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Foreword

It has already been established a policy of the United Nations Program of Development to help the national creative initiatives. That's why I was very pleased to encourage the preparing of the "ROMANIA 2020" project that tries to offer a coherent analysis.

This paper is a result of a common effort of many academicians and scholars who studied the present situation of the Romanian society. They have recommended that the social and political policies adapt taking into account the transition' s costs estimated according to the actual tendencies and the future ones that are to be seen in the working'force market as wel as commercial changes, energy, industry agriculture and the environment's protection.

U.N.D.P.- considers that this project will succeed in bringing an important contribution to debating the evolution of the Romanian society, offering to the governmental official, civil society, youth and academical people the opportunity to express their opinion on the Romanian society of the year 2020.

I want to take the advantage of this occasion and thank to all of those who made a contribution to the achievement of this remarkable project and I hope it will bring a vivid discussion on problems covered.

Leueen Miller

U.N.D.P. – Resident Representative

Preface

The "Romania 2020" Program has always been a part of what we call *The Romanian Academy's Topical Programs*. They have been referring to a great number of problems, beginning with *The History of the Romanians* and *The Regional Linguistic Atlas* up to the *Romanian Rural Society's Development*. The ambition of our Academy is to prepare in a very short time a *General Strategy of the Development of Our Society*, considering that the Romanian Academy could think further to the future and of course offer reliable solutions in a world in which the political groups follow their proper interests. "Romania 2020" is in a certain way the predecessor of this vast and ambitious project. It aims at discussing and making studies as to the development of our country in a medium period. In the last four years, our researchers have organized numerous international conferences and colloquies concerning the energy, agriculture, nuclear energy [1994]; demography, economy, informational society, medicine, world –wide economy and education [1995]; youth, preventing the disasters [1996]; ecology, the Black Sea's problems and the sustainable development [1995] - are only some examples as to the approaching of the vital problems the country is facing out in the perspective of the near future. In the Academy's Assembly Hall, many personalities from abroad made speeches that helped in understanding the main processes of the Contemporary World and of the perspective studies that had been made. Harlan Cleveland - President of the World Academy of Art and Science; Paul – Marc Henry – The Ambassador of France, President of the European Center of Development from the Peace University (U.N); Ricardo Diez Hochleitner – the President of Rome Club ; Alexander King – Merited President of Rome Club; Lincoln Bloomfield – Merited Professor at the Massachusetts Institute of Technology (M.I.T.-U.S.A.); Hugues de Jouvenal – Director of Futuribles International, Paris; Bertrand Schneider General Secretary of Rome Club; Rei Shiratory - University professor, Tokyo etc.

This paper is another result of "Romania 2020" project and it has been made up in cooperation with different personality and research centers in our country that have joined to the Academy's specialists' efforts. This study aims at offering a background documentation and new point of view suggesting a number of projects as a first step in a process that needs to be continued and complete. Consequently the preliminary edition will be translated into English and it could be amended following to the debates and additions that will be done. A greater attention is going to be given to the social, ethical and cultural problems, Romania's integration in Euro-Atlantic structures, as well as presuming and evaluating the cultural and artistic patrimony that have already been taken over by the younger generation. The Romanian Academy wants to thank all those that brought their contribution to materializing this project and once again expresses its gratitude to the specialists from the United Nations' Program of Development who gave a hand to achieve this work. P.N.U.D. has set up a National Center for Sustainable Development under the care of the Academy, a premise that the researches in this direction will be increased. The same center together with the Prospective Commission of the Academy and its Institutes will make all efforts so that the present book will be the background of a large debate and will collect new facts, appreciations and visions useful for the development of the Romanian society. We also express our gratitude to the Technical University of Constructions from Bucharest (Conspress-Printing House) for publishing the first edition of "Romania 2020". We are not sure that history will take into account our projects, but the scholars' target is to compels it take into consideration their ideas and aspirations. That's why, from ancient times the intellectuals have been making projects and fancying ideal societies. Today's researches are no longer confident to the ideal societies and consequently they are not making utopias any more. Now they take aim at a more unpretentious purpose that is a discover of the signs of our future evolutions and show the best way as they can. Let our project's perspective come true!

Acad. Eugen Simion
President of the Romanian Academy

Chapter 1 – INTRODUCTION

1A. World – wide tendencies

To have a picture of the first decades of the XXI-st century it is instructive to study the identified tendencies of the last decade of XX-th century. As a matter of fact, in the opinion of the English historian – Eric Hobsbawn, the new century has already begun: "The XX-th century started in 1914 and finished in 1991, being a short century". This does not mean that it was short of surprises. A best seller that asked what country would win the economic competition in the next century – Japan, Europe or U.S.A. has become obsolete in just four years, its author recognizing that Japan owing to its long recession left the game and consequently a new great economical power, more dynamical, namely China, should be taken into consideration. Another surprise was that in 1997 the "Asia's tigers" have known a fall of the markets considered as a threat even for the developed economies.

Let's review some of the broad tendencies, which are pointed out by the specialists, beginning with John Naisbitt: According to him the ten characteristics of the XXI-st century are as follows: 1. A boom of the global economy; 2. Arts' Revival; 3. A market socialism will develop; 4. Global life styles and cultural nationalism; 5. A private Health System; 6. The ascent of the Pacific Region; 7. Female ascending in management. 8. Religions' revival. 9. A greater development of biology. 10. Individuality's triumph.

Peter Drucker differs from the opinion of John Naisbitt and puts forward another ten characteristics: 1. Increasing limits as to the state's function and a tendency towards the private economy; 2. Coming up a new pluralism in the society, aiming at the efficiency; 3. Organized political leadership by means of agreement as to the objectives; 4. A transnational economy based on competition. 5. A transnational ecology; 6. Opportunities for India, China, Brazil and Mexico; 7. Movement towards an society based on the knowledge; 8. The development of the tertiary non-profit field; 9. The Trade Unions' decline; 10. Organizations based on information.

Alvin Tofler has a further decalogue: 1. Education as a sum of dates, information, symbols, images, culture, ideology and values; 2. The importance of the untouchable values such as the ability of getting, producing, distributing, and using the information strategically and efficaciously; 3. Ceasing the mass production due to the increasing number of flexible technologies that lead to a greater variety of product and the client's satisfaction; 4. The greater value of the high qualified and specialized work (not necessarily connected with the productive activity); 5. A permanent innovating activity as a competition instrument; 6. Diminishing the size of the economical units; 7. A more horizontal and flexible organizing of businesses; 8. A high degree of integration of the systems to be able to control the complexity; 9. An increasing importance of the electronic means that connect computers, databases and other informing technologies; 10. Rapid change.

Edward Cornish also presents the world wide future society's activities, enumerating 92 tendencies that are going to change the world in the next years, but if we reduce them to a decalogue, here is what we find out: 1. The informing technologies will be as smaller as possible and introduced in the human body; 2. Cultural changes: the global culture will prevail, local cultures and languages will disappear and new types of cultures and languages will at this time appear; 3. Education: education by multimedia, virtual reality, connected global universities; 4. Work: computerized robots will replace people in the most of activities; 5. Economy and business: the global productivity will increase and the differences between rich and poor will become bigger and bigger; 6. Money: global electronic banks - the cash payments will practically disappear and the cyberspace will follow the criminal activity; 7. Govern: the relation between government and the people will be influenced by the informative technologies; 8. Every means of communications and amusement point out the possibility of getting out of this real world and live in societies invented by the

amusement industry; 9. The private life: the tendency towards egocentrism as a response to invading the private life by the external elements; 10. Dominant information technologies.

Not only the economies are subject to investigations and predictions. Faith Popcorn has also a

decatalogue, pointing out certain changes as to the social attitudes: 1. Personal isolation and blocking far away from the world becoming dangerous and hostile; 2. Adventurous fantasy and indirect running away by consuming; 3. A small reward and articles of luxury being the emotional counter-weight of the shortcomings and bad news; 4. Individualism and the necessity of differentiation; 5. Inner releasing or giving up the success for a better life; 6. Regression and objections when accepting the limits of age; 7. Survival or looking for a better and longer life; 8. A careful consumer and tendencies to a bigger consciousness and organizing to defend their rights; 9. Longer lives and working years. People living 99 years; 10. Avoiding from contributing to the social responsibility, including honesty, environment's protection, education and ethics.

Being convinced that what is going on in Asia is by far the most global change today, Naisbitt has rethink his famous megatendencies on the base of the Asian experience. Consequently he puts down the following main points: 1. From simple nation to multi-nation; 2. From traditions to options; 3. From exporting to consumption; 4. From government controlling to markets' management; 5. From farms to super towns; 6. From hardworking to a high technology; 7. From man's domination to women's emergence; 8. From West to East.

Very suggestive are Lester Thurow's considerations on economical forces that offer a shape to tomorrow's world and using the comparison with the tectonically plates. The author considers that beyond the economical phenomena visible measurable and touchable there are other forces that the French would call "deep forces" and that are to his opinion very few and namely: 1. The end of communism; 2. A technological change towards an industry based on the human brain; 3. An unheard of demography; 4. A global economy; 5. An era lacking of political, economical or military domination.

Here are some passages from the contemporary literature, and one can remark a lot of coincidences, agreements etc. That's the perspective of the year 2020. It is not enough to seek out the common points of these opinion as a base of orientation for our paper because there are both wrong ideas and visible absences.

There is a distinct difference between civilization and culture. Because the changes in the two fields are taking place with different speeds and sometimes the constant change in civilization is prevented by the resistance and traditionalism of the cultures, we shall suggest a separate treatment. So these are the tendencies that are to be noticed following to the present investigations and some conclusions as result of Romania's and the neighboring states and their relations experience:

1. Civilization, technically and as a sum of the goods used by generations is based on a an impressive evolution of knowledge. First it includes science and technology and then all the activities and products that are no longer local valued and are suspected of a rapid transfer and generalization.
2. It is not enough to consider as being parts of the civilization only technical or scientifically elements or the vital ones like communications, transports etc., but also the institutions that now are politically and socially generalized. In fact, the most important item of the civilization remains the Constitutional regime, the aspiration to have societies based on law, democracy no matter of meaning but with respect to universal vote, parliament, the separation of powers in the state, the liberty of speech and association as basic elements in spite of the obstacles to their assimilating in different societies based on other regimes.
3. This civilization is totally a capitalist one. There is a very clear heritage of the XX-th century represented by the egalitarianism, which failed, and that was refused by the people in Russia and China. There is also a crise of the welfare state that aimed at offering right, advantages and benefits that could surpass its financial resources. Sweden could be the best example in this respect.
4. One of the dominant phenomena of the present period, having real chances to pass on to the next two decades it's the break out of the culture based on different systems of faiths values, traditions, habits

and mentalities. Culture is the main source of identity. In this respect we could say that the phenomena of cultures multiplicity in contrast with the unique civilization it an expression of an ardent looking for identity all over the world, both in smaller states, the new ones and the developed societies. The main feature of the cultures is their diversity. There are about 5000 and 10 000 cultures which are to be recognized. As long as it respects other cultures, this phenomenon should be respected and encouraged. But when the identity feeling is very strong and comes up in opposition with others, it leads to very serious contradictions, so that the most conflicts in the world today are about identity and cultural differences.

5. The cultures oppose to globalization, fearing that the integration which affect the proper identities will destroy the traditional life style, imposes alien values and habits. That's why one of the most persistent themes up to 2020 will be judging the economical, financial, technical and scientifically globalization in opposition to fragmentalism maintained by the smaller cultures, so long neglected and now brought to life. Here are the reasons we have reserves about setting up global cultures or a regional culture, that is an European culture with an European consciousness - because it is essentially for any culture to underline the difference. While the civilization is a feature of the common denominator or of the proximal genius, the culture are incline towards the specifically difference. The global civilization's duty to give respect to all cultures together with the necessity that cultures nourish positive attitudes as regards the development of the civilization is the solution for the two tendencies to be harmonized. One of the greatest lessons of the XX-th century is that the country choosing modernizing taking into account the initial western pattern haven't lost their proper personality at all. An excellent example are the Asian countries that do not differ too much regarding their organized economies, their rapid increasing economy, and their will to assimilate new technologies preserving some specific features. The material abundance that has been got by means of the progress of the civilization has even allowed a boom of the proper cultures, which received even more financial boosts.
6. In spite of the fact that it has been announced the permanent lowering of the states role up to their disappearance as main actors of the international life, we may see that the states are still living and the same time their inner essential functions to decide economical and political strategies are very necessary. The states have suffered considerable pressures from different directions, one of them being the needd integrating in large regions and consequently giving up some of their attributes in favor of the entities they adhered to; there are also pressures from internal structures by decentralization and N.G.O. organizations or what we name OCS (the Organizations of the Civil Society).
7. One of the main themes of the present period, but especially of the following one, it is preserving biodiversity, resources, their rational using and the campaign against wasting. The solution for an association of the economical development with the care for nature is offered by sustainable development. The main idea of this new thesis that has been accepted by many specialists (mostly after Rio de Janeiro Conference) is to select those economical activities that can lead to regenerating the consumed resources and eliminating the industrial activities that cause total exhaustion of the resources. A very simple example is marine fishing, that keeping a high rate threatens to endanger the marine life itself. Another example is the timber industry that can destroy the woods in many countries which haven't yet got a rational control and corresponding laws. The care for environment is a basic part of the following century. **The most worrying question that cannot get a proper answer is about the fact the actual increasing of the population surpass the resources of our planet.** Until now the pessimist predictions haven't became reality because the progress of the technology led to the green revolution and thus to a double production of cereals. But as far as the living conditions, the situation is disastrous, as a great part of the people on Earth live in pernicious conditions, with no water or electricity mainly in poor villages or in "bidonvilles", "favelas" or other unproper forms of housing.
8. In spite of the technical progress, the gulf between rich and poor has increased both internally and especially internationally. The world is divided into two great areas – the prosperity and poverty. The figures about this problem are absolutely shocking. Neither the sustainable development nor the new economical order or the philosophy of the proper technologies and returning to traditional forms of production gave a positive result. One can say that two different worlds are going to pass on to the XXI-st century, characterized by completely different levels of living and opposite capacities of using the results of the progress.
9. The progress of regional integration is characteristically to our days; it includes tens of initiatives and the most active are: ASEAN in Asia and MERCOSUR in Latin America. European Union is the most advanced model considering its laws and institutions. Other organizations that are developing are: NAFTA that includes Mexico, USA and Canada (and which tend to extend in the region of Latin America) and the cooperating structures in the Pacific Ocean as well. The most active powers are USA, Western Europe (including France, Germany, England, Italy and smaller countries), Japan, China, Russian Federation and, in Latin America, Brazil and Argentina; a region with great chances will be soon led by South Africa.
10. The technologies are very rapidly progressing. People hope that besides the present dominant technology (the computer technology that completely changes the industrial system, social organizing, education, ma-nagement and even every man's life), new sources of energy can be found out. Although the XX-th century has confronted with an energy revolution of the nuclear type and manage to use it in peaceful actions, the most outstanding change of this century it was not in the field of the big energies, but of the smaller ones, namely the computers and the communications. It is to be expected a return to the activity of finding the necessary sources of energy that the expanding world needs, as the fossil and

unregenerating sources are limited, this may produce problems in the future if non-renewable sources of energy continue to be used. Fortunately the fact that science interfered almost every time when there was a crisis with good solutions is a good omen for the following century.

To sum up the present and practical tendencies with real chances to pass on and develop in the following two decades, there can be established the following decalogue: 1. The unicity of the civilization based on knowledge; 2. The advancement of the political institutions and the observance of the basic human rights; 3. Capitalist economy based on market forces and competition; 4. Immense variety of the cultures and their possible conflict; 5. Misapprehension between civilization and cultures; 6. Changes in the states function; 7. Sustainable development; 8. The defiance of the great divisions on Earth; 9. Regionalism; 10. The progress of the technology and the domination of the computers.

