

**GEF/UNDP Project
“Needs Assessment for Capacity Building at the National Level”**

Reports on sector assessments in the fields of Climate Change, Biodiversity and Combating Desertification

Chisinau 2004

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OVERALL REPORT
of the „Climate Change” Working Group

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Introduction

The Republic of Moldova adhered to the United Nations Framework Convention on Climate Change, recognizing thus the importance of the problem and committing itself to contribute, as much as possible, to the world efforts to reduce the anthropic impact on world climate. By adhering to the Kyoto Protocol, the R. Moldova can benefit from the implementation of the Clean Development Mechanism, but for this, considerable legal-normative and institutional efforts are necessary.

The report presents the results of the assessments carried out by the „Climate Change” working group on the current situation of the national capacities in implementing the provisions of the Framework Convention and of the Kyoto Protocol. The analysis is carried out on priority fields of the R. Moldova at system, institutional and individual level. It also contains a brief outline of the barriers to the implementation of the mentioned provisions, as well as proposals on capacity building in corresponding fields and at corresponding levels.

4. Outline of assessment methods

4.2. General objective of the group

Assessment of capacities existing at national level in the field of stopping and adapting to the phenomenon of climate change aiming at developing a plan of actions for national capacity building and overcoming the barriers to accomplish the provisions of UN Framework Convention on Climate Change (UNFCCC) and for improving the quality of global environmental management.

1.2. The Algorithm of assessing national capacities in the field of "Climate Change"

The algorithm of the assessment process was developed based on the provisions of the "Self-assessments of national capacities: guide for implementation and a set of resources" manual, using the table-descriptive method.

Assessment was planned to be carried out at three levels: system (normative-legal), institutional and individual (personnel).

At system level, it was planned to assess the legal framework (concepts, national and branch strategies, national and branch programs, organic laws, presidential decrees, decisions of the Government), assessment of the extent to which the provisions of the UNFCCC are reflected, outline of planned measures and their legal (and financial) support.

In order to assess the institutional capacity it was suggested to analyze the institutional responsibilities within national strategies and plans, legal acts, measures related to the accomplishment of the provisions of the Framework Convention. In this context it was decided to carry out the corresponding analysis at ministerial, departmental and agency level.

The criteria for assessing the institutional capacity were defined as follows: clarity of the mission; efficiency of the structure, management, planning and quality management; human and financial resources; informational situation; availability of material facilities: computers, offices, Internet network etc.

It was decided to carry out capacities assessment at individual level based on questioning decision-makers and people in executive positions who are involved in the implementation of the provisions of the Framework Convention on Climate Change, of the employees within ministries, departments and agencies with a certain attribution to the accomplishment of the UNFCCC provisions. The objectives of the questioning were determined (formulated) in the following way: correctness of duties definition; correspondence of the professional level; existence and efficiency of the training/advanced training system; professional growth, staff evaluation; initiative promotion.

1.3. Concept of the structure of the group of experts for carrying out the first stage of the project

The concept of the structure of the group of experts who will carry out the assessment of the current situation in the field of climate change was defined taking into consideration the major objectives of the Framework Convention, the latter being structured in three blocks:

1. Assessment of greenhouse gas emissions and measures for their reduction
2. Assessment of vulnerabilities and measures to adapt to climate change
3. Researches and systematic climate observations

According to this concept, the structure of the working group comprises three subgroups of experts for each field (sector) important for the Republic of Moldova. The members of the group of experts have been selected among specialists in the field, with experience in working as a group and having as starting point the idea of having a complex, competent and efficient team.

1.4. Development of terms of reference for the experts of the "Climate Change" working group

The terms of reference were developed based on:

- requirements regarding the corresponding terms for the working group in the field of climate change;
- objectives of the first stage of the project;
- methodical guidelines regarding the assessment of the current situation of capacities and development needs of national capacities, reflected in the "Self-assessments of national capacities: guide for implementation and a set of resources" manual.

Each expert had to present the results of the assessment in the form of an assessment report having a descriptive and neutral nature, containing:

- analysis of present situation and description of identified barriers - individual, institutional and system - which hinder the accomplishment of planned activities;
- analysis of the measures that would contribute to building capacities for the implementation of UNFCCC provisions.

2. Identification of the present stage of accomplishing UNFCCC provisions, taking into consideration the individual, institutional and system aspects

2.1. Priority areas and actions of the R. Moldova in the context of the provisions of the Framework Convention on Climate Change and Kyoto Protocol

The Republic of Moldova adhered to the United Nations Framework Convention on Climate Change on June 09, 1995 (The Decision of the Parliament of the R. Moldova No 404-XIII of 27.04.1995) and is member of the group of developing countries that can voluntarily engage, as much as possible, into world efforts to reduce the anthropic impact on global climate. A developing state can benefit from the help of developed countries depending on its contribution to the accomplishment of the basic objective of the framework convention.

The main tasks of the countries that have ratified the convention are:

- To inventorize greenhouse gas emissions (GHG),
- To estimate the vulnerability of different sectors to climate change,
- To develop measures for GHG emissions reduction and for the adaptation to climate change, including raising society awareness in this field.

The Republic of Moldova presented in 2000 the First National Communication containing the results of the national GHG emission inventory and the measures proposed to accomplish the objectives of the Convention. These are adapted to the economic situation of the R. Moldova and integrated into the national development programs.

In 2002, the R. Moldova presented „Technological Needs and Development Priorities” report, which reflects the present situation and the needs for new technologies in energetics and industry from environmental impact point of view.

The Republic of Moldova adhered to the Kyoto Protocol in 2003 (The Law of the R. Moldova No 29-XV of 13.02.2003). According to art.2 of this law, the responsibility for accomplishing the provisions of the Protocol is exercised by the Ministry of Ecology and Natural Resources.

The nominal structure and the regulation of the National Commission for the implementation and accomplishment of the United Nations Framework Convention on Climate Change, as well as of the mechanisms and provisions of Kyoto Protocol were approved by the Decision of the Government no.1574 of December 26, 2003. The commission is the supreme national authority in this field.

The priority areas and the activities of the Republic of Moldova were stipulated in the First National Communication and as for energy, industry and transport, sectors with the highest level of GHG emissions, these have been described comprehensively in the „Technological Needs and Development Priorities” report.

The priority actions stipulated in the Convention and the Protocol are the following:

➤ In the field of GHG emissions limitation and reduction

The results of GHG emissions estimations in the Republic of Moldova have established the most important sources of emissions: energetics (71 percent), including the production of electric and thermal energy and transports; some industrial processes (11.6 per cent), agriculture (12.7 per cent) and waste (4.7 per cent). The priority measures for GHG emissions reduction were determined on types of sources as follows:

Energetics sector, which includes – fuel transportation, conversion of primary fuel energy; transportation of secondary energy through thermal and electric networks; use of all forms of energy:

- Encourage reforms that would contribute to the realization of policies and measures for limiting or reducing GHG emissions at all stages of production and transport of electric and thermal energy;
- Increase energy efficiency in all basic branches of national economy and in the residential sector;
- Improve and introduce new and recyclable sources of energy in the energy balance;
- Adjust to European norms and standards on preventing environmental pollution.

Industrial processes sector:

- Update technological processes for the rational use of natural and energy resources and for the reduction of production waste;
- Promote ecological production and implementation of non-polluting technologies;
- Improve and complete the legal framework according to the European standards (norms on emissions)

Transports sector:

- Use on a large scale of electric transport, modernization of transport and use of less polluting fuel: nonethyl gas, natural gas and biological fuel;
- Optimization of urban and interurban transport network;
- Application of economic and tax measures to stimulate renovation of vehicles and of the rolling stock;
- Facilitation of the use of public transport

Agriculture and agricultural processing industry sector:

- Efficient use of fuel;
- Use of recyclable energy sources (solar, wind, biogas, natural freeze) as a means to reduce traditional fuel consumption;
- Use of modern technologies with reduced consumption of energy and ecologically pure;
- Use of processing industry waste and agricultural waste.

Waste sector:

- Use and neutralization of waste;
- Limitation of waste generating sources;
- Eliminating raw material containing toxic substances;
- Use of organic waste and methane released from waste as a source of energy.

➤ **In the field of developing GHG absorptive capacities**

- Recordkeeping and improvement of measures for protection of forests against diseases and harmful agents;
- Afforestation of water protection zones and extension of forests protection belts along the main communication ways;
- Afforestation of damaged soils;
- Strengthening of seeding and growing basis of the planting reproduction material from local species.

➤ **In the field of adaptation to climate change**

Climate changes have a serious impact on natural ecosystems, agriculture and health of the population. Risk factors determining the level of vulnerability for ecosystems and population health are: insufficiency of soil humidity, irregular distribution of precipitations, frequent floods, and high temperatures, especially at the beginning of the summer and at the end of spring.

The main activities regarding the adaptation to new climate conditions, determined based on the assessment of ecosystems vulnerability and risk factors were defined as follows:

For natural ecosystems:

- Extension of protected areas for ecosystems vulnerable to climate changes;
- Organization of the monitoring aiming at determining species and ecosystems stability depending on climate changes, carrying out measures to increase their resistance to changes;
- Development and implementation of programs to extend forests and other green spaces, adequate administration of forest potential;
- Recovery of humid areas.

For water resources:

- Protection of waters against pollution and drainage caused by human activity;
- Prevention and liquidation of destructive effects of waters,
- Protection against floods and underfloods;
- Provide safe hydro-technical constructions against floods.

For agroecosystems:

- Adaptation of the process of using natural resources having agricultural destination to the principles of sustainable agricultural development;
- Creation of socioeconomic conditions for profitable activities of farms;
- Development of types, hybrids and technologies adapted to new climate conditions
- Development and implementation of complex (hydro- and agro-technical) systems of accumulation and efficient use of atmosphere precipitations;
- Implementation of agricultural systems that contribute to the reduction of soil erosion and degradation;
- Judicious administration of agricultural fields and pastures.

➤ **In the field of public health**

- Restructuring of public health monitoring system;
- Placement of polluting objectives as far away from work and leisure areas as possible.

➤ **In the field of research and organization of climate observations**

- Promotion of scientific research in the field of climate change and improvement of the national system of systematic observations.

➤ **In the field of education, training and raising population awareness**

- Raising public awareness on climate changes and needs for permanent adaptation to possible changes, encouraging participation of population and non-governmental organizations in this process.

The following sections briefly present the results of assessments carried out by experts within the present project regarding national capacities of the Republic of Moldova at system, institutional and individual levels in accomplishing the above listed measures, contributing thus to the achievement of UNFCCC objectives. The analysis is carried out on priority areas and representative economic sectors.

4.3. Assessment of capacities in the field of GHG emissions reduction

4.3.1. Current situation of capacities in the energetic complex

Situation regarding capacities at the level of system

In the energetic sector, documents determining state policies and strategies at present are: The National Strategy for Sustainable Development, Energetic Strategy of the Republic of Moldova until 2005, Energetic Strategy of the Republic of Moldova until 2010, National Program of Energy Conservation 2003-2010; National Program for using Recyclable Energy Sources until 2010 which is in the process of being adopted now, Concept of Republican Heat Supply System Renewal, DG no 189 of 10.02.2003; National Program for the Use of Production and Consumption Waste, DG No 606 of 28.06.2000, Program for Restructuring the Thermoenergetic System of the Republic of Moldova, DG No 581 of 21.08.1999; National Gasification Program of the Republic of Moldova, GD No.1643 of 19.12.2002.

The National Strategy for Sustainable Development, developed by the Supreme Economic Council within the Presidency of the Republic of Moldova and the United Nations Development Program for the 2000-2020 period provides the following basic activities in the energy sector: carrying out of the plan of actions approved by the Decision of the Government No.360 of April 11, 2000 - **Energy Strategy of the Republic of Moldova until 2010**; promotion of market economy principles in energetics; raising transport production efficiency and energy distribution and costs reduction, adoption of European norms in technologies modernization, introduction of recyclable energy sources in consumption balance.

Energetic Strategy of the Republic of Moldova until 2010 is the only document stipulating state long-term policies in the field of energetics, being the main component in the process of ensuring the implementation of the National Strategy for Sustainable Development in the energetic sector. It includes and describes in details some of the main activity directions outlined in previous strategies and provides concrete mechanisms for accomplishing the planned activities, including development of educational and raising society awareness sets of programs regarding energy saving. Some activities are taken from the Energetic Strategy of the Republic of Moldova until 2005.

The National Program of Energy Conservation 2003-2010, promotes some of the directions stipulated in the Concept on Environmental Policy of the Republic of Moldova and in the Energetic Strategy of the Republic of Moldova until 2010 through saving actions and measures. The program determines the basic principles of state policies related to energy conservation, according to the Law of the Republic of Moldova No. 1136 of July 13, 2000, emphasizing the efficiency of energy sources consumption, implementation of energy conservation technologies and development of the mechanism for raising the interest of the consumer towards energy conservation.

To reach the proposed strategic objective the following priority areas are emphasized according to the requirements of the Energy Charter Protocol:

- Assessment of the energetic, environmental and economy impact of undertaken measures;
- Definition, approval and application of standards aiming at improving the efficiency of energy consuming equipment and efforts for their harmonization at international level;
- Development and promotion of individual initiative and industrial cooperation;
- Promotion of the use of the most efficient technologies and energy equipments, which are economically viable and non-polluting;
- Creation of specialized centres for energetic efficiency.

The majority of measures provided in strategies and programs have been developed in legal documents, but a part of them was not included in this set of laws. We refer to a set of ecologic measures of general nature, as well as GHG emissions in the energetic complex that should be included in the following documents, which must be adopted as soon as possible:

- Law on Ecological Security;
- Guide for assessing the damage caused to environment and to natural resources by human activities and mechanisms to compensate these damages;
- National Plan of activities of reduction of greenhouse gases according to the provisions of the First national Communication of the Republic of Moldova;

- National Program and area programs for the reduction of polluting agents emissions by existing fuel consuming installations according to international treaties and European directives;
- Extension of the provisions of the Law on Taxes on Environmental Pollution No. 1540-XIII of February 25, 1998 on autonomous thermal plants as well.

Another set of suspended measures refers directly to energetic sources:

- Diversification of sources and ways to import energetic sources that include finalizing and beginning to exploit the Giurgiulesti Petrol Terminal;
- Elimination of price discrepancies in order to increase their efficiency; an intensive free competition between the producers of fuel and coal products.

The set of laws referring directly to the energy sector includes the Law of the Republic of Moldova on Energy No.1525-XIII of 19.02.98; the Law on Gas No.136-XIV of 17.09.98; the Law of the Republic of Moldova on Saving Energy No.1136-XIV of 13.07.00; the Law of the Republic of Moldova on Thermal Energy; the Law of the Republic of Moldova on Concept of Privatization of Energy Sector Enterprises, No. 63-XIV of 25.06.98; and the Law of the Republic of Moldova on Petroleum Products Market, No. 461-XV of 30.07.01.

Directly related to these problems also are: the Law of the Republic of Moldova on Natural Resources No. 1102-XIII of 06.02.97, the Law of the Republic of Moldova on Secondary Material Resources No. 787-XIII of 26.03.96; the Law of the Republic of Moldova on Production and Consumption waste No.1347 of 09.10.97; the Law of the Republic of Moldova on Standardization No.590-XIII of 20.09.96; and the Law of the Republic of Moldova on Principles of Urbanism and Territory Arrangement No. 835-XIV of 17.05.96.

Given the fact that the majority of the mentioned laws have been adopted before the development of strategies, many of them need some changes and adjustments. It applies especially to those related to CHG emissions. As in the case of strategies, the laws do not contain direct references to thermal pollution and GHG emissions.

Unfortunately, the laws related to the ecological set do not refer to the problem of waste energy exploitation (of any origin), which could have a double ecological effect: avoiding CO₂ and CH₄ emissions in the process of natural decomposing of waste and reducing fossil fuel consumption.

In the energy sector, adoption of the legal framework was delayed. The law on Energy was approved in 1998, the law on Energy Saving in 2000 and the Law on Thermal Energy is being examined in the Parliament, and is to be adopted soon.

The laws on energetics are of economic nature, but, since these are aimed energy conservation, they lead to the reduction of fuel consumption and to the reduction of GHG emissions. The objectives of these laws refer to adequate political, organizational and economic conditions for the efficient use of energetic sources in the process of their extraction, production, processing, storage, transportation, distribution and use, one of the conditions being limitation of the monopolist activity and stimulation of free competition in the energy sector.

The conditions for the development of the energy sector and promotion of environmental protection measures are provided, as well, by the laws on the privatization of the energy sector, the Law on Competition Protection, the laws on access to information. However, a series of measures provided by these laws on the energetic sector are not reflected in regulation and standard acts, including:

- State, central and local public authorities support of private initiatives and promotion of the private sector in thermal energy sector;
- Regulation of monopolist activities and stimulation of competition in thermal energy sector;
- Inviolability of investments in thermal energy sector;
- Non-involvement of public administration in the economic activity of companies of production, transportation, distribution and delivery of thermal energy except the cases provided by the legislation in force;
- Diversification of thermal energy production sources and of the forms of property in the thermal energy sector.

The above-mentioned legislative acts reflect the problem of the necessary financial support for accomplishing the outlined measures. The following documents have been developed and approved: Investment Strategy of the Republic of Moldova, the Law on Investments, however some measures did not receive the proper legal expression. No priorities are provided for the increase of investments in:

- Environmental protection and improvement,
- Areas related to the system of residual waste evacuation and neutralization,
- Scientific research applicable in the field of ecology.

It can be ascertained that strategies, concepts, programs and plans of actions, as well as the laws developed on their basis generally ensure the system framework necessary for accomplishing the basic tasks in the energy sector. The problem of GHG emissions reduction is reflected in the above-mentioned documents in the context of achieving economic objectives. Taking into consideration the importance of the energetic sector in GHG emissions, the

development of a special area program, which would determine, according to the environmental policies of the Republic of Moldova, the special environmental protection actions from the part of the energetic sector are welcomed.

Capacities at institutional level

The energetic complex and especially the one of thermal energy play the main role in GHG emissions reduction, a task that can be achieved first of all through energy conservation. The Ministry of Energy, created by the Decision of the Government No. 547 of 28.06.2001 is responsible for this filed.

The competence Ministry will carry out the following tasks: promote state energy policies, form the energy market and coordinate the activity of state owned energy companies and joint-stock companies where the state is the main shareholder.

It should be mentioned that the Ministry of Energy has no subdivision responsible for GHG emissions reduction and environmental protection is not directly included in its tasks.

The Ministry acts towards this direction as much as possible, but the results are not sufficient, especially in thermal energy sector, from the following reasons: unfavourable investments climate, low prices of electric power acquisition on the Russian and Ukrainian market.

A compulsory condition for the privatization and good running of the energetic sector in the market economy is the right fixing of tariffs for energy. In order to develop methods for the calculation of tariffs for different forms of energy and energy carriers, the Government created by its decision No.767 of 11.08.1997 the National Agency for Energy Regulation (ANRE). The main task of ANRE is to increase work efficiency, ensuring and promoting competition in electric, thermal and gas energy sectors; development and approval of tariffs for energy and energy sources. As the examined documents show (see the ANRE decisions No.30 of 26.12.2000 and No.34 of 19.02.2001, the Decision of the Government No.138 of 16.02.01), one of the barriers that reduce ANRE efficiency is the involvement of central and local public authorities in the activity of economic units in the corresponding area.

Energy conservation. Reduction of energy resources consumption is a problem that has been paid significant attention at all levels - national strategies and programs, laws, regulations and other standard acts. Nevertheless, this attention is not determined by the intention to solve environmental problems (these are mentioned in certain documents, but only fugitively), but rather by the critical situation of the energetic complex: the extremely high rate of energy sources in the cost of gross domestic product, energy intensity 4-5 times greater than in developed states; delivery of thermal energy to population at prices which are too high compared to the average wages in the country; incapacity of consumers to pay the bills for the consumed energy.

These problems can be solved only through energy conservation, a solution that ensures the reduction of fuel consumption and greenhouse gases emissions.

The population is not completely aware of the problem of energy conservation and the latter is treated by the political leaders of the republic and by competence ministries under the level of importance and seriousness.

The National Agency for Energy Saving (NAES) is the main agency responsible for the promotion of energy conservation in the republic. Although this structure was created within the TACIS program in 1995, the Law on Energy Saving was adopted as late as in 2000, the Regulation of the National Fund for Energy Saving - in 2002 and the Program for Energy Conservation, that began to be developed in 1995 - by the end of 2003. As a result of the lack of competence and insufficiency of qualified staff NAES is not functioning now, the majority of actions for energy saving failing to be implemented because of statute gaps. The situation related to NAES must be solved urgently and training actions in the field for the staff at all levels but especially for decision makers must be carried out.

More than 40 per cent of energy sources are consumed in buildings. Therefore, buildings are a significant reserve for energy conservation and GHG emissions reduction. The Building and Territory Development Department is responsible for this problem. This institution has the following responsibilities:

- Granting of activity licenses in buildings design and construction and in the industry of building materials;
- Development, approval and implementation of standards and standard acts in its areas of activity;
- Coordination and guidance of scientific researches in environmental protection, territory arrangement, urbanism, architecture, constructions, construction materials industry, residences, municipal infrastructure as well as implementation of new techniques and technologies in its areas of activity.

The department developed and approved the Concept of up-dating the national system of standard acts and the Program for creating a normative basis in constructions. Thanks to the creation of the Extra-budgetary Fund for financing the works for the creation of the normative basis in construction, this program is successfully carried out.

Use of recyclable energy sources (RES), is very important in the conditions of the Republic of Moldova, being the only efficient method for GHG emissions reduction, but also the main available source of local energy. The use of RES is provided in national strategies and programs. The results in this area are insignificant, the main barriers being:

- Ignoring of the RES problem by decision making bodies;
- The significant amount of necessary investments and the long period of their recovery;
- Financial scarcity at all levels;

- Unrecognizing advantages of RES use by the society.

Significant attention is paid to *the problem of gasification*. A series of programs, legal and standard acts have been developed in this field, the majority being implemented. In the balance of fuels, the share of natural gas exceeds 60 per cent. From the GHG emissions point of view, it is a positive factor, but at the same time the dependence of the country on the main supplier - Russia is increasing. The main actions planned to be carried out in the gas sector are the following: construction of pipes between internal main pipelines and the line Drochia-Ungheni-Iași, which would allow connection to other sources of gas through Romania. The introduction of gas meters at the points of entry into the republic is delayed, fact that can directly influence the emissions of CH₄, the gas consumption on the territory of the republic not being controlled strictly at this moment.

Capacities at individual level

The state of capacities at individual level is characterized by the insufficiently deep recognition of the essence of global climate change problem. At the same time, because of the long and deep economic crisis in the republic, environmental protection problems are placed on the secondary plan in the hierarchy of priorities;

The insufficient awareness of the problem of GHG emissions reduction through energy conservation and use of recyclable energy sources, insufficient information regarding world experience in this area are serious impediments at individual level in the accomplishment of the provisions of the Framework Convention. The problem of energy conservation is often treated unilaterally, being reduced to technical measures of energy saving and to delivery of warm water to some consumers. The organizational aspect of energy conservation and RES implementation at the level of enterprises is neglected and therefore unknown by their managers. The process of education, training, informing and raising decision makers awareness concerning these problems must be improved. An efficient solution in this regard would be the promotion of young people in managing positions.

