and economically balanced.**
- 5. Success of transition is directly related to the extent to which its political, social and economic components are effectively combined. The experience of the Republic of Moldova, both positive and negative, demonstrates explicitly the connection between the reforms progress and political stability. Political risks and disordered policies of the state pose a serious obstacle in the way of reforms. A better-informed citizenry will more likely take an active part in political decision-making. Social unrest, strikes and street protests constitute an extreme form of expression of popular will. In this light, it is vital to promote in all possible ways the transparency of governance through an effective system of public information dissemination. Equally important is to promote all forms of education, including retraining and enhancing professional qualifications, legal, medical and ecological education to supply the population with knowledge and skills necessary to guarantee effective social transformations. Thus, conditions will be**

**created for the emergence of a stronger civil society capable of solving key political, economic and social problems.**

## **Conclusion**

**The lessons of the '90s have freed the country from illusions. Both for the government and for the population it has become clear that the way towards well-being and a socially oriented market economy- both for the population and for the state – will not be short. The question has emerged about the need for a new strategy that would better fit the interests of human security now and sustainable development of the Republic of Moldova in the future.**

**The modern phylum of development of Moldova could be defined as technogenic phylum of economic development. This is nature-destroying phylum of development. However now extensive economic development in the Republic has environmental, economic (investment) and social limitations.**

**Environmental limitations are caused by quantitative exhaustion and qualitative aggravation of stores of natural resources, environmental contamination. For Moldova these limitations are linked first of all to the following circumstances:**

- The descending degradation of land resources in the near future may call environmental crisis in agricultural regions;**
- Contamination of surface waters (especially small rivers) are already obvious, and even more an acute problem becomes prevalent contamination of underground waters that results in an aggravation of deficiency of potable water;**
- The burial and the utilization of waste products, including toxic, are the extremely unsatisfactory;**
- Some kinds of natural resources are close to exhaustion;**
- Danger of rise of technogenic failures and eco-catastrophes that is connected to significant deterioration of the industrial, transport and waste management utilities, etc.**

**Economic or, in narrower sense, investment limitations are connected to planting disproportion between spent on use of natural resources by remedies and received results. Thus efficiency of these expenses continuously drops down; therefore maintaining a former level of use of natural resources needs more and more remedies.**

**Social limitations are caused by aggravation of health of the population in connection with environmental contamination, agricultural production. Health of the population becomes limiting factor in achievement of the purposes of sustainable development of the country.**

**Thus, existence of these limitations of development of the Moldavian economy changes it toward sustainable development.**

**Due to lack of financial possibilities national actions are mainly declarative, nevertheless creating legal and social background for further implementation. Moldova is a part of main international environmental agreement, being a pioneer of ratifying of the Aarhus Convention.**

**Organizational and management system of the country is mainly developed but still needs some improvements. Special attention should be drawn for increasing role of local authorities, business and civil society. Multi-stakeholder dialog should become a main planning tool on all levels: local, regional and national. Certainly, such changes require strong support not only from international organization, but also from local population. It means that education and public awareness should play more significant role in the society, and decision-makers should be trained on public participation issue.**

Resolution  
of the Conference “From Rio to Johannesburg”  
Chisinau, Moldova, 20<sup>th</sup> June 2001

**We, the participants of the Conference “From Rio to Johannesburg”, dedicated to the evaluation of the progress achieved and perspectives of Moldova on the way to sustainable development,**

**Noting that the process of preparation of Moldova to the Global Summit on sustainable development to be held in Johannesburg in 2002 is developing slowly and not much effectively,**

**Recognizing that most of the environmental problems are connected to insufficient preparation, shortsightedness and corruption of public authorities,**

**Underlining the value of existing natural landscapes, that are presently under threat of destruction because of economic activity that doesn't correspond to the requirements of the sustainable development,**