These considerations on the tendencies predictable until the year 2020 lead to four possible scenarios for the whole mankind, with considerable effects on the development of the states and societies:

A. The scenario of the global civilization. There are some reasons to consider this scenario a real one. This is expected that the general and global wars will be prevented and in this respect we could tell that no "conflict of the civilizations" will happen. The vision is about a civilization having some rival centers with tensions due to their competition, but too interdependent to present a damaging conflict for all implied parts. These are also reasons to think about a possible and practical scenario in the political field too. It's about ending the great conflicts by historical reconciliation and remarkable progress of the technique for solving the conflicts. A change took place from solving conflicts to preventing them, one of the present topics. It is impossible to start a globalize of the civilization without proper institutions. That's why a return to solutions like UN type or other great institutions – modernized and flexible – for to solve different problems is necessary and required. The way of the globalize is presenting today is a quasichaotic one, in which the reduced authority of the states make that a lot of economical phenomena of a global type may be no longer controlled by the state and/or other institution and international regulations.

B. The second scenario is the 30 years war (10 of them have already passed, full of slaughters in Bosnia, Rwanda and other hot spots in the world), the most unfavorable of all. According to the practice of scenario making, it does not exist the possibility of neglecting just the most disastrous. That will be possible by means of the civilization's incapacity of expanding and solve the contradictions within it, or its shortcomings. In this case the identity's imposing phenomena will have both violent and dissolvent forms. The complexity of the modern life, the density of the population on the earth, frustrations, alienation, individual bewilderment increase the appeal to fragmentation tendencies that lead to breaking the society into communities and adverse groups. In the absence of the means to control these tendencies, their limit is the anarchy and "bellum omnium contra omnes" drawing the alternative of a bulk of conflicts instead of a general conflict. If the example of Franco – German reconciliation and solving of the conflicts in Western and Central Europe is encouraging and very much the same the example of reconciliation in Southern Africa, the Middle East and Balkans are decisive tests for the future face of the XXI-st century. The Middle East conflict that started in 1948, stands still, in a precarious equilibrium, where nobody can tell if the dominant idea of a prosperous region in the Middle East will be able to end the traditional hate and cultural adversity. If the conflict goes on and worsens it will also produce effects in other regions of the world.

We cannot put aside what is a new danger (less taken into account by the contemporary analyses): the anarchical movements. These are different from the internal conflicts and the civil wars because there are not definite camps that fight for same interests or for power. The anarchical spirit is when a lot of entities practice violence with no purpose or political ideals, just for the pleasure of robbery, destroy and killings. Unfortunately there are countries where the central authority has almost vanished and armed groups fight at random; consequently, typical forms of anarchy are to be seen. Individual uncertainty is very high, the population emigrate, the infrastructure damages are massive and cannot be repaired and the history has been pushed back for the respective people and country to primitivism. Sociologically, anarchy is a secondary result of society's dying, a worrying phenomena produced by the unemployment and the increasing number of those that cannot enter the social and productive establishment.

As to the scenarios of the disasters, either natural catastrophes or those occurring because of human errors, should also be considered. Among the natural ones there came first the earthquakes of a great magnitude, that would mainly affect developed regions like Japan and the US Western Coast. The recent earthquakes in Japan and Los Angeles are serious warnings. The massive changes of the climate is another natural danger – be they based on some cyclic phenomena of climate or artificial produced by an intense pollution (eg. burning of the rain forests in S.E. Asia or great damages to natural resources (e.g.?) with secondary climatic effects). The period considered up to 2020 presents a great probability as to such phenomena, but there is no possibility to predict their effects. Also there are - the food and oil crises which cannot be omitted; many specialists predicted this to occur around year 2015.

There are other two scenarios, intermediate to the first two one very close to the global civilization that we will call "Spasmodic civilization" and the second one, "Status quo", very close to the negative scenario connected with the conflicts, disasters and regressions.

C. Spasmodic civilization refers to a positive evolution of processes of the regional integration, the progress of the globalize and technological innovation with impact and general diffusion. This sure and continual progress of this global civilization can be slowed down by some opposing forces or reserves as to accepting the phenomena. Taking into account the general tendencies, a contemporary analyze (the Catalan perspective) reads the following possible events based on the lasting differences existing in the world economy and which represents the same number of barriers concerning the generalization of a unique system of civilization: a) the deepening of the North – South gape: the world is dominated by USA, Japan and Europe and the new industrialized countries having an European market functional and efficient; b) the deepening of the North – South gape, with the same domination – USA – Japan – Europe and the new industrialized countries, but with a divided Europe capable only of a reduced competitiveness.

The difficulties that oppose to the spreading of global civilization include: 1. The national state's crises and its impossibility to control the changing process; 2. The financial crises whose rises, falls and cycles may also be sources of instability; 3. Fluctuations and cycles that are inherent to the economical processes; 4. The absence of organizations that could put into practice projects that surpass the private interests. 5. The great changes ask to the organizing the economy and passing to a logical worldwide network, other than the one that was dominant up today and was based on sovereignty's principle; 6. The expanding of the nervous center or the areas of excellency as the universal tendencies signal it; 7. The part that different areas play in the integrated areas; 8. The burst out of the identity claims that accompanies the fail of the great totalitarian ideologies and the strong tendency for coming back to localism; 9. The boom of the media able to influence for better or for worse the development of the events; 10. The end of the great universal ideologies that allow the development of currents based on cultural specificity.

Many scenarios make studies on the possible evolution of the regional integration, but the most important for us is the European one, and we ought to consider, as other researchers do, the ways and our perspectives for a European integration. Let's consider four of them, which have backed these researches. Europe could develop under the following directing lines: 1. Thoroughness. The unique market is realized by a limited number of members even if the monetary and fiscal union is to be done around 2000; the European institutions have got considerable powers and a progressive harmony is socially implemented; 2. Enlargement. The community is opened for new members as it was until it reached 16 members and is permanently nearing to the eastern countries, but expanding implies a slowing level as to the achievement of the common market and even a temporary blockage of the enlargement; 3. Dividing up takes place instead of thoroughness and enlargement. The community is reduced to a free area of change, with no serious industrial policy. It has got to confront the process of universalization, changed by the apparition of the world oligopoles; it loses the reason of being and is dividing up; 4. The political and social aspects are shadowed by a technocracy that has grasped the power, the European organizations can not be controlled by the democracy and so they become super-organizations coordinating the European business in the name of the experts and technocrats. It is named "Brussels bureaucracy".

Other researchers also, for instance those at the Institute for East – West Studies predict a turbulent environment described as having four opposing tendencies: a) globalizing versus localizing; b) integration hostile to fragmentation; c) abundance opposite to the poverty; d) individual gets increased powers contrary to his being robbed of rights and privileges.

All these elements make problem free development difficult that will result in ups and down some up – steps followed by regressions and especially antagonistic situations that will slow down the economic progress, what is characteristic to this scenario is the difficulty to control the local disputes. They can burst out nevertheless if a global controversy is going to be prevented. The dangers of a divided world into rich and poor countries, the difficulties that some countries meet when they reach the level of developing countries, as well as the social figures almost disastrous for most peoples of the world lead to the conclusion that the scenario of the slow progress, with frequent variations has got better chances than the most favorable.

The indicators that the population considers essential in the period until 2020 are interesting. There have been tests carried out in some countries and regions, especially in Europe, Japan and USA. Of all 25 values considered, 16 are grouped together as signifying progress : life quality, life style, nature, health, the personality, spare time, freedom, innovation, autonomy, hedonism, the basic community, security, personal expression, common living and the status of the world. The great collective ideas and authority are considered in regress. It is remarkable (especially after the relative decline of Japan as an illustrative example for Asia's development) by China's coming up and by the evolution of the regional countries with emergent economies, that not all these values should be taken for certain. It is possible, like in the case of Asia's rise to the top of the civilized centers, that the values which the tested societies consider necessary, to be mere continuation of the actual state of spirit and not real characteristics of the following period. As to values, it is very well known that the phenomenon of swinging attitudes determines a choice of preferences. As an example, the recoil of the authority is not sure. The most cases of economical starts have taken place in unconditional authority regimes. A world of 7 to 8 billions of persons, that is quite a crowd, needs a greater numbers of common rules to live, so that the anarchy may be avoided and the life lead a normal line. More rules suppose more authority institutions capable to formulate, sustain and put into practice the rules of social living. The second case to be discussed is that of the collective or commune causes considered as declining by those who evaluate the priority of the values by 2020. The same swinging rules that determine

the value movements may direct the attention to the public interest on a very great extent. The continually blunting (pointed out by numerous studies) of the choice for the public interest in favor of individual, private, local or community interest may be replaced with an increasing conscience that the public interest must be prevailing, so as the Asian mentality, culture and economical practice prove it.

D. The fourth scenario is **Statu Quo**. It predicts that up to 2010 the world will suffer no change, being dominated by the same crises, same trials and that the dangerous events will take place at the same rate, as well as the unstable situations. All the above – mentioned factors in “global civilization” scenario are constantly blunted by their opposite in “statu quo”. So, first, science and technology could meet a period of standstill, some authors saying that the list of the great inventions is closed and there will be no other new or extraordinary achievement in the future. It could be that some inventions and innovations that today are considered as promising may well generate in the future numerous unaccepted contradictions. Also, some technological advantages could meet such vehement protests that would block their widespread introduction. Second, economically and financially (excepting the idea of a general crisis that is to be found in the disasters’ scenario) a series of passing crises could take place, often enough to stop mankind’s progress. The recent examples of Russian and Asian crises made it clear that the globalizing is increasing the tendency for crises; that is, when the economy of a center or of a region meets difficulties they expanded to the rest of the world. But the most important characteristic of “Statu Quo” would be the result of the number, intensity and persistence of the local disputes. There are still an immense source of smoldering conflicts, unsolved adversities and hate that could demand exhausting efforts to solve and control them instead of using these efforts to push the world up to the progress. Take, for instance, the existing and neverclosing sources of the Balkan disputes, or the problem of the conventional excolonial boundaries in Africa and Arabia that have been denied by a tribal or ethnic reality, as well as the authoritarian regimes that can live on only on the bases of international conflicts; all these facts prove that even this “Statu quo” scenarios cannot be neglected.

If we compare “the global civilization”, “spasmodic civilization”, “Statu quo” and “the 30 years war” scenarios with the potential the end of our century reveals, then we can be inclined to think that the first two have greater possibilities to become realities than the others and even if the global civilization could not turn into reality according to an optimal scenario C, it will be able to bring the world of the year 2020 to general levels of prosperity and life superior to those from the beginning of the century.

1B. The great challenges

1. There is no country, society or human being not to be aimed, affected or challenged by the changes in nature. No matter if the evolution will be slow or spasmodic, accelerated or hindered, the civilization of the XXI-st century will inexorably go on leading to rational adaptation of the states that form the international system. The challenges are identical for the developed countries and for those states that are going to be developed. The big countries that are centers of civilization and those in other regions having relations of solidarity with these ones, will think of preserving or improving their privileged situations. The developing countries have to choose between the integration in this family (still a minority) or marginalization. No political program claims that belonging to the periphery is an ideal to be followed, by others, but very few mention strong measures to avoid it.

The civilization being characterized by economy, techniques, information and scientific capacity, getting in its foreseen forms for the XXI-st century by the contemporary processes is mainly of the same nature.

2. The economical challenge for a country like Romania is the one that leads to increasing of PIB, by means of such speed that will lower the distances up to the developed countries, representing a clear surpass of the minor status offered by the values of a quasistandstill. To join the emergent markets (there are 25 countries in this category, among which Poland, Russia, Hungary, Czech Republic, Turkey, Greece to remind only those neighboring us), could be the first target. In the competition of the globalization that started in the last decade, some of the states were favored by their level of development. The national output in the European Common Market was 20,000\$ per capita (by 1991), and in EFTA more than 25,000\$. Nobody can speak about the Romania’s modernity in this century before reaching the level of 10,000\$ per capita.

The aim of the development, the key of a long postbelic stage and which the developing countries saw clear as the surpass of marginalization was not successfully achieved but in some cases. The growing worry about ecological state of our planet and the wasting of the unregenerating resources amended the initial objective and led to the idea of a sustainable development or development that relays on renewable sources, at the same time with the drastic change of the attitude towards the environment, which needs protection and preservation.

To formulate the sustained growth as a primary objective means to strike against the mental reserve of the societies that escaped from the “scientific socialism” which compromised this objective, associating it with all the short comings of the central planned economy (forced labor, unpaid, the sup-pressure of the liberties and initiative). Together with other concepts (wealth, plan, strategy, export, effort, discipline), the idea of growing induces a state of refusal in the mentality. Some years have to pass before these terms used by the contemporary capitalism will get again their former rights.

Civilization is not a self-purpose but it is the essential support of a life favourable for the development and assertion of the human personality. The “vulgar materialism” and the “narrow economism”, the familiar

accuses of those that refuse them are simply symptoms of the incapacity to be a part of the mindkind's progress.

3. Connecting to the global civilization, which takes place on the base of "identity card" containing the values regarding the level and the growth of economy, also presumes communication and transportation infrastructures, so that they may be part of the regional and international network. The infrastructure is the weak point of the developing countries. If the communications can very easily be established due to the progress of the technologies and their accessible cost, the highways, shipping-yards, airports, the land transport, maritime and air lines of transport require great investments for a long period. Let's have only one picture. The world is covered more and more by visible and invisible networks, highways for goods, money, services and people. To offer centers, through which the world flows may pass by, the countries must contribute with their fragment of network updated to an international standard. An example is offered by the infrastructure of the financial services represented by the banks – real knots in the world financial networks.

4. The challenge of the globalization that is extending produced as an initial reaction of the developing countries, economical reforms that are nothing but raising ones' own institutions at the level of the international system, a fundamental operation for modernization. The temporary prevailing of two objectives – reform and privatization and the ensuring of the stability (for example the establishing of the national currency and preventing inflation) must not hide the main objective of increasing the output and the productivity and getting profits by participating in the international commerce. It is supposed that at the beginning of the next century the economical basic terms in the countries chosen for globalization will be *increasing, development, production*, after a long period of using the term *revival*.

No country faces the globalize alone. The associating phenomena are frequent in a world of regions. No matter it's about an advanced system of institutions or laws like in Western Europe, a cooperation and a partnership based on no treaties like in Asia, or of an intermediary and pragmatic cooperation like in America, the objective is only one: greater markets for those manufacturers whose economical position is advantaged by association or integration.

Beyond the common market's requirements of institutional, legislative and financial reforms of the future members, it was the idea that they represent solid economies, with very similar values. Thus, a fragment from "Agenda 2000", containing the commission's points of view concerning Romania's asking to adhere to the European Union underline: "Romania's population represents 6,5% of that of the Union and its economy only 1,5%. The internal gross produce per capita is about 24% of the average produce achieved in the EU. Romania would meet huge difficulties if it were exposed to medium term concurential pressures and of the market's forces in the Union; (...) a great part of the Romanian industry is outdated and the agriculture must be modernized".

It is clear that any entering the E.U. that will take place at the beginning of the following century will have to be preceded by strengthening of the economies, illustrated by the values of national gross output and, of course, by their correspondence with the development' ratio.

Romania's position as an associated country with the E.U., combined with the opportunities of globalization (Black Sea Area, South – Eastern Europe, Danube Area, Central Europe) and other strategic partnerships with economical values, are all open opportunities to support the great effort for high development values.