4.3.2. Current situation of legal and institutional framework capacities in industry

Priority actions in the industry sector of the Republic of Moldova were initially reflected in the “National Strategy for Sustainable Development” (approved in 1995) and the corresponding action plan in industry: privatization, stimulation of investments in the main branches of industry; management modernization and training of managerial staff.

A set of laws (Law on Environmental Protection, Law on Air Protection, Law on Hydrometeorological Activity, Law on Taxes for Environmental Pollution, Law of the R. Moldova on Protection of Small Businesses) includes control activities (monitoring), economic levers and organizational measures to reduce toxic emissions from industry production.

The majority of planned measures was performed partially or is at the stage of implementation, the most frequent barriers being: lack of local financial sources, lack of feasible projects specific for the industry of the R. Moldova, of economic and legal mechanisms to stimulate investments, delay of the process of state companies privatization.

Economic growth can become the driving force for the reduction of CO₂, SO₂, NO_x emissions when dynamic rhythms of production growth will allow enterprises to invest in cleaner technologies and to pay more attention to environmental problems.

The structure of the Ministry of Industry determined by the Decision of the Government No. 1574, includes the following directions: industry strategies and policies; industrial development; economic-financial analysis and reforms; administration of state property; foreign relationships and European integration.

The competences of the Ministry of Industry are: development of concepts, strategies, policies and strategic programs for sector development; carrying out studies on world tendencies of technical-scientific research and formulation of proposals for the implementation of new technologies; carrying out studies on energy consumption in industry processes, identification of industrial processes with excessive energy consumption, promotion and implementation of efficient technologies and equipments; promotion of reforms in industry, identification of problems faced by economic agents and development of measures to support production activity, elimination of barriers and improvement of the financial situation of economic agents.

A true “challenge” in controlling industrial pollution is the rigorous application of environmental protection regulations and at the same time maintaining the competitive industrial basis of the country. The total cost of environmental protection in the processing industry amounts only to 1-2 per cent from the industrial added value, although an increase of this indicator is expected.

Environmental taxes are imposed almost exclusively in the area of communal and transport services. Environmental tax exemptions and major concessions accepted for the industrial sector undermine the application of the “Who pollutes- pays” principle.

The number of enterprises having systems of ecological management increased significantly in the 1999-2002 period. A series of industrial enterprises were granted ISO 14001 and EMAS certificates. However, many economic agents do not apply such environmental management systems because of their high costs and because of relatively low penalties imposed for pollution.

The industrial ecological policy existing in the R. Moldova was extended mainly around admitted limits of emissions.

The increase of ecologic efficiency in industry could be ensured by introducing new technologies in industrial processes (cleaner technologies, end-of-pipe reduction measures and energy and raw materials consumption modification) and structural changes.

There are few economic possibilities to replace existing technologies with purer modern technologies (B and C class measures), but it is possible to carry out A class actions instead, i.e. raw materials, water and energy saving, increase of technological discipline, improvement of technological parameters that ensure the increase of labour productivity.

First steps for the implementation of pure production principles were made at dozens of enterprises. In the 1995-2003 period, the Agency for Restructuring and Enterprise Assistance "Aria" initiated audits at a series of industrial enterprises aiming at improving management and technological processes and presented modernization proposals. Through the USAID program, similar activities have been carried out at a series of small and medium enterprises. Several enterprises obtained remarkable results regarding thermal and electric energy conservation, reduction of water consumption, reduction of the content of chemical substances in overflows and of the quantity of organic waste by carrying out A class measures.

The legal and the institutional framework existing in the republic are favourable for the implementation of cleaner technologies. These provisions are stipulated in a series of laws and executive documents, including the national declaration on the promotion of the "Cleaner production" policy.

4.3.3. Current state of legal and institutional framework capacities in transports

In documents and standard acts developed in the Republic of Moldova in transports sector, the priority actions and measures are sufficiently reflected. For example, **The Short-Term National program of Road Safety Improvement - 2003-2004 and Long-term program - until 2008 provides:**

- Development of national standards on environmental protection in road traffic, adjustment to international standards;
- Development of regulations of state ecologic instrumental control and testing (inventory) of the level of environmental pollution by cars in road traffic with exhaust gases and mechanic noise;
- Organization at national level of the monitoring of air pollution by auto transport (collection of data, their transmission and processing, point out "intensely polluted areas", creation of points to collect evidence in road traffic);
- Promotion of technical assistance projects through all official channels to ensure the accomplishment of measures planned in the program;
- Carrying out of the study on design and building of a belt road for Chisinau Municipality;
- Ensuring of the observance of the provisions of the Law on Atmospheric Air in the field of inventory of toxic gases emissions by all mobile sources of pollution;
- Creation of mixed mobile control posts in order to ensure technical and ecological safety;
- Limitation of old cars imports.

The following actions in the filed of transports are of great importance for the Republic of Moldova: removing the gas enriched with lead from the market (the import of this gas was forbidden in 2003), adoption of strict standards regarding old cars, establishment of an efficient inspection of the technical condition of the car park.

The environmental impact of transport depends largely on the quality of fuel. Fuel quality standards contribute significantly to the reduction of air pollution by vehicles. Taxing fuel is an important lever, imposing the increase of energy efficiency in transports and, therefore, the GHG emissions reduction. It should be mentioned that the season subsidies granted for gas and diesel gas as well as the price tendencies for transport fuel on the republican market do not encourage the utilization of more efficient transports (from the fuel consumption point of view).

The fuel for naval and air transport is exempted from taxes in the republic. Taxes are not applied to diesel gas and electric power for railroad transport or these are taxed relatively low. These factors influence the competition between transports and untaxed sectors do not undertake any measures on GHG emissions reduction.

The Republic of Moldova does not have a national integrated functional monitoring system on pollutants including for means of transport. The basic gaps of the existing system of toxic substances management and control are:

- Lack of a single methodology for assessing and calculating emissions from stationary and mobile sources;
- Because of the lame technical endowment many activities (collection, analysis, forecast of information on general emissions by polluting enterprises) on integrated environmental monitoring are not carried out;
- Lack of coordination and cooperation between environmental institutions and sectors in problems related to pollution reduction;

- In the strategic plans regarding transports sector the monitoring problems are taken into consideration but are reflected partially or from case to case.

The infrastructure of railroad transport is comparatively developed. The basic legal act in the field of railroad transport is the Railway Transportation Code. At the level of „Calea Ferata din Moldova” (Moldovan Railroad State Enterprise), as well as at institutional level (Railway Transport Department of the Ministry of Transports and Communications of the Republic of Moldova) there has not been created a clear vision on the environmental policy.

Investments in transport infrastructure are a priority for the transport policy the latter being based on the extension of the infrastructure, especially of roads.

The problem of developing and regulating the activity of public transport in Chisinau is presented in the Concept of the Municipal Public Transport Development for the 2000-2010 period, approved by the decision of the Municipal Council No. 3/35 of 22.06.2000.

This conception establishes and specifies the set of priorities, strategic directions and basic measures for the development of transport sector and communication networks in Chisinau, aiming at solving economic, financial, social and ecologic problems.

A strategic priority in passenger transport with high nominal capacities is the development of electric transport, characterized by the lowest operational costs and a minimum level of environmental pollution. Recently, the trolleybus parks have been completed with new transport units.

In the sector of passenger transport with buses, the strategic priorities are the following: quantitative and qualitative increase of the rolling stock, improvement of the quality of services, of the level of comfort and increase of profitability.

The completion of municipal enterprises with new trolleybuses and busses will allow reducing the number of minibuses, fact that will positively influence the environment. For this purpose, the minibuses will operate in microsectors, which are difficult to reach with other types of public transport. The minibuses that have been running for more than 15 years are not allowed to transport passengers on municipal routes according to the Common Decision of the Ministry of Internal Affairs of the Republic of Moldova and Chisinau City Hall No.12/23/2 of 06.11.2001.

Implementation of modern building, repairing and maintenance technologies for roads is planned.

The legal framework for transport management is also subject to reforms, the old procedures being replaced by new rules and regulations.

The development and implementation of long-term policies related to transport and its management are hindered largely by the instability in administrative and legal sectors.

The structure of the Ministry of Transports and Communications is determined by the Decision of the Government, which does not provide any subdivision responsible for environment. The structure, competences and obligations of the subdivisions of the Ministry are determined through the corresponding regulations.

4.3.4. Current state of capacities in agriculture and processing industry

Capacities at system level

The category of legal acts that have been adopted in the Republic of Moldova: three concepts, six programs and several decisions of the Government pertain directly or indirectly to the examined problem. These are based on the promotion of reforms that would help accomplish policies and measures including GHG emissions limitation or reduction.

The concept of processing industry development provides insurance of safety of food products consumed by the population of the country and increase of export capacity of the corresponding industry.

The Concept of environmental policy of the Republic of Moldova provides reduction of the pollution level, its inclusion in European norms, reduction of specific consumption of fuel, use of fuels with reduced GHG emissions and of recyclable energy sources, including in agriculture and processing industry.

The national strategy for development in the environmental sector provides adjustment to European norms in modernization of technologies as to limit polluting factors; introduction of own recyclable energy sources in the consumption balance.

Implementation of this strategy is based on ten basic laws on environmental protection, as well as on the following programs: modernization and technological renewal in processing industry; use of recyclable energy sources in agriculture; efficient use of the package (including package waste).

The program of modernization and technical adjustment of capacities in processing industry (Decision of the Government of the RM on the reform in agriculture No.1022 of 06.10.1998) provides development and application of investments projects according to international norms and regulations; identification of main directions of the processing industry for the development and implementation of investments projects in ecologically clean technologies.

The Area program for using recyclable energy sources in agriculture (Decision of the Government no. 1022 of 06.10.1998) aims at saving traditional sources of energy and reduction of environmental pollution level.

The program for the development of packing industry (Decision of the Government of the RM No. 1022 of 06.10.1998) in the field of environmental protection stipulates capitalization of glass, paper, plastics, polyethylene, wood and other waste. For the capitalization of waste at area level, creation of Package Producers Association is suggested.

The National Program for Energy Saving for the 2003-2010 period (Decision of the Government No. 1078 of 5.09.2003) provides efficient use of energy sources and of energy and, as a result, GHG emissions reduction. Reduction of energy consumption in agriculture is planned to be achieved through optimal combination of sources of local and renewable energy with traditional sources by introducing waste coming from agriculture in the energy cycle; development and promotion of a favourable tariff policy in order to save electric power and implement new technologies; inform and train the rural population in problems related to energy saving.

The National System of Standards was completed with corresponding standards on the quality and harmlessness of agricultural food production.

We can ascertain, with some hesitations that the concepts, the strategies, the programs and the laws developed and adopted in the Republic of Moldova form the legal framework necessary for the development of capacities in agriculture. At the level of strategies, programs and other legal acts and a set of measures of financial nature remained unaccomplished: creation of agriculture and processing industry development fund; granting tax facilities to commercial banks and to investment funds in case of their participation in the financing of ecologic projects in agriculture; granting tax facilities and granting credits to economic agents in agriculture and processing industry, who modernize on their own account the technologies and equipment aiming at reducing the consumption of natural resources and environmental protection.

It should be mentioned that laws related to agriculture have a general economic character, but also an ecological one and with some small exceptions, these contain direct references to GHG emissions.

Current state of capacities at institutional and individual level

The activity plan of the Ministry of Agriculture and Food Industry provides the accomplishment of state policy related to environmental protection, coordination of environmental protection activities, promotion of ecological agriculture and ecological products.

In 2003, the general Direction for Ecological Agriculture and Plant Protection with the State Inspectorate was created within the Ministry of Agriculture and Food Industry. Before 2003, environmental protection problems were the main concern of six different directions.

In the field, the problem of environmental protection is the responsibility of District agricultural directions, but rather formally.

Local public authorities must: ensure observance of the laws on environmental protection, organize the development and accomplishment of ecological programs; carry out systematic and operative informing of the population, enterprises, institutions, organizations, on the state of environment; to assess the environmental impact and to carry out ecological audits; to organize and coordinate scientific researches in ecological problems; to inform and administer the extra-budgetary national ecological funds; to build the public opinion on the state of environment and advocate ecological knowledge. These functions are considered auxiliary in the activity of local public authorities, where the social economic problems are on the first plan and hence are not fulfilled.

What concerns problems related to environment, the Ministry of Agriculture coordinates its activities with the Ministry of Ecology and Natural Resources, Ministry of Energy and Ministry of Health.

Specialists in corresponding area complete the apparatus of the Ministry of Agriculture. The problem of GHG emissions reduction in agriculture is not sufficiently realized in the territory and by decision makers because this problem is not considered urgent, this subject is not reflected and debated in mass-media, on TV, at universities, in schools etc.; the majority of specialists in agriculture have insufficient knowledge in environmental protection; in the conditions of the economic crisis that affected the republic attention is paid only to measures ensuring immediate material benefits.

4.3.5. Current state of capacities of legal, institutional and individual framework in waste sector

State of capacities at system level

The Republic of Moldova has a proper legislation in the field of waste management.

The Concept of Environmental Policy of the Republic of Moldova approved by the Decision of the Government of the Republic of Moldova No. 605-XV of November 2, 2001 (Monitorul Oficial of the RM No. 9-10, 2002) determines the main objectives of environmental policy, many of these referring directly to waste sector, namely:

- Prevention and reduction of the negative impact of economic activity on environmental factors, on natural resources and on the health of the population in the context of sustainable development of the country;

- Regulation on impact, pollution prevention and environment cleaning, which provide environmental management at enterprises and ecological licensing, introduction of licensing of environmental management systems, processes and products with a negative impact on environment;
- Coordination of the realization of the provisions of the National Program for the Use of Production and Consumption Waste;
- Promotion of a cleaner production;
- Improvement of economic mechanisms of environmental protection and rational use of natural resources, proceed from administrative levers of environmental protection management to economic levers, repairing of the damages caused to the environment;
- Review of legal and standard acts in force, their adjustment to European legislation.

The concept specifies concrete actions for each branch of the national economy, oriented towards the reduction of the impact of production waste, namely:

In industry: promotion of a cleaner production by applying non-polluting technology; raising the interest of enterprises in decreasing the waste volume, while processing and reusing these as secondary raw material; modernization and use of installations for collecting toxic substances resulting from technological processes;

In residential and communal household sector: application of construction technologies with a reduced environmental impact and use of ecologically pure construction materials; sanitation of places, including separate collection of consumption waste; designing and placement of controlled storages determining waste quantity;

In environmental research-development: detailed scientific research in priority areas of environmental protection, continuation of assessment researches of the impact of economic activities on environment.

The concept also provides the main directions of waste management: waste capitalization and neutralization, reduction to minimum of their production and toxicity; eliminating the use of raw materials containing toxic substances; separate collection of consumption waste; stimulation through economic mechanisms of economic agents involved in waste management, improvement of the legal framework in the field of waste management.

National Strategy for Sustainable Development - „Moldova’-21”, of 2000 provides principles and objectives of phased sustainable development in the Republic of Moldova.

The third part of the strategy contains perspective objectives for each sector of national economy including environmental policy and provides economic instruments that would contribute to ceasing waste in national economy, especially in energy consumption and would stimulate the concern for the problem of waste and pollution. The activities are planned until 2020.

The National Program for the Use of Production and Consumption Waste, approved by the Decision of the Government of the Republic of Moldova No. 606 of June 28, 2000, was developed for the accomplishment of the provisions of articles 11 and 28 of the Law on Production and Consumption Waste No.1347-XIII of October 9, 1997 (OM No. 16 –17 of 05.03.98). The program addressed the development of objectives in the sphere of sustainable development strictly according to the „Who pollutes pays” principle. The realization of each chapter of this document will directly contribute to the reduction of environmental pollution, including GHG emissions reduction.

The basic objectives of the program are based on the principles of reducing to minimum the level of waste, their inclusion into economic circulation (processing, use) and their ecological storage. The key-problems that must be solved within the Program are the strengthening of the institutional and legal capacity along with attraction of investments in the field of waste management.

The typical technological scheme of solid consumption waste storages: 3-5 thousand inhabitants; 10-15 thousand inhabitants; 20-30 thousand inhabitants, approved by the order of the Ministry of Environment and Territory Building of the Republic of Moldova No. 67 of 02.05.01 is a mechanism for the implementation of the National Waste Capitalization Program. This document includes technological, technical and environment protection solutions for the arrangement and use of solid consumption waste storages. Local public authorities disposing of financial resources successfully implement it.

The Law on Environmental Protection no. 1515-XII of June 16, 1993 (OM, 1993 No. 10 with further amendments) containing provisions referring to the delimitation of the obligations related to waste management by the bodies of central and local public administration.

The Law on Production and Consumption Waste No. 1347-XIII of October 9, 1997 provides regulations on waste management according to the Law on Environmental Protection. The law applies to individuals and legal entities involved in waste generating activities. This law establishes severe restrictions on waste formation, fact that will lead to the reduction of greenhouse gas emissions.

The Law on Expert Evaluation and the Evaluation of Impact on the Environment stipulates the goals, tasks and principles of expert evaluation and of the evaluation of impact on the environment, as well as the method of organization and caring out of expert evaluation.

The Regulations on the evaluation of the impact on the environment (appendix to the law) provides methods for preventing a possible impact on the environment and establishes the procedure of documentation development by EIE (Evaluation of the Impact on the Environment) and requirements for it, requirements imposed to

documentation on EIE; including for processing installations and ramps, interment and neutralization of industrial waste. By applying the provisions of these laws, beginning with the planning stage, activities generating enormous amounts of waste will be avoided, the emissions of GHG into atmosphere will be reduced significantly by forcing the beneficiaries and the designers use pure ecologic technological processes, with advanced equipment and adequate technologies of waste processing and recycling (introduction of waste into economic circulation). Central authorities responsible for environmental and natural resources and partially beneficiaries of economic activities successfully implement the law by carrying out expert evaluation of planned economic activities.

The Law on Taxes on Environmental Pollution No. 1540-XIII of February 25, 1998. The basic objective of the law is the promotion of non-polluting technologies, implementation of measures for the reduction of waste volume.

Implementation of the provisions of the law contributes to interesting the beneficiary in practicing activities based on non-polluting technological processes, generating minimum amounts of waste, with strict recordkeeping, their processing and recycling to avoid the penalties for the generation of waste and, at the same time, to reduce GHG emissions resulted after waste interment. The provisions of the law serve as a mechanism for the stimulation of economic agents.

The Regulation on waste management developed in 2003-2004 (presented to the Government of the Republic of Moldova for approval). The Regulation serves as a mechanism for the implementation of the Law on Production and Consumption Waste. The document outlines the provisions of European directives on waste management. According to the regulation, authorities of central and local public administration, economic agents generating waste and operators of waste storages are involved in solving the problem of waste management.

SR13330, SR 13343, SR 13350, SR 13351, SR 13388 standards refer to the sanitation of territories, being implemented partially by people responsible for waste management. The provisions of the standards aim at regulating the activities of waste management, which will also lead to the reduction of GHG emissions.

Capacities at institutional and individual level

Institutions responsible for the management of consumption and production waste, according to the legislation in the filed, are the following: the Government of the Republic of Moldova; the Ministry of Ecology and Natural Resources, Department of Constructions and Territory Building, the Ministry of Agriculture and Food Industry, the Ministry of Health, Ministry of Industry, Ministry of Energy, Ministry of Transports and Communications.

The main task of **Government of the Republic of Moldova**, according to the national environmental legislation related to waste management is the implementation of state policy in this field.

The Ministry of Ecology and Natural Resources, according to the national environmental legislation on the basic roles of the ministry, approved by the Decision of the Government No. 356 of April 6, 2004, and according to the Ministry Regulation has the following basic tasks related to consumption and production waste management: determining limits of hazardous emissions into the environment, storing production and consumption waste; carrying out state expert evaluation of the programs and projects of hazardous waste placement and arrangement, building and placing installations for waste treatment and neutralization; developing and implementing national plans, regulations and other standard acts on consumption waste management; developing and implementing national and branch strategies, programs and plans in cooperation with other interested institutions for the reduction and elimination of environmental pollution, including waste pollution; promoting „A cleaner production” policy in industry, energetics, agriculture; carrying out state control of environmental conditions, of observance of the legislation on waste management. The ministry carries out this control through the General Directorate of Ecological Impact and Waste Management of the Central Apparatus of the Ministry, Soil, Waste and chemical substances Section of the State Ecologic Inspectorate and corresponding sections of regional ecologic agencies. As well, the Ministry coordinates the National Register of chemical substances, location of special grounds for the neutralization and interment of hazardous waste; holds the function of authority competent in the control of cross-border transportation of waste and its elimination according to the requirements of Basel Convention, signed by the Republic of Moldova.

The Ministry promotes the state policy in waste management and carries out the control of legislation observance by economic agents through the central apparatus - the Main Directorate for the Prevention of Environmental Pollution (five specialists, including a specialist in waste management) and through its subdivisions, the subdivisions of the State Ecologic Inspectorate (central apparatus), Soil, Subsoil, toxic substance Directorate with one specialist and three regional ecologic agencies (Centre, South and North). The National Institute of Ecology makes the scientific research in the area.

Hydrometeo Service carries out the monitoring of air pollution as a result of waste management.

The institutional capacities in the field of waste management within ministries and its subdivisions are reduced.

The Regulations of the **Ministry of Agriculture and Food Industry** do not include any obligations related to environmental protection, including waste management. Different people from different directions solve problems related to waste management occasionally.

The institutional capacity for the fulfilment of the provisions of the laws on waste management is reduced.

Ministry of Health. According to the Regulations of the Ministry of Health and other standard acts, the basic functions of this institution related to the problems of this project are carried out through the State Sanitary-Epidemiologic Service.

In the context of waste management, the ministry undertakes the following activities: carries out the sanitary-epidemiologic supervision of waste formation, transport, neutralization, use, interment and liquidation; calculates the level of toxic substances in waste, develops the Classifier of hazardous waste and the methods of determining the toxicity level; coordinates the decisions regarding the appointment of places for storing and neutralizing hazardous waste and other toxic substances; organizes operative measures for preventing and liquidating mass intoxications, organizes activities of scientific and technologic research for health in its relation to the environment; develops programs of branch waste management.

The obligations of the Ministry regarding waste management are provided only by the legal framework related to this field and are fulfilled through the State Hydro-Epidemiologic Service and its regional subdivisions. The institutional capacity in this regard within the mentioned institutions is reduced.

Ministry of Industry. According to the National Environmental legislation of the Republic of Moldova and the Regulation of the Ministry of Industry, the tasks and the obligations of the ministry related to the problems of this project are the following: development and promotion of programs, plans related to ecologically clean industrial production and reduction of waste through the application of non-polluting technologies; coordination of the activities of enterprises in the area of environmental protection; carrying out of departmental expert evaluation of project documentation; organization of waste collection and sorting according to their nature by the branch enterprises, ensuring a strict recordkeeping of all waste resulted from the production activity of enterprises, development of norms of formation, storage, processing, interment and destruction of waste; ensuring the drawing up of special registers of applied noxious products and substances by industrial enterprises.