**Call the Government of the Republic of Moldova to:**

- 1. Recognize sustainable development as a social and political priority direction and undertake immediate steps for the implementation of its principles;**
- 2. Use geographical position of the country as an advantage for the development of flexible and effective external economic policy in order to achieve benefits for the country;**
- 3. Realize integration of the environmentally trusted decisions into the fields of economic production and social policy;**
- 4. Assure to the civil society the real opportunity to participate actively and be heard in the preparation process towards Global Summit on sustainable development, and also introduction of real inter-sector co-operation (Government – NGO – business);**
- 5. Strengthen intergovernmental co-operation in the region, and in particular, regulate the full-value transboundary co-operation in the field of environmental protection, co-operate actively with Romania and Ukraine on sustainable management of transboundary natural resources;**
- 6. Declare as the national priority enhancement of the River Dniester and consider this problem as a priority in co-operation with Transnistria;**
- 7. Adopt and implement effective mechanisms for legislation enforcement in the field of access to information, public participation in environmental decision-making and access to justice on the environmental protection matters according to the provisions of the Aarhus Convention;**
- 8. Move forward development of environmental education at all levels, raise public awareness in the field of environmental protection and assure explication of sustainable development principles among the large public and decision-makers;**
- 9. Prevent from import into the country and application of environmentally harmful technologies;**
- 10. Use economic instruments for the implementation of environmental protection policy.**

**We are coming out in favor of introduction into the county of specialized legal proceedings, connected to the environmental protection issues that will raise the quality of court decisions. Legislative sanctions in environmental protection field should be reinforced.**

**Guarantee the transparency of environmental decision-making by assuring the placing of the projects in Internet and mechanisms of bilateral connection “authorities – public”, and also open and effective access to information that relates to the quality of the environmental components (water, air, etc.). It’s necessary to include in the legislation the binding procedure of public hearings on local and national levels.**

**We call for conservation of valuable natural territories for future generations by effective management of existing protected areas and their expansion, and implementation of the National Strategy on ecological network.**

**We are convinced in the necessity to acknowledge the importance of the priority actions that are especially urgent for the Republic of Moldova on her way to sustainable development in the field of sustainable agriculture and territory development:**

- **Develop the concept and the strategy of agricultural lands use;**
- **Determine and confirm the optimal correlation between agriculture and livestock-breeding in the country, assure protection of agricultural producers. Determine maximal loads on pastures and the order of their use;**
- **Support legally and materially the optimal forms of agricultural production, that allow solving of property problems, effective competitive production, processing and commercialization of agricultural products;**
- **Develop clear marketing policy and implement it on the external market in order to assure the competitiveness of Moldovan agricultural products. Here to consider as a priority the image of Moldovan products as ecologically clean. In order to achieve this, the use of chemicals should be diminished, the Cartagena Protocol should be ratified and to adopt a stringent variant of the Law on biological safety for exclusion the products of genetic engineering from used sorts;**
- **Introduce measures to decrease soil erosion processes, including effective sustainable organization of the use of land, land tenure and struggling with soil erosion;**
- **Assure conservation of natural and semi-natural areas, that are biodiversity reserves and stimulate decrease of chemicals use;**
- **Establish the principles of rational land tenure in the legislation, including land tenure planning and creation of biodiversity reserves and forest frame, increase responsibility for the impact provoked o the soil, forest, biological and landscape resources, including economic and financial mechanisms;**
- **Assure the orientation of Moldova towards ecologically clean production and popularization of such direction inside and outside the country with the goal of creating a positive image of Moldova – producer of ecologically clean products, that is why to adopt and implement strict prohibiting legislation in the field of genetically modified organisms use and their derivatives in agriculture, including domestic animal feeding, assure efficient control of the companies that produce and distribute GMO;**
- **Raise the percentage of forestland to 15 % taking into account the equality of forests. Redemption of degraded lands is a perspective with further restoration by reforestation, meadow creation, etc;**

- **Guarantee awareness of rural public on the methods of effective land tenure, solving of main problems, connected to it, as well as methods of public hearings and transparent decision-making.**

**We call to proceed from the basin principles of water resources use taking into consideration biological and landscape diversity conservation while solving the water problems in Moldova. It is important to conclude the bilateral Convention (on Dniester River) and trilateral convention (on Prut River), speaking about transboundary rivers in Moldova. These conventions would assure harmonious approach towards conservation and use of water and biological resources. Monitoring and management of all river resources should be improved qualitatively and transferred to basing commissions, created in the framework of the conventions.**

**The law on water protection belts and zones of rivers and basins (1995) requires the implementation measures. The more valuable areas should be redeemed by the state.**

**The problem on artificial basins property (land, water, installations) in the framework of Land and Water Codes needs an urgent solution. It will give the possibility to assure their sustainable rational use.**

**The energy use policy of the country should be oriented towards decrease of the production that requires application of high use of energy technologies, diminishing energy losses, more use of alternative sources of energy (solar energy, biological gas).**