5. The controversies from the end of this century as regards the market's role will go on, but important results are coming out for the countries accenting at the international system. The illusion of the free market that eliminates any interference of the state and also the prediction of the dissolution of the states as interfering instruments in economy needs important corrections. The market is mainly dominated by those who sell and only subsidiary it can lessen the buyers' burden. The sellers are competing in the market, and those who do not produce but consume could not pretend the changing of the market's rules to their benefit. The confusion comes from the "reactive opinion" of the countries in transition which combine repulsion of the total guiding that they have already experienced with the texts of economical philosophy imported from West. But the practice shows that there is a very careful observation of the market and economy's phenomena by means of fine sensors belonging to a developed statistical apparatus; this leads to taking legislative, financial and even political measures to assure their basic interests. It is not very difficult to decipher this concern when wars start with that purpose of getting sources of energy, like oil. The states

are still existing and watching, using a part of income taxes for the maintaining of their international positions. They continue to work out and apply new ideas (using the democratic processes in contact with an public opinion that pretends satisfying state, solutions for the problems of existence and survival). In democracy, both the deciding factors and implementing solutions are partial nongovernmental, meaning no absence or indifference as the state is concerned.

Practically there is no state without a *strategy* concerning the development of the societies they are serving. Opposite to what was practiced in socialism, these strategies are very concise. According to Saburo Ocira, former Japanese minister for foreign affairs, who was a member of the governmental team that put the bases of reviving the Japanese economy, the initial strategy contained five points that can be written on a single page. The strategy contains priority objectives, as result of the practical utility, together with the means of reaching them, judged after the probability to efficiently contributing their achievement. It's about the old scheme of bayesian decision susceptible of the more multiplying the utilities with the probabilities. Evidently, the strategies are formulated for a long period.

The *policies* are especially sectorial and contain the actions on short terms too. A strategy is achieved by industrial, agrarian, financial, scientific or educational politics. The strategies and the politics of the developed countries, liberal by excellence, are not determinative. They only aim is creating the framework in which the free game of the market's laws will favour and not prevent satisfying some essential interests of the society.

The kind of interference and the used methods, the period to be surveyed, from 5 to 40 years, how many risks are accepted (let alone the priorities of every state), all of these differ from a place to another. But the strategies and politics are present mainly at the emergent countries decided to equalize "the cosmic take off".

Not only creating strategies and politics is the strong "memento" for those countries confronted with the challenges of the following century, but also it is imperative to bring them at the world's level. The economical literature projects such strategies and analyses them. Thus, Lester C. Thurow announces "the disappearance of classical comparative advantage" based on the natural resources and the relative abundance of capital and working force. Based on examples he thinks that "supplying with natural sources fell out from the competitive equation". And so happened with "the disciplining of the capital" in the conditions of the world market of capital. Today, knowledge and skills are the only sources of the comparative advantage. They became the principal part of the economical activity at the end of the XX-th century. Together with other remarks concerning changing the conception about "the production cycle" or about the world spread theses that "all take advantage out of commerce", the other conclusions change very well in rooted conviction that "the power of innovating" create decisive economic advantage. The technologies remain decisive but what means more is to be among the first producers of the technologies of processing and less in the new productive technologies. Here is the explanation: "to master the processing technologies, a successful company should be managed so that it will mix invention, design, production, sales, logistic and services in a structure that the competitors could not level. The secret of being the best resides not in an intensive work or capital or management, but in having such capabilities in the organization that will allow it to make the cheapest integration of all those activities". One must think of the shocking fall down of the individual achievement that can be obtained in the market in the last instance. But is more difficult to obtain people with the capacity to organize universal networks, "those that are able to be the best workers of knowledge, the best of the best". It's a memento for those who establish the aims of education at high individual standard, letting alone the skills that the groups' organizers need.

Once again, the actual tendencies and the predictable ones lead to the education and instruction of the people when putting on the first place on the brainpower technologies.

These tendencies that are the basic challenges for the strategies of developing countries, should be completed with other consideration connected with getting into the competitive world. There are at least two elements for them. In the information era we can cover longer distances more quickly and shorten the distances between the developing ones and the most developed, and this is illustrated by the new industrialized countries, namely the Asian ones. Their secret is also the ingenuity required by the adequate strategies to identify "economical holes", those unsaturated areas, capable to absorb the goods that the great bidders neglect. Even if the role of the resources is diminished, it is still important in choosing the whole; as well as the favored geographic position plays a decisive role in commerce and the goods circulation.

6. Democracy continues to be the main test of the society in the following century. It is the form of the governing and practicing the power and resisted to the agitated history of the XX C. and which ends up as a cemetery of totalitarianism that reached the highest levels of arrogance and violence. In spite of its brittleness and the dangers that follow it, the democracy offers following to a contest the best chances to its people as to enjoy of rights, initiative and of speaking, preventing them of pression and falsehood. We do not agree the optimism of those who considered the end of history as (Fukuyama) characterizing the events at the end of this century as the final triumph of the western like liberal democracy, we can remark a considerable advantage of the call of democracy and a gradual degradation of the undemocrating regimes.

The greatest dangers comes from misunderstanding of that complex mechanism which is the democracy simply confused with more striating by institutions any kind of authorities of the individual liberty (even when its exercising is done with the price of restricting the rights of the others) and not taking into account the abstention, self control, moderation, and tolerance which the democracy implies. It offers responsibilities and equally rights, while the totalitarianism grasps the responsibility and the possibility to exercise it.

The democracy in spite of individualism associated with does abolish the public property, nor let it in care of the free market. Urbanism, green spaces, pure air and clear water, highways, schools, hospitals (that are private property and is a special chapter of the states budget and of the invisible economy), had great chances to be developed by the capitalist democracy, that pushed the responsibility up to the individual level.

A great advantage of democracy the multiplication of NGO and those of the civil society new actors both in internal and international life.

The contempt of the democracy as to the emergent countries is the assurance of a decisive process with a large participation, but undiminished by difference of opinion and limited interests. The democratic institutions are called to back developing processes, that ask for respect from the authorities and low. The democracy is also in order regime, but not imposed or based on repression. Its power is to form a framework of efficient action sustained by developments that combine the rights with the responsibilities the standstill or the regress of a democratic society can not be assigned to the democracy, which proved to be the most favorable form of backing the welfare and satisfaction of the society's basic needs, but to the political immaturity of the members that are unable to grow up waiting to get indications, orders from the superior authorities. But the means of the democratic society are not of this kind and is characteristic by transparency, persuasion and trust.

7. There is no more dangerous trap for the development of a society as it is a breaking out internal or external conflicts capable to seize the mental and material energy, the material and human resources. The connection of the conflicts with instability and the standstill has been demonstrated internationally.

There are all reasons to think that speaking about Romania the political ability and diplomatic to prevent the country's implying in open conflicts in the neighborhood with lost decay will prove again viable. Moreover a considerable experience with his field offer the liberty of taking initiatives and playing parts as to reconciliating and preventing the conflicts. This means to support the preventive diplomacy, which is encouraged and looked for by different instructional Boards like UN. This process offers a part to nongovernmental boards as "The Centre of preventing the conflicts in the Black Sea region and South – Eastern Europe" that is activating here in Romania that offer practical solutions of common projects type.

Concerning the internal conflicts, of ethnical origins, religions and cultural, the predictions agree the optimistic scenario. As the Romanian – Hungarian reconciliation is going to strengthen externally, becoming one of the real cases of reconciliation in Europe the possibility of peacefully living with the Hungarian minority in interior has real possibilities to impose, taking into account the liberties given the minority population employed in different programs that aim at shorting isolation to enlarge the interaction and give birth to loyalty and affection for the common country. In the XXI st century the exacerbated and intolerant nationalism is part of the scenario improbable of desaster.

The misunderstandings between gipsy population and other habitants is more difficult that suppose more than enriching the political democratic and civil culture, requiring large social programs that will be a main subject for the next years. The social conflicts especially the working ones bringing up face to face the union and the patrons (employers) are the problems for all countries produce in great loses to economy, but there is no reason to think that the formula of partnership and the triangular ones (govern, companies and union) can not find new forms practicing in our country.

Free of conflicts and advancing towards the consolidating the democracy, Romania would have better conditions to solve the fact problems.

8. The figures that characterize the social situation in Romania are unsatisfactory as the *UN Report for 1997* reads. It would be an illusion to think that their unproven is a part of a social measure as it is the abolishing of the poverty. The necessary resources for a normal social situation could not be but a developing economy. The health of the population depends on the hospitals equipment and maintaining, the access to doctors and medicines and the proper diagnosis depends on the new medical equipment. Houses and the habitat depends on the policy of building resources. The education requires money for equipment and caring for schools, as well as to pay the personnel. The pensions and the social security depend on a budget whose sources depend on the taxable activity of the economy.

The social capital is conditioned by the economy and so is unimaginably its development if it is not taken into account its social dimension. That's why, the branch of concerns led to the phrase - social and economical development.

A healthy population needs a permanent, accessible and complex nourishment. As many theoretical exercises would be done socially, an old requirement and very actual in the new century that will confront food crises is evidently imposing, food. There are countries underdeveloped where the governments have only one task; to supply the market with sugar and cooking oil. A greater dividing than the rich and poor will be done in future by the countries possibility to assure food for population. A more shocking scenario could predict the interdiction that the countries that did not solve the problem of food especially when they had that possibility to lose the right of voting in international boards. This is the merit of civilization, to send back to the backgrounds that is the basic tendencies of the society.

9. The most considerable contempt of the era is that towards the cultures. They are systems of opinions and arrange the values, generate attitudes and form mentalities. A permanent debate on the cultures possibilities to communicate among them and to compare the values that define them. The theses of incommunicating and incomparability led to the contemporary relativism, but in regression as the new demands come up of the next century. The perspective of the civilization helps us to surpass the new dilemma. Cultures could be considered taking into account three simple criteria: how strong is their universalist essence, existing in a greater or less measure in everyone; how much are they inclined to the communication and how much could they accept to enrich through dialog or interaction; are they favorable to the civilization and the changing rhythms? Could these be other criteria of classification: peaceful cultures and fighting cultures, the last ones are based on violence and controversy. But there are cultures (e.g. Japanese and German) that succeeded in changing the profession of warrior in features that are favorable to competition, which needs perseverance and stubbornness.

Very few words of being unitary, cultures contain currently and schools that are favorable to one or other of the positions considered in the proposed classifications.

To the Romanian culture every directions are present. The idea of preserving the identity, very important for a people that entered later in the modern life, created traditionalist currents, conservatory, parochial. The open and favorable to civilization currents won in the last century.

Modernizing Romania and out remaining its actual marginalization, as a result of a long time economical standstill will keep open the dispute between traditionalists and modernists, with arguments of a century and a half arguments. Although the traditionalists find new supports in the internal criticism of the capitalist and democratic system e.g. their irrationalism and the apology of the cultural communities (ethnic, linguistic, religious) the most possible scenario is an upward evolution of the universal and globalist values, based on a large rationality and unhaughty of the communicating and interacting practice, making it possible to shut the cultures, to achieve the trust in science and the civilization role.

Actually, in our country, the school of opening is based on a tradition too, whose patriotism was emphasized in creating and rapidly developing the Romanian modern society.

The rapid adaptation and their wish to know, their being able to get good results in mathematics, sports, music are the reasons of the Romanians' favorable attitude to the civilization.

The so much discussed Weber theses about the origin and favoring capitalism in the Protestant doctrines is a reason of considering the culture as a background of entering in civilization. Although many other authors do not agree (Braudel) it is argued and comparing it with the civilizations maps (Toyubee) are out of the Western boundaries and of orthodox faith. The creation of the new Asian centers of civilization necessitated amending Weber's thesis, but with a similar argument, Confucianism is the base features that have been decisive in the development of the Asian countries' capitalist economies all of them stressing up on education, economizing and hard working. And this idea can deny the possibility of some East-European countries to enter the civilization.

But, a country that had a Minister like Spiru Haret at Education and whose popular productions shows a great possibility to make effort and much scrupulosity and the results in the first years (at the beginning) of the science and techniques cannot give up when's about civilization. The ethics of work and cultivating the effort are not lacking when it's a motivation. It is true that both western Protestantism and the Eastern philosophy were favorable to the long term vision and objectives and that numerous historical depressing experiences made that the basic skepticism of the Romanian people concerning the opportunity to think in future increase so that the efforts of a generation be destroyed by the next one. To this question we can tell that the existence and the survival of the Romanian people in history is a long term project and that tenacious ambition to keep the identity has been realized thousands of years successively.

10. To put an end to a list of challenges that the evolution of the universal society is addressing to the orienting and the option of all countries especially to those wanting to over-pass the underdeveloping we will try to point out a key concept. It's about "*The Project*" that a touchable objective. The Projects are the atoms of the civilization.

The Project refers to get together more resources or energies, complementary so that an objective may be achieved. The projects we want to achieve are referring to the nature of civilization, have a reduced contents of subjective cultural factors and are neutral and not culturally disputed. A classical example is the project dedicated to creating the European community for coal and steel proposed by Monet, extended after that to the Common Market and European Union. It's ascendant destiny confirms the adequate choice of the first theme selected from the industry's ABC. The cultures of the Old Europe and proud have been let alone without asking them to renounce at the sovereignty, as it was about the states. There are tens of similar themes that can connect the countries in common projects: dams, highways, bridges, planning, common economical areas, free commerce regions, enterprises and industrial objectives etc. Multinational Companies are projects of the globalize.

There is still a characteristic of the viable projects: they create interaction. Defined as common working, the logic of the team is dominating the projects. The projects draw the attention and energy of the persons and societies, guiding them to the future and making easier for them the history's burden and the obsession of the past. The projects get together partners considering the multiplication complementarily and not at all the norm ineffective of relationship or likeness. The more different are the parts of a project, the more are its chances to succeed. The projects for civilization are like this, that supposes to recognize an integrating reason and prevent the collision of the cultures, that are inclined to point out the differences. The conflicts in Yugoslavia started because the common project defined on the cultural bases disappeared (the ideological one) and flimsily incorporated in political federal formulas. The place where the bases of the project have been attentively selected (survival, economical interests and the control of the passes-by) like in Switzerland about 700 years ago, the project has lasted, unaffected by the considerable differences of the four cultures and the 25 cantons.

So there are long term projects, more significant than those medium-term or short, the last ones cannot be considered projects either, they are worth the term of initiatives.

What is most important thing concerning the projects is their possibility to offer characteristically parts for their identity (groups and individuals), that is different of their personal status, generally it is conferred by birth and the groups they are of. It is mainly about the identity of the future society of: tell me about your present project you are working now so as I may tell you about your personality. The other questions that may present a person (citizenship, language, nationality, religion, etc.) are of course possible, but without the relevance of the past century.

Backing the "project's" value for persons and (for) societies, we come to the greatest contempt of the tomorrow's world of the countries and human collectivities, met by the beginning of the XXI st century outside the advanced families (developed or with an emerging states). The question they are addressing got the capacity of launching of a real project of entering the civilization's atmosphere.

The projects of modernization are as old as some hundreds of years. Usually we imposed up-down: Peter The Great for Russia of 1700, Atatürk for Turkey of 1920.

Romania said yes to a similar project at the middle of the past century and achieved it in two booming stages around the beginning of century that has passed and for a short while, between the two world wars. Today the projects of modernization do not depend on a leader, but it they (imply) involve the specialists in working out and supporting them and a favorable public opinion and possessing wish and trust.

The (postrevolutionary) period after revolution, named as transition does not allow a decisive answer to the possibility taking an action effort national, major in a modernization project. Unapproaching in this period of the developing main problems, developing the reform of the traditionalist institutions alongside with the vogue aspiration to the modern welfare, includes in feeble intentions of status (membership to Euro – Atlantic institutions) are not very clear about what is happening until the end of the century.

If were a referendum with the little question addressed to the society, if they wanted to rich or not, able to an active part in the global system strong enough to follow the playing rules on a winning position, the answer would be a positive one for sure. That is why the possibilities offered by this project makes that the perspective for "renaissance" remains still open.