According to the above-mentioned regulation, the tasks of the ministry include activities related to coordinating enterprises in clean production and environmental protection. The structure of the ministry does not include environmental protection Directorates. There are no persons designed and responsible for environmental protection and waste management. The institutional capacity is reduced.

Ministry of Energy. The ministry has the following tasks: developing energy sources, giving priority to efficient and non-polluting energy production technologies, developing area programs in waste management.

The structure of the ministry does not provide environmental protection Directorates within the activities in this area, including waste management. There are no persons in the central apparatus of the ministry responsible for environmental protection, including for waste management. Moreover, not all enterprises of the field have sections for environmental protection.

A low institutional capacity is recorded in relation to accomplishing the provisions of legislation on waste management.

Ministry of Transports and Communications. According to the Regulation, the ministry has no obligations related to environmental protection, including waste management. The structure of the ministry does not include directorates that would ensure the protection of environment against polluting agents specific for this area.

The institutional capacity for accomplishing the provisions of legislation on waste management is reduced.

4.4. Current state of capacities related to GHG absorbers - forest sector

State of capacities at the system level

The analysis of national strategies and programs, of legal and standard acts related to forests sector, as well as of the degree of their implementation reveals the existence of sufficient capacities in this area.

The existing legal and normative framework related to forests sector was updated after 1991 and has at its basis the principles stated in the Constitution of the Republic of Moldova, the majority of international agreements, conventions and treaties signed by our country (Forests Code, Law on Environmental Protection, Law on Natural Resources, Law on Amelioration through Afforestation of Degraded Lands etc).

The Parliament, the Government, central and local public authorities have a relatively satisfactory experience in the area of improvement of the legal and normative framework related to the forests sector, being able to outline priority areas and directions. At the same time, existence of certain gaps and flaws in the legislation creates barriers, disparities, constraints in the process of implementation of the existing legal and normative framework (partial delimitation of competences, insufficient adjustment to international agreements, insufficient reflection of aspects related to biological diversity conservation, adaptation of forests ecosystems to climate changes etc.)

The national strategies and programs reflect sufficiently the priority problems related to the forest sector, but without a realistic assessment of internal financial capacities. At the national level of financial means distribution

(Ministry of Finances and Ministry of Economy), an inefficient policy of financing the sectors of waste managing is promoted. Such a situation can cause the exhaust of the resources of the corresponding structures and - a very serious problem - the increase of the used amounts and reduction of recovering activities (including in case of forests). In the condition of our country, observance of the balance *exploitation-regeneration* is a necessary condition if we take into consideration the insufficiency of natural resources.

At the national level, there are certain capacities that can ensure the carrying out of activities provided in this field. Thus, a significant part of activities that derive from existing national programs and strategies have been or are being carried out at present. However, several specifications are necessary in the context of identifying and implementing the most urgent and important activities, which will give the best results (including synergetic). In this context, "Moldsilva" Agency, engaged in the fulfilment of a series of programs of forests conservation and extension, has the main role. In case of supporting the efforts of Moldsilva by co-financing recovery and afforestation activities, for instance of the most expensive, this structure will be able to ensure the fulfilment of proposed tasks.

Scientific researches related to forests are carried out under the necessary level. The capacities in the area are limited, mainly because of weak cooperation between institutions related to forest industry (Forests Research and Arrangement Institute, Botanical Garden, National Institute of Ecology, scientific sections within state natural reservations). The subject of research allows parity and does not correspond to the current necessities of the forest sector. Directions related to outlining the real condition of forests and development tendencies, the adaptability and vulnerability of forest ecosystems to the process of climate change are only at the initial stage. Good results in this area can be achieved only by strengthening the efforts, including by developing an integrated program of research in the forest sector, establishing the priorities and involving the entire existing human and financial potential.

The forest sector is insufficiently ensured with qualified staff at present. Depending on the position of the employees, the share of workers without an appropriate professional qualification amounts to 25-66 per cent. A similar situation is recorded in environmental protection agencies, which carry out state control in the forest sector.

The existing potential in the field of staff training comprises three institutions that train higher education professionals, an institution involved in training engineers and one institution in training foresters. A common problem for all forest sectors is the insufficiency of teaching staff. Advanced training courses are organized annually under the aegis of the Forests Research and Arrangement Institute attended by 80-100 professionals.

State of capacities at institutional level

The existing institutional level is relatively structured. All state structures have delimited competences and areas of activity (including those related to forests), these being presented in regulations approved by the Government or outlined in legal and standard acts. At the same time, the corresponding framework contains many elements of the socialist system with a centralized planned economy, state and cooperatist property, distribution of resources and administrative methods of control. At the national level, there is no clear concept of the creation of an institutional system that would ensure the sustainable management/administration of natural resources, including forest resources. As a proof of this are the frequent modifications related to departmental belonging of the forest sector, reformed six times after 1990. Not all these changes improved the institutional capacities, but quite contrary have hindered the activity of forest bodies during different periods.

The successful implementation of strategies, programs, provisions of the existing legal and normative framework is determined also by the capacities of central and local public authorities engaged in this process. The greatest share of responsibilities for the implementation of the mentioned framework related to the forests sector of the Republic of Moldova belongs to two authorities:

- Central Forest Authority (State Forestry Agency „Moldsilva”).
- Central Authority for Environmental Protection (Ministry of Ecology and Natural Resources).

The basic responsibilities of the State Forestry Agency "Moldsilva" are: promotion of state policy and of the national strategy on forest conservation and development; regulation, coordination and control of forest fund administration and management; environmental principles based management, based on forest arrangements of the subordinated forest and hunting fund; development of the forest system and control of its observance; application of this system in the subordinated forests fund, observing principles of sustainable development of forests.

There are three main directions traced at the management level of the Agency: extension of areas covered with forest vegetation, ensuring forests security and protection; efficient use of wood and non-wood forest products.

The efficiency of the existing institutional frame is reduced. There is an over-centralization of competences, fact that reduces the role and initiative of the second (enterprise) and third (forest administrative units) levels. Although the National Strategy for Sustainable Development of forests provides that forest administrative units will carry out a significant part of activities, these structures have reduced competences, do not have financial autonomy, are not encouraged to use maximally the existing technical, financial and human potential. The fund for forests conservation and development, planned as one of the main mechanisms for the promotion of modern forest policy was not created. The economic-financial planning is carried out depending on the reached level, without identifying some strategic indexes.

The basic competences of the Ministry of Ecology and Natural Resources in this area are: development and promotion of state policy regarding the rational use of natural resources; coordination and management of scientific researches in the field of environmental protection, rational utilization of natural resources etc. Certain activities of the ministry contravene „General principles of management of environmental protection activities”, which provide that „State Institutions for environmental protection *must not try to solve all problems by themselves, ...it is necessary to organize the efficient and rational inter-sector cooperation and coordination based on partnership relations, especially with health protection bodies and with the following sectors: economic, energetics, transport, agriculture, forestry and trade policies.*

State of capacities at the individual level

This analysis refers to the training level, skills, responsibilities and capacities of decision makers to implement successfully the legal and normative framework, as well as to the access of the staff of corresponding subdivisions to information.

The competences of the directions of „Moldsilva” Agency are determined by corresponding regulations and of the personnel - by job instructions. The employees must have adequate knowledge and an experience of over five years in forest related areas. The existing potential has the necessary capacities to formulate the priorities and to contribute to the implementation of the necessary activities.

No training courses/strategies are organized for the staff of the agency. The staff has access to all the necessary information existing within the "Moldsilva" Agency. The truthful information related to other owners of forests vegetation in the country is less accessible. A particular problem is the limited access to the international information on the forest sector. Relations with similar structures in neighbour states are not sufficiently developed.

The existing system does not adequately stimulate personal initiative; it underestimates the contribution of each employee in the process of production. Stimulation and career growth is not proportional to the contribution and competences of employees.

Within the Ministry of Ecology and Natural Resources, the General Natural Resources Directorate carries out the main part of activities within the forest sector. The activity of the Directorate is regulated by job instructions and working regulation determining clear tasks, competences and obligations of the personnel.

The employees of the direction have a reach experience in international cooperation (participation in different forums, conferences, symposiums, training courses/studies, exchange of experience etc.) and capacities to identify and to implement the priority directions related to the use and development of natural resources. Less known and debated are the urgent problems currently faced by the national forests sector. The real condition of the forest fund is not sufficiently analyzed. Socio-economic aspects related to the particularities of the forest fund are insufficiently promoted, as the obligations of the ministry are not only related to raising public awareness and formation of ecologic construction, but firstly to the development and promotion of state policy of rational/sustainable use of natural resources.

Extension of possibilities of assertion of the second level of administration, participation in the process of decision taking/formulating would have a positive effect on the activities of both structures, of the quality of adopted decisions, would encourage the inter-sector and international cooperation in the area.

4.5. Current state of capacities in the filed of ecosystems adaptation

4.5.1. Current state of capacities in water sector

The basic law regulating the relations in waters area in the R. Moldova is the Water Code adopted by the Parliament on 22.07.1993. Relations related to environmental protection, protection of public health, of flora and fauna, protection of lands against floods resulted from the exploration of waters are regulated by the following standard acts: Law on Environmental Protection, Law on Sanitary-Epidemiologic protection of the Population, Law on the Protection of the Animal Kingdom, Land Code etc.

The basic objective of existing legal acts is the protection of waters against pollution and exhaust caused by human activities. The problems regarding the prevention and elimination of destructive effects of waters are reflected only in article 99 of the Water Code, forcing individuals and legal entities to carry out measures of protection against this natural phenomenon. Problems related to protection against floods and under-floods are partially reflected in legal acts related to the organization of the civil protection system (Law on Civil Protection No.271-XIII of 9.11.1994) and, to a certain extent, the Law on Quality in Construction No.721-XIII of 02.02.1996, Law on the Principles of Urbanism and Territory Arrangement No. 835-XIII of 17.05.1996. In order to apply these laws a series of organizational regulations have been developed in the area of civil protection and different technical norms in constructions.

The Water Code established general provisions, principles and methods to solve issues in the water sector, which need to be developed in future legal acts. The legislation on waters includes a series of laws, Decisions of the Government and special standard acts of the ministries and other state institutions. These legal acts do not cover the entire legal space defined by the Water Code, have a fragmentary character and reflect many problems unilaterally. At the present stage of socio-economic development of the Republic of Moldova, important modifications take place in

the structure of state authorities, in territorial-administrative organization, reformation of the property right and of relations in the field of waters, which determines a permanent adjustment of legislation in this field.

The problem of water resources management, as a set of responsibilities related to the prevention of pollution and protection against destructive effects of water was not expressed clearly from legal point of view. The delimitation of functions and establishing the cooperation method between the structures of central and local public authorities are unsettled and are an important subject that needs to be improvement in the field of water legislation.

Surface waters are directly related to precipitations and underground waters, the hydrologic regime of which is formed within the limits of hydrographic basins. The problems of water resources administration must be solved within the limits of the territories determined by natural conditions. The borders of hydrographic basins of border rivers and of watercourses are well outlined geographically and serve as a basis for the determination of river districts.

By the Partnership and Cooperation Agreement between the European Union and the Republic of Moldova, ratified in June 1998, the Republic of Moldova engaged into making efforts to bring its legislation up to the one of EU in a series of areas, including environment. This process of harmonization comprises to a certain extent the water legislation and especially the institutional framework. Framework directive of the European Union on Water, No. 2000/60/EC provides the change of the principles of administration of water resources by passing to integrated management of river basins. A legislation that would ensure a solid basis for the delimitation of districts and basins of rivers, as well for the appointment of responsibilities to authorities administrating water surfaces is necessary.

Along with the improvement of the structure of state bodies, it is necessary to determine the legal statute of water consumers as legal subjects in the field of waters. The existing Water Code allows any legal entity or individual to receive the right to use water objects without determining the legal capacity and capacity for action of the person. When assigning water objects (partially or entirely) it is important, that the water beneficiary has real legal rights for the fulfilment of his duties.

The safety of hydrotechnical constructions against floods can be guaranteed only in case of existence of a permanent monitoring according to certain standard programs. Given the specific features of hydrotechnical constructions, it is necessary to develop standard acts taking into account the particularities of these constructions, local conditions and their resistance to time.

The Moldovan legal framework in the field of waters was created in the conditions of prevailing state property of water objects and based on a centralized system of managing and financing water managing activities. Economic mechanisms, private right norms, obligations and responsibilities of water use subjects as well as other aspects of market economy were not completely reflected in the legislation in force. The institutional and organizational framework of water sector management does not have a solid and well-justified legal basis.

Adjustment of the national legislation to the requirements of the European Community must be performed as soon as possible.

4.5.2. Current state of capacities in agriculture

a. *Phytotechnical sector*

Capacities at the system level

The existing legal framework on the phytotechnical sector establishes general economic and organizational norms. It also regulates the relations between the state, the producer and the consumer, but many of the aspects of agricultural sector are formally reflected or are not reflected at all (for example, the consequences of climate change on agricultural production).

National Environmental Action Plan (NEAP) of the Republic of Moldova provides a series of actions referring directly to the adaptation of agriculture to new economic and environmental conditions:

- allocation of public investments for research in agriculture in order to increase the production competitiveness based on its reorganization, technical modernization and implementation of modern technologies;
- encouraging of agricultural production exports through the liberalization of prices and trade; improvement of products quality, extension of outlets;
- implementation of the soil reform along with the reorganization and privatization of agricultural processing enterprises.

NEAP proposes a series of changes in the agricultural sector, aimed at reducing pollution and stopping the degradation of soils and underground waters. The environmental policy promoted in this context contains conceptual principles to be accomplished: environmental protected regions must not be privatized; motivation of advantages of biologic agriculture compared to the traditional one and outlining the restrictions, technological and technical limitations; application of standards of biologic agriculture administration and implementation of new systems depending on the agro-ecological potential of the soil; organization of training programs for producers wishing to practice biologic agriculture and development of preferential financing mechanisms of their activity; carrying out of

reforms based on justified agricultural data, selection of agrochemical materials, diagnosis and forecast of plant diseases, popularization of methods for combating harmful agents and creation of consultancy services.

The objective of the **National concept of an ecological agriculture** – production and selling of ecological and genetically unchanged food products (Decision of the Government of the Republic of Moldova no. 966 of August 21, 2000) has as objective: promotion and implementation of ecological agriculture in the Republic of Moldova by using biotechnologies and excluding technologies of industrial origin, based exclusively on natural ecological processes.

Capacities at institutional level

Ministry of Agriculture and Food Industry (MAFI) is responsible for ecological aspects related to agriculture. Within the ministry, there is the Unit for environmental protection, with 4 members of the staff. MAFI supervises the activity of the following institutions and bodies: Scientific Production Association „Fertilitate” and its subdivisions; the Institute of Agrochemical Services and its chemical stations. (These institutions are responsible for the supervision of fertilizers and application of pesticides, of radiological contamination of soil and agricultural products); Service for plants protection against harmful agents and diseases in agriculture and its subdivisions in districts; the Institute of Scientific Research and Technological Design „N.Dimo”; State Company „Apele Moldovei” and its subdivisions; Centre of Veterinary Diagnosis and Control.

Several institutions working in the field of agriculture are subordinated to other ministries. „Hidrometeo” Service supervises the pollution of soil with pesticides. State Ecologic Inspectorate within the Ministry of Ecology controls the pollution of soil through the implementation of the Pollution and Soil Degradation Prevention Program.

Three universities, several professional schools and scientific research institutions within MAFI and Academy of Sciences, as well as experts-consultants in agriculture are the basis of research and studies in this area.

Several NGOs are dealing with problems related to agriculture: soil erosion, evacuation of residual waters, quality of underground waters, soils fertility, population training etc.

b. Zootechnic and pisciculture sector

State of capacities at the system level

As a result of economic reforms, state institutions undertook concrete measures for the creation of a legal and institutional framework adequate to the new conditions, including the liberalization of activity of enterprises in the zootechnic sector and revival of the private sector. The Government adopted the Concept of Agro-industrial Sector Development. The programs developed in this area are well grounded, but the objectives and the tasks are impossible to be achieved, since the real possibilities of the State Budget and capacity to credit of commercial banks providing them with financial resources were not taken into account. Often, actions provided in programs cannot be carried out because of the insufficiency of organizational activity of institutions in this area, of state and local state authorities.

The Law on Zootechnics establishes the legal and economic basis for the organization of this activity, regulates the relations between the state and animals owners, aiming at creating conditions for increasing the quality and quantity of cattle breeding production, applying biotechnologies in the zootechnics sector, using non-polluting growth stimulators, active biological and veterinary substances. It also regulates the improvement of breeds, reproduction of animals and fodder resources, scientific activity and staff training.

Eventual amendments and supplements to the **Law on Zootechnics** and to the **Code of Administrative Contraventions** regulate fees applied in case of violating the rules and norms of animal reproduction, of fodder resources use and of the use of fishery objects; norms of animal growing etc.

The problem of fodder production, its use and sale is not reflected in the legal and normative framework. Today, the classification, the nomenclature and the terminology used in animal nutrition is defined by national and international standards approved and used through bilateral agreements, establishing terminological definitions, types, quality, and technology of production, storage, transport and sale of different types of fodder. However, these legal acts do not reflect several aspects of animal nutrition.

Law on Pedigree Cattle Breeding establishes the legal and economic basis for the organization of selection and reproduction in the sphere of cattle breeding of the republic, regulates the relations between the state, the owners and the beneficiaries of breeding resources. The main objectives of the law are: creation of economic prerequisites for the increase of the quality and quantity of animal production based on the improvement of existing breeds; creation and implementation in production of new races, types, lines and hybrids of animals with a high reproductive and adaptation potential; protection of selection achievements, protection of the rights of individuals and legal entities disposing of conditions necessary to obtain, improve, reproduce and sell breeding resources for the increase of animal production.

Law on Veterinary Activity contains two parts:

- Legal acts adopted by state bodies regulating the structure, the rights and the obligations, the requirements imposed on import/export, the accreditation of enterprises, issuing of certificates for raw materials and products of animal origin;

- Legal acts of the former USSR regulating the conditions of animals breeding, the sanitary-veterinary expertise of animal production etc.

A part of the legal and standard acts has no legal basis and therefore is not ratified. These acts were adopted in the conditions of a planned economy and public property and do not correspond to the present socio-economic situation.

The Law on Animal Kingdom determines the competences of the state in the administration of fishing resources. The regulations imposed on areas of waters protection are specified also in the Law on Protection of Riparian Zones. The Law on Animal Kingdom has several appendixes with the lists of species of fish protected by the state and regulating fishing in water objects.

In the context of transition to market economy, certain aspects of adopted laws are extremely important, but they also contain gaps that must be excluded. We refer to the insufficient harmonization of the Law on Animal Kingdom with the Law on Natural Resources and Water Code.

Substantial amendments must be made to the Law on Zootechnics, the Law on Pedigree Cattle Breeding, and the Law on Veterinary Activity in relation to the revival of the private sector and many modifications in the administrative organization, in the structure of the Ministry of Agriculture and Food Industry etc.

An essential gap in the existing legislation is the lack of mechanisms and procedures for the assessment of the impact of the activity of the cattle-breeding sector on environment.

The relations between state authorities, enterprises, farmers and users of water objects for fishing are regulated by the Water Code, the Regulation on conditions of the allocation of water objects approved by the Decision of the Government no. 745 of October 7, 1995 and the Law on Animal Kingdom. Fishing enterprises and farmers are granted the right to use water objects, but the way and the conditions for the allocation of these objects are not completely regulated, the procedure of issuing the utilization certificate is complicated, deprived of legal basis and causes dissensions in the relations between the state organizations and the holders of the title. Solving the problems related to the management of water objects assigned for fishing purposes is impossible without specifying the rights and responsibilities of the beneficiaries. The created problem can be solved only by developing and adopting the Law on Fishing that would regulate the legal norms and the relations between economic agents in this sector.

The strategic orientation of the Republic of Moldova towards European economic integration imposes bringing the national legislation on cattle-breeding, veterinary service and fishing up to the European legislation in this area, taking into consideration the socio-economic conditions of the country.

Analysis of the institutional and individual framework

The Ministry of Agriculture and Food Industry guides the activity of associations, enterprises within the competences established by the legislation, controls peasant farms, economic agents irrespective of the type of property and the legal form of organization for the use of breeding animals, meeting of veterinary requirements for preventing and treating animals diseases. The Science and Professional Formation Department within the Ministry Coordination coordinates activities of state institutions for research-development in cattle breeding.

The central body of the State veterinary service is the Direction for veterinary Medicine and State Veterinary Inspectorate, a component of the ministry. Administration bodies of the State Veterinary Service in districts and towns, sector veterinary clinics, veterinary circumscriptions, as well as people carrying out individual activity in veterinary medicine, are subordinated to local administration units in relation to issues of general nature and with regard to special issues - to instances superior hierarchically to the State Veterinary Service, while the Departmental Veterinary Service in general matters is subordinated to the corresponding department and in special ones to the regional State Veterinary Service.

The Ministry of Agriculture, upon need, determines the structure of the State Veterinary Service.

The research and design Enterprise "Avicola-Moldova" performs research, coordination, management and marketing functions in poultry breeding sector, actions for the improvement of its quality, ensures the process of reproduction, selection and hybridization of breeds of poultry and administrates the equities of the state in joint-stock companies specialized in poultry breeding.

As a collegial body, the "Piscicola" Association coordinates the economic activity of producing and selling poultry products, ensures the process of reproduction and selection of fish in fishery enterprises of different types of property and promotes the acclimatization of new species of fish.

The Ministry of Ecology promotes the policy in relation to solving complex problems related to natural resources, animal kingdom and environment.

The position of responsibility within the General Direction for Cattle-breeding, Inspectorate for Selection and Reproduction, the General Direction for Veterinary Medicine and the State Veterinary Inspectorate are held by qualified specialists, because of frequent modifications in the organizational structure of these directorates, the officials cannot fulfil their duties at the proper level.

The National Institute for Cattle-breeding and Veterinary Medicine periodically organizes training courses for assimilating artificial sowing techniques.

The ministry has no network of consultancy services to train managers in cattle-breeding and veterinary services, nor does it have networks to inform and train farmers in collective and private farms.

4.6. The current situation of the capacities in the field of public health adaptation to climate changes

The existing capacities in the field of public health adaptation are provided at three levels: systemic, institutional, and individual level.

The existing *systemic level* provides legal and normative support to priority areas. The legal framework includes: Conception on the organization and functioning of the socio-hygienic monitoring (2002), National Program for Population Health Education and promotion of a healthy life style (1998), National Immunization Program (2000), National Program to Combat and Prevent cholera and other diarrheic diseases (2003), National Environment and Health Action Plan (2001). Important roles have: The Law on Healthcare (1995); The Law on Sanitary and Epidemic insurance of Population (1993, amended in 2002); The Regulation on Social Hygienic monitoring (2000) that indirectly reflect the problems in the adaptation of public health to the new socio-economic conditions and to the new environmental conditions.