Chapter 2 - THE POPULATION AND THE CHARACTERISTICS

2A. The Romania's population in 2020

Introduction

Both by the characteristics and tendencies, the present Romania's demo-graphic situation is very complex and negative in all its sectors and major components, representing actually the demographic side of the crises that Romanian society is facing now, changing from the old regime to democracy and market economy. Unlike other countries that experience this process of transition and where the demographic changes are more or less similar to those in our country, the demographic evolutions after 1989 have got particular characteristics in Romania. They cannot be separated, at least when speaking about birth, from the effects of the forced demographic policy promoted by the former regime. For a long period the birth rate was high in the European context by means of coercive measures and their ending in December 1989 brought a rapid lowering of new born percentage, a problem that could not be influenced in any way on a short or medium term by the new social and economical situation ***no matter what that would have been.*** However, the economical crises that began after 1992 did nothing but put stress on the low birth rate and broke the evolution of other elements of the population's increasing.

The evolution of the Romania's population in the next two decades will depend, on one hand on the moment and measure in which the present characteristics and tendencies could be stopped, and on the other hand on ***the future choice*** as to the evolution of the Romania's population in the next century. Anyway, the developments that took place after 1989 will inevitably influence this evolution, both the structures and certain fundamental demographic figures such as birth rate and mortality.

Working out a demographic prediction in the present social and economical situation is very complex and negative in its essence. With a tendency to worsen, it should be an action with a deep searching character. It's too large an area of the unknown to present realistic hypothesis on the probable evolution of the elements of the population's migrating and natural movement, with no practical reference points. We might make a great mistake if we deny the values of the explorative approach. The various hypotheses, characteristic to this approach, lead to considerably different results and we think that this offers a necessary framework to search the future.

Without diminishing the qualities of the search we shall observe that the demographic evolutions after 1989, the characteristics of the present situation and the perspectives that are foreseen for the near future impose a new manner of approaching the country's demographic future. It's about the ***normative – type approach.*** To maintain the actual tendencies and characteristics of the demographic situation would lead for a long or medium period of great demographic disaster. ***Can we forget that these tendencies and characteristics, as well as their potential long term effects are the consequences of an exceptional social and economical situation, that can only be a breaking moment, limited in time, in the historical evolution of the Romanian society?*** We don't think that it is possible to leave alone such a perspective and daresay that the normative - type approach should be the first step when designing the demographic future of the Romania. It's just the method we establish in this study.

1990 – 1996: Seven years of demographic decline

The demographic evolutions after 1989 are complex and negative. This complexity is referring at least to two aspects. On one hand, it is extremely difficult, even impossible, to separate that element of the evolution that objectively resulted from the accumulation that took place before 1990 (when the socio-economical situation deteriorated and forced and savage demographic politics took place) from those developed as a result of the crises Romania is passing through now. From another perspective, demodulation of the demographic characteristics that however are taking place as we come to another type of society, didn't establish its new elements, which can not be considered apart from the present characteristics and tendencies, specifically to a period of crises. The negative evolution after 1989 is referring to the implications, the demographic and socio-economical consequences, both actual and long-term ones, a field that has not been enough approached by the Romanian demographic and demo-economical research.

The deterioration of the demographic situation has known significant particularities from one demographic phenomenon to another, concerning the intensity of changes and placing them in time.

The birth rate's lowering was predictable given the conditions of removing the interdiction on abortion and contraception, but the intensity of this lowering was to depend on the new economical and social context. This context proved to be (by almost all of its elements and first of all by those that determine the living standard) hostile, even more than under socialism, to an increased birth rate. An increase of the external migration was predictable at the same time with the arrival of the right to free circulation and the real explosion of migration in 1990 and 1991 shows the phenomenon's values. The decreasing values of the movement and recording some moderate values and somehow constant in the years to come are not the result of exhausting an important migrating

potential that had accumulated before 1990, but especially of the more and more restrictive measures adopted by the Western countries as far as the migration is concerned.

If the evolutions of the birthrate and external migration in 1990 were considered normal, we cannot say the same thing about the other phenomena; their evolutions depended of the changes that the Romanian society had to experience at the social and economical level. Before 1990, the mortality was high, in comparison with the developed countries, the average living period reflecting the great difference in comparison with those countries. The decrease of the general living conditions and at the same time of the medical assistance worsened the population's state of health and consequently the evolution of the mortality. The mortality began to worsen only after 1991, when the economical crisis was at its worst, and the living conditions and the medical assistance were at their lowest; in contrast, after 1990 and 1991, the hope to live at birth experienced a slight increase. In 1996 the hope to live at birth for the masculine inhabitants is of 1,5 years comparing with 1989 and comparing with 1992 the kick reaches 2 years. Masculine mortality is becoming more prominent especially because of illness of the circulatory system, cancer, illness of the digestive system, infections and parasitical diseases; this mortality increases after 30 years of age. Concerning the feminine population, there have been also increases of mortality at adulthood but they were compensated by the lowering rate of mortality for the young women, thus the average living limit has known a remarkable stability between 1990-1995. In 1996, the hope to live at birth has regressed in the feminine population as well.

The total changes that occurred as to the Romanian demography after 1989 are represented in the table 1.

Table 1

Demographic balance 1989 – 1996

Indicator	1989	1990	1991	1992	1993	1994	1995
The total inhabitants at 1 Jan.- thousands	22774	22855	22829	22811	22779	22748	22712
Born alive – thousands	370	315	275	260	250	247	237
Born alive at 1000 inh.	16,0	13,6	11,9	11,4	11,0	10,9	10,4
Fertility total rate (birth given by a woman)	2,19	1,83	1,57	1,51	1,44	1,40	1,34
Deceased (total) (thousands)	272	247	247	252	264	263	266
Deceased (of 100 inh.)	10,7	10,6	10,9	11,6	11,6	11,7	12,0
Deceased in their first living year (thousands)	9,9	8,5	6,3	6,1	5,8	5,9	5,0
Deceased in their first living year of 1000 born alive	26,9	26,9	22,7	23,3	23,3	23,9	21,2
Marriages – thousands	178	193	183	175	162	154	154
Marriages to 1000 inh.	7,7	8,3	7,9	7,7	7,1	6,8	6,8
The total rate of feminine primarnuptial of 100 women	...	94	87	86	79	74	73
Divorced – thousands	36	33	37	29	31	40	35
Divorced by 1000 inh.	1,6	1,4	1,6	1,3	1,4	1,7	1,5
Average living age – years							
- Male:	66,6	66,8	67,0	66,1	65,9	65,7	65,5
- Women:	72,7	73,3	73,6	73,3	73,3	73,3	73,4
Population of 60 and over - in %	15,2	15,5	15,8	16,4	16,8	17,0	17,3

17,6							
Natural increase–thousands	122	68	24	-4	-13	-19	-35
-55							
Migrations – total - thousands	-41	-94	-41	-29	-17	-16	-21
-19							
Total increase / lowering - thousands	81	-26	-17	-33	-30	-36	-56
-74							

Source: the National Commission of statistics 1996a; 1996b; 1997a; 1997b; 1997c; 1997d; 1997e. Other periodicals of NCS for the population at 1 Jan. 1989 – 1991; author's figures starting with the all round population at Jan. 1 1992 and considering the lowering increasing in the three years, obtained as a sum of the natural increase and the external migration balance – the last one was considered equal to the number of immigrants for 1989 and as a difference between immigrants and repatriated for 1990 – 1991 (the figures concerning the number of immigrants have not been published).

In the last seven years the Romania's population lowered by 270 thousand inhabitants, a decrease that represents over 1% from the population in 1990. Considering this number only, the decrease cannot be considered as an important one. There are still some structural implications that cannot be neglected and especially the things should be considered from another perspective, the one of development that could follow for a middle and a long term; than, the evolutions after 1989 and those almost sure from the years that followed get new significance.

An outlook on the evolution of the number and the age structure of the population between Jan. 1st 1992 – Jan. 1st 1997 (all the figures based on the results of the census in Jan. 7th 1992 and consequently presenting a good accuracy and coherence), shows that the decrease of the populations' number in five years, about 230 thousands of inhabitants, comes from a decrease of 580 thousands in the group of ages 0-6 and an increase of 350 thousands as to the other groups of ages. The population of 0-6 years represents at the beginning of 1997 the generation that have been born after 1989. At the beginning of the schooling year 1997-1998, the children born in 1990 were 7 years old and started the first school stage. Their number was 70 thousand smaller than those from 1996 (that were the 1989 generation) and represents a decrease of 25%, which in the next few years will be about 30%. This real wave will maintain in time in all forms of learning and it is admitted that will produce changes (even disturbances) as to the relation between the pupils and the teachers and the territorial organization of the schools' network.

The falling of the young population, the pyramid's base, is the most important quantitative change determined by the descendant evolution of the birth rate in the last seven years. The structural changes are numerous and the most important of them should be mentioned: the process of the population rapidly growing old. About 18% of the population is over 60 years old and its tendency to increase is sustained by the base of ages' pyramid.

From the perspective of the future evolution of the population's number should be mentioned the following elements:

1. The negative figure of the external migration seems to establish at about 20.000 persons.
2. The natural slow down surpassed the migratory one in 1994 and is having a firm increase and it is to be remarked that this element will play a main part in the future descendant evolution of the population's number too.
3. The consequences of the lowering birth rate will influence the long term evolution of the population after 2010, when the generations born in 1990-1996 will be most fertile and they will leave a considerable smaller number of new born (if the fertility does not suffer changes); this period will be dependant only on the evolution of birth after 1996.

To build a demographic future: Conditions and the way of approaching.

On the probable evolution of the Romania's population in the following decades have been published lately shorter or detailed results of some projects elaborated starting from various ideas, explorative or normative, concerning the evolution of the fertility and mortality. We do not intend to make a comparative analyze of these projects in a so uncertain future socio-economical context and to which correspond at least uncertain demographic developments, the authors of the projects being free to substantiate at will the hypotheses that they built the respective projects on.

We want to make another type of analysis of the Romania's demographic future, even if the method used is a normative one.

The ideas we are starting from have got known elements:

1. The economical and social crisis that the Romania is passing through is coming up to its lowest point.
2. The end of the crises will mark the beginning of its improvement and, after that, the long waited economical increase will start.

3. The establishing of the economical increase will actually be the beginning of a sensible improvement of the living standard and quality of the medical assistance.
4. The increase of the living standard and the improvement of the medical assistance quality will influence positively the evolution of the demographic phenomena and especially the nuptial, birth rate (fertility) and the population's mortality

The last idea deserves some remarks. The positive consequences that a high living standard would be going to have in the mortality seems to be certain: a decrease of mortality on ages (it's result will be observed in increasing the average life's span) and subsequently a decrease of mortality gross rate. We must not forget that the mortality in our country had high figures now and before 1990, considerably higher than in the developed countries. In other words the lowering that followed after 1991 did nothing but dwindle a situation that was essentially negative. The possibilities to reduce the mortality are considerable and a better living standard should keep up such an evolution .

The consequences of another socio–economical context on the fertility will probably be more complex and the unknown area is large. If we believe that a sudden change of the birthrate should be the most probable evolution in a better social–economical context, we also take into account some elements that cannot be neglected. The evolution of the number of the newborn considering the position shows a considerable smaller lowering as to the first position ones, in comparison with the other positions. Between 1989 and 1986 for instance, to a total lowering of newborn of about 40% the first position decrease is only of about 14%. We could conclude that the birth rate lowering took place in a secondary way, by renouncing to the children, the main attitude of the young families being to prevent from having children of the second position and over. It is difficult to tell if this attitude means renouncing to the second/third position or postponing the decision on the second/third child in the family. The fact that women consider that the ideal number of children is 2,1 (no matter the age, education or socio–economical position) would agree with the second hypotheses.

Admitting a positive reaction of the fertility to mending to the whole socio– economical situation and reaching a new higher living standard, it's impossible to foresee probable values. There are too many unknown factors of the past and future evolutions.

In the projections that have already been published, at least one was based on the fertility sooner or latter which, if combined with the decline of the mortality, would stop the demographic decline and start the increasing of the population. In our set of projections there is such an idea but it is simply a reference idea.

The Romanian's population's future cannot be a draft today. When in the developed countries the increasing living standard did not lead to revival of the fertility as it was vital to replace the generation after the second world war, we cannot see how the Romanian fertility, even if it will revive in future, could reach such a level. Besides, although the total birthrate in the developed European countries today has smaller values than would assure the replacing of the generation, we would like to underline that in any of the developed countries where there was a *natural decline* (Germany, Italy) the population number *did not decrease* . The external migration counterbalanced the natural deficit (*Council of Europe 1996*). May the emigration be an element we must take into account as to the future evolution of the Romania's population's number? Highly unlikely.

The deep crisis in Romania makes it impossible for the state to directly interfere in the evolution of the demographic phenomena and processes. Such interference can only be *an economical one*, and the problems that the Romanian society is faced with call for other priorities. Looking to the future we think there is another idea that could be put forth. *If Romania is admitted also in the middle developed countries group that will mean to bring to normal the demographic situation, without reaching such a fertility level so that the demographic decline may be stopped; working out and adopting such a demographic policy to follow just this objective could be basic for Romania's demography in the so near XXI-st century.*

Stopping the demographic decrease will be the consequence of the common evolutions of the mortality and the fertility. We cannot deny that bringing the fertility and mortality to the same values may prove to be easier to achieve when the two components have reached a certain level, by special pro-grams, referring to health and mortality of the population. Reaching the equilibrium and zero – increase will be the moment when the society will have to decide on a basic problem for its future; *will Romania need a stationary or a increasing population?*

What are the considerations to be taken into account to sustain the option? The most important could be: the age structure and especially the relation between the old people (mostly inactive economically) and those that are working (economically active, the majority), density and the relation between the population (its number) and the natural resources; the ecological equilibrium; military element and geopolitics.

Building a demographic future: hypothesis and scenarios

Two demographic projections will offer the comparisons needed:

In the first one, named “*Equilibrium*”, the total fertility rate (TFR) would stipulate that every woman is going to give birth to 1,5 children in the year 2000 and then, it will be reached the value of replacing generations, 2,067 children for a woman in 2010. This level is to remain constant.

The second variant – “*Increase*”: TFR level would reach 1,5 children/women in the year 2000 and a higher level to that of replacing – 2,3 children for a woman in the year of 2010 and after this year. In both variants the mortality would considerably slow down and the medium life span would reach in 2050 the greatest values known today in Europe. Concerning the external migration, in the two variants there has been adopted the possibility that its value will diminish and will be zero beginning with 2010. It’s quite a simple idea: the establish of the economical increase, the rise of the material and spiritual living level will lead to a value zero of the external migration (which means a compensatory effect of emigration and immigration). Here are, in the second table, the hypotheses of the two variants to which we have added for reference, the variant “*Landmark*” of mortality, fertility and external migration (*rates of ages and sexes*) – at the level of 1996.

We mention that the variant “*Equilibrium*” comes to more than 100 years (with the fertility ideal for 2050 – and the mortality in a fair decline also after 2050), to be able to exactly evaluate the characteristics and the parameters of the motionless stage.

Table 2

Scenarios on the evolution of fertility,
mortality and external migration – for the period 1996 – 2020.

Variant (2050)	1996	2000	2005	2010	2015	2020
THE VARIANT “EQUILIBRIUM”						
Total rate of fertility (born by a woman)	1,30	1,50	1,78	2,07	2,07	
2,07 2,07						
Medium life span (years)						
- Male	65,1	66,5	68,2	70,0	71,4	
73,0 76,6						
- Female	72,8	73,5	74,7	76,0	77,4	
79,0 82,4						
The value of external migration (thousands)	-20,0	-15,3	-7,7	0	0	0
0						
THE VARIANT “INCREASE”						
The total rate of fertility (born by a woman)	1,30	1,50	1,90	2,30	2,30	
2,30 2,30						
Medium life span (years)						
- Male	65,1	66,5	68,2	70,0	71,4	
73,0 76,6						
- Female	72,8	73,5	74,7	76,0	77,4	
79,0 79,0						
The value of external migration (thousands)	-20	-15,3	-7,7	0	0	
0 0						
THE VARIANT “LANDMARK”						
The total rate of fertility (born by a woman)	1,30	1,30	1,30	1,30	1,30	
1,30 1,30						
Medium life span (years)						
- Male	65,1	65,1	65,1	65,1	65,1	
65,1 65,1						
- Female	72,8	72,8	72,8	72,8	72,8	
72,8 72,8						
The value of external migration (thousands)(*)	-20	-19,7	-19,4	-18,9	-17,8	-16,3
-10,0						

* **Note:** The decrease of this value is due to lower migration rates if the population number decreases continuously.

The variant “*Landmark*” is built on the hypotheses of the mortality, fertility and external migration having a more referential character. Its message cannot be ignored. The demographic perspectives of Romania would be catastrophic without a reduction of the mortality and an increase of fertility: from 22,6 mil. inhabitants in 1996, the population would reach 22,3 mil. in 2000, 21,3 mil. in 2010 and it would go down to under 20 mil. in 2019.

Bringing to normal the mortality and fertility in Romania cannot happen but in other economical and social conditions. The later such a society will install, the longer and more expensive will be stopping the running down and then recovering the demographic situation.

The variants “Equilibrium” and “Increase” can in no way represent probable evolutions. However, we have no element to allow working out such a foresight. Their value should be studied from another perspective.

The Romania’s demographic situation is one of the present crises the Romanian society is facing. Undoubtedly there is a demographic price of transition, if we consider the demographic legacy from the former regime and the tough changes that took place after 1989. The delay of the reforms prolonged and dwindled the economical and social crises, and diminished the demographic situation. It’s not accidental that mortality decreased in the countries where the reforms started rapidly and the transition has advanced (Czech Republic and Poland). Unlike the economic price of the transition that we see and feel and which the future generation will know from literature and history, the demographic price of the transition will affect the Romania’s population, its number and demographic structures, for the whole of the XXI-st century.

We have mentioned that overcoming the crises and the beginnings of economical recovery and growth should have positive effects on the demography but we could not tell how significant. However, the two variants of possible evolution of the demographic situation after the social and economical crises could be landmarks for the demographic policy.

Assessment of the hypothesis

The “Equilibrium” variant considers a stationary population and the “Increase” variant refers to a population that after surpassing the stage of decrease would start a moderate increasing stage.

In the table 3 there are the most important results of the projections and some comments must be made.

First, the two variants do not represent anything else but normative approaches. We think that this is the most reasonable and the most realistic attitude of a specialist in today’s demographic and socio–economic situation, and that this type of treatment is the one that the government and the political class need.

The idea that all our construction is based on is that of positive relations among the socio–economical recovery, reaching a higher standard of living and the evolution of the demographic phenomena (especially the mortality and fertility).

Table 3

The possible characteristics of the Romania’s population, supposing an increasing evolution, a stationary one and the maintaining of the mortality, fertility and external migration as in 1996.

Variant	Population	<u>RBN</u>	<u>RBM</u>	<u>RCN</u>	RTF	<u>E(0)-years</u>		Pop. 60+
R D	(thousand)	-at 1000	inh. -		at 1 woman	Male	Female	in %-
“ECHILIBRiUM”								
1996	22608	10,2	12,7	-2,5	1,30	65,1	72,8	17,7
47,4								
2000	22396	12,1	12,3	-0,2	1,50	66,5	73,5	18,7
46,4								
2005	22429	13,8	12,0	1,8	1,78	68,2	74,7	18,5
45,3								
2010	22682	14,8	11,8	3,0	2,07	70,0	76,0	19,0
47,7								
2015	22924	12,6	11,3	1,3	2,07	71,4	77,4	20,3
51,8								
2020	23014	11,4	10,9	0,5	2,07	73,0	79,0	21,7
54,4								
(2030	23254	12,7	10,9	1,8	2,07	75,0	81,0	24,1
53,5)								
(2040	23513	12,1	12,1	0	2,07	75,8	81,7	27,9
64,5)								
(2050	23374	12,0	12,8	-0,8	2,07	76,6	82,4	29,8
70,2)								
(Stationary limit								
Stage)	23900	11,9	11,9	0	2,07	81,5	87,2	29,8
72,5)								
“INCREASE”								
1996	22608	10,2	12,7	-2,5	1,30	65,1	72,8	17,7
47,4								
2000	22394	12,1	12,3	-0,2	1,50	66,5	73,5	18,7

Belarus	10,4	9,8	50	47	17,8	22,8	10,3	13,3	-3,3
73,2									
Bulgaria	8,5	7,6	77	69	20,6	24,9	9,6	13,9	-4,3
74,7									
Moldova	4,4	4,8	132	142	13,4	17,9	14,4	10,6	3,8
72,1									
Polonia	38,6	39,9	119	123	15,7	21,9	12,0	11,1	0,9
74,6									
Rep. Ceha	10,3	9,8	130	124	17,3	24,0	9,6	12,3	-2,7
75,9									
România	22,7	21,4	96	90	17,2	22,3	9,8	12,8	-3,8
73,3									
România (b)	22,8	23,0	96	97	17,3	21,7	11,4	10,9	0,5
76,0									
Rusia	148,5	134,8	9	8	16,8	22,9	9,8	14,8	-5,0
70,2									
Slovacia	5,3	5,5	109	112	15,0	20,9	11,0	10,8	0,2
74,9									
Ungaria	10,1	8,9	109	95	19,3	24,3	9,8	14,5	-4,7
72,9									
Ucraina	51,8	47,0	86	78	18,8	23,7	9,8	14,4	-4,6
73,3									

RMN = Gross natality rate; RBM = Gross mortality rate;

RCN = Natural gross rate; E(0) = Average lifespan.

Source: United Nations, 1997a; for Romania (b) - CNS, 1996 (data for 1995) and author's calculations.

Strictly speaking, about demography we cannot tell the advantage of an increasing population. The demographic rate of growing old is only a little higher than that of the stationary population, but the difference is compensated through relations of dependence.

Even if we transfer all the problems in the economical field, it is hard to tell what the advantages of an increasing population will be, and how the arising problems can be countered (the increase of the pressure on natural resources, the destabilization of the ecological balance etc.).

The military and geopolitical reasons generally have their own importance. But their importance can be appreciated only in larger context, regional and European.

In most of the European countries the demographic increase is very close to zero. As to the region our country is located in, the data in table 4 does not require many comments. Only in the Republic of Moldavia and Poland was an increase of the population predicted (although the evolutions of the natality in Poland in the last period and also those of natality and mortality in Moldavia, show that an imminent natural decrease is to take place in these countries as well as in Slovakia). In other countries the decreases are much more important: Hungary – 12%; Bulgaria – about 11%; Russia and Ukraine over 9% (compared with 6% in Romania).

If we cast a glance on the evolution of Romania's population as it is presented in UN projections for 1996, it demonstrates again the complexity of the present demographic situation and the uncertainty of the future developments.

The UN projections have been provided in four variants, the difference among them only being the hypothesis on fertility; for natality and migration there is only one variant. In table 5 are presented both hypothesis and the results of the four variants up to 2050.

In the *superior variant*, the fertility should increase throughout 1995 – 2050, the level of replacing the generations being reached in 2025. The value of total fertility rate in the years 2040–2050, about 2,5 children/woman, would be similar to that of 1950-1960. Concerning the *minimal variant*, the fertility would decrease till 1,35 in 1995 – 2000, compared with 1,40 in 1994 and remain the same in the period 2000 – 2050. We point out that the 1996 level of the total fertility rate is already under the one adopted in this variant (reaching 1,30 children/woman). The *medium variant* of the projections foresees an increase of the fertility, but only after 2005 and at a slower rate than in the superior variant, the value of replacing a generation being reached at the end of the period (only 1,99 children/woman in 2040 – 2050). The hypothesis on the mortality foresees a continually decreasing, the medium life span reaching 78 years in 2040–2050. Finally, the external migration is going to be zero in 2010. In the *constant variant*, the fertility is that of 1994: 1,4 children/woman, in all the reference period of the projections (hypothesis on the mortality and migration being, as we have already mentioned, the same in all the variants).

Romania's population for 1996

Year Migration Period balance—thous.	Inh.- in mil.				RTF				E(0)
	Variant				Variant				Variant
	S	M	I	C	S	M	I	C	S=M=I=C
S=M=I=C									
1995	22,7	22,7	22,7	22,7					
1995-2000					1,5	1,4	1,35	1,40	69,5
-30									
2000	22,6	22,5	22,5	22,6					
2000-2005					1,6	1,4	1,35	1,40	70,5
-20									
2005-2010					1,7	1,47	1,35	1,40	71,5
-10									
2010	22,5	22,0	21,8	22,2					
2010-2015					1,8	1,54	1,35	1,40	72,4
0									
2015-2020					1,9	1,61	1,35	1,40	73,3
0									
2020	22,3	21,4	20,9	21,6					
2020-2025					2,0	1,68	1,35	1,40	74,2
0									
2025-2030					2,1	1,75	1,35	1,40	75,1
0									
2030	22,2	0,7	19,7	20,7					
2030-2040					2,25	1,85	1,35	1,40	76,3(*)
0									
2040	22,2	19,9	18,2	19,5					
2040-2050					2,45	1,99	1,35	1,40	77,8(*)
0									
2050	22,4	19,0	16,4	18,0					

RTF= Total fertility rate; E(0)= life hope at birth (both sex)- years.

S = superior; M = medium; I = inferior; C = constant.

(*) – the average of the values for the two five-years periods of the ten years interval.

Source : United Nations, 1997a

Comparing the ideas from the UN projections with our own, one can conclude they are practically similar concerning the mortality and migration.

In all the variants Romania's population would continue to decrease in the following decades as it began in 1990. Only in the superior variant would the decline be stopped in 2040 and the increase would again return. It is important to notice that this would happen only when fertility reaches an important and continual increase and only 25 years after reaching the replacing level of generations. This fact has a deep significance. The difference between the number of population in the superior and inferior variants are unusually great (6 mil. in 2050) and that could be an expression of the difficulties that have met the authors of the projections in establishing the probable evolutions of the fertility in a demographic and socio – economic context so much particular as for the countries that pass through the transitional stage, or the result of the too theoretical methods used in projecting the fertility.

The complexity of the demographic situation which Romania is passing through and the difficulty of making an accurate estimation are also to be found in our intention to suggest the probable evolution of the urban and rural population in the following two decades. Unlike the difficulties that have already been spoken about, in this case interfere the unexpected changes that took place in the last years in the migrating movement among environments. We are witnessing an increasing movement from cities to countryside, which is unheard of in the demographic history of Romania. *And it takes place during the well-known period of increasing urbanization in Europe.* Even if the causing mechanism can be identified in specific factors of the crises that our country faces, the demographic and socio – economical implications of the process still remain unknown, as well as the period these evolutions could last.

Practically, the urban population has for the last years been stationary: 54,9% in 1995 – 1996, 55% in 1997. If we examine the population in the two environments we will see that the urban population decreased. *If this trend is to maintain we could foresee the decrease of the urban population, in an incredible process of ruralizing; and all this in a country which presents one of the lowest rates of urbanization in Europe.*

Stopping the demographic decline and reestablishing the situation should lead to the resume of urbanizing process. With the present characteristics and demographic trends in Romania, there is no element to allow us to work out a forecast of the population. That's why we shall refer to the UN 1996 projections. Here's the evolution of the Romanian urban population in the period of 1995 – 2020 (%):

1995-55,9	2010-63,0
2000-58,2	2015-65,4
2005-60,6	2020-67,7

The figure should be considered carefully since the demographic evolutions in the last years and especially the changes to the urban and rural population remain unknown to the UN specialists. Anyhow, the projected level of urbanization in 2020 is lower than the Western European one (for the same year – 80%) and even to that of the Eastern Europe – 79%.

There is also the problem of possible changes in the national structure of the population. A projection concerning the nationalities should not be technically speaking difficult, if we knew the particularities of the mortality, fertility and the external migration for every nationality. But we lack all this information. Besides, as far as the gypsies are concerned, the figures from the census of Jan. 1992 (401 thousands) clearly underestimated the real statistics of this minority. Supposing there were a million gypsies in 1992 (according to some specialists) and taking into account their characteristics of differentiated mortality and fertility, the possible structure of the population for some nationalities in the year 2025 in comparison with that in 1992 (with constant fertility and mortality in time) would be (in percentages):

The year Other nationalities	TOTAL	Romanians	Hungarians	Gypsies
1992 –census 1,6	100,0	89,5	7,1	1,8
1992 – with 1 million Gypsies 1,7	100,0	87,0	6,9	4,4
2025 – with 1 million Gypsies in 1992 1,4	100,0	84,9	6,0	7,7

We have some figures resulting from conditional projections, based on approximate elements and we have to be careful with any interpretation. It is sure that there are significant differences concerning the fertility and mortality for every nationality, that will influence the population's structure considering the ethnical affiliation.

Final considerations

The demographic decline that Romania has known after 1989 can not be stopped in the economical – social context. On the contrary, the longer the period of crises, uncertainty and lack of perspectives, the more negative the demographic situation will be. Coming out of the crises, setting up a stable economical increase and raising living standards are essential conditions of a demographic recovery. But they are probably not the only ones. The demographic policy will have to amplify the positive results of the socio-economic strategy to stabilise the population's fertility and mortality. When this stability is achieved a fundamental decision should be taken concerning the long-term evolution: shall we have an increasing or a stationary population?

The demographic element is, above all an element with long-term and very long-term evolutions influenced by today's actions, which, at many times, cannot be avoided. The seven years of the demographic situation's decline and the following ones, when this decline will go on, will decisively influence the Romania's demography in the next century. In other words a long-term vision is vital not only for evaluating the implications but also working out any realistic and demographic policy. The critical situation that our country faces and the priorities of the moment could explain the lack of a demographic policy (which requires large financial resources). However, it does not explain the total "omission" of the demographic factor and especially its prospective dimensions in the governmental programs and strategies and in the political parties doctrines and the parliament's activities.

Romania needs demographic stability. It cannot be achieved now, or in the near future. But we must achieve it when the current social and economical crises is overcome. It's the most important target of this country.

2B. THE STATE OF HEALTH

This chapter is meant to point out some main aspects of health looking up to 2020. The problems are formulated considering the existing socio-economical conditions and the possible alternatives developing in the future.

Generally health is defined as the absence of illness. A more positive definition has been proposed by World Health Organization (WHO). According to WHO, health is "physical, mental and social welfare". The strategies and the evaluations concerning the state of health had to be substantially changed on the basis of this concept.

The major themes that ought to support the policies to improve and promote the health in the European Countries have been issued in a famous document– Health for All of Us – 2000 (WHO 1985):

- ? equality – to cut down as much as possible the existing gaps between the countries, geographical regions and different groups of populations;
- ? offering a positive sense to health – so that the population may use their whole mental and emotional capacity; promoting health and preventing illnesses are the main objectives of this desire;
- ? multiple partnership - to assure the necessary conditions for promoting health; strategies and reducing environmental, economical and social hazards;
- ? the primary medical assistance - is the center of the system of services for health, because it responds to the basic requirement of the population (short distance to living and working places, accessibility and acceptability for all) and can employ the community;
- ? international partnership – considering that the health problems exceed the national boundaries (for instance epidemics, pollution or commerce with products dangerous to health).

Romania, like the other Central and Eastern European countries faces a period of economical, political and social transition. The main features of transition are the changes that have taken place in two important fields: introducing democracy as a political establishment and introduction of the market economy. These changes influenced all the sectors of public activity and gradually had an impact on the social development in the country and on the state of health as well.