The capacities at *institutional level* are characterized by the possibilities of the relevant institutions to accomplish the provisions of the legal documents. The emissions of polluting gases are supervised within the “Mofam-health” system, but this program covers only the emissions of CO, NO₂ and SO₂. The Greenhouse Gas (GHG) emissions are not monitored. In addition, the sources of methane are neither assessed nor monitored, especially those originating from managerial and industrial wastes.

At the institutional level, it is possible to put into practice the provisions of the standard and legal acts, but these acts do not cover sufficient issues relating to climate change, the state does not encourage and support the fulfilment of such provisions, the economic agents and other responsible persons are not informed or encouraged.

Capacities at *individual level* can be characterized by a sufficient level of training of specialists, who have a significant working record. The specialists in the country know very well the problem discussed and are aware of the necessity to carry out several special measures.

4.7. The current situation of the capacities of the legal and institutional framework regarding the organization of researches and climate monitoring

The legal framework

The national network on climate monitoring works according to the Law on Hydrometeorological Activity nr. 1536-XIII February 25, 1998; Decision of the Government of the Republic of Moldova nr. 935 November 11, 1999 “On the approval of the Law on the use of hydrometeorological information in practice and in the activity of economic agents”; Decision of the Government of the Republic of Moldova nr. 401 April 3, 2003 “Some aspects of the hydrometeorological activity in the Republic of Moldova”; Methodological guidance and recommendations of the World Environmental Organization.

The Law on Hydrometeorological Activity regulates the activity of the hydrometeorological network on the territory of the Republic of Moldova. The destination of this network is to provide the population, economic sector, and the national institutions with hydrometeorological information. The legal requirements concerning the hydrometeorological information are described in the annexes to this law. Other topics included in the annexes are the legal support for coordinating and effective functioning of the national hydrometeorological network and bringing the national norms up to international standards.

According to the law, the hydrometeorological activity is carried out by the State Hydrometeorological Service. The responsibilities and the structure of the Service are reflected in the Law, and the financing sources of the hydrometeorological activity in the Republic of Moldova are also listed in the law. The law mentions that the Hydrometeorological Service is the main holder of the National Fund of hydrometeorological data, specifying the international aspects of the activity of the Hydrometeorological Service.

The Annex to the Law on Hydrometeorological activity contains a set of regulations on the carrying out of a range of works in the regions afferent to meteorological stations and posts.

The Decision of the Government “On the approval of the Decision on the use of hydrometeorological information in practice and in the activity of economic agents” includes the norms and rules concerning the use of hydrometeorological information by the bodies of the central and local public administration and by the economic agents whose activity is influenced by weather conditions. The decision defines all types of hydrometeorological information and the spheres of its application, providing for: the modality of organizing, receiving, and sending the information about dangerous meteorological phenomena to economic agents; the modality of controlling the use of this information by state organizations.

The existing legislative basis on the functioning of climate monitoring network on the territory of the Republic of Moldova allows carrying out such an activity according to the promoted tasks and requirements. At the same time, it

has to be reviewed in order to improve the quality of the hydrometeorological activity and monitoring in the field of environmental protection at country level.

The institutional and individual framework

The monitoring of the regional climate system parameters is carried out by the Hydrometeorological Service of the Republic of Moldova. The Service responds to the Ministry of Ecology and Natural Resources. It is the acting body within the climate and weather monitoring in the Republic of Moldova and it is also a part of the World Meteorological Organization (WMO) whose main task is to coordinate the activities in the field of hydrometeorology and environmental monitoring. The international cooperation in hydrometeorology is an important part of the activity of the Hydrometeorological Service, ensuring the well functioning of the Service.

The Service has the following departments: the Directorate of Meteorology, which includes the network of meteorological observance posts and stations; the Directorate of Hydrology which includes the network of hydrological posts and stations; Monitoring and the Condition of the Surrounding Environment Directorate with its surveillance labs and posts; the Telecommunication Centre; the Automation Centre, which includes the National Fund of hydrometeorological data.

Along with the technical and methodical endowment the main factor that determines the quality of meteorological observations is the degree of specialists' qualification. Currently, 372 specialists carry out the monitoring process, however only 61.5% have secondary professional education and higher education.

The small wages of the employees and the lack of specialized higher education institutions for the training of future specialists determine the staff shortage. At the same time, a system for advanced staff training is not established.

4.8. Assessment of the capacities of the legal and institutional framework concerning public training and raising public awareness

All legal documents that have been developed after 1992 refer to the education system and cover aspects related to educating environmental responsibility and raising ecological awareness.

The Concept on education development in the Republic of Moldova, adopted in 1994, provides measures that allow achieving educational objectives accepted by the world community, especially those that refer to environmental protection. The **Law on Education** was developed and adopted based on this Concept. This law provides the structural and systematic reform of the education system by 2005 including the development of the curricula that will reflect the current national and world trends.

The **State Program on education development 1999-2005** was developed in order to create the legal, managerial and curricular frameworks for accomplishing the educational policy at country level, provided in the Concept on education development and in the Law on education. What concerns the climate change issues, specific actions for the development and implementation of the new pre-university education curriculum as well as the "Education in Ecology" Project have been foreseen in the Program.

The strategy of higher education development in the context of the Bologna Process is now being developed under the supervision of the Ministry of Education. This strategy, will certainly comply with the European Standards requirements, including environmental issues.

Educational measures that relate to the provisions of the Framework Convention are as well stipulated in standard acts on power supply, environment protection, natural resources, agriculture, public health, etc.

Generalizing the above-mentioned we can conclude that in the Republic of Moldova the existing legal framework partially reflects the UNFCCC provisions in relation to staff education, training and professional advance.

4.9. Assessment of capacity necessities for bringing the national legislation up to EU legislation

4.9.1. EU environmental policy and legislation

The European legislation applied in the field of environmental protection comprises about 200 standard acts (directives, regulations and orders). These acts refer to different sectors: air and water pollution, management of chemical products and wastes, biotechnology, protection against radiation, nuclear safety, and nature protection. The legislation is a result of the decisions taken at the UN Conference in October 1972 that took place in Stockholm and that pronounced itself for the establishing of a common environmental protection policy.

"*The Community-framework Program for the promotion of environmental protection actions*" was launched to support this decision. This Program was based on the vertical and sequential approach of environmental issues for a five year period. The measures undertaken within these Programs were oriented towards reduction of pollution by enforcing certain minimum standards in the fields of waste administration, water and air pollution. Five Programs of this kind have been implemented (1973, 1977, 1983, 1987, and 1993) until present. These are medium-term Programs and reflect the evolution of environmental concerns and policies.

The basis of the community legislation in the field of environment was laid by the Rome and Maastricht Treaty. Thus, according to article 130 of the EC Treaty the EU community actions concerning environmental protection are based on respecting several principles: the *precaution principle*, the "*Polluter pays*" principle, and the *coverage* of the

environmental damages, especially by the source. In addition, this article stipulates that the requirements in terms of environmental protection should be integrated within the definition and implementation of other EU policies.

The essence of these objectives is described in the Fifth Community Program for policy and actions on environment and sustainable development, adopted by the Council on February 1, 1993. Specific strategies and actions of the Community in the environmental field for the period of time until the end of the 20th century and further are stated in this Program. The main principles of this Program of actions are: “division of responsibilities”, this means a more dynamic and broader participation and integration in all policies of the participants who are part of the economic and social life, including the national, regional, and local public administration.

The Amsterdam Treaty (1997) conferred the status of common European policy to the community actions in the field of environment. The amendments of the Preamble and article 2(B) in the EU treaty strengthened the principle of sustainable environmental development, so now this is one of the EU major objectives. The article 6 (3c) of the EU treaty mentions the necessity of a *trans-sector* approach to the environment and the integration of the environmental policy in all field policies of the Community. Therefore, the articles 6, 95, 174-176 of the European Community Treaty are the legal basis of the EU environmental policy.

Based on an order of the council the *European Environment Agency* was founded in 1990. Having its headquarters in Copenhagen, Denmark, it is the central body of the Community and has the task to accumulate and spread the technical, scientific, and economic information necessary for developing and implementing environmental protection measures at Community level. The agency is also the body responsible for collaborating with international Programs in the field of environment, such as the UN Program.

In 1998 at the Council in Vienna, the European Commission held a communication where it called for the integration of ecological principles within the member-states development policies. From that point, the community institutions and the member-states are obliged to include environmental requirements in their legal acts, particularly in such areas as energy supply, agriculture, transportation and telecommunication, fishing, tourism, industrial and economic policies.

The Commission’s Communication on the *European Strategy for Sustainable Development* was approved in May 2001. Long-term objectives regarding sustainable development are defined in the communication. In particular, they refer to climate change, public health care, and rational administration of natural resources.

The **Sixth Community Environment Action Programme, Decision No 1600-2002-EC** defines the EU priorities until 2010. For the next ten years, the Programme has four fields of main importance: *climate change and global warming, protection of nature and biodiversity, health in relation to environment, conservation of natural resources, and waste management*. Capacities strengthening for the implementation of the legislation and the inclusion of economic reasoning in other development policies are found among the most important measures to achieve these major priorities that have been adopted by the Community.

Along with the development of the environmental policy, a number of financial and technical instruments for protection were adopted: The LIFE Program, ecological labelling, environmental auditing, the system of assessing the impact of public and private projects on environment, criteria used by ecological inspectorates in member-states for controlling and preventing integrated pollution, fees for Carbon dioxide and energy emissions.

The European Commission created the *LIFE Program* as a financial instrument meant to contribute to the implementation and improvement of the community policy and legislation on environment. The Program co-finances environmental actions and projects in member-states, as well as in the Mediterranean states, in associate states, and in third-world countries.

The structure of the Program is based on three subject components:

- *Life-Nature* – contributes to the implementation of community directives on the protection of migrant birds and habitats, especially of those administered within the “Nature 2000” initiative;
- *Life-Environment* – promotes the development and application in practice of new methods and technologies in natural environment conservation;
- *Life* for third-party countries – supports the development of technical assistance projects on environmental protection for Mediterranean and Baltic States. It contributes to the training of administrative and structural capacities and to the implementation of progressive policies on environment.

The *ecological labelling* system was introduced in 1993 by the Decision of the Council nr. 880/92. According to this decision, producers and importers of products sold for the first time on the territory of member-states can require an ecological label issued by a responsible body. This is done in order to confirm the fact that the product is ecologically pure and corresponds to the criteria of the Ecological Security Commission for this type of products. The above-mentioned commission defines ecological safety requirements for different categories of products and publishes the list of these products in the Official European Community Register.

The *scheme for ecological auditing* was introduced in order to improve the industrial protection of the environment. This scheme describes a new formula for ecological management: the European enterprises have to observe the environment legislation and, in addition, apply the ecologically pure production technologies.

From 1972 until present, the community policy in the field of environment has progressed enormously. The European Union took part in the development of a large number of international conventions that it has also signed. The EU involved in the accomplishment of a large number of actions undertaken at global and regional levels in order to solve the common environment protection problems. The fact that research Programs receive substantial financial funds, proves the thoughtful attitude that the European Union citizens have towards the environment they live in. Further, we will proceed to a detailed analysis of the sector policy and legislation within the European Union.

4.9.2. Legal and regulation framework on GHG emissions control

The main international treaties and standard acts

Air quality amelioration is a world priority. Greenhouse gases are considered to be the main cause of global warming. That is why, specific practical actions at national and international level are necessary to be undertaken in order to reduce significantly GHG emissions. The international legislative and regulation framework that was the basis of the present-time international and European relations in the field is the following:

1. The UN General Assembly:

Res. 43/53: Protection of global climate for present and future generations of humanity (6.12.1988)

Res. 44/228: United Nations Conference on Environment and Development (22.12.1989)

Res. 44/206: Possible adverse effects of sea-level rise on islands and coastal areas, particularly low-lying coastal areas (22.12.1989)

Res. 44/207: Protection of global climate for present and future generations of humanity (22.12.1989)

Res. 46/169: Protection of global climate for present and future generations of humanity (19.12.1991)

Res. 45/212: Protection of global climate for present and future generations of humanity (21.12.1990)

Res. 51/184: Protection of global climate for present and future generations of humanity (3.12.1997)

2. UNFCCC – United Nations Framework Convention on Climate Change

United Nations Framework Convention on Climate Change

The Berlin Mandate (COP.1)

The Geneva Ministerial Declaration (COP.2)

The Kyoto Protocol (COP.3)

The Buenos Aires Action Plan (COP.4)

The Marrakech Agreements COP. 7)

3. Agenda 21: chapter 9 – atmosphere

4. European Union

The European Energy Charter

The Energy Charter Treaty

The Protocol on Energy Efficiency

The White Charter

The European legal Framework

The standard acts that form the basic European legal framework on “Climate change” are the result of the decisions taken by the European Council, by the European Community Commission, and by the European Parliament. The great number of documents and legal acts that act within the Community can be divided into three groups: (1) documents that refer directly to the objectives of the Convention and of the Kyoto Protocol, (2) documents that refer to indirect activities and (3) documents with a tangent impact.

Given the fact that greenhouse gases are a component part of the atmosphere, the EU regulations concerning atmosphere protection refer directly or indirectly to these gases. Thus, the **Council Directive 96/62/EC of 27 September 1996 on ambient air quality assessment and management Official Journal L 296, 21/11/1996 P. 0055 – 0063, serves as legal basis** for atmosphere protection actions. Currently, subjects related to GHG are completed at a legal level (see Annex 1). The European Community is a co-signer of the Geneva Convention on trans-border long-distance air pollution and of the Protocols on Acid Substances, which are a completion of the respective Convention. In order to ameliorate the quality of air, a new global strategy was adopted in May 2001. This strategy was followed by a number of special EU directives. As a result of the global warming impact on the socio-economic evolution within the last century the regulations on air quality are an important part of the EU legislation. Among the main documents in this regard are the following:

The Community alignment to the UNFCCC objectives was accomplished by EU adherence to this instrument according to the European Council decision “**94/69/EC: Council Decision of December 15, 1993 on the conclusion of the United Nations Framework Convention on Climate Change**”, and later on by the approval of the Kyoto Protocol “**2002/358/EC: Council Decision of 25 April 2002 on the approval, on behalf of the European Community, of the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the joint fulfilment of commitments thereunder**”.

The basic directions of the activities promoted by the EU in relation to the threatening impact of climate change can be defined as follows:

1. GHG emission monitoring mechanism.
2. Fluorinated GHG emission reduction.
3. GHG emission trading and climate change Program.
4. GHG emission trading scheme.
5. European Climate Change Program.
6. Kyoto Protocol.
7. European Union post-Kyoto Strategy

1. The GHG emission monitoring mechanism was established through several legal acts of the Community: the **Council Decision 93/389/EEC of 24 June 1993**, for a monitoring mechanism of Community CO₂ and other greenhouse gas emissions that was amended by the **Council Decision 99/296/EC of 24 April 1999**.

Several estimations of the emissions level were brought about and several reports were presented to the EU Parliament and to the EC Council for a ten years period. (*First evaluation report - COM(94) 67 final, Report from the Commission under Council Decision 93/389/EEC for a monitoring mechanism of Community CO₂ and other greenhouse gas emissions; Second evaluation report - COM(96) 91 final Report from the Commission, of 14 March 1996, under Council Decision 93/389/EEC; First evaluation report - COM(2000) 749 final. Report from the Commission, of 22 November 2000, under Council Decision 1999/296/EC for a monitoring mechanism of Community CO₂ and other greenhouse gas emissions; Second evaluation report - COM(2001) 708 final. Report from the Commission to the European Parliament and the Council, of 30 November 2001, under Council Decision 93/389/EEC, as amended by Decision 1999/296/EC for a monitoring mechanism of Community CO₂ and other greenhouse gas emissions.*)

The Report „COM(2002) 702 final” (*Report from the Commission, of 9 December 2002, under Decision 93/389/EEC, as amended by Decision 99/296/EC for a monitoring mechanism of Community greenhouse gas emissions*) points out the fact that the Community states have gone through a considerable progress in GHG emission estimation, which correspond to the responsibilities undertaken according to the provisions of the Kyoto Protocol. The transportation sector is an exception as by 2010 a 28% increase in emission is forecasted in comparison to 1990. Taking into account this fact, 12 states approved additional policies and measures to ensure the accomplishment of objectives defined in the Decision **2002/358/EC**. The Decision of the Parliament and European Council (**February 5, 2003**) **„For a monitoring mechanism of Community greenhouse gas emissions and the implementation of the Kyoto Protocol (presented by the Commission) [COM(2003) 51 final]”** substitutes the Decision 93/389/EEC.

2. Fluorinated GHG emission reduction (hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluorides) is an objective provided by the Regulation presented to the European Parliament and Council (**Proposal for a Regulation of the European Parliament and of the Council of 11 August 2003 on certain fluorinated greenhouse gases (presented by the Commission) [COM(2003) 492 final]**).

3. GHG emission trading and climate change Program. This Program was approved at European level in order to promote more dynamically the policies that derive from the Convention and Protocol (**Greenhouse gas emissions trading and climatic change Program (ECCP)**). The Program is based on: *Green Paper on greenhouse gas emissions trading within the European Union [COM (2000) 87]. Communication from the Commission to the Council and the European Parliament on EU policies and measures to reduce greenhouse gas emissions: Towards a European Climate Change Program (ECCP) [COM (2000) 88]*.

4. GHG emission trading scheme. The directive, which establishes the emission-trading scheme, can be considered one of the main components that refer to GHG emissions, of the European legal framework. Thus, it shapes the legal basis of the Europe Carbon Market **“Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC”**. This directive is the result of the debates carried out after the approval of the European Commission Green Paper on greenhouse gas emission trading within the European Union (*European Commission's Green Paper on greenhouse gas emissions trading within the European Union*) and was included in the proposal submitted for approval in 2002 (**Proposal for a Directive of the European Parliament and of the Council establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC [COM (2001) 581 final - Official Journal C 75 E of 26.03.2002]**)

5. European Climate Change Program focuses on carrying out inter-sector actions in order to combat climate change phenomenon through activities in the following sectors: energy supply, industry and transportation. In October 2001 the European Commission received a communication (**Communication of the Commission October 23, 2001 on the implementation of the first phase of the European Climate Change Programme (COM(2001) 580 final - Not published in the Official Journal)**), through which it announces the outcomes of the implementation of the first phase of the Programme.

6. Kyoto Protocol. In 2002, the European Council announced the Community adherence to the Protocol and undertook the responsibilities to reduce GHG emissions for the 2008 - 2012 period of time (Annex II) (**Council Decision 2002/358/EC April 25, 2002 on the approval, on behalf of the European Community, of the Kyoto**

Protocol to the United Nations Framework Convention on Climate Change and the joint fulfilment of commitments thereunder [Official Journal L 130, 15.05.2002]).

7. European Union post-Kyoto strategy. Considering the fact the EU undertook responsibilities to reduce the GHG emission by 8%, for the initial 2008 – 2012 period of time, it decided to develop a Community Strategy in order to achieve the European objectives referring to the Kyoto Protocol and to the Buenos Aires Action Plan. The Communication of the Commission (**Communication of June 3, 1998 from the Commission to the Council and the European Parliament - Climate change - Towards an EU post-Kyoto strategy [COM (98) 353 final]**) laid the basis for respecting the obligations undertaken by EU in relation to the Kyoto Protocol. According to the request submitted by the European Council (Vienna) concerning the development of the strategy, the Commission presented a new Communication (**Communication of May 19, 1999 from the Commission to the Council and the European Parliament - Preparing for implementation of the Kyoto Protocol [COM (1999) 230 final]**). It stressed that the level of community emissions has increased since 1994 and the volume of emissions can increase by 8% by 2010, comparative to the level of 1990 if additional policies are not undertaken. Transport emissions can increase by 22% as from now (2000) and by 39% for the 1990- 2010 period of time. For the residential and third sector, the growth can reach up to approx. 4% in the next years. In the energy sector, the emissions will be stabilized, and in the industrial sector, the emissions will decrease by 15% during the 1990 – 2010 period. Thus, a number of measures aiming at contributing to the accomplishment of the objectives for the following sectors were presented: energy supply, transportation, agriculture, and industry. Different inter-sector measures were taken into consideration, such as the proposal for restructuring the **Community framework for the taxation of energy products and the large-scale implementation of the Kyoto Protocol mechanisms** (JI and CDM). The necessity of an effective monitoring mechanism of the emissions was also stressed. Some component parts of the EU legislation already provide emission monitoring (*Decision nr. 93/389/EEC and Directive nr. 96/61/EC on pollution control and integrated prevention*). Anyhow, EU considers the strengthening of monitoring capacities by using information technologies and satellite surveillance systems to be very important.

Therefore, we can draw the following conclusion: the EU legal framework is at an advanced level and is constantly improving. It is actually the engine of the Convention, even if at present, some countries as the USA and Australia have not ratified the Kyoto Protocol yet and the global financial mechanisms do not function “at full capacity”. It is well known that the US is implementing its own Program for GHG emission reduction, including its own emission-trading scheme. It is supposed that activities in this field will allow the USA to have national operational sale and purchase units for GHG emissions. The Carbon Market is at the development stage and many projects like CDM or JI are accepted and actively implemented in the branches of economy.

General considerations on the EU GHG emission trading system

According to the Kyoto Protocol, the European Union is obliged to reduce by 8% (as compared to the level of 1990) the emission volume of the seven greenhouse types of gases within the 2008-2012 period. Generally, in 1990 the EU emissions constituted 4334 ml. tons of CO₂.

Within the European Union, the volume of the emission that is to be reduced at national level was distributed among the 15 member-states as follows:

- Germany – 21% (1201 ml. tons);
- Great Britain – 12,5 % (775 ml. tons);
- France – 0% (637 ml. tons);
- Italy – 6,5% (542 ml. tons);
- Spain – 15% (301 ml. tons);
- The Netherlands – 6% (208 ml. tons);
- Belgium – 7,5 % (139 ml. tons);
- Greece –25% (104 ml. tons);
- Australia – 13% (74 ml. tons);
- Denmark – 21% (72 ml. tons);
- Finland – 0% (73 ml. tons);
- Portugal –27% (69 ml. tons);
- Switzerland – 4% (69 ml. tons);
- Ireland – 13% (57 ml. tons);
- Luxemburg – 28% (14 ml. tons).

It should be mentioned that the European Union managed to reduce its GHG emissions by 4% in 2000 as compared to the level of 1990.

At present, besides the EU Directive on the establishment of the, GHG emission trading scheme, the following acts are in force in the field of GHG emission:

8. European Commission Recommendation 2000/303/EC of April 13, 2000 on gas emission reduction by private transportation means.

9. European Committee Decision 93/389/EEC of June 24, 1993 for a monitoring mechanism of Community CO₂ and other greenhouse gas emissions within the European Union.
10. European Committee Decision of April 26, 1999 amending Decision 93/389/EEC for a monitoring mechanism of Community CO₂ and other greenhouse gas emissions (1999/296/EG) within the European Union.
11. European Committee Directive 93/76/EEC of September 13., 1993 to limit carbon dioxide emissions by improving energy efficiency.