Trying to make a realistic evaluation of these changes and of their results, two aspects should be mentioned from the beginning:

- ? in spite of the expectations of both the medical core and the population concerning a clear strategy of reforming the health services, the changes that occurred in this field were slower than in other social and economical fields of activity;
- ? the immediate effects of the transition period on the health services and on the state of health, have been more negative than positive, conditioned by the economical situation in the past and in the present.

The answer to general population health in the current economic-social conditions represents a long-term effect of the complex interaction between internal and external factors. The difficulties connected with the transition period add to the changes in the state of health due to the appalling present living conditions of the years 1980 – 1989.

1. The actual state of health of the population

1.1 General indicators

The principal indicators of the state of health of the population for 1990-1996 present a general decrease in the populations health:

? the life expectation at birth decreased from 69.7 years between 1990-1992 to 69.3 years between 1993-1995. Significant differences are recorded between the women's life expectation and men's and between rural and urban population (a common characteristic for the European regions). Between 1993-1995 the average life expectation for men was 65.7 years and for women 73.3 years; 70.0 years in urban areas and 68.4 in the countryside (for the both sexes). In the European region, between 1980-1994 the data concerning the life expectation at birth show, an increase from 61 years to 65, with differences among the countries of UE, CEE and the countries from the former USSR. In UE the increase was 3.1 years for men (from 70.3 to 73.8 years) and 3.2 years for women (from 77.4 to 80.6 years). In CEE these figures were 0.6 years for men (from 66.7 to 67.3 years), and 1.8 years for women (73.5 to 75.3 years); in the former USSR the life expectation decreased 1.6 years for men (from 62.2 to 60.0 years) and 0.6 years for women (from 72.5 to 71.9 years).

? the general mortality increased from 10.6 in 1990 to 12.6 in 1996. For the first time, after the periods of war, Romania has known a bigger number of decease than the newborn, the natural increase being negative (-0,2‰ in 1992 and -2,4‰ in 1996);

- ~ the infantile mortality reached very high values. Romania has the second highest infant mortality rate in Europe, after Albania ; 26,9‰ of newborn in 1990; and 22.3‰ in 1996. The rates of infantile mortality (1995) are very different in the different regions, the highest being registered in Botosani (31.9‰), Constanta (28.7‰), Giurgiu (29.1‰), Ialomita (29.2‰), Calarasi (28.2‰), Iasi (27.2‰);
- ~ maternal mortality was 0.4‰ for 1000 born alive in 1996;
- ~ fertility rate was 1.4 in 1994;

~ abortion rate was 1972.0/1000 in 1996 and the ratio between the number of abortions and the number of births was 2.7:1 in 1992.

The structures of mortality on age groups reveals the increase of the mortality rate in the age groups 35-64 (a different tendency than in the West European countries) and its decrease for the groups of 0-29 (the same tendency as in the western European countries):

Year	1985	1990	1991	1992	1993	1994	1995	1996
Deceases at ‰	10.9	10.6	10.9	11.6	11.6	11.7	12.0	12.7
from which %:								
Group of age								
0-4 years	6.7	6.2	4.9	5.1	5.2	5.5	5.0	5.3
5-9 years	0.7	0.6	0.6	0.5	0.6	0.7	0.8	0.8
10-14 years	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4
15-19 years	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.7
20-24 years	1.1	1.0	0.9	1.0	1.0	1.0	0.9	1.0
25-29 years	1.3	1.3	1.2	1.3	1.2	1.1	1.2	1.2
30-34 years	1.8	1.8	2.6	2.9	3.1	3.2	3.2	3.3
35-39 years	2.4	2.7	5.8	6.5	6.5	6.8	7.2	7.4
40-44 years	3.8	3.8	3.9	4.4	4.5	4.7	5.0	5.1
45-49 years	6.0	6.0	5.8	6.5	6.5	6.8	7.2	7.4
50-54 years	8.8	8.8	8.9	9.7	10.3	10.3	10.6	10.8
55-59 years	12.8	12.8	12.9	13.6	13.9	14.4	14.8	15.3
60-64 years	19.0	18.7	19.2	19.8	20.2	20.5	20.8	21.4
65-69 years	18.7	28.3	28.8	30.2	29.9	30.0	30.2	31.5
70-74 years	28.1	44.4	44.9	46.4	46.2	46.7	47.4	49.3
75-79 years	47.9	75.1	77.3	82.5	81.2	78.5	74.7	78.1
80-84 years	142.	128.	131.	132.	129.	126.	127.	140.
85 +	6	8	7	5	7	7	4	5
	286.	231.	242.	235.	229.	224.	225.	244.
	7	8	7	4	4	1	9	9
At 100 000 inhabitants								

? main factors for the *general mortality* of the population are: cardiovascular diseases, tumors and respiratory diseases (according to the Health Annuary of Statistics – 1996)

Year	Cardiovascular diseases	Respiratory diseases	Tumors	Accidents
1980	588.0	136.7	135.0	67.1
1996	785.9	86.2	170.3	78.7
At 100 000 inhabitants				

The major problem of health in Europe is that of cardiovascular illnesses: 50% of the total causes of decease, 30% of the causes of incapacity of work; these are also important consumers of the budget for health. The mortality due to cardiovascular illnesses of the Romanian women of 0-64 years was 104.3/100000 in 1992, more than double the European number.

The mortality due to cancer is among the smallest in Europe, but the mortality rate due to uterine cancer is the greatest: 10.68/100000 in comparison with 3.35/100.000.

In West European countries, the third highest cause of mortality are accidents and intoxication, and in Romania the respiratory illnesses also have an important contribution. Tuberculosis is the disease that brings about many deaths; it covers up to 45% of the deaths by transmissible illnesses. Romania shows an increase in the number of cases of tuberculosis, unlike the other countries in Europe, where it is declining .

Year	1970	1980	1985	1990	1995	1996
Incidence	137.7	54.5	50.7	64.6	95.0	98.6

It is possible that this increase is due not only to the socio-economical factors.

Although infections and parasitical illnesses play a minor role in determining the mortality index (the eighth place in the causes-of-death hit parade belongs exclusively to TBC); it is their evolution in this period that should be mentioned. Of all the infectious illnesses, hepatitis is a public health problem, its presence is growing steadily:

Year	1980	1985	1990	1995	1996
Incidence at 1 000 inhabitants	227.3	174.7	322.0	139.4	104.3

The increase of diseases' occurrence is due to alimentary infections and parasitary illnesses, severe diarrhea (349.1^{0/000}), heptospirose, toxinfections etc.. This increase shows the poor state of the economic-social conditions of the population; their appearance is connected with food hygiene and living conditions, water supply and personal or community hygiene.

The main reasons for *infantile mortality* are respiratory illnesses and prenatal causes. This also shows the effect of the living conditions, education and the care for health. In West European countries the general reasons of infantile mortality are asphyxia and immaturity. In East European countries and those of the former USSR, the reasons of the death are due to problems with the respiratorysystem, digestive system and infectious illnesses.

Also, in Romania there were 2907 cases of AIDS declared at the end of 1994. More importantly, the temporary working incapacity shows an increase of 62% between 1990-1995, from 639 to 1020 days/100 employers. Very often the reasons for this are: respiratory illnesses – 16,7%, accidents - 13,8%, digestive diseases - 12.4% and cardiovascular illnesses with 7.2%, in 1996. Working accidents are the result of poor professional training, the lack of technological discipline and inadequate safety in the working place.

In Romania, 44% of the population (10011000 inhabitants) works in certain fields of activity; the third part (2882000 inhabitants) works in industry. About 30% of the employers are exposed to many professional noxious chemicals, and 32.5% of them work in very risky conditions. The above mentioned information have got a significant coefficient of relativity owing to deficiencies of recording and the rapid changes that are taking place in various industrial sectors in our days. The list of the problems connected with professional illnesses is very similar in Europe, regardless of the country, geographic region or stage of development. Some multifunctional diseases (arterial hypertension, iskemical cardiopathy, gastric ulcer, broncho-pneumonia obstructive and chronic etc.) in whose producing or aggravating some professional risk elements can interfere, are answers in time to the impact of the working conditions on the state of health. Although the real situation of this morbidity is yet unknown, it is said that it could be 5-10 times bigger than the one due to professional illnesses and that it represents an important cause of premature death. The economical loss due to the temporary working incapacity and premature death was esteemed in some countries of 10-15% from G.I.P.

The transition period influences (by its length of time and the way that the process of economical, legal and reformation of the health services are developing) the possibilities of evaluating the time a person is spending in the working place and its impact on the workers' health.

1.2 The environment conditions

The environment elements, the quality of the air, of the drinking water, food, lodging, noise levels and the sanitary conditions have a decisive influence on the state of health.

The existent Romanian informational system regarding both environment and health does not allow the establishment of direct connections between the working conditions and the frequency of the diseases. However, the information collected by medical searches lead to the conclusion that there is an increase in mortality due to some illnesses in very polluted areas.

The evaluations of national studies as well as those of the international institutions World Bank, WHO and PHARE, identified areas with a population of 1.5 mil inhabitants (representing 6% of the total of inhabitants) where the surrounding atmosphere and the working places are very much polluted.

The main elements of pollution with an influence on the health in these areas are: heavy metals (Lead, Cadmium, Copper), sulfur and nitrogen oxides, fluorine and organic volatile compounds. The searches done in places polluted with lead, show that children's bodies contain considerable quantities of lead and exhibit increasing arterial pressure. The somatic development of the children in industrial areas with non-ferrous industry registers differences of minus 1 - 1.5 years compared to the national standard. The values of the anemia are 4-10 times bigger than the national medium values.

The PHARE-CESAR study realized in Eastern and Central Europe included four Romanian towns and showed that the values (chronic bronchitis - 15.7%, bronchia asthma - 8.3%, and

pneumonia - 26.6%) are the highest in comparison with the other countries (Czech Republic, Slovakia, Poland, Hungary and Bulgaria). These results point out the importance of the atmospheric pollution on the population's health in the polluted places.

64% of the population are supplied with drinkable water by public systems (90.2% of urban population and 16.7% of the rural population in 1996). Between 1985-1989, the interruption of water distribution affected 35% of the urban population; between 1990-1995 the percentage reached 50%.

The pollution of the water, the difficulties in treating the water and those in distributing led to 72 cases of hydric epidemic between 1985-1995. During these episodes, 10,238 persons got ill (27.8% of dysentery, 50.6% of severe diarrhea and 20.9% with hepatitis A). In the rural places, the sources of drinking water are the individual and public wells. The main risk for the health connected with the water from wells is infantile methemoglobinemia. Between 1984-1995, there were about 2346 cases of children of 0-1 year getting this disease – 80 of them died.

During the last two decades, the population experienced a rapid rate of urbanization, reaching 54.3% in 1992. The rapid urbanization led to the decrease of the urban living conditions by superpopulating, environmental pollution and increasing the automobile-traffic. These elements, along with others of urban risk led to a?: the first was cardiovascular illnesses (especially ischemic cardiopathy and arterial pressure), chronic respiratory illnesses (first of all chronically obstructive bronchopneumopathy), neoplastic and neuropsychic diseases, domestic accidents and traffic incidents.

The main problems of the urban lodging in our country which influence the state of health are: insufficient space (11.6 sq.m/person, that is 11.1 sq.m/person in cities and 11.6 sq.m/person in the countryside, in comparison with 16.7 sq.m/person in Czech, 22.3sq.m/person in Bulgaria, 22.8 sq.m/person in Slovenia, 25 sq.m/person in Hungary and over 30 sq.m/person in West-European countries); the noise; the lack of sanitation in the common spaces; certain conditions which favor the transmitting of illnesses or the changing of behavior - the increase of aggression, stress, the appearance of domestic accidents.

The excessive noise can have a scale of effects starting with discomfort, sleeping problems and symptoms of stress, finally affecting auditive capabilities of the inhabitants. To sum up the effects produced by the noise is difficult, though epidemiological searches that have been conducted in urban areas showed that the diseases' risk factor is three times greater for the persons exposed to higher levels of noise.

Another important element for the state of health is the quality, the nutritive value and the sanitary safety of the food. Between 1990-1996, a number of 422 centers of alimentary toxoinfections have been declared, with 12,162 patients of whom 7169 needed to be hospitalized.

The inadequate management of domestic solid waste affects the salubrity of towns and implicitly the state of health of the population by favoring the spread of the parasitary diseases, transmissible accidents and discomfort. Between 1992 and 1993, important epidemiological centers of trichineloză and leptospiroză appeared.

2. The health services

The period of transition has made it very difficult to implement the health reform. Romania had considerable difficulties in promoting the necessary changes in the medical system and Parliament did not vote in the necessary laws. Other elements that have negatively influenced the state of health in this period were: explosions of prices in the pharmaceutical sector owing to the inadequate management of privatization and price control, the claims wage increases, the fragmentary practicing system of the health social security, the lack of medicines and the discontinuity in producing them, the lack of motivation for the personnel.

2.1 The financing

The health system is financed by the state from the budget and from the fund for health coming from the local budgets.

The expenses for health represented 2,7% from GDP in 1990; 3.3% in 1991; 3.4% in 1992; 2,9% in 1993; 3.3% in 1994; 2.9% (including foreign sources) in 1995 and 3.1% in 1996. The middle value in EU is 7,8%, the EEC 5.9 % and in the independent countries of the former soviet territory 4,1%.

2.2 Human resources

- ? 18,1 doctors for 10000 inhabitants: 1 doctor for 552 inhabitants (1 doctor for 557 inhabitants in the rural areas and 1 doctor for 112 inhabitants in urban areas);
- ? 56.6 sanitary medium trained personnel for 10000 inhabitants (1 for 177 inhabitants; 2,7 for each doctor);
- ? 2,7 stomatologists for 10000 inhabitants (1 stomatologist for 3584 inh.);
- ? 1.1 chemist for 10000 inh. (one chemist for 8789 inh. –in state's public pharmacies).

2.3 Resources (1996)

- ? 413 hospitals, 518 polyclinics, 6058 medical dispensaries, 135 stationers, 13 TBC sanatoriums, 13 preventoriums, 546 crèches, 58 houses for abandoned children, 224 maternity hospitals and 923 state's public pharmacies.
- ? 7,6 hospital beds for 1000 inhabitants (7.7% in 1994).

2.4 The activity

- ? The average hospitalization days in 1996: 10,4 days (11.4 days in 1990 and 10.9 in 1995); the beds usage 284.7 days/bed in 1996 (247 days/bed in 1990) that is 77%; the days spent in a hospital 215.5 in 1995 (225.8 in 1990); 21.5 hospitalized in a hospital for 100 inh. in 1996, 20,1 in 1995.
- ? The number of treatments was 3.3 per inhabitant and there were 4.5 medical advises per inhabitant in 1996 (8.3 in 1990); medical advisers in primary medical services were 2.6/inh. in 1996 (3.4/inh in 1990, which shows that the idea of the family doctor has not been yet fully accepted neither by patients or by doctors.

3. The medical school and research

Medical teaching is now taking place in state universities and private ones; a “National council for accrediting the Universities and medical schools” has been set up and its task is to evaluate the programs and the learning conditions. The university autonomy was obtained through the Law of Learning, which led to a greater responsibility in managing the educational process.

Specializing in different directions is made through the Center for Perfecting of Doctors and Pharmacists). With an international cooperation, The Institute for Health and Managing Services has been set up, beginning to train health’ managers. The political interference in the sanitary administration created misfunctions, including financial loses due to the refusal to use the human resources trained for sanitary management.

The medium trained personnel are learning in state’s high schools and private ones. With international support, The Nursing School has been set up too, so that the medium trained medical personnel is educated to Western standards .

Setting up medical professional associations and The Doctors’ Board is an important step towards the decentralizing of the sanitary system and promoting the professional competence.

Unfortunately, the medical Romanian research with old traditions and international reknown is the reform’s Cinderella. The lack of financial and technical resources, the breaking of the medical research Institutes from the Universities, the changing of the generations without covering the remained hole, the migration of many specialists led to the decline of the Romanian medical research, both applicative and basic.

4. The state of health up to 2020

To describe the state of health’ evolution looking to the years 2020, two functions have been taken into consideration: “external surroundings“, a source of multiple opportunities but also notable difficulties for the health system and for the process to develop and put into practice the reform and “internal conditions” characterized by the strong and the weak points of the health system.

The predictions for the following decades are only some results of certain experience and knowledge, completed with suppositions referring to the actual tendencies and the possible future change of the present situation; these predictions are not hypothetical extension of the actual trends.

“The external conditions” is the economical development, political, stability and the consolidation of the democracy, the main elements that directly influence the state of health and the health system. The significant increase of the GIP determines a real increase of expenses for health, expressed by the expenses for the health for an inhabitant.

Implementing the health ensurance system can be successful only in a healthy economical situation, which allows the functioning of the system, offering stability when economical fluctuations happen.

An analysis of the influence of the increasing rate of the GIP, over the expenses for health shows that generally there are not substantial differences between the sums spent by the government with smaller national income and those with medium incomes and that the percentage begins to increase *only* when the GIP/inh. is reaching a certain value. This was demonstrated by the developed countries who’s GIP is 7000-8000 \$/capita (Health Care reform in CCEE/NIS, WHO, Copenhagen, 1994.

In 1990, the expenses for health care in Romania were \$ 63/capita instead of \$ 71/capita according to the national life level (NLL); the same indicators were \$83/capita instead of \$72/capita and in Hungary were \$185/capita instead of \$148/capita (World Development Report 1993).

To succeed, the Health Care Reform needs, besides large sums of money, political stability. To achieve the major reform of health services strong governments are needed (Bismarck in Germany, *American Medicaid* programme during the Kennedy Presidency). The determined governments are needed so that the influence of the competitive proposals and of the strong groups of influence may be reduced.

The quality and the conditions offered by the health services bring their contribution of 20% to the state of health of the population but the rest is the contribution of socio-economical conditions.

The progressive democratization will lead to an increase of the requirement of better health services, more equally distributed, to a greater public participating in taking the decisions as regards the priorities and the means of getting medical care. This participation will require objective information and transparency.

The system of health care can be considered a social, economical and political mechanism, whose principal functions are offering health services to the benefit of the people.

The changes cannot take place suddenly and spectacularly even in the conditions of a developed market's economy. The rapid professional perfecting in the health services represents a vital investment so that the health services become efficient. Perfecting the abilities and the promoting capacities of the reform is the key element for that. It is essential that the training programs must be guided to satisfying man's needs and the community requirements and not according to the professional interests. Also, specializing the medical staff is a means of improving the health. International financial aid is of most importance. There are at least three critical points that can be identified when discussing the financing of the health services: first is the capital of the financial resources that can be used for health, second is the public access to the health services and the third is introducing extra payments in financing. Controlling the costs is the first necessity to have health services able to assure health care for all the population.

The introduction of competition to the health security and insurance companies is profitable for the health services. Though, there are opinions that warn against extra-payments. Their role is not only that of obtaining extra-advantage for health but is meant to reduce the excessive demand. However, extra-payments can raise an obstacle for the people with small incomes who need medical care but can not afford to get it.

Most health reforms aim at the structural, technical, financial and cost – efficiency aspects, to the public private system, market competition, systems of payment, managing development, neglecting how much the health wins.

There are important reasons to study the impact of the health reform on the state of the populations health. The populations health is usually the main objective of the reform; all the other aspects must be looked upon as elements that could affect the population's state of health. (For instance: increasing efficiency leads to striking out extravagance and produces more available resources for the patients). Restructuring the health services may influence the population's health in the intended direction or may have even negative influence.

If these arguments are accepted, then the last test of appreciation of a reforming program resides in the extra health care that the medical services have generated.

In the conditions of economical development and sustained health care reform, the structural changes and the adequate use of the resources would improve the efficiency of the health services.

Increasing the life expectation is an important indicator of social progress in a country. The decrease of the mortality rate of children aged 0-4 and the mortality due to the main causes of death, should be the main objectives and consequently lead to increasing life expectancy.

In a period of economical and social development, even without spectacular raisings of the income per capita, a decrease of the infantile mortality rate would be possible by focusing every effort in the direction of educating the parents concerning the house's hygiene, food, water and the medical care in pre and post natal periods. The positive results of the parents' education as concerns the child's chances of surviving are well known, the risk of mortality at the age 0-5 decreases by 2-5% for every maternal education year. The education offers to women better possibilities to express themselves and effectively communicate with their children and medical staff. Moreover it seems that the educated women receive a better treatment from the medical staff. Also the family's education (not only of the women) has positive effects on the domestic habits and on the children's growing up.

The educational and cultural level of the parents is a very important social element as concerns the decrease of the infantile mortality. The education for health should be started in secondary school because it includes the majority of the school population (92% for 11-14 years and 60% for 15-18 years) and it also is the top period for the individual reception of information.

The migration of the population to the rural places during the transition period may negatively contribute to the decrease of the number of deaths at the age 0-1 years, due to the living conditions, drinking water supply, diet and the lack of medical care.

An element favorably contributing to the reduction of infantile mortality is represented by the medical services, the population's access to these, the development of the possibilities of diagnosis at the level of primary care, the family planning sections.

The illnesses of the circulatory system, including the cardiovascular and cerebra vascular diseases, are the main causes of death in the developed countries. Heart illnesses are associated with some factors like smoking, stress, diet, high blood pressure and cholesterol. The mortality structure due to cardiovascular diseases depending on the age and sex in the European Region (WHO 1995) shows that the mortality rate decreased in the last decade in the Western European countries both for men and women older than 15 years, increasing by contrast for the population older than 65 years. In the Central and East European countries the mortality due to cardiovascular illnesses for persons of age between 15 and 65 increased continuously, contributing with a major part to the total mortality-rate due to this illness. In the near future there will be no favorable

conditions to reduce this indicator. In the period of transition success means: reorganization, competition, the labor forces movement, acquiring new skills and accepting new values – all these requires a tremendous effort. The searches that have been achieved in the last 30 years about the possible reasons of cardiovascular and cerebra vascular diseases have suggested the methods by which they may be prevented . The preventing strategies should be influencing the lifestyle and environment of the population and identifying the groups that need special care. This means guiding health care to preventive medicine, especially first aid. The preventive measures can reduce the cases of these illnesses, but it is necessary that they be completed with programs to prevent the premature death owing to stress and to cure the persons already ill.

In the conditions of an economical development, when some sanogene goods could invade the market, the qualitative competition of the goods, the commercial advertisement etc. will improve the profile of the cardiovascular diseases, but most probably no earlier than 20 years.

WHO envisions that in the following years, the developing countries will be confronted with two thirds of the new cases of cancer, both as an effect of the access to the medical technologies which can detect them and because of the impact of the polluted atmosphere in the respective countries. The technical means of investigation will point out the increasing number of cancer, but also creates the premises of a preventive control able to locate the tumors. Reducing the number of people smoking, diminishing the professional exposure, the limited use of X-rays and some medicine and reducing personal exposure to sunlight are key points in the programs designed to prevent cancer. It is very important that the technologies for diagnosis and treatment become rapidly accessible to the health services and a greater number of patients, because the optimal technical level of diagnosis and treatment can be reached only in the following decade by the developing countries.

The reduction or even total eradication of the infections and parasitary illnesses is expected to take place when the development is quicker. The society 's ability to take care of the population, to offer a program of immunization and good living conditions, like central heating, water, food and salubrity creates the chances of reaching this desire. The success in reducing the number of cases of death by infectious diseases depends on the capacity of the health services and medical research to answer quickly to illnesses and moreover, to anticipate and prevent their appearing.

When infectious illnesses crop up six reasons are to be identified: changes in the environment, changes in the natural habitat balance, demographic and behavior changes, international circulation (travelling and commerce), the complications due to modern medicine, the adjustment and changing of the microbial metabolism and the flaws of the public health services.

The urban development and crowding, incoming of new emigrants and the movement of the population from one place to another can encourage infections of the population. Other enterprises such as building roadsand houses and irrigating projects may also (owing to changing places by the population) bring new sources of infection. The changes of the local climate can increase the number of varieties of insects and other vectors of disease. The crowding, changes to dimension, density and urban distribution of population can contribute to the transmission of infectious illnesses. All these elements are present in the social and economical period of transition; but supplying with safe drinking water, a rapid disposal of the waste and the sanitation of the food can diminish the effects generated by the economical and social changes.

The professional illnesses are dependent on the working conditions, the number of persons exposed to the potentially harmful conditions, the legislative system and the laws that assure the elimination of these risks and prevent diseases.

Although modernizing the medicine and the hospital is an important element of diminishing diseases and suffering, it can increase the possibility of new illnesses appearing. A hospital, by its nature, contains a crowd of ill people. About 5% of the patients brought to "emergency" acquire an infection during their period of hospitalization. The existence of resistant viruses is the result of nozocomial infection. Many of the invasive procedures practiced in the hospitals give the opportunity of developing the nozocomial infections. The controlling programs designed to prevent the spread of infections in children at schools and medical units are difficult to implement even in better material conditions, without management and corresponding education of the population. .

The accidents and the traumas, especially with reference to children, adolescents and old-people are an important reason for death in the developed countries, and the social and economical conditions produce significant differences between the values of the rates and the causes that generate them. Traffic accidents produce 40% of the accidental deaths; for every death there are 15 cases of severe traumatism and 30 of slight traumatism. Accidents are the main reason for hospitalizing and permanent physical handicap and that implies large costs for treatment, rehabilitation, social and medical care, special treatments. Also domestic accidents, accidental intoxication and fires produce a great number of accidental deaths, about 45% of all. To prevent them, multidisciplinary strategies and programmes should be put into practice that lead to the reduction of the hazards , especially in the houses, at the working places, on highways and in designing consuming goods with a higher rate of safety. To increase the automobile trade it is necessary to achieve the internationally accepted changes, which will offer security and protection for the travelers. Efficient traffic control, education of the drivers, better roads, improved house appliances and the consumer's education for correct use, introduction of fire codes in the buildings, protecting equipment and other forms of controlling the working places are only some of the means

of preventing or reducing the accidents. The laws and the economical means of the future must stimulate the production and selling of reliable foods to the consumer. Their quality should always be tested for their risk to health and safety and their results must be announced to the consumers.

The public health services should bring to the attention of the politicians, administration, consumers and specialists the risks of using some products and goods. Epidemiological systems of control, programmes for emergency situations, technically and financially supported must be developed and practiced. Great importance must be given to the informational system for accidents to identify the place, causes, the people in danger and for establishing the measures to be taken. Connecting to the international system of toxicological information is a means of preventing the uncontrolled circulation of toxic products and the illnesses associated with them.

Changing the social and cultural conditions that accompany the economical modifications affect groups of population with raised vulnerability: adolescent and old people. The suicide rate and attempts of suicide tend to increase in the majority of the European countries, especially young men and women. The greater percentage of suicides refers to old people and men. The suicides are connected mostly with mental illnesses, depressive diseases that could have been treated and drinking problems. The attempts of suicide have got a high percentage (2/3 of the cases) under the age of 30, and are connected with a similar family history, disorganized family, failure at school, unemployment, drugs and alcohol, depressive states. Although the majority of the suicide attempts are not expected to be lethal, 10-20% are repetitions.

These things point out some significant aspects: preventative measures should be taken and changing the social element that stresses the person (unemployment, failure at school, isolation) must be accompanied by the measures to strengthen the individual capacity to face real life. In this respect, programmes and special funds should be worked out and ensured by inter sectorial connections, mainly locally and with the community's help. The medical staff and the community should be implied in counting and treating this risk, as the suicide rate and the attempts to commit suicide represents important agents for the health of the community.

Finding good living and work conditions must be an obligation of the economical and social development, in order to take important steps in promoting the state of health.

The preventive medical assistance implies a great deal of problems that should be solved by government and politicians: organizing the territory, house, industrial development, agriculture, transport, producing energy and the protection of the environment. This means an adequate legislation for all the fields, and also that the civil society must be more and more conscious of the potential risks and the means of protecting against them, a greater attention to health when a new economical and social development is planned, a permanent and coherent dialogue with the population about the solutions and alternatives concerning the development.

2C. LEARNING - EDUCATION

1. Introduction

It is well known the idea that the education in the Western part of the world we are going to refer to in this chapter has got to face a world in a continual and rapid change. About a quarter of a century ago, a paper about education began with the following words:

"We need a profound reshaping of education if mankind is to survive in a sort of world in fast evolving."

Education was going to be guided to a changing world to which man had to adapt: maybe the same thing primitive man did at the beginning of the civilization – he adapted to the nature. We very easily forget that man created the world he is living in, first adapting the nature to his necessities and only then adapting himself to the nature. It seems strange that man must adapt to a world that is rapidly changing according to some criteria which man can do nothing but obey.

Perhaps man should be taught to build a new world in which he is going to live very close to his nature. It is not about returning to mother nature, but becoming intimate to man's nature.

We should not speak so much about adapting to a rapid evolution of the world. First we must encourage an opposition to the wrong evolution of the world. But because the world is developing rapidly, a strategy of two steps must be thought of:

- on the short term : adapting to the rapid evolution of today
- on the medium term: the opposition to an evolution without goals from man's perspective.

Otherwise, instead of building an improved new world, we shall fall into the tendency of desiring a new man. We can evolve for a new world rapidly or slowly, but the important thing is that it should be a man's world (ask James Brown).

We think that such an approach offers an alternative perspective to the ones promoted by many present theories that deal with education today. Why must these theories be reoriented for a certain community? Three types of motivations can be emphasized.

- In the respective community a major social transition took place.
- Outside the community there are educational systems that work alright.
- Globally there are transitions that throw out of balance the educational systems and solutions must be found to fight this process.

So, education will be placed somewhere between man's aspirations and the forms in which these became true, more or less, in the world we live in. Consequently this chapter will start with a section dedicated to the world and its tendencies, followed by another one dedicated to man and his nature. The education's elements corresponding to man's nature will be dealt with in another section. The relation between synchronically and diachronically putting into practice human education will be dealt with in the fifth section, while the sixth is dedicated to the much disputed influence that the world's has on the educational activity. All these problems will be discussed from the perspective of what education should become in Romania and not only in the following decades. (We have avoided the tendency of static analyses, because the main problems that will exist in the next decades are not connected to the quantitative aspects. Apparently the world is pressed by some phenomena that act quantitatively. In reality, only a partial understanding of the things and the incapacity to imagine efficient solutions can place us behind some quantitative evaluations and the solutions coming out from them).

2. The world

The tension between to live and to exist is achieved at man's level. At the beginning it was mediated by nature. In time, this part was taken over almost entirely by man's world (shortly: *the world*). The process of substituting the nature with the world can be characterized by a term introduced by A. Leroi Gourhan: *exteriorization*. We shall extend this term so that we can characterize the world as a result of many types of exteriorizations that created the following:

- ? the technosphere - the amount of all objects in which man accomplishes some functions that he cannot achieve at his level: *the buildings* that solve for him the problem of housing; *the tools* which allow him to surpasses his limits to act over nature; *the arms*, also a sort of tools; *the systems of communication* by means of which he passes to organize a more and more structural society; *the cybernetics* by means of which he tries to deal with the complicated world achieved by different exteriorizations;
- ? the ethnosphere – is a world of symbols; at the beginning it was meant to house the ethnical experiences (by writings or similar techniques) and now, supported by the means offered by cybernetics it tries to supervise a world that is more and more dependent on the significance or at least the syntax of some symbolic structures;
- ? the calosphere – the harmony of the natural surroundings finds its correspondent in the harmony that man tries to offer to the artificial medium of his world by means of the objects and the art that give value to the meanings or at least the significance of some symbolical structures;
- ? the politosphere – man is manifesting his limited capacity to control the human relations' complexity by delegating some representatives to act in his place through the political society or the civil one;
- ? the teosphere – represents a space that has also been obtained by a delegation, whose aim is to facilitate the access to the sacred, to the deep meanings of the existence by an institutional framework.