A question aroused as a result of the introduction of the EU compulsory GHG emission trading system by some EU member-states: does this fact conflict with the European legislation? We should mention that, as a rule, contradictions between the European Law and the national one appear when there are standard acts adopted at European level. In this case, the EU acts are in force, the priority principle of the latter being established by the European Court of Justice with headquarters in Luxembourg.

4.9.3. Comparative assessment of the national framework with the EU and UNFCCC framework

The comparative analysis (assessment) of the national legal framework was carried out taking into consideration the responsibilities assumed at the UNFCCC and according to the necessity to bring the national legislation up to the European legislation. Initially, the areas where capacities were needed have been identified. Afterwards, a comparative analysis of the priority areas was carried out, thus a multi-sector assessment was performed.

Capacity necessities:

1. *capacity strengthening*

- legal framework,
- systemic research and observation,
- data base monitoring and updating, including inventory of the GHG emissions and reduction commitments
- public participation and expert training,
- implementation of scientific achievements,
- sustainable management by means of economic and administrative instruments;

2. *national strategies / action Plans and Programs*

- national, regional, and local policies
- sector strategies,
- action plans;

3. *technology transfer*

- technology transfer
- financial support and technical assistance
- activities implemented according to the Clean Development Mechanism (CDM);

4. *public education and informing*

- education,
- training,
- raising public awareness,
- cooperation;

5. *impact and adaptation*

- adaptation to the impact of climate change,
- impact assessment,
- vulnerability and response measures,
- monitoring and surveillance;

6. *reporting*

- National Inventory Report (NIR),
- National Communications (NC),
- Historical references.

The hierarchy of the capacity necessities according to their priority:

Main areas:	Article- UNFCCC	EU Directives	Republic of Moldova
Legislation	<p>Preamble</p> <p>... taking into consideration that it is the right of the states to adopt an <i>efficient legislation on environment issues</i> and that norms, household objectives and ecological priorities must reflect environmental and development conditions to which they refer ...</p>		<p>1. The RM Law on Environmental Protection nr.1515-XII June 16, 1993, MO nr. 10 of 30 December 1993;</p> <p>2. Law on Ecological expert Evaluation and the Evaluation of the Environment nr.851-XIII of 29 May 1996, Monitorul Oficial nr.52-53 August 8, 1996</p> <p>3. Law on Atmospheric Air Protection nr. 1422-XIII, December 17, 1997, Monitorul Oficial nr. 44-46, May 21, 1998 etc.</p>
Systemic research and observation	<p>Art. 5</p> <p>...The Parties:</p> <p>(a) support and further develop, as appropriate, international and intergovernmental programmes and networks or organizations</p>	<ul style="list-style-type: none"> • European Council Decision 93/389/EEC June 24, 1993 on CO2 and other GHG monitoring mechanism • European Council Decision 1999/170/EC 	<p>1. First National Communication of the Republic of Moldova (2000).</p> <p>2. “Climate change. Researches, studies,</p>

	<p>aimed at defining, conducting, assessing and financing research, data collection and systematic observation, taking into account the need to minimize duplication of effort;;</p> <p>(b) Support international and intergovernmental efforts to strengthen systematic observation and national scientific and technical research capacities and capabilities, particularly in developing countries, and to promote access to, and the exchange of, data and analyses thereof obtained from areas beyond national jurisdiction;</p> <p>(c) Take into account the particular concerns and needs of developing countries and cooperate in improving their endogenous capacities and capabilities to participate in the efforts referred to in</p>	<p>January 25, 1999 <i>adopting a specific programme for research, technological development and demonstration on promotion of innovation and encouragement of SME participation (1998 - 2002)</i></p> <ul style="list-style-type: none"> • Directive 96/61/EC <i>September 24, 1996 concerning integrated pollution prevention and control;</i> • Directive 2004/3/EC <i>February 11, 02 amending Council Directives 70/156/EEC and 80/1268/EEC as regards the measurement of carbon dioxide emissions and fuel consumption of N₁ vehicles (¹)</i> 	<p>solutions” Collection of works.</p> <p>3. “Technological necessities and development priorities” UNDP/ MECTD (Ministry of Ecology, Constructions and Territory Development)</p> <p>4. “Renewable energy” Feasibility Study UNDP/MECDT</p> <p>5. “Climate and hazards in Moldova” Monograph</p> <p>6. “Power policies and strategies”</p>
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	subparagraphs (a) and (b) above		
National inventories and commitments to reduce GHG	<p>Art. 4.1(a) ... The Parties: Develop, periodically update, publish and make available to the Conference of the Parties, in accordance with Article 12, national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, using comparable methodologies to be agreed upon by the Conference of the Parties;</p> <p>Art. 4.2 (c) Calculations of emissions by sources and removals by sinks of greenhouse gases should take into account the best available scientific knowledge, including of the effective capacity of sinks and the respective contributions of such gases to climate change.</p>	<ul style="list-style-type: none"> • <i>European Parliament and Council Decision 280/2004/EC February 11, 2004 concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol</i> <u>Associate documents:</u> <ul style="list-style-type: none"> • <i>Decision 99/296/EC for a monitoring mechanism of Community greenhouse gas emissions</i> <i>European Parliament and Council Directive 2003/87/EC October 13, 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC</i> • ; 	<ol style="list-style-type: none"> 1. First National Communication of the Republic of Moldova (2000). 2. Calculation methodologies used for inventory those aggregated by UNFCCC(IPCC & CORINAIR); 3. As a result of an economic regression, the RM showed a GHG emission reduction by 64% in 1998 as compared to 1990.

	The Conference of the Parties shall consider and agree on methodologies for these calculations ...	<ul style="list-style-type: none"> • Commission Decision 2004/156/EC January 29, 2004 <i>establishing guidelines for the monitoring and reporting of greenhouse gas emissions pursuant to Directive 20003/87/ of the European Parliament and of the Council;</i> 	
National, regional and local action plans	<p>Art. 4.1 (b) Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change;</p> <p>Art. 4.2 (e) (ii) Identify and periodically review its own policies and practices</p>	<ul style="list-style-type: none"> • Directive 2001/81/EC on <i>national emission ceilings for certain atmospheric pollutants;</i> • COM (2003) 739 final – directive proposal the <i>promotion of End-use efficiency and Energy Services on the ManagEnergy;</i> • Communication (2000) 0088 final on <i>EU policies and on greenhouse emission reduction measures;</i> • <i>Proposal for regulation COM (2003) on certain fluorinated greenhouse gases.</i> • <i>Amended proposal for a Directive of the European</i> 	<ol style="list-style-type: none"> 1. Law on Atmospheric Air Protection nr. 1422-XIII, December 17, 1997, Monitorul Oficial nr. 44-46 May 21, 1998; 2. Decision of the Government nr.1047 October 4, 2001 on the approval of the Program on the reduction of atmospheric air pollution by vehicles , Monitorul Oficial nr.121-123 October 5, 2001; 3. The Decision of the Parliament of the RM on the approval of the

	<p>which encourage activities that lead to greater levels of anthropogenic emissions of greenhouse gases... Art. 4.1(d) Promote sustainable management, and promote and cooperate in the conservation and enhancement, as appropriate, of sinks and reservoirs of all greenhouse gases not controlled by the Montreal Protocol...</p>	<p><i>Parliament and of the Council amending Directive 1999/32/EC as regards the sulphur content of marine fuels</i> ;</p>	<p>Concept of environmental policy of the RM nr.605-XV November 2, 2001, Monitorul Oficial nr.9-10 January 15, 2002; 4. Decision of the Government nr.1574 December 26, 2003 on the institution of the National Committee for the implementation and fulfilment of the UNFCCC provisions and Kyoto Protocol mechanisms and provisions, Monitorul Oficial nr.6-12 January 1, 2004 5. Law On Payment for Environmental Pollution nr. 1540-XIII February 25, 1998 6. The national strategy for sustainable development. 7. Law on power sector nr. 1525-XIII February 19,</p>
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			<p>1998.</p> <p>8. Power strategy of the RM until 2010 approved by the Decision of the Government of the RM nr. 360 April 11, 2000</p> <p>9. Law on Energy conservation nr. 1136-XIV July 13, 2000</p> <p>10. Decision of the Government nr. 1092 October 31, 2000 on the use of renewable energy resources.</p> <p>11. Decision of the Government nr. 1078 September 5, 2003 on the approval of the national Program of energy conservation for the 2003 - 2010 period</p>
Technology transfer	Art. 4.1 (c) Promote and cooperate in the development, application and	<ul style="list-style-type: none"> • Council Decision June 27, 1997 on renewable energy sources 	1. Decision of the Government nr. 421 April 5, 2002 “On thermal

	<p>diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol in all relevant sectors, including the energy, transport, industry, agriculture, forestry and waste management sectors. Art. 4.8</p> <p>In the implementation of the commitments in this Article, the Parties shall give full consideration to what actions are necessary under the Convention, including actions related to funding, insurance and the transfer of technology, to meet the specific needs and concerns of developing country Parties ...</p>	<ul style="list-style-type: none"> • Council Decision December 18, 1997 on a <i>Community strategy to promote combined heat and power.</i> • Directive 2001/77/EC on <i>the promotion of electricity from renewable source in the internal electricity market</i> • Directive 2002/91/EC December 16, 2002 on <i>the energy performance of buildings</i> • Directive 2003/30/EC May 8, 2003 on <i>the promotion of the use of biofuels or other renewable fuels for transport.</i> • Directive 2004/8/EC February 11, 2004 on <i>the promotion of cogeneration based on a useful heat demand in the internal energy market and amending Directive 92/42/EEC</i> 	<p>rehabilitation of the built residential buildings”.</p> <p>2. Decision of the Government nr. 1092 October 31, 2000 “On the use of renewable energy resources”.</p> <p>3. Decision of the Government nr. 1078 September 5, 2003 “On the approval of the national Program on energy conservation for the 2003 – 2010 period”</p> <p>4. Decision of the Government nr. 189 February 20, 2003 “On the approval of the Concept on the renovation of the heating supply system in the Republic”</p> <p>5. National Report “Technological necessities and development priorities”,</p>
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			<p>MECTD/UNDP. 6. “Renewable energy” Feasibility Study UNDP/MECTD. 7. Decision of the Government nr. 123 December 19, 2001 “The Program of gasification of the Republic of Moldova until 2005”.</p>
Financial support received	<p>Article 4.3 The developed country Parties and other developed Parties included in Annex II shall provide new and additional financial resources to meet the agreed full costs incurred by developing country Parties in complying with their obligations under Article 12, paragraph 1. They shall also provide such financial resources, including for the transfer of technology, needed by the developing country Parties to meet the</p>	<p><i>European Parliament and Council Regulation (EC) nr. 2493/2000 November 7, 2000 on measures to promote the full integration of the environmental dimension in the development process of developing countries (Official Journal L 288 , 15/11/2000 P. 0001 – 0005)</i></p> <p><i>European Parliament and Council Regulation (EC) nr. 2494/2000 November 7, 2000 on the measures to promote the</i></p>	<p>1. Project of the World Bank “Soil Conservation” within the CDM mechanism. 2. The law for the ratification of the Memorandum of Understanding between the Government of the Republic of Moldova and the Government of the Kingdom of Denmark on the cooperation for the implementation of the Clear Development</p>

	<p>agreed full incremental costs of implementing measures that are covered by paragraph 1 of this Article and that are agreed between a developing country Party and the international entity or entities referred to in Article 11, in accordance with that Article. The implementation of these commitments shall take into account the need for adequacy and predictability in the flow of funds and the importance of appropriate burden sharing among the developed country Parties.</p> <p>Article 4.4</p> <p>The developed country Parties and other developed Parties included in Annex II shall also assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those</p>	<p><i>conservation and sustainable management of tropical forests and other forest in developing countries (Official Journal L 288 , 15/11/2000 p. 0006 – 0010)</i></p>	<p>Mechanism defined in the Kyoto Protocol at the UN Framework Convention on Climate Change, nr. 332-XV October 7, 2004.</p>
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	<p>adverse effects</p> <p>Article 4.5</p> <p>The developed country Parties and other developed Parties included in Annex II shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention. In this process, the developed country Parties shall support the development and enhancement of endogenous capacities and technologies of developing country Parties. Other Parties and organizations in a position to do so may also assist in facilitating the transfer of such technologies.</p>		
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	<p>Article 12.4 Developing country Parties may, on a voluntary basis, propose projects for financing, including specific technologies, materials, equipment, techniques or practices that would be needed to implement such projects, along with, if possible, an estimate of all incremental costs, of the reductions of emissions and increments of removals of greenhouse gases, as well as an estimate of the consequent benefits.</p>		
Public education and training and raising public awareness	<p>Art. 4.1 (i) Promote and cooperate in education, training and public awareness related to climate change and encourage the widest participation in this process...</p> <p>Art. 6 (i) The development and exchange of educational and public</p>		1. The Law of the RM on Environmental Protection nr.1515-XII June 16, 1993, Monitorul Oficial nr. 10 December 30, 1993; 2. Law on Ecological Expert Evaluation and the Evaluation of Impact on the Environment nr.851-XIII May 29, 1996

	<p>awareness material on climate change and its effects;</p> <p>New Delhi work Program, CoP 8.</p>		<p>Monitorul Oficial nr.52-53 August 8, 1996</p> <p>3. The Law of the RM on Principles of Urbanism and Territory Arrangement nr. 835 May 17, 1996.</p> <p>4. Decision of the Government nr. 951 October 14, 1997 on the approval of the Regulation on public consultation in the process of development and approval of the documents on urbanism and territory arrangement.</p> <p>5. The Law of the RM on the ratification of the Convention on “Access to information, justice, and public participation within the process of adoption of decisions concerning environment” nr. 346-XIV April 7, 1999.</p> <p>6. Decision of the</p>
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			Government nr. 72 January 25, 2000 on the approval of the Regulation on public involvement in the development and adoption of environmental decisions.
Information exchange cooperation	Art. 4.2 (e) (i) Coordinate as appropriate with other such Parties, relevant economic and administrative instruments developed to achieve the objective of the Convention		1. Decision of the Government nr. 935 October 11, 1999 “On the use of hydro-meteorological information in the activity of economic agents”
Impact adaptation	Art. 4.1 (e) Cooperate in preparing for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa,		1. First National Communication of the Republic of Moldova (2000).

	<p>affected by drought and desertification...</p> <p>Art. 4.1 (b)</p> <p>Formulate, implement... measures to mitigate climate change ... and measures to facilitate adequate adaptation to climate change;</p>		
Impact assessment	<p>Art. 4.1 (f) Take climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions, and employ appropriate methods, for example impact assessments, formulated and determined nationally, with a view to minimizing adverse effects on the economy, on public health and on the quality of the environment... Art. 4.1 (g) Art. 4.1 (h) Promote and cooperate in the</p>	<ul style="list-style-type: none"> • Decision nr. 2179/98/EC September 2, 1998 on the revision of the EU Program on environment and development policy and actions. • Council Resolution June 21, 1989 on greenhouse gas effects, (Official Journal C 183, 20/07/1989 p. 0004 - 0005) 	<ol style="list-style-type: none"> 1. Law on Hydrometeorological Activity (nr. 1536-XIII February 25, 1998). 2. Decision Government nr. 41 April 3, 2003 on "Some aspects on the hydro-meteorological activity in the Republic of Moldova". 3. First National Communication of the Republic of Moldova.

	full, open and prompt exchange of relevant scientific, technological, technical, socio-economic and legal information related to the climate system and climate change, and to the economic and social consequences of various response strategies.		
Vulnerability to the impact of climate change and response measures	<p>Art. 3 The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects... to achieve this, such policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors...</p>	<p>Regulation (EC) nr. 2152/2003 November 17, 2003 concerning monitoring of forest and of the environmental interactions in the Community.</p>	<p>1. Decision of the Government nr. 106 February 27, 1996 on measures to ensure forest protection and protection of forest curtains and other forest plantations, Monitorul Oficial nr.32-33 May 30, 1996</p> <p>2. Decision of the Government nr. 737 June 17, 2003 “The State Program for the regeneration and afforestation of the forest</p>

			fund for the 2003-2020 period”
Reporting	<p>Art. 4.1 (j) Art. 4.2. (b) In order to promote progress to this end, each of these Parties shall communicate... <i>periodically</i> detailed information on the policies and measures... Art. 12.1 In accordance with Article 4, paragraph 1, each Party shall communicate to the Conference of the Parties: a national inventory of anthropogenic emissions ..., a general description of steps taken or envisaged by the Party to implement the Convention; any other information that the Party considers relevant ...</p>		1. First National Communication of the Republic of Moldova (2000).

4.10. Assessment of current capacities concerning the implementation of the UN Framework Convention on Climate Change (UNFCCC).

“The UN Framework Convention on Climate Change” and the Kyoto Protocol, both signed and ratified by the Republic of Moldova, are documents of the international law implementation, that set a number of obligations to the Republic of Moldova. Intercountry agreements are part of the international system of relationships between states, establishing and limiting at the same time their sovereignty. These types of agreements refer to the international public law, the norms of which are an integral part of the national legal system¹, of the subjects of these agreements.

The role and the position the international documents and obligations that the Republic of Moldova undertakes within the national system are regulated by the Constitution of the RM according to the legal hierarchy. According to the Constitution of the RM, the norms of international law and the international treaties to which the Republic of Moldova has adhered are part of the national legal system. If the international treaty sets rules other than those provided by the domestic legislation, the provisions of the international treaties shall be applied.²

The present civil legislation of the Republic of Moldova provides in art. 7 of the Civil Code of the RM: “*If the international treaty that the Republic of Moldova is a party to provides other provisions than those provided in the civil legislation, the orders of the international treaties will be applied*”.

Generally, taking into consideration the legal system of the RM, the existing hierarchy can be presented as follows:

1. The Constitution of the Republic of Moldova, adopted on July 29, 1994, came into force on August 27, 1994 and the constitutional laws
2. International Treaties to which the Republic of Moldova is a party to.
3. Organic laws.
4. Ordinary laws.
5. The orders of the President of the Republic of Moldova.
6. Decisions of the Government.
7. Other standard acts issued by the bodies of the central and local public administration.

By virtue of what was mentioned above, the provisions of the UN Framework Convention on Climate Change are part of the law system of the Republic of Moldova as a component of the national legislation.

At the same time, these provisions can be implemented only provided that proper legal and administrative mechanisms exist, carried out within the national legal system. Until present time, the Republic of Moldova did not adopt any special legal documents that would regulate expressly greenhouse gas emissions. The legal regulation on GHG emissions was performed through different standard acts with imperfect contents.

The main documents that are the basis of the international relations and that derive from the UN Framework Convention on Climate Change are the following:

- Berlin Mandate (COP.1)
- Geneva Ministerial Declaration (COP.2)
- Kyoto Protocol (COP.3)
- Buenos Aires Action Plan (COP.4)
- Marrakech Agreements (COP. 7)

In the Republic of Moldova the bases of the environmental policy in the stage of transition to market economy were laid by the Law on Environmental Protection nr. 1515-XII June 16, 1993, the Law on Atmospheric Air Protection nr. 1422-XIII December 17, 1997, the Law on Hydrometeorological Activity nr. 1536- XIII February 25, 1998, the Environment Protection Concept in the Republic of Moldova (1995), the

¹ The decision of the Constitutional Court on the interpretation of several provisions of art. 4 of the Constitution of the RM, nr. 55 October 14, 1999, Monitorul Oficial nr. 118-119/ 64 October 28, 1999 “...besides, international treaties prevail only over domestic legislation and not over constitutional norms...” The Constitutional Court decided: “(3) *The unanimously accepted principles and norms of the international law, the ratified international treaties and the treaties the Republic of Moldova has adhered to are part of the legal framework of the Republic of Moldova and become norms of the RM domestic law.*” Note: The decisions of the Constitutional Court cannot be litigated in any court as they are final.

² This reasoning is based on the provisions of art. 4 and art.8 of the Constitution of the RM, which stipulate: Art. 4 (2) *Wherever disagreements appear between conventions and treaties signed by the Republic of Moldova and her own national laws, priority shall be given to international regulations.* Of course, these provisions are patient of some completion and critics introduced by the Decision of the Constitutional Court on the interpretation of article 4 of the Constitution of the RM. See the note above. Art. 8 (1) *The Republic of Moldova pledges to respect the Charter of the United Nations and the treaties to which she is a party, to observe with her relations to other states the unanimously recognized principles and norms of international law. (2) The coming into force of an international treaty containing provisions contrary to the Constitution shall be preceded by a revision of the latter.*

National Environment Action Plan (1996), and by the National Environment and Health Action Plan (2001). Strategy documents for sectors and fields that include a number of provisions on environmental protection have been developed also. Within the 1995-2000 period the “Environment for Europe” process took proportions in the newly independent states. The Republic of Moldova took an active part in this process being represented at the highest level within international environmental organizations.

Despite the existence of national legal bases on environment, the climate change problem is not sufficiently regulated. The Republic of Moldova has not adopted yet a Strategy on greenhouse gas emission reduction and an action plan for adaptation to climate change.

The legal regulation on GHG emission reduction implies the adoption of a number of standard acts that would provide the basic terms, mechanisms, methods, and other aspects of GHG emission in relation to the UN Framework Convention on climate change and Kyoto Protocol. It is necessary to improve the existing documents and to develop several mechanisms for the application of standard acts and standards that contravene those stipulated in international legal and standard acts.

A great number of legal and organizational barriers hinder the implementation of the UNFCCC provisions. During the last few years, due to the activities carried out by UNDP projects with the support of the Global Environment Fund, the first important steps in involving the Republic of Moldova within the international cooperation and training specialists in the field were taken. However, there are some capacity gaps in what comes to the legal, institutional, and partially, individual framework.

The analysis of the capacities for the implementation of the UNFCCC provisions regarded the approach of the problem at three levels: systemic, institutional, and individual. The identified necessities are the following:

At **systemic** level – To create a clear Concept that will allow different fields of national economy addressing the provisions of the Convention and that would allow them to work on the implementation of these provisions at the national level.

- To develop a scheme for assessing the negative impact of climate change and to estimate the costs of the benefits from the efforts undertaken for the adaptation and active implementation of new technologies, including renewable energy sources, this fact would be able to attract foreign and domestic investments.
- To create financial instruments that would promote energy efficiency and transfer of technologies favourable for the environment.
- To implement by law a system for monitoring the phenomena that have a great impact on public health and to introduce warning as a method for the prevention of extreme large-scale climate events.

At **institutional** level – To promote the training of specialists and other responsible persons at a greater scale and raising their awareness on the negative consequences of climate change as well as on the possible ways to outrun critical situations.

- To create a solution of the problem through common activities and by means of multilateral and inter-institutional cooperation. The undertaken efforts should be monitored and coordinated, this means that one of the relevant institutions should assume this responsibility.