The world is the result of man acting to get rid of his limitations. Actually, the functions that man expressed by establishing the world are characterized by limitations man stepped aside from. The result was a world of people under *the blame of the limit*.

The man seems to be more absorbed by the world of the exteriorization that tends to confuse with, thus generating a growing tension between its nature and the way of being of the world. Has man forgotten his limitations? Apparently yes, practically no. The clearest sign of the limitations' consciousness is represented by the demential pendulations between an implacable rationalization and the discouraging irrational. The helplessness of the two tendencies is the base of an absurd confrontation between rational emphasized limits and the illusion of some limitations mystically pointed out. In a wrong relation between man and the world, his nature and existence are guilty of the crises as well rational and spiritual. Only learning and education offer a chance to settle down this crisis. But we must start from what is man in relation with *himself, people, world, nature and the existence*.

3. Man

Man is characterized by "the sum "of the limitations that cannot manifest because they come true only in him, due to his capacity of "accessing" the unlimited possibilities of the existence. Man is the end of an evolution that allows a limited portion of the existence, the human being, to be coupled to the whole complexity of existence. It's a being for whom the syntagm "Complex" is reductive as well as the attribute "Miraculous". As limitative is the fantastical vision on what man can be. Maybe all these notions together begin to tell something about man's nature.

A minimizing reflex, difficult to explain, makes man build his own image by simplifying cuttings. For the exterior world, man successfully used for many times different reductionisms. They are not available for himself. *Homo sapiens* it's as simplified as *homo religious* or *homo faber* (sometimes substituted by *homo demens*). We'd rather endeavor to find a pattern adequate to the present concern of man about himself.

We don't pretend to offer a final image, but one that places man between the rational behaviours and the spiritual behaviours. If the modern man spectacularly promoted his rationality and the post modern one tries to surpass the limitations of the rationalism by excesses that are connected with his spiritual nature, the post-modern man may recover in this world which is rapidly changing by exercising a tripartite image about himself. This thing would suppose:

- ? rationality of the attitudes man practices in the community by means that allow reproducibility and univocal dissemination;
- ? imaginative which allows building and understanding by fantasy and intuition of a space between strictness of things rational established and the responsibility imposed by the access to the plenitude of the existence;
- ? spirituality – an attitude that derives from the feeling that man is not coupled to the existence as a whole.

So man has an equal representation about him. He is rational, cultural and deeply spiritual. In the history of the western world the three hypostasis of man (that of being rational, cultural and spiritual) have manifested diachronically:

“Man is present in the world through his own three components that assure stability with regard to oneself, to existence or to the world; i.e., SPIRITUALITY, IMAGINARY, and REASON (let's call it the HUMAN FUNDAMENTAL TRIPLET: S.I.R.). KNOWLEDGE, ACTION and LIVING (the action of being alive) are coordinated by the previous three components, each having different weights in different moments of the individual or the historical evolution:

- ? *in the pre-Christian age, S.I.R. appeared acting indistinctly as a whole;*
- ? *in the two Christian milleniums the three components manifested themselves DIACHRONICALLY, in turn by the Orthodox spirituality, by the Catholic cultures and by the Protestant rationalism;*
- ? *we believe that the way humankind perceives the world will manifest itself synchronically in the next millenium”*

Who can deny that the ancient Greeks' rationality was not guided by the imaginary dissimulated by the Socratic maieutics supported by its own daimonion. The spectaculosity of the Greek rationality was also backed by its roots in the real existence, sometimes beyond the rational. Even if the truth exists in a rational form its “birth” requires a judgement led with much imagination offered by a spiritual base that is justified by the trust [F. FUKUYAMA] substantiated by the collective subconscious. [G. JUNG].

The Romanian Andrei Cornea sees the same problem in a recent book;

“It is worth recognizing that the break had started, in fact, exactly with Plato, Socrates or Aristotle [Heidegger's onto-theo-loggia] that is at the same time with the decisive strikes that they applied to mythical consciousness, placing the ratiom on the throne of supreme reference of the appreciation of the existence. But the idea that between the world of facts, that of the values and that of faiths there is a distance difficult to cover belongs entirely to the modern science and philosophy. KANT did not build a «system» but he wrote three «CRITICS» showing out the limits hard to be covered between the rational world, the one of the moral law and that of the esthetical appreciation. Anyhow, from Greeks up to now we continuously «retreated» from the archaical paradise of the community with the Universe and Divinity, we separated, divided, distributed according to the fields, activities, instrumental typologies. How much time could we afford this retreat, this ontological defensive?”

The two Christian milleniums began with a first millenium that annihilates the Greek judgement and the roman civilization in the name of *faith* as a clear spiritual form of setting up man. It follows half a millenium of *suggestion* by which the rational is culturally urged to bring man nearer and nearer the truth. Desperately, the protestant reform tries to bring man next to the truth explaining it *rationally*. In turn (in the western world) *faith*, *suggestion* and the *explanation*, in a perfect diachronicity try to bring man next to the truth, offering him at the same time a chopped model of action and dream.

The result is a western world delicately divided:

- ~ in a space of *traditional* values (based on faith) and depending of *elite* (the very feeble “orthodox democracies”);
- ~ in a space of the show and hierarchies in which man can isolate to get free for the *cultural* play stimulated by the imaginary and allowed by a hierarchical structured community (the authoritarian catholic democracies);
- ~ in a space of the *rational* settled civilization in which man has the only liberty to act in a system of maximum efficiency, that tends get globalized, offering at most of the possibilities to the individual accomplishment between the limits of the world (the real protestant democracies).

This Western World wishes, more or less consciously, to attain the most performant model, the one of the protestant democracies rationally instituted; it is also marked by a tendency of denying the most efficient model (based on the exclusivity of the rational attitude) by tending to a model ensuring man's plenitude (including the spiritual side).

A resynchronizing of the equal exercising of the three elements would mean re-establishing an equilibrium troubled by an unhappy evolution that led to:

- ? limits given by the complexity of the rational instituted processes;
- ? conflicts generated by tribalization of the cultural differences;

? laicization of Homo religiosus by rational conversion of the sacred in cultural values.

After a millenium of spirituality (orthodox), half a millenium of imaginary (catholic) and some centuries of rationality (protestant) when the human model was completely but diachronically exercised, we hope that the following millenium will resynchronize to man's benefit, his proper behavior. So, at the end of two milleniums of unidimensional evolution, in a space that all the time remained tridimensional we reached the point where in process of the education (learning) is mostly exercised the rational element, by tolerating the spirituality and oppressing the imaginary.

4. The elements of learning

Learning is thought of, perhaps too superficially, as a process through which man learns about living, adjusting his inner limits to the world's limits. Actually, we think that at the level of man's existence, the world's globallity should harmonize with the existence totality *by learning*.

Man and the world (his creation) must accommodate, through learning, the very spirit of the existence. So, the learning process will have to be based on the three components (rational, imaginary and spiritual) of the representation that we have about man. In ancient times, every component is associated with a form of learning. So :

? *the instruction* promotes the *rational* abilities;

? *training* develops habits of the *imaginary*

? *education* is aimed at *spiritual* achievements.

In the last centuries, learning was too much practiced in the form of instruction, the other components being more or less neglected. There are also tendencies that try today to offer alternative patterns in which every one of the other components is wrongly stressed upon. The idea we intend to put forward is the one of equally cultivating the three elements, for the use of all the people. Today's scholars discuss only education and instruction, promoting models oscillating between rational and spiritual, with no possibility to find a point of equilibrium. We think that the introduction of a third guide-mark will offer a context base this stability on. This mark is given by training people to promote their visions or intuitions wherever the rational or spiritual searches stop.

4.1 The instruction

The instruction is the rational element of learning, the multitude of knowledge that can be transmitted by means of "useful and clear rules". This knowledge does not depend on the traditions, cultural diversity or the way they'll be used. It is the knowledge that can be taught everywhere with good reason. By instruction one can learn about mathematics, physics, geography, history, foreign languages, music, technical drawing, sports.

But instruction can not guarantee a use of the knowledge for man's benefit, for community or for nature. A zombie can also be instructed. A computer is instructed its thinking derived from its power to store knowledge and rules.

The worst thing is, sometimes the instruction tries to substitute the other forms of learning. How could it be named anything but "a wrong way of learning" that certain practice in the Romanian school to ask the pupils to learn essays about literary masterpieces, essays that were published in special books instead of being composed by the pupils. Another example could be learning by heart certain texts and attitudes, by which the Romanian school pretends to achieve religious education. In these two examples, neither the literary imagination or the access to sacred are facilitated because the techniques that are used are mainly instructional and not training or educational.

The supremacy of the instruction against training and education has resulted from a long process of degenerating when the teachers' mediocrity and the authority of the institutions have won.

Instruction is often used as learning mechanism because:

? it is the easiest to practice by the teacher ;

? it is easy to verify that the pupils are learning;

? it is the easiest to evaluate by the person who checks the learning activity.

Unfortunately, mediocrity and authoritarianism act in families and communities. A pupil who is reading fluently, correctly calculates and recites without a mistake is celebrated more than the one who thinks well or has the ability of social relations, because such qualities are useful later in life when they become difficult to acquire.

Goethe was thinking of an education where the teachers had to teach children first to think and then reading and counting. These things do not diminish the instruction's dignity when starting points of the global world are just the knowledge obtained by means of instruction. But the quality of this global society will depend on the other two forms of learning.

4.2 Training

Training is part of imagination. Why is training useful in the learning process? Because too many times "the solution" is reached only by the effect of one of the two elements of the imaginary:

- *intuition* which helps us understand beyond any possible explanation;

- *fantasy* which helps us build beyond mathematical facts

The capacity of the imaginary does not increase significantly by instruction or education. Training by practicing some actions implying intuition or fantasy is the only way to develop the

imaginary during the learning process. This means the imaginative practicing with the help of a trainer instead of an instructor. Solving 100 math. problems could be replaced by only a well-chosen few for a certain pupil by a real trainer. The pupil should get the ability of finding his own way (starting with a well-assimilated instruction) when he is going to solve a new problem or a special situation.

Many times, the imaginary offers a rapid and spectacular way, whereas instruction presumes a very slow way. Self –confidence and the imaginative experience that has been obtained on this occasion represents something that sometimes exceeds the level of the instruction and of the training, touching the level of education.

The imaginary cannot act as a whole, ?Imagining a solution we are obliged to confirm it by formal means, which we have got by instruction. The free manner that we sometimes release the fantasy is supported by the relaxation offered by the knowledge we have been instructed with. Thinking censors and confirms the imaginary at the same time. The confirmation of a rational product from the perspective of some knowledge that have been obtained and supported by theories may at any time be discussed starting from information more or less complete about the world, nature or existence. But there will be facts, objects and attitudes for which the rational confirmation is not sufficient. Any rational substantiation starts from an initial limitation that allowed working out of a theoretical coherent *corpus*. The learning process should also offer to man the possibilities of thinking beyond intuitions and rules.

4.3 Education.

Education is the spiritual element of learning.

The capacity of choosing a point where the faculty of reasoning or/and imaginary does not offer sufficient support will be given by this third element of learning. Education helps to acquire ideas connected with the plenitude of existence and man's special status (these ideas are to be found in the world's coherence and individual liberty). Globalizing a civilized world to guarantee the individual liberty is relying on the collective unconscious mind which may be as a unique "Interpreter" of the individual experiences in the world. The tension between the world's unity and the individual thinking is tolerable in a civilized global world by the people that recognize similar values.

Education has got the guiding role in the individuation process [C.G.JUNG] by which the world's experience is interpreted and assimilated by everybody. If choosing is a superior result of the education, this must avoid the following things:

- preeminence of the "tribal" values;
- absolutization of the rational criteria;
- uncensored access of the imaginary.

So, we may hope to get an equilibrium in which the "tribes" can offer culture that is used by the civilized community in spiritual unitary world.

Education is striving to make man more conscious of his belonging to the plenitude of existence. Neither mind nor the imaginary can give consistence to the idea that man is "connected" with the totality of existence. Education enables man to think using significations. If the instruction works with significations and the imaginary builds or shows structures of whose signification or sense gain importance only when they are accepted, education is the one that gives the ability (unrational but not irrational) to work with deeper meanings.

Because the sometimes truth surpasses the tangible domain, learning should develop man's capacity to accept it by other means besides the rational. The imaginary can lead us to the truth, but if the instruction does not allow us to accept it, then the education has to help us accept the suggestion of the imaginary.

Sometimes, the education is wrongly replaced by training. The thought of the plenitude of the existence will not be obtained by perseverance of a training. "Significant exercises" cannot substitute the experience of a well-conducted educational process. Major difficulties come up in evaluating the educative activity too. What can not be univoque evaluated is very often avoided. That is why mediocrity and authoritarianism avoided make education their purpose.

A last danger: it is very easy to think that the new man can be created by means of education. For this reason the educative process is the most difficult.

5. From diachronic to synchronic when learning.

Any critical analysis starts by pointing out a crisis. In Romania, the evolution of the processes and mentalities underlines a discussion about the exclusive rationalist or spiritual measure (because of totally ignoring the imaginary). Why shouldn't we consider that an equal interaction among rational, imaginary and spiritual would be responsible for a new face of the world in which man will be well placed, used and served? Man should equally develop the three elements and he will have the choosing practice, the ability and the knowledge to design and build his own world.

What should he do practically? He has got to defeat some problems that came out from a wrong evolution and has to build new mechanisms. In short:

- he has to face some problems connected with a world and a learning process that became more complex, getting and sending for less new meanings at the same time;

- his main purpose in the short period is the harmonization of the three elements: reason, imaginary and spiritual mainly with the help of the school;
- in the long term he has to achieve the unity between the individual, the people and the world, the nature and the existence.

Romania can achieve that by:

1. Redesigning the learning plans and programs.
2. Changing the mechanisms to finance the education regardless of its level.
3. Increasing the part of the local communities in policy making regarding education.

What should be the state's institutions' part referring to learning?

1. Projecting the purpose of learning
2. Creating an institutional and legislative system.
3. Evaluating and correcting the policy of education.

The problems connected with the complexity, synchronizing and unity will in turn be discussed, taking into consideration the ways to be followed and the part of the state's institutions concerning the evolution of education.

5.1 Complexity

The world has turned into a complex one. As a rule, the education assumed this complexity exaggerating those aspects connected with the instruction. From such a school will come out only persons that will more or less consciously give a hand to increasing the world's complexity.

But why shouldn't the world be complex? Because man wants a certain relation between complexity and meanings. When the world becomes too complex the access to the deep meanings is blocked.

Rationality tried to impose on us simple patterns and mechanisms which we can understand and build. After some hundreds of years the effect proved to be opposite of the initial intentions. The world tends to complexity. The simplicity from the beginning of rational activity deteriorates in process of an unaccepted complexity strangely. Strangely enough the world became complex because we wanted to explain and build in it starting from simple representation and models.

Coming out of the complexity can only begin by a deep rethinking of learning, starting with the plans and the programs. The main alterations that are to be done for all the levels of the education are the following:

- ? the decrease of the importance that instruction has in the learning activity, mainly by reducing the amount of knowledge that is taught;
- ? increasing the education' and training' importance, by inter disciplinarily courses and by the pupil's training to solve effective problems or cases starting from the idea of maximal results by strictly necessary knowledge;
- ? increasing the importance of individual studying by an increased use of the library, laboratory, network of computers with the main effect "to find" answers to different problems by oneself or with a working group;
- ? to guide learning towards the individuals characteristics by optional courses, especially by a direct achievement of the relation between the pupil and the teacher with results in the education field;
- ? practicing different skills and to postpone as much as it is possible specialization. The effects will