At **individual** level – To develop a well-reasoned curriculum focused on this issue and that would create a comprehensive educational framework, in such a way the problem will reach different levels of society: pupils, students, professional environments, and public officials.

- To carry out an ample communication campaign on the possible solutions, fact that would create the necessary ground for citizens’ initiatives and at the same time will determine the formation of ecologically-oriented views among politicians.

3. Identification of barriers that hindered the accomplishment of planned activities

3.1. Barriers in the field of GHG emissions reduction

3.1.1. General barriers

1. At system level, the necessary capacities characterized by strategies, concepts, national programs and laws for the fields with the greatest range of GHG emission in the republic (the energetic complex, transports, industrial branches, agriculture and waste) have been developed. Typical for the majority of these acts is that specialists in the corresponding branch and in related fields did not involve sufficiently in the process of their development and expert evaluation, fact that reduces their quality: certain necessary actions are missing, while other secondary ones, are included; for the majority of planned actions the financing source is not mentioned. Another constant gap is the describing-informative form of some of these acts.

2. For the enforcement of direct measures on GHG emissions reduction, it is necessary to monitor the condition of atmospheric air as well as to monitor the influence of anthropogenic activity on atmospheric air. The necessary legislative framework was created in the republic; therefore, the institutional system with the necessary functional documentation for the enforcement of the measures stipulated in these acts does exist. Nevertheless, in most of the acts, at all levels, concrete references to green house effect gases are missing, control and taxing being provided only for the emission of noxious gases.

3. In the state structure acting in this field (ministries, departments) there are not provided units responsible for the environment. The protection of the environment, in general and the problem of GHG emissions, in particular are not included in their functional obligations.

The barriers are the same at systemic, institutional and individual levels:

- Because of the difficult economic situation in the country, the policy in the field of environment is not a priority, the most important issues being the poverty problem, the problem of economic reforms and the one of revival of the national economy;
- Because of the reduction of fuel consumption in comparison with 1990, the problem of GHG emissions does not seem to be urgent.
- Decision-making persons do not realize the gravity of the problem caused by thermal pollution.

4. The Ministries (except the Ministry of Agriculture and Ministry of Ecology) do not have provided in their structures any subdivisions responsible for environmental protection and ecology.

5. There are not provided encouraging measures that would contribute to the carrying out of environmental policies and of actions for limiting or reducing the emission of GHG. Barriers:

- The instability of the legislative framework;
- The high level of bureaucracy and corruption within state and public bodies;
- The low level of political culture of citizens.

6. An educational system for staff training is missing as well as one for the rising public awareness on the subject of climate change and measures to combat this phenomenon. Barriers:

- Ignoring of serious problems generated by the climate change, including at the level of decision-making persons;
- The method of addressing problems in the manner of the workers of branch ministries, a method inherited from the administrative command system – to hold direct responsibility only in relation to the production process and less in regard to the promotion of strategic policies, such as environmental protection and sustainable development;
- The difficult financial situation, the lack of necessary resources for additional expenses required for editing certain informative materials, for organising seminars and conferences on the mentioned problem etc.;
- Insufficient financing of education and science;
- Ignoring the importance of informing and educating by the decision factors;
- Lack of knowledge of the particular problems by the mass-media employees.

3.1.2. Specific barriers and impediments at the sector level Energetic sector

1. The most effective measure for GHG emissions reduction in the energetic sector is saving the energetic resources. The main barriers at *institutional and systemic levels in energy conservation*:

- Outdated technologies and physically worn-out equipment of the sources for the production of energy and of the transport networks and distribution of energetic resources ;
- Energy consuming industry and communal household, with old technologies and machinery, directed to cheap fuel and energy;
- Financial scarcity, that does not allow introducing new technologies and redirecting the production systems and services towards an energetic efficiency;
- Unfavourable investment climate, that discourages local and foreign investments in the reconstruction of the national energetic complex;
- Peculiarities of investments in the energetic complex – large amounts with long terms of recovery;
- The high risk level of banking credits caused by the political, economical and legislative instability;
- Incapacity of payment of agents, energy consumers, both individuals and legal entities;
- Providing energy to the population has a strong social aspect, is excessively politicized, the state and local public bodies interfering in the economic activity of enterprises in the energetic sector.

2. An efficient measure for reducing the consumption of electrical and thermal energy is the control of the energetic resources consumption. An essential barrier, *at institutional level*, for fulfilling this action is the lack, until now, of the following:

- Norms and indexes for the consumption of energy and fuel;
- Regulation of compulsory energetic expert evaluation of projects and energetic certification of buildings;
- Regulations of energetic audit.

3. In the Republic of Moldova, which has very poor resources of traditional fuel, a special attention should be paid to primary sources of energy, transport and consumption of natural gases, to own reserves of fossil fuel and renewable energy sources.

The main barriers and impediments in the field of primary energy sources:

At systemic level:

- Until present, the National Program for the capitalisation of renewable energy sources has not been approved;
- In some documents, the technical and financial possibility of enforcing the provided measures was not taken into account, in the existing conditions these being impossible to be carried out;
- The problem of energetic capitalisation of waste is not dealt with;

At institutional level:

- Large and long-term investments are necessary for the capitalisation of RES;
- The lack of certain encouraging facilities at different levels for users to implement RES.

4. The main barriers in the process of carrying out information and raising public awareness action regarding the climate change and measures to combat it, including by energy saving, are as follows:

- Insufficient acknowledging of the seriousness of problems regarding climate change, energy saving, use of RES and lack of a serious approach of the latter at different levels;
- Regarding these problems as secondary ones and neglecting the role of RES in the energetic balance by decision-making persons.

Industrial processes

The main barriers and impediments in implementing the provisions of the Framework Convention and GHG emissions reduction in industry are as follows:

- Privatisation and slow reorganization of enterprises;
- The strong economic decline had a negative impact on the industrial production in the Republic of Moldova, because of the sudden raise of the price for the used electrical energy, energy consuming technologies, installations and extremely used-up machinery having a great content of metal;
- Because of the physical and moral wear of the equipment, considerable investments are necessary for modernisation and introduction of new technologies. The profitability of the assets of enterprises is very low;
- Expenses for reducing the environmental impact of the industry are insufficiently assessed ;
- The Law of the Republic of Moldova on Protection of Small Business No. 112 – XIII of 20.05.1994 meets the provisions of the policy GHG emissions reduction through the exemption of tax on the income obtained by commercial banks from credits offered for drafting,

development and implementation of new techniques and technologies; readjustment of and introduction of new technologies in the process of production. Barriers: limited access to credits and mainly to short term credits, 2-3 years;

- Instructions on the way of organising and carrying out of the state ecologic expert evaluation and Law on Ecological Expert Evaluation and the Evaluation of Impact on the Environment are not efficiently applied, from bureaucratic reasons. Often, the ecological expert evaluation of new technologies and equipment is carried out without the approval of the National Institute of Ecology. The same project can be carried out at the level of the State Ecological Inspectorate or local ecological agencies;
- Enterprises do not apply the system of quality management at large, according to the ISO 14001 or EMAS standards;
- Financial resources for the implementation of planned activities are not assessed or indicated in the National Program of Ensuring Ecological Security; involvement of the Ministry of Industry in the activities for reducing noxious emission is neglected.

Transports

Barriers and impediments in the implementation of the provisions of the Framework Convention and GHG emissions reduction within transports are the following:

1. At systemic level:

- Lack of common cooperation strategy within CIS on the promotion of environmental pollution protection in the field of transports;
- The political environment, unfavourable for practicing the activities of integrated monitoring on the entire territory of the Republic of Moldova;
- Insecurity of investments;
- Lack of connection between the sector informational systems, used for the management and reduction of emissions, fact that limits the informational support for decision taking;
- Because of insufficient financing and lack of administrative and legal support existing laws and plans are not observed or implemented to the necessary extent.

2. At institutional level

- Reduced energetic efficiency of electric and rail transport ;
- Directives and standards on the quality of fuel, motors and vehicles are unsatisfactory;
- Technologies, technique and equipment used for building and maintaining of roads are consuming a lot of energy;
- Standards on protection zones of road networks are outdated and require urgent harmonization with those of the European Union. After frequent reparation and maintenance works of engineering networks, the protection zones are destroyed and of low quality;
- Lack of a strategy to reduce CO₂ emissions from automobiles;
- Standards on the noxious emissions and specifications for liquid fuels (program for car gas) are not in compliance with the European Union standards and regulations;
- Republic of Moldova does not have a national integrated system for monitoring the pollutants. The Ministry of Ecology and the Ministry of Education have separate monitoring programs, that do not include inventory of GHG emission;
- Lack of a unique method of appreciation and calculation of emission from stationary and mobile sources;
- Bad condition of vehicles and use of low quality fuels (diesel gas with app. 1% of sulphur, unconditional natural gas – with high content of water, smuggling with gasoline that contains lead– although it is declared that this type of gasoline is not imported anymore since 2003);
- Insufficient technical capacities of laboratories for the assessment of noxious emissions and weak coordination to monitor and control the circulating material;
- The tax system applied on transports is not efficient enough.

3. At individual level

- Lack of capacities for using modern management methods, unsatisfactory remuneration of employees;
- Irresponsibility of managers and specialists of state institutions, lack of transparency in the mechanisms of developing rules and decision taking;
- Limited access to information.

Agricultural works

1. The problem of GHG emissions reduction in the agricultural sector is not understood both in the field and by decision factors. Barriers:

- The mentioned problem is not considered to be urgent for the agricultural sector;
- Taking into consideration the crisis the national economy is going through, attention is paid mainly to measures that can bring benefits in a shorter period and less – to environmental problems;
- The environmental protection subject is weakly reflected by mass-media, and also in the curricula within schools and universities etc.;
- The majority of specialists within the agricultural sector have minimum knowledge in the field of environmental protection.

2. The laws and programs developed in the field are little known in the territory and are implemented sporadically and extremely seldom. There are not provided efficient mechanisms that would stimulate putting into practice of the developed and adopted programs (the responsible organisms and persons, as well as the financial support, etc., are not indicated in programs)

3. In the field, the district agricultural departments are responsible for environmental protection problems within the agricultural sector, but the activity of these in the corresponding field is rather formal. The local public administration is concerned only with socio-economic problems.

Waste management sector

Analysing the actual science of the legislative and institutional framework in the field of waste management, including the activities that contribute to GHG emissions reduction, we can conclude that the main barriers that hinder the carrying out of the provisions of the National Strategies and Programs in the field, are the following:

1. At local level of waste management, the barriers are mainly financial (lack of financial resources in the budgets of the local public administration) and organisational – lack of corresponding infrastructures for waste management, specialists able to correctly appreciate and determine the capacities of waste management in the locality. These barriers have caused the failure of the programs developed in the 10 former districts. Not being correspondingly motivated, the activities stipulated in the programs were fulfilled only by a limited number of economic agents from localities.

2. At branch level, barriers are also of financial nature (lack of resources in the state budget for carrying out the planned activities), organizational nature (waste are not managed and their recordkeeping is missing), and observance of the legislation in the field. For example, until now, the Ministry of Agriculture, the Ministry of Energetics, the Ministry of Transports and Communications have not recorded and presented for programs to be carried out in relation to waste management within the corresponding branches. Usually, responsible for waste formation and processing are the beneficiaries that are going to manage waste using funds from their own budgets.

3. Separate collecting of production and consumption waste (creation of separate collecting centres) proved to be impossible to accomplish because of:

- Insufficient training of the population in relation to the necessity to separately collect the consumption solid waste (CSW);
- Lack of initiative in this field of the local public authorities and lack in the local budgets of financial resources for these activities;
- Lack of the infrastructure necessary for separate collecting of waste and lack of equipment for processing the recyclable waste;
- Lack of economic levers to stimulate activities in relation to waste using and processing.

4. The standard technological schemes of solid waste storages (3-5 thousand, 10-15 thousand, 20-30 thousand inhabitants), developed with the purpose to control waste storages have not been applied into practice, because of:

- lack of financial resources in the corresponding budgets;
- lack of experience in the field of waste storages planning.

5. Barriers in the field of collecting methane gas at the consumption waste storages:

- lack of investigations in relation to the profitability of recovering methane from the ramps;
- lack of experience in the field of recovering methane from waste;
- lack of financial resources necessary for these works;

- irresponsibility of the bodies of the local public administration, who are not interested in co-financing these works;
- limitation of the infrastructure and experience for using methane and its collection only in case of foreign investments in this field.

3.2.Barriers and impediments in the field of natural resources and adaptation to climate changes.

3.2.1. Water resources.

8. In the field of water resources management at national level, many institutions with partial responsibilities and functions that often overlap lacking an efficient coordination and cooperation in their activity. Most of them do not have an adequate financial base.
9. The information on the hydrological regime and water quality does not entirely reflect the real situation of surface waters because of the continually reducing number of observation posts, placed on internal rivers and observation wells for underground waters. The State Water Cadastre is drafted only based on the available information.
10. The constructions of drawing and supplying water for irrigations are not used and hence become destroyed every year.
11. Some localities express the tendency to give up supply with potable water from central communal systems, and to use underground waters to satisfy the local needs.
12. The legal potential of our legislation in force is not totally used for settling the disputes in the field of exploitation of water objects, because of the bureaucracy and lack of qualified specialists in this field.
13. The funds raised from the consumption of water are not used according to the destination provided by the Law on Natural Resources, fact that does not contribute to strengthening the financial base of the water household.

3.2.2. Forest sector

1. The existing legal and standard framework in relation to the forest field contains many gaps and flaws, which partially reflect some important aspects, creating barriers, misunderstandings, constraints in the process of implementation (partial definition of competences, insufficient connection to international treaties, unsatisfactory application of several legal provisions, inefficient application of sanctions, confusing content of laws, insufficient explanation of the aspects related to biodiversity conservation and adaptability of forest ecosystems to climatic changes etc.). The general situation in this field is characterized by:
 - existence of many disagreements, flaws in the legislative and standard acts in force;
 - insufficient technical and economic norms;
 - inefficient state control in the field of forest legislation observance/implementation;
 - insufficient integration of the forest policy with other national policies and provisions of international acts.
2. General situation of national forest resources, one of the main sources of carbon dioxide absorption from atmosphere, is characterized by a degradation tendency, a process that can be crucial for the capacities of our country to contribute to the solving of the problems included in the UNCCC. At this compartment the general conclusions are:
 - The Republic of Moldova is one of the European countries with small areas of forests and with the smallest share of forest resources;
 - A high level of forest dispersion and irregular distribution, which is a negative factor;
 - Most of forests have a brushwood origin- 57%;
 - Almost 40% of the brushes do not correspond to the constant conditions;
 - In forests there were cases of intensive tree drying (almost 31 000 hectares);

Negative factors, which caused forests degradation:

- lack of a study in the field on the real situation of forests and development tendencies;
- lack of a national typology of forest ecosystems;
- fragmentation of forests into isolated blocks, lack of connections between the latter and destruction of migration ways for species;
- simplification of the forests content and structure, mistake made in the process of maintenance works and management;

- uncontrolled and unregulated rests and entertainment from a legal point of view;
 - intense pasturing and illegal forest cutting.
3. A decrease of forest biodiversity can be ascertained as a result of:
- administration of the forests in the last centuries mainly by applying the grove regime with sprout regeneration;
 - planting of forest crops with a simple composition, vertical and horizontal structure, from unidentified reproducing materials;
 - application of chemical substances to combat agriculture and forest pests;
 - intense pasturing and illegal forest cutting, poaching;
 - increased anthropic pressure, uncontrolled access of the population in forests, ;
 - mistakes committed within forest administration;
 - reduced possibilities to exchange genetic information and species migration because of forest fragmentation;
 - intense agricultural capitalisation of territory of the country.
4. Difficulties in forest regeneration works are a consequence of the following:
- reduced capacities for the regeneration of many types of bushes;
 - lack of years with sufficient fructification for the regeneration of cvercinee;
 - lack of control of the origin of forest reproducing materials;
 - insufficient knowledge of the forestry personnel in applying new regenerating and treating technologies;
 - insufficient financing.
5. The condition and management of forest vegetation, other than the one of the forest fund, is unsatisfactory. Although this vegetation has an important role in protecting the soil from erosion, rivers and waters from pollution, as well as an economic importance, being an additional source of wood and non-wood products, offering working places, this vegetation is not provided an adequate administration regime. The situation in the field reveal the following:
- lack of a planning program for agricultural lands, rural localities and small towns;
 - insufficient cooperation between the administrators of agricultural lands and forest and environmental authorities;
 - insufficient lands covered with forest vegetation (protective forest belts, green spaces, plantation of trees and bushes);
 - insufficient implementation of motivation and legal responsibilities to create such plantations.
6. It is necessary to mention the following shortcomings of the current institutional system:
- Insufficient/inefficient defining of competences and responsibilities among different levels of administration, among central public authorities that tangentially relate to the national forest sector, and among central and local public authorities;
 - reduced management efficiency, imperfection of the current financial mechanism;
 - reduced development possibilities of the informational system vertically and horizontally, between different management systemic blocks;
 - slow international integration of the national forest sector;
 - inefficient management of forest resources, non-capitalisation of the existing potential and lack of favourable growth conditions;
 - reduced financing of the main forest activities from the State budget;
 - lack of initiative at the second and third level, contradictions between the “centre”, “enterprise” and “forest administration units”, between forest authorities, environmental authorities and local public authorities;
 - planning of the activities is carried out depending on the achieved level, not being scientifically motivated and standardized;
 - insufficient cooperation and integration among departments and sectors, in relation to the forest fund management activity between central forest authorities and other ministries and departments: Ministry of Ecology, Ministry of Agriculture and Food Industry, Ministry of Industry, Ministry of Energetics, Ministry of Transports, as well as local public administration;
 - lack of an institutional structure and of qualified staff within other owners of forest fund and forest vegetation besides the forest authorities;

- insufficient information of the public about the condition of forests and about the decisions taken, public non-participation in the development of such decisions.
7. Current situation of human resources is characterized by:
- Insufficient professional qualification of the staff, non-correspondence of the latter to the new economic and management conditions of the forest sector;
 - Insufficiency of specialized forestry personnel within other managers and owners of forest fund and of lands with forest vegetation;
 - unqualified or semi-qualified staff, lack of modern and performing equipment at working places, technical endowment being at the level of the '70s-'80s;
 - the share of employees lacking specialized higher education is 25-66% (depending on the categories of employees);
 - persons having secondary education prevail among engineers, scientific collaborators and managers;
 - endowment of the working places of specialists and managers with modern communication technologies and computers is unsatisfactory;
 - the profession of forester is not considered to be imposing.
8. Science and forest arrangement:
- absence of a national integrated program in the field of forest research;
 - insufficient researches on the vulnerability and adaptability of forest ecosystems to unfavourable climate change;
 - lack of researches in the field of forest economy;
 - lack of the national forest arrangement program and concept, taking into consideration the market economy and local conditions;
 - non-accomplishment of certain arrangement works on the territories of the forest fund managed by Mayor's Offices and on the surfaces covered with vegetation outside the forest fund.
9. Public forest education is missing. Sociological surveys show that forest problems are insufficiently discussed in the society.

3.2.3. Agricultural sector

1. Insufficient activity of the bodies responsible for the sustainable development of the phytotechnic sector in the development and implementation of programs on:
 - • adaptation to climate change consequences
 - • protection of soil fertility and ecologic reorganization of degraded lands
 - • adequate combating of pests.
2. Reduced budget possibilities to subsidize the rehabilitation programs of irrigation systems and to carry out agrotechnical works within drought-affected zones (creation of agricultural crops species, hybrids resistant to thermohydrologic stress, to diseases and pests).
3. Lack of standard acts on animal nutrition and of mechanisms to apply these acts into practice. This fact determines the inactivity of the bodies of local public administration and state institutions in regulating production, selling and use of fodder.
4. Insufficient control of the use by agricultural producers and sale of uncertified and inferior quality seeds and planting material.
5. Lack of funds to acquire high-quality seeds and planting material by economic agents and using mainly manual methods of soil processing, result in low production of agricultural crops.
6. Lack of legal mechanisms and financial facilities to attract foreign and local investments in the process of implementation of modern technologies in traditional and ecological agriculture.
7. When developed certain legislative and standard acts, financial and technical possibilities were not estimated, and as a result, those have not been fulfilled.
8. Unsatisfactory activity of the managing bodies in phytotechnics and zootechnics sectors, bodies responsible for the development of this branch and control of the achievements of the Government adopted action programs.
9. Absence of a flexible and attractive investment policy for domestic and foreign investors while implementing modern technologies in traditional and ecological agriculture.
10. Lack of legal mechanisms and financial facilities necessary to promote the local producer and to stimulate research institutions working within enterprises that produce seeds, planting material and as well as in the reproduction of breeding animals.

11. A deep degradation of the zootechnics sector during the last years, fact that can be explained by the following: reduction of the role of the state in directing this field; lack of coordination and successiveness of actions of political, economic, juridical institutions; incapacity of state competence bodies to launch and to fulfil structural reforms in the field.
12. Lack of a national development strategy in zootechnics, able to determine the intensification of the process of economic development – financially and scientifically motivated – of modernization of animal breeding technologies.
13. The current legislation of R. of Moldova in the fields of zootechnics, veterinary service and pisciculture does not provide the aspects of relations between state bodies and bodies of the local public administration: efficient use of fodder resources in zootechnics (hay-fields, pasture lands etc.) and water resources (in pisciculture); improvement of the organizational structures of territorial subdivisions in zootechnics and veterinary service.
14. Reduced possibilities of the State Budget, commercial banks, and of private crediting and financing capital at the stage of drafting development programs of the zootechnic sector.
15. There rights of animal owners are not ensured in relation to choosing the reproduction breeds and animal breeding in the private sector.
16. Absence of certain legislative norms that would regulate administration and exploitation fodder resources (including pasturelands and hay-fields).
17. Non-observance of the sanitary-veterinary norms and of the requirements for using fodder resources by animal owners, as well as insufficient control of the observance of these norms.
18. Delay of organisational measures to assign the use and deficient management of water objects, in the property of the local public administration; irrational use of budgetary sources.
19. Lack of harmonization of the development plans of economy branches dependent on water resources (pisciculture, agriculture, industry etc.)
20. Lack of control of the activity of animal owners, regardless of the type of property, leads to environmental pollution in rural localities.

3.3. Barriers and impediments in the filed of population health adaptation to climate change

1. Barriers at systemic level:
 - Delay in adopting certain important standard acts: such as, the National Health Policy developed in 2000 and revised twice, has not been passed on yet;
 - National plans and programs are not financially supported in order to be carried out;
 - Restrictions (indications) limiting controls of certain objectives that can be sources of environmental pollution are introduced, fact that doesn't allow the continuous monitoring of public health and of factors that determine the latter and has a negative impact on the health condition of the population;
 - Developed standard acts do not provide efficient mechanisms for encouraging medical staff and entrepreneurs to implement advanced industrial, agricultural technologies and technologies that would provide efficiently use of waste in order to ensure a clean environment, for preventing pollutant emissions and for adapting public health to new environmental conditions;
 - A regulatory and organizational mechanism to prevent and reduce air pollution and neutralize waste in populated localities, having the purpose to improve the quality of the environment and to reduce health risks has not been developed yet.
2. At institutional level:
 - the system applied to select and process the information on public health is not in accordance with the European standards, the selected incomplete information doesn't allow assessing the influence of climate and environmental factors on public health;
 - information on air pollution is very general, is not classified according to the type of noxious substances and without presenting their level of concentration;
 - statistical processing is carried out only in absolute data and in percents, without being examined separately for each locality (districts, city), seasons, classes and nosologies;
 - the mentioned system is not provided with computers and specialized software, does not use advanced informational technologies, fact that doesn't allow:

- a) implementing socio-hygienic monitoring, insertion of data in the integrated informational system, their statistical processing for correlations record keeping;
 - b) developing measures to promote health and prevent diseases depending on the real situation, outlined through the socio-hygienic monitoring;
 - lack of national high-quality standards on atmospheric air, norms of admissible concentration of noxious substances in exhaust gases and other polluting sources, brought up to the norms of the World Health Organisation;
 - lack of Cooperation agreements between ministries and departments (except the Ministry of Ecology) for the exchange of scientific, technological, technical socio-economic and legal information on the climate system, as well as on economic and social consequences of different activities;
 - lack of modern technologies, equipment, advanced methods for assessing noxious emissions;
 - insufficient financial support of scientific researches on the impact of environmental factors on public health, development of measures to reduce effects of climatic changes and adaptation to these changes.
3. At individual level:
- because of socioeconomic reasons periodic study visits abroad are not encouraged (in West European countries, in Romania, Russia etc.);
 - activities carried out to create public opinion and raise awareness, especially by specialists and officials, concerning the need to observe regulations;
 - insufficiency of information and raising public awareness in the field of climate change.

4.2. Specific barriers in the field of education, staff training and raising population awareness

1. The current systemic level of the Republic of Moldova ensures the fields considered to be a priority with the legislative and regulating support, necessary for the education system.

Generally, the legislative framework existing in the RM totally reflects the provisions of international documents in the field of climate change. Nevertheless, it should be mentioned that certain measures provided in development/reorganization programs and plans are of a general nature, and often do not refer sufficiently to this problem.

Barriers:

- In most of cases, financial sources necessary to carry out provided actions are not specified, and in many cases, the only hope is exclusively international financing (grants).
 - approval of legislative acts is often delayed.
 - specialists in the field of education are not consulted while developing certain legislative acts, specialists that subsequently become executors of these acts.
 - the legislation does not provide mechanisms to encourage/stimulate economic agents/ teachers with the purpose to raise the level of professional education in the field of climate change.
2. At institutional level:
- weak cooperation with higher education institutions: presently, not a single ministry offers recommendations and does not check the developing / carrying out of study plans, which should also include legislative provisions on climate change.
 - there is no real cooperation between specialists of ministries in relation to the strategy of management, training and education of population in environmental protection and/or energy saving.
 - ignoring of serious problems related to climate change, both by the population and by decision factors.
 - weak popularization, here and there even inexistent, of new “pure” technologies and RES, that leads to a bad training of the society to accept them.
 - reduced financing of education institutions, especially in regard to providing with advanced teaching materials (especially labs) of the teaching staff.
 - lack of cooperation between state institutions, responsible for population education and information with environmental NGOs.
3. At individual level:

- decrease of the number of specialists that work in the education field, because of a massive exodus of professionals from the education field and arrival of unknown persons in key decision positions led to ignoring serious problems generated by climate change.
- insufficient understanding of the impact of the environmental factor on society and placing problems related to environmental protection, energy saving, and use of RES in the category of unimportant issues.
- insufficient support of scientific researches in the field of climate change.
- insufficient access to information of decision factors, specialists and population.

3.5. Barriers and impediments in the field of climatic research and observation

1. The general institutional and legislative basis that regulates the activity of the climate monitoring network on the territory of the Republic of Moldova allows carrying out of activities adequate to the tasks and requirements provided by the Framework Convention on Climate Change.

At the same time, it is mentioned that the legislative basis needs considerable improvements in relation to:

- regulation of mutual relations between the Service and users of hydrometeorological information, including relations with mass-media services. Lack of these regulations contributes to the situation in which in most of cases low quality and unauthorized information is used;
 - efficient mechanisms to provide for a charge special hydro-meteorological information to economic agents. The provisions of the Decision of the Government as of November 11, 1999 no. 935 “On approving the Decision on the use of hydrometeorological information in the practical activity of economic agents” are not effective. The users of hydrometeorological information, most of them state organizations, refuse to pay.
 - insurance and additional payment for the damages caused by dangerous hydrometeorological phenomena;
 - activity of networks of inter-institutional observance. The existent legislative acts do not provide existence and use of these networks.
2. The amount of financing the State Hydrometeorology Service, established according to the State Budget for the corresponding year, assures only 44% of the real necessities. The insufficient financing is reflected directly and indirectly on the efficiency and quality of the activity of the national climate monitoring network and fulfilment of the international obligations of the Republic of Moldova at the compartment hydrometeorological activities in general and of the provisions of the Convention, in particular.
 3. Requirements on points of observance and their protection zones, reflected in the appendix to the Law on Hydrometeorological Activity are continuously violated. Various building works in protected zones, planting of trees and bushes, construction of gas stations and roads are carried out without the approval of the Hydrometeorology Service. All these have negative consequences on the quality of observations; the representative character of stations and posts is lost, including those included in the Global Climate Observing System.
 4. The technical means used to carry out meteorological observations are old both morally and technically. Because of that, there are gaps in the instrumental observations in relation to certain parameters. This situation influences the fulfilment of international obligations concerning the exchange of hydrometeorological data and creation of a comprehensive base of hydrometeorological data.
 5. The problem of providing the Service with personnel is extremely difficult. The deficit of personnel is determined by the lack of personnel trained for this speciality in national secondary and higher education and because of the small wages of the employees within the structure of the Service. A methodical Centre, which would be concerned, including with the problems of continuous training of specialists in the field was not created in the republic.

3.6. Capacity barriers to bringing the national legislation on climate change up to EU legislation

Specific features of the national legal system, which supports “de jure” the process of bringing the local legislation up to the one of EU, are the following:

- *Individuals and legal entities are objects of the same legal framework, meaning they have the same rights;*

- *priority is given to international treaties;*
- *the Republic of Moldova has to ensure environmental protection and ecological balance within its geographical area;*
- *coexistence of the legislation promoted in the post-soviet period and of the one inherited from the old social system.*

It is obvious that the regulations imposed to EU member states cannot be included immediately and entirely into the national legal system, because of the specific features of the socio-economic and political reforms, which our country is going through. The Republic of Moldova has inherited from the old system a series of laws and standards, which are rigid in comparison to those applied in the European Community. Most of these are incompatible with a free market economy, acting rather as a blocking mechanism than as an encouraging one. Without a revision of the old legislation and the harmonization of the new laws with the standard, it is extremely difficult to build a legal framework corresponding to present dynamic conditions, which will meet the desire of our country to join the European Union.

In this context, among the major barriers to bringing our environmental legislation up to the one of EU, the following can be listed in particular:

- *limited financial resources;*
- *complementing laws are inconsistent in relation to the environmental issues approach;*
- *lack of a definite division of duties among environment administrations;*
- *tardy establishment of an organizational structure for EU integration;*
- *insufficient specialists (attorneys) in environmental legislation;*
- *emerged difficulties in cases when environmental legislation requires financial sacrifices;*
- *lack of population awareness in relation to environmental legislation;*
- *low level of environmental education.*

At the “horizontal” legislation level the EU regulations are satisfactory represented within the national legislation (in general, environmental protection conceptual aspects, which the European legislation is based on, were taken over by the new law system of the Republic of Moldova), while those related to environment remain at a high pronounced level of incompatibility.

It is important, in this context, to adjust the sector legal framework, which would outline the priorities and activities via direct reference documents or via indirect measures, which would contribute to GHG emissions reduction. The basic sectors for the Republic of Moldova are: energetics, transports and waste management. Taking into consideration the peculiarities of the country, we could mention agriculture, food industry and constructions sector.

Within EU, special attention is paid to energetics efficiency. The community legal framework being focused on this field is quite detailed and multilateral. Although there have been taken steps in this sector in the Republic of Moldova – there have been developed and passed a series of bills, programs focused on energetics efficiency within different branches of the economy, the supplementation of the national legal framework remains an urgent priority.

Air pollution is considered one of the big challenges of environmental protection in the Republic of Moldova. Our country has ratified the United Nations Framework Convention on Climate Change, assuming some clear obligations, inclusively to reduce GHG emissions, which lead to worldwide climate change. Standards for emissions from pollutant sources are specified in the NST (national standards) adopted in the soviet period, which differ from those applied in EU. The modalities of informing the public about the air quality do not correspond to those adopted by the European Union either. Although the free access of public to environmental information, including information about the air quality is a right guaranteed by the main legal acts, there does not exist a well-defined mechanism to exercise this right, since we are talking about the procedures for information distribution, especially in exceptional situations.

For a quick alignment to European standards it is necessary to harmonize the directives that contain documents which directly address perspectives to reduce GHG emissions, as well as those with indirect ant tangential impact (**ex.: Directive on integrated pollution prevention and control 96/61/EC, Directive on the limitation of emissions into the air from large combustion plants 88/609/EEC, modified by 94/66/EC, Directives on environmental impact assessment 85/337/EEC and 97/11EC, Wastes Framework Directive 75/442/EEC** etc.

The domains outlined as priorities within the subject assessment, deficiencies and barriers to harmonization are the following:

1. **Legislation** – lack of a legal act that would authorize the engagements of the country vis-à-vis its position within the Convention, would indicate the eligible domains covered by the Convention, would

point out the ways and forms of activity, including the legislative segments this act is completing, would define the notions presented in the UN Framework Convention on Climate Change (for example “greenhouse gases emissions”, “sources of GHG emissions”, “the impact of the global warming effect”, „adaptation measures” etc.). By such means creating the possibilities to include, as quick as possible, the objectives of the Convention in the national legislative framework and creation of the framework necessary for the activities unfolded extensively in the Republic of Moldova; the lack of the standard – regulating framework on the monitoring of GHG emissions and of reporting and exchange of information instruments at regional and global levels.

Lack of a legislative framework on the integration of environmental priorities within sector policies of the national economy and compulsory observance of national priorities of sustainable socio-economic development.

Lack of the legislative framework on the use of renewable energy sources and less energy consuming technologies.

- 2. Systemic research and observation** – the institution responsible for monitoring, record keeping and statistical analysis and reporting is not appointed.

The decisional framework is not defined and the instruments for applying the decision taken by authorized institution, with the responsibility to respect norms of emission, according to the national legislation (now, the normative framework does not exist).

The scientific institutions are not empowered and there are no national programs financed in order to research the impact of climate change, the pollutant impact of GHG emissions and to develop national programs/plans on the assessment of socioeconomic vulnerability and adapting to climate change.

- 3. National inventories and engagements to reduce GHG** – lack of the body (or authorized working group), having the responsibility to carry out inventory of GHG emissions.

Lack of finances of the competence body (working group) to carry out and report the national inventory.

Lack of a Strategy on GHG emissions reduction and application of new technologies (for maintaining the low level of emissions from pollutant branches) and the lack of a mechanism to apply the Kyoto Protocol.

Lack of a compulsory methodology at national level and authorized by the institutions participating in the inventory process, according to the national regulation on GHG emissions monitoring.

- 4. Local, national and regional action plans**– there does not exist a National Strategy and / or an Action Plan to reduce GHG emissions.

Limited financing of measures to increase energetic efficiency.

Lack of certain national complex cooperation programs with international institutions working in the filed of implementing programs aimed at energetic efficiency.

Lack of an Action Plan to reduce the climate change impact.

Lack of integrated plans in relation to the regional synergy activities, including approaching tangential objectives of other environmental conventions.

- 5. Transfer of technologies** – lack of a complex feasibility socioeconomic study at national level, concerning the necessities, potential to capitalize and the national benefit as a result of applying environmentally favourable technologies.

Lack of a legislative, regulating and financial framework on the promotion of energy production from renewable energy sources on the domestic market of electric energy.

Lack of a legislative, regulating and financial framework on the promotion of cogeneration based on the demand of thermal energy on the domestic market of electric energy.

Lack of mechanisms that would encourage activities, initiatives and works focused on production efficiency, distribution and use of energy.

- 6. Received financial support** – deficiencies of knowledge among responsible persons and branch specialists of the objectives stipulated in the environmental Framework Conventions and of technical assistance programs.

Lack of capacities to formulate urging problems and to define ways for solving them, by attracting new financial sources and adequate management of the provided financial resources.

Lack of a clear concept and of a transparent strategy of regional and international cooperation, for attracting financial support in order to change the economic design, including through the contribution of environmental programs.

Lack of inter institutional cooperation within the activities unfolded under the aegis of UNFCCC and other Conventions on environment.

7. **Education, training and raising public awareness** – inter sector advanced training of specialists from various branches of economy, that have environmental impact is missing.

At the level of national policies, the priorities of the country in relation to alternative sources of energy are not defined and the knowledge concerning the promotion of new technologies is not encouraged.

Lack of the educational curriculum on environment, defined on principles of professionalism, for schools, higher education institutions and institutions that train public officials.

The teaching materials on the topic are missing as well as analytic plans adapted to the global, regional and local context (under the UNFCCC aegis) for subjects that address the environmental issue within the educational system and there are no materials additional to the ones within the university faculties that directly or indirectly relate to environmental protection.

Aspects related to the “global warming” phenomenon are insufficiently addressed, while these should be included in the awareness raising and training actions promoted by authorized institutions and NGOs.

8. **Impact assessment and adapting to the impact** – the national monitoring system does not provide observance and assessment of the climate change effects.

The legislative acts, programs and action plans on adaptation to the impact of climate change. There are no scientific institutions to research the impact of climate change, pollutant influence of GHG emissions and develop programs and national plans on the adaptation to climate change.

9. **Reporting** – the normative-regulating framework on reporting the GHG emissions estimations and socioeconomic vulnerability to climate change is missing.

A clear scheme for reporting the GHG emissions according to the methodologies and standards accepted by UNFCCC is missing.

A procedure to finance the assessment and reporting works, including the remuneration of experts responsible for the inventory – reporting process is missing.

3.7. Barriers to the implementation of the UN Framework Convention on Climate Change

The main shortcomings identified within technical estimations are presented as follows:

1. Lack of the national legislative framework on the implementation of the provisions of the UN Framework Convention on Climate Change.
2. Lack of regulations that would create the necessary legal framework for the application of requirements of the Convention on emissions monitoring, environmental impact, public health etc. Therefore, a mechanism to develop the admissible gaps of GHG emissions does not exist, and there is no normative framework to observe the emissions and control and punishment instruments are not defined.
3. Lack of the provisions of the Convention within policies and national action plans.
4. Lack of a national monitoring system of the GHG emissions; lack of an observance system of the socioeconomic vulnerability and climate change impact.
5. Lack of a GHG emissions reduction strategy.
6. Provision of inadequate data.
7. Lack of trained personnel and fluctuation of personnel.
8. Reduced capacity of responsible institutions to realize the essence of roles and functions related to the phenomenon of climate change, as well as the necessity to develop associate programs, policies and action plans.
9. Weak and inefficient inter institutional cooperation.
10. Lack of a normative-regulating framework concerning the activity of Energy Saving Companies (ESCO).
11. Lack of an Action Plan on the adaptation of economy, ecosystems and public health to the new environmental conditions.
12. Low level of acknowledgement of the priorities to reduce GHG emissions and of the possible impact of climate change.
13. Limited financial, institutional and professional capacity regarding the transfer of environmentally favourable technologies.

4. Identification and presentation of measures that would allow the removal of barriers and building national capacities, taking into consideration the individual, institutional and system levels.

4.1 General suggestions

1. In order to fulfil the provisions of article 2 of the Law no. 29-XV as of 13.02.2003 for the urgent adherence of the Republic of Moldova to the Kyoto Protocol within UNFCCC, it is necessary to adjust the standard acts on the above mentioned field to the requirements of the Kyoto Protocol.
2. Strategies, programs and development plans, laws and other standard acts of the Republic of Moldova, that are tangent to the carrying out of the UNFCCC provisions, developed in different periods and without adequate coordination, contain inexact and double data, and are to be updated. The way of their developing and adopting is to be modified, and a state body for harmonizing, supervising and monitoring strategies, national programs, laws etc. is to be created.

It is necessary that the process of developing legislative acts to be carried out by teams of specialists form all the approached fields, and those should be remunerated according to their responsibilities.

3. Development of capacities to include environmental problems in the plans of sector economic development.
4. Development of economic mechanisms to assist individuals and legal entities in order for the latter to observe and enforce the laws, programs and action plans to the corresponding extent;
5. Development of interconnections between sector informational systems, used for managing and reducing pollutant emissions, fact that would increase the decision taking capacity.
6. Creation of efficient communication mechanisms with the civil society and involving the public in the decision taking process.
7. Development, implementation and promotion of economic mechanisms.
8. Introduce within ministries and personnel responsible for environmental problems, as well as within branch institutions, the provision on the creation of special funds and attracting financial means from outside for environmental protection and GHG emissions reduction.
9. Development of staff training and advanced training programs in problems of management, audit, analysis capacities, risks etc.
10. Unfolding of training, educating and explaining activities on the phenomenon and consequences of climate change at all levels: training and advanced of specialists, schools, lyceums, population and mass-media.
11. Promotion of young people in decision-taking positions, without the conception and skills formed within the administrative-command system.

4.2. Proposals for capacity building in the field of GHG emissions reduction

4.2.1. Energetic complex

Measures at systemic level:

1. In order to reduce the unproductive consume of energy it is necessary to implement the National energy saving program along with the process of developing the Program to reduce the level of the energetic component in the GDP, provided in the Activity Program of the Government of the Republic of Moldova "Revival of the Economy - Revival of the Country". The main support in carrying out these activities consists in adopting urgent measures to improve the investment climate of the country.

At institutional level the following measures are necessary:

1. Inclusion of GHG emissions monitoring and taxing of these emissions, taxes compulsory for all types of fossil fuel users, except the household consumption, at the first stage in the regulating and standard acts of ministries and branch institutions of the Republic.
2. Assuring the implementation of the National Program for Energy Conservation by:

- increasing the efficiency and extending the activity of the National Agency for Energy Conservation;
 - creating specialized centres for energetic efficiency;
 - developing branch programs for energy conservation.
3. Development and implementation of:
 - Regulation on stimulating energy conservation;
 - Regulation on the energetic expert evaluation of projects;
 - Regulation on energetic audit of enterprises.
 4. Drafting standards for energy consumption in buildings, transports and for obtaining a production unit (action partially fulfilled by the Decision of the Government of the Republic of Moldova).
 5. Creation of the Energetic Efficiency Department within the Standardization and Metrology Department, with the following main functions:
 - developing, in cooperation with the branch ministries and NAEC (National Agency for Energy Conservation), the list of settings, machines and equipment that must be submitted to certification if these are manufactured within the country or are imported;
 - developing, along with NAEC and the Institute for Standardization and Metrology, the Instruction on certification according to the Law on conformity;
 - unfolding the control on observing this certification at delivering the production on the domestic market and when importing them.
 6. Promotion of massive implementation, according to the Development Conception of the Scheme of placing power plants within the Republic of Moldova until 2010, of energy sources with cogeneration.
 7. Adopting and fulfilment of the National Program for the Implementation of Renewable Energy Sources.

Measures at individual level

1. Organise conferences, seminars, meetings at branch and republican levels in the field of climate change, energy conservation and implementation of RES with the compulsory participation of decision factors. Organise courses of advanced training in the above-mentioned field for specialists of the national economy. Introduce the “Energy conservation” subject in schools and specialized institutions.
2. Promotion in decision positions of different persons without applying the conceptions and skills formed by the administrative-command system.
3. Organise an effective system for systematic advocacy of energy conservation through mass media. At the initial stage, education/training activities in the corresponding field are used, in order to train journalists from electronic and written mass media.

4.2.2. Industry, including agricultural processing industry

1. Acceleration of the privatization processes and reorganization of industrial enterprises aimed at raising the efficiency of their activity and attracting foreign and local investments; work out development programs for certain industrial and regional sectors aimed at attracting investments, identifying and implementing certain specific methods for increasing the investment activity of enterprises.
2. Implementation of quality management systems within enterprises according to ISO 9000 standards.
3. Creation of the legislative basis on promoting innovative centres and parks of technological transfer aimed at supporting advanced technology production with minimum consumption of energy resources and non-polluted technologies.
4. Modification of legislation aimed at improving mechanisms for stimulating local and foreign investments.
5. Improvement of the legislative framework on the transparency of investment mechanisms, privatization, and objective information on the activity of enterprises and equity market.
6. Creation of a national system of integrated monitoring of pollutants, including GHG emissions and industrial wastes.
7. Improvement of packing industry aimed at natural resources conservation and capitalisation of glass, cardboard, paper, plastic, polyethylene, wood, and other waste products. Creation of technical committees to develop and approve technical instructions in the field. Development of packing standards.
8. Development of the infrastructure to promote export of industrial products, render informational services and consultations, preferably in purer technologies.

4.2.3. Transports

1. Bringing the national standards on GHG emissions and other transports polluting gases up to EU standards and regulations.
2. Developing a national strategy on the reduction of GHG emissions and other transport pollutants according to EU complex legislation on environment and transport.
3. Improvement of the tax and assessment system of emissions – differential monitoring depending on the age and vehicle runway as a more effective instrument to assess and reduce transport pollution.
4. Bringing standards on protected forest belts and protected zones of road networks up to EU standards.
5. Organization of a more efficient coordination and communication between environmental and transport institutions.
6. Implementation of modern technologies in road construction and maintenance, supply transports with nonintense-energy and technical equipment.
7. Endowment of laboratories with technical and advanced equipment to monitor and control transport units of different ministries and institutions.
8. Renovation of auto parks, networks of municipal (buses and trolleybuses) and interurban transport.
9. Improvement, optimization of road networks and maintenance of the rate of shuttle services in urban localities aimed at reducing pollution of populated areas and minimum exposure of the population to vehicle pollution.

4.2.4. Waste Management

Results of the assessment of the national legislative framework capacity show that the framework is sufficiently comprehensive and provides the necessary requirements on waste management. Mechanisms for stimulating waste management activities are less developed. National legislative acts in force related to this field do not cover direct measures for reducing GHG emissions within waste interment, as well as its effect on the climate change. It is necessary to introduce these provisions in the mentioned acts.

1. In order to strengthen the legislative capacities, it is suggested:
 - to improve further the existing legislative framework;
 - to approve and implement the Regulations on waste management (act presented to the Government for approval);
 - to develop the National Scheme for disposal of deposits of household wastes, which will take into consideration plans for urbanistic development of localities in the Republic of Moldova;
 - to develop norms for waste creation for each branch of the national economy. In order to attain those objectives it will be necessary to involve all central public bodies, which will assess capacities and prognoses for the development of the branch;
 - to develop mechanisms for stimulating waste management (usage of state and local budgetary funds, national and local ecological funds, attraction of local and foreign investments);
 - to develop a Strategic Program for improving and developing the national database, this will serve as a mechanism for proper waste monitoring. The program will be developed based on a detailed inventory of the existing landfills;
 - to up-date the National Program for capitalising household and industrial wastes (according to production branches and localities), which will serve as a solution for the main problems of excluding/minimizing wastes, including GHG emissions. Being considered a priority in accomplishing international conventions (UN Framework Convention on Climate Change, Basel Convention, Stockholm Convention), it is necessary to include the following activities in the revised National Program;
 - to develop and implement a complex scheme for the disposal of household wastes according to the requirements on populated centres arrangement and environmental protection in all localities of the Republic of Moldova;
 - to develop and implement economic levers and mechanisms aimed at stimulating activities on waste quantity reduction (recycling, processing, neutralization, implementation of efficient technologies and practices);
 - to implement investment projects presented by the „RAMBOOL MD” firm for the landfill of Chisinau municipality and the station for biological filtering of city waters, which will contribute directly to the promotion of application of alternative sources of energy and development of national researches in the field.

2. In order to strengthen institutional capacities in the field of waste management, the Ministry of Industry, the Ministry of Transport, the Ministry of Agriculture, and the Ministry of Energy should engage personnel responsible for problems on environmental policy and waste management in the corresponding branch. It is also necessary:
 - to create an infrastructure for waste management in localities (municipality, district, village): centres for separate collection of wastes, waste processing capacities and their inclusion in the economic circuit;
 - to create centres for consultancy in waste management and attraction of investments in the given field; for implementation of good technologies and practices in the field, which will contribute to the accumulation of knowledge and experience by the waste generating beneficiaries;
 - to raise population awareness in the field of waste management and its impact on public health;
 - to strengthen funds in local and state budgets in the field of waste management;
 - to carry out scientific researches on GHG emissions at municipal landfills and stations for water filtering.

4.3. Suggestions on capacity building in the field of GHG absorbents – forest sector

1. Improvement of the forest policy aimed at:
 - reviewing the forest normative basis as a component part of the forest regime;
 - adjusting the national forest policy to the recommendations of specialized international forums;
 - separating administration and state control activities from those of economic management;
 - promoting at large forests biodiversity, through specific orders;
 - establishing principles and the way of financing forest activities, state contribution to forest activities of main importance (arrangement, research, regeneration and extension, forest protection and security);
 - establishing principles and the way of developing and using Forest Conservation and Development Plan;
 - promoting privatization in the forest sector, especially of related and distinctive activities;
 - stimulating extension of afforested areas and other forest plantations;
 - public information and participation in the decision taking process.
2. Improvement/harmonization of the legislative and normative frameworks on the activity of the forest fund:
 - to develop the Law on forest fund administration (structure, including the territorial one, competences of relevant authorities, etc.);
 - to develop the Law on pastures and animals pasturage (way and application conditions, taxes, etc.);
 - to develop the Law on private forests (constitution conditions, management peculiarities, facilitation/stimulation, etc.);
 - to develop the Law on forest taxes (imposing taxes on beneficiaries of forest products, directing means obtained from forest conservation and development, tax all economic agents whose activity influences the condition of forest resources);
 - to approve and implement the Decision of the Government on criteria and indicators of a sustainable forests management;
 - to develop and implement national technical norms on the application of forest treatments and carrying out of arrangements;
 - to liquidate divergences/harmonize laws: bring the Forest Code – up to the Law on Natural Resources, the Law on State Protected Natural Areas Fund, the Law on Environmental Protection, etc.
3. Amelioration/improvement of the institutional framework:
 - to determine clearly the state control functions and those of natural resources management;
 - to create certain regional/local structures responsible for administration and management of mayor's office forests (communal and inter-communal forest areas);
 - to modernize institutional organizations within the forest sector and central forest authorities.
4. Ensuring forests conservation and development through:
 - promotion of biodiversity conservation principles while carrying out activities related to forests care and management;

- implementation of programs approved by the Decisions of the Government no. 636 of 26.05.2003 (on new land capitalisation and raising soil fertility during the 2003-2010 period) and no. 637 of 17.06.2003 (on regeneration and afforestation of forest fund grounds within the 2003-2020 period);
 - development of a conception and a national program of ecological reconstruction of the existing forests (within the first stage, about 25 thousand ha);
 - plantation of energy forest cultures (within the first stage, 5 thousand ha, with the possibility to extend those practices to satisfy heating necessities).
5. Concluding the system of improvements and state record-keeping of forests through:
- extension of forest improvements on the entire territory of the forest fund and of forest vegetation regardless of owners, application of a unique forest management regime, providing record-keeping of all forest resources, maximum fulfilment of assigned duties, capitalisation of additional products and their involvement in the economic circuit;
 - development of a national improvement system, taking into consideration specific conditions of the Republic of Moldova;
 - revision of exploitation ages and production cycles, with the corresponding scientific argumentations;
 - integration of forest biodiversity conservation problems into the improvement conception and practice;
 - increase of the volume of information on the state of the forest fund necessary for activities planning.
6. Intensification/extension of scientific researches aimed at:
- estimating the current forests situation and emphasizing the tendencies of their development;
 - assessing the genetic variability of the main forest species aimed at ensuring seminologic principles and conservation of forest genetic resources;
 - describing the natural forest ecosystems aimed at proper carrying out of forest works and determining the degree of their vulnerability;
 - developing certain ecological technologies for applying treatments aimed at establishing forest plantations with optimally diversified structures within natural regeneration;
 - organizing strategies aimed at combating forest diseases and forest pests by modern biological and integrated methods;
 - developing methodologies/technologies regarding the ensuring of forest ecosystems adaptability to the climate change phenomenon;
 - examining and monitoring forest plantations degraded by different unfavourable factors and improvement of the existing treatments aimed at adequate application of works on ecological reconstruction.
7. Providing the forest sector with human resources:
- Modernization of the process of specialists' professional training and advanced training of the existing personnel according to the new economic conditions and current tasks of the national forest sector. It will include:
- training of specialists based on necessities, national peculiarities of the forest fund, and requirements of the market economy;
 - diversification of funding sources of the institutions providing forest education;
 - proper endowment of institutions with up-to-date equipment and technologies;
 - organizing students and teaching staff internship within the best units and institutions in the country and abroad;
 - cooperation in research and education with institutions of the same type abroad;
 - introduction of compulsory and permanent training of the staff involved in the forest system.

4.4. Suggestions on capacities building in the field of sustainable utilization of natural resources and adaptation to climate change

4.4.1. Water resources

1. To adopt the Law on Waters, which will contain direct legal norms on all aspects of relations in the given field:

- legal establishment of water management institutional framework, creation of districts and authorities of river basins;
 - financial provision of the water management activity;
 - legal establishment of proprietary right on water objects;
 - democratic principles and public participation in control over utilisation and responsibility of beneficiaries over the state of water resources (Water Users Associations);
 - basic principles of legislative regulations and technical norms in the field;
 - method of calculating the amount of water payment;
 - legal basis for the creation and functioning of Water Users Associations.
2. Amending the Law on hydrometeorological activity (art.23) and the Regulation on “Hydrometeo” Service. Ensuring access for all water users to synthesized information based on exact and representative observations on the state of surface and subterranean waters.
 3. Ensuring utilisation of means originated from payments to use water resources according to the destination determined by the Law on Natural Resources (art.25 p.5). Amending the Tax Code and the Law on Budgetary System and Budgetary Process on the distribution and utilisation of collected means.
 4. Financing sources, which will ensure the implementation of long-term state programs, should be appraised at the stage of programs development, as an integral part of the project presented to the Government for examination and approval.

When selecting methods and means of state programs financing, it is necessary to estimate the possibilities of state and local budgets, capacities of country banks, and of the local private capital as real as possible.

Suggestions on attracting funds of external financing organizations should be well-reasoned as to reduce the risks related to the insolvency of credit contractors.

5. Adoption by the Government of the program for rehabilitation of irrigation networks, as an important factor to combat droughts.
6. Gradual transition carried out at country level to the provision of rural localities with water based on centralized networks, using Nistru and Prut rivers as a source of water.
7. Immediate allocation from the State Budget of funds necessary for carrying out works on the reconstruction of deteriorated barrages and anti-flood constructions, aimed at avoiding great inundations on the territory of the corresponding area.
8. To complete the staff of the State Ecological Inspectorate with specialists in water legislation, in order to settle objectively many conflicts related to the violation of Water Code provisions and other normative acts of the given field.

4.4.2. Agriculture

a. Phytotechnic sector

1. Implementation of national strategic objectives for sustainable development and creation of a competitive and sustainable agro-alimentary system.
2. Reorganization of farms by reorienting the application of individual methods of soil processing and cultivating ecological vegetable products according to the principles of association and cooperation aimed at maintaining soil fertility and increasing the production volume.
3. Creation and consolidation of units to acquire agricultural products and supply farmers with factors of production, aiming at: qualitative carrying out of agricultural works, juridical consultations, development of business plans, control over the quality of seeds and planting stock.
4. Creation of budgetary and extra-budgetary funds for a financial support strictly oriented at certain activities of traditional and ecological agriculture.
5. Development of a research program aimed at ensuring utilisation of species and hybrids of agricultural cultures highly resistant to the thermohydric stress, diseases and pests specific to certain climate conditions.
6. Development and approval of the Law on Soil Protection, which stipulates creation of hydrographical basins, ecological reconstruction of degraded lands.
7. Introduction of a competitive market system in the cereal sector, having the following objectives: to establish a sustainable cereal industry that creates possibilities for a profitable production; to ensure consumer’s access to these quality products at reasonable prices; to facilitate adjustment to changes in internal production, without jeopardizing food safety.

8. Improvement and amending of phytosanitary standard acts on regulating the market of seeds and planting stock.
9. Development and adaptation of legal bases aimed at regulating production, selling, and use of forage, as well as animal nutrition.
10. Improvement of legislative bases on the protection of different sorts of plants in traditional and ecological agriculture and its bringing up to existing EU legislation.
11. Creation of the institutional framework and legislative basis of biological agriculture and national standards, development of certain techniques to produce different crops, crop rotation systems, as well as mechanisms to support local producers.
12. Carrying out of circular modifications within secondary school education by providing topics related to the phenomenon of global climate change and consequences of those changes in manuals of the corresponding subject.
13. Development and adaptation of a strategy of efficient water use in the sectors of national economy, as well as of mechanisms to support water consumers for irrigated agriculture.
14. Development of a plan of measures aimed not only at combating consequences of contaminating plants with harmful organisms, but also at blocking ways of their spreading.

b. Zootechnic sector

1. Revision of legislative and standard acts in zootechnics, pisciculture, and veterinary service, development of a program to modify the existing legislative basis and bringing it up to the EU legislation.
2. Improvement of administrative relations between economic agents, local public authorities, and state institutions involved in the zootechnic sector, veterinary service, and pisciculture.
3. Development of juridical and financial bases to ensure functioning of market economy mechanisms in the zootechnic sector and promotion of the local producer.
4. Development of a flexible investments policy and attractive for internal and external investors and facilitation of the access to advanced technologies, stimulation of the implementation of national science achievements aimed at developing the zootechnic sector, veterinary service, and pisciculture.
5. Orientation of the zootechnic sector towards improvement of the specialists' training system in order to ensure economic growth of food safety and protection of farms and farmers.
6. Reorganization of trade relations and their diversification in order to create and develop certain types of poultry farms with proper forage and owned processing bases.
7. Development of a set of measures of legislative, administrative, managerial, and scientific nature aimed at ensuring conservation, restoration, re-cultivation, and management of forage resources, including of grounds used for pasturage.
8. Reorganization of enterprises of breeding cattle reproduction, creation of market infrastructures, and promotion of financial and legal and financial facilities to stimulate the activity of research institutions aimed at supplying farms and rural population with young bulls, sheep, etc.
9. Increase of zootechnic sector products competitiveness based on reorganization, technical modernization, and implementation of modern technologies.
10. Allocation of financial resources and development of a set of measures aimed at developing the zootechnic sector (creation of artificial insemination centres) and veterinary service in rural localities.
11. Development and adaptation of legal norms aimed at regulating relations of economic agents in pisciculture:
 - bringing the Law on Pisciculture up to the provisions of the Law on Animal Kingdom and the Law on Natural Resources;
 - establishment of property rights over water objectives with piscicultural destination;
 - management of water objects with piscicultural destination and responsibility of the beneficiary for their state, including hydraulic installations;
 - providing of organizational measures and observance of conditions of assignment of water objects utilisation;
 - organization of consultancy and laboratory services aimed at observing fish growing techniques;
 - development of a mechanism for compensating damages caused to piscicultural resources; financial provision of scientific researches and their implementation in pisciculture;
 - specification of piscicultural objectives on categories and development of mechanisms for determining, collecting and utilize payments in order to employ them in piscicultural purposes;

- ensuring of strict measures aimed at providing conditions for the reproduction of piscicultural resources in the process of hydraulic structures exploitation.
12. Capitalisation of the current state and rational utilisation of piscicultural water fund surfaces by state and local public administration authorities along with institutions of that type.
 13. Promotion of actions on preventing and reducing the impact on environment in rural localities caused by the activity of collective and private enterprises of the zootechnic sector.
 14. Intensification of scientific researches towards priority problems of the zootechnic sector, selection of technologies able to reduce the impact of anthropogenic sources on environment.
 15. Prevention of pollution of water objectives with piscicultural destination by identifying the sources of pollution.

4.5. Suggestions on capacity building in the filed of adapting public health to new environmental conditions

Ensuring the sanitary-epidemiological safety of population, prevention of general morbidity, adaptation of public health to changes in economic and environmental conditions requires mobilization and integration of the efforts of state, civil society, ministries, departments, and all organizations. The following actions are necessary:

1. At system level:

- improvement and approval of the National Action Plan to prevent atmospheric air pollution;
- approval of the National Health Policy;
- creation of and ensuring the running of the socio-hygienic monitoring system in the country;
- development of the public health system, including of the State Sanitary-Epidemiological Service to perform full hygienic supervision over sources of atmospheric pollution, concentration of pollutants in atmosphere, climatic parameters, and the state of population's health;
- financial provision of the implementation of the National Environmental Health Action Plan, of the socio-hygienic monitoring system, and other legislative acts approved in the Republic of Moldova;
- creation of an integrated informational system on the level of atmospheric air pollution by GHG and on public health, corresponding to the European system;
- elimination of restrictions (introduced by the Decisions of the Government) on limiting the frequency of controls carried out by the State Sanitary-Epidemiological Service over sources of pollution, being aware of the fact that human health is the most precious value, incomparable with any other value, and therefore it should be permanently protected and strengthened through daily care and state responsibility.

2. At institutional level:

- opening of the Faculty of Public Health within the "Nicolae Testemitanu" State University of Medicine and Pharmacy to train doctors in public health providing specialization in management, hygiene, epidemiology, health promotion, microbiology, etc.;
- support researches, impact studies in order to reduce effects detrimental to economy, public health, environment quality, projects developed aimed at reducing climatic changes and adapting to them;
- improvement of cooperation agreements between the Ministry of Health and competent ministries on permanent cooperation, defining of duties, exchange of scientific, technological, technical, socio-economic, and legal information on pollution of the environment by GHG and climate changes, as well as on economic, social, and health consequences of different activities;
- raising of economic agents awareness, as well as of the persons in charge by creating certain situations, which would completely exclude violation of any standard act or law;
- stimulation and financial support of economic agents, persons in charge in medicine, ecology, power engineering, transport, agriculture, industry, salubritization for successes obtained in preventing emissions, adaptation of public health, promotion of new technologies, healthy lifestyle, etc.

3. At individual level:

- periodical advanced training of the medical staff in the problems of adapting public health to changes; raising specialists in charge awareness and of the public towards the necessity to observe strictly the requirements of hygienic regulations and the laws in force, and to promote new technologies in the filed of preventing atmospheric pollution and climate change;

- creation of conditions to stimulate the specialists and population towards health education, creation and raising public awareness towards problems of climate change;
- creation of conditions to encourage and support individuals and legal entities in meeting provisions of standard acts;
- promote responsibility of every individual for non-approving environmental pollution and protection of personal health and the health of relatives.

4.6. Suggestions on capacities building in the filed of scientific researches and climatic observations

In order to regulate relations on the organization and development of the national hydrometeorological activity it is necessary:

- To revise the legislative basis on the relations of the Hydrometeorological Service with beneficiaries of hydrometeorological information and with agencies of mass communication. Economic mechanisms for regulating those relations will be established.
- To introduce a strict control over execution of legislative acts provisions on the organization of hydrometeorological stations and observation points.
- To confer the Hydrometeorological Service a new legal status, based on the provisions of the Law on Hydrometeorological Activity, aimed at operative transmission of information concerning the launching of dangerous hydrometeorological phenomena and environmental pollution in cases of disasters and accidents; optimization of the process of interaction with bodies of the local and central public administration.
- To strengthen the instrumental basis of the system of operative observations and communications, as well as to automatize hydrometeorological databases.
- To modernize the hydrometeorological network through: consolidation of the instrumental basis of the system of operative observations and communications; to automatize the system of acquisition, processing, and dissemination of information; to automatize databases; to install automated hydrological stations along rivers; to organize ozonometer observations according to the Vienna Convention for the Protection of Ozone Layer.
- To improve the survey system of environmental pollution: to restart surveying of cross-border air pollution (the station in Leova), to reequip gradually stationary control posts of free air pollution in towns and cities, to inform the environmental pollution survey Centre.
- To organize training of specialists in hydrometeorology in higher education institutions of Moldova and to create a continuous educational system for specialists involved in the Hydrometeorological Service.

4.7. Suggestions on capacities building in the filed of education, staff formation, and raising population awareness

At the level of secondary and high school education:

1. To develop and publish the manual for “Environmental Geography” subject (XIIth Form), which will be the main source of pupils’ ecological education.
2. To include into “Physics” and “Geography” subjects curricula topics that will promote rational utilization of energy and explain aspects on energy regeneration sources.
3. To introduce “Environmental Protection”, “Energy Conservation”, and “Energy Regeneration Sources” courses into all trade schools colleges with technical profile.

At the level of undergraduate and postgraduate education:

1. To introduce courses/topics of ecological and energetic nature into educational programs of students – future teachers/lecturers (especially, at pedagogical institutions).
2. To develop and implement certain mechanisms for the cooperation of ministries (especially, of the Ministry of Education) with universities aimed at including legislative provisions related to education in the students’ teaching programs.
3. To promote post-graduate courses in environmental protection, energy conservation, pure energy, pure agriculture, etc.
4. To strengthen capacities and involve employees of NAEC (National Agency for Energy Conservation) in the development/teaching courses on energy efficiency.

5. To stimulate financially scientific researches (within certain research/development projects) in areas provided by the Framework Convention on Climate Change”

At the level of staff advanced training and raising population awareness:

1. To train and provide advanced training of the teaching staff of the secondary school education in problems related to environmental protection and energy conservation.
2. Cooperation of decisive-taking factors (competent ministries) with activists of NGOs that deal with ecology and development of certain common actions for sustainable life promotion.
3. To encourage broadcasting of permanent programs (series of programs) on TV and radio on subjects of environmental protection, in order to explain the harmful impact of human activities on environment.
4. To popularize the advantages of using ERS in mass media – to prepare the population for the implementation of ERS in the Republic of Moldova.
5. To promote and popularize results obtained by certain Moldovan (and foreign) enterprises as a result of implementing projects on energy conservation and/or utilization of ERS.
6. To implement demonstrative pilot projects on utilization of ENS, energy conservation, use of waste products, etc.

4.8. Suggestions on national capacities building to implement the UN Framework Convention on Climate Change

Strengthening of the national capacity aimed at implementing provisions of the UN Framework Convention on Climate Change can be achieved by overcoming identified barriers. Thus, the need to complete the national legislation and the normative-regulation framework with acts and documents that would allow quick implementation of existing priorities at both national and local levels becomes obvious.

Priority problems that cannot be postponed:

- to determine spheres where the national legislation is to be brought up to the international legislation;
- to ensure coordination and efficient management of the process of bringing the national legislation up to the international legislation;
- to develop and implement a framework on the creation of the professional potential in the basic directions of the national economy;
- to ensure the process of bringing the norms and standards up to those accepted by UNFCCC or by competent international institutions;
- to determine conceptually the stages, mechanisms, necessary financial and material funds and covering sources, capacities and the structure of the process of bringing the national legislation up to the international one;
- to draft an organic bill on the determination of mechanisms and procedures for harmonization, which will serve as a basis for the concept on the method of carrying out the harmonization.

Legal regulation in the field of greenhouse gas emissions reduction implies adoption of a number of standard acts, which would stipulate basic terms, mechanisms, methods, and other aspects related to greenhouse gas emission in atmosphere, according to the UN Framework Convention on Climate Change and the Kyoto Protocol.

We consider that the following documents should be adopted in the first place as to implement the conception:

1. The Law on state regulation and policy in the field of greenhouse gas emission and absorption in the Republic of Moldova.
2. The Law on record keeping and control of the level of greenhouse gas emission and absorption in the Republic of Moldova.
3. The Law on redressing the damage caused to public health as a result of the negative impact on the environment.

The above-mentioned Laws should specify the following:

- Definitions that will correspond to the international terminology.
- Structure of the future monitoring and control system.
- Distribution of responsibilities among competent bodies on the market for regulating carbon emissions.
- The main bodies for registering and confirming market principles in the field of carbon emission.
- Methods and forms of state control.

- Principles of collecting and exchanging information necessary for the functioning of the system of analysis and reduction of emissions.

According to the suggested conception, the laws will aim at recognizing, at legislative level, the harm of anthropogenic emissions – gases with greenhouse effect – and the necessity to perform their inventory, create a national monitoring system, of record keeping and control of greenhouse gas emission and absorption.

Moreover, it is necessary to make several amendments to the existing legislation of the Republic of Moldova. For example, art. 3 of the Law of the Republic of Moldova on Atmospheric Air Protection should contain such notions: **greenhouse gas, intake reservoir, polluting emissions, gas absorbent, source of pollution, climate system.**

The first step in the process of harmonizing the legislation is to make a comparative analysis of international and national provisions, which exist integrally or partially, in order to determine the level of correspondence and to establish methods of legislative adequacy.

Following the example of certain countries, it is recommended that, under harmonization of the legislative and normative framework and strategically – to strengthen the national capacities at political and professional levels - the Republic of Moldova should develop and approve certain strategic documents, which will clearly reflect the position of the country, and, through which mechanisms of Kyoto Protocol would be practically and efficiently tackled.

Thus, it would be appropriate to carry out the **National Study on the Implementation of the CDM mechanisms**. The study will identify the potential of reducing GHG emissions, the structure or the scheme of the corresponding reduction in time or according to sectors, possibilities to implement technologies favourable to environment, ways to support financially activities focused on implementing objectives of the Convention by involving the national economy. This study could become a significant part of **the National Plan to Reduce GHG emissions**, another document necessary for the Republic of Moldova at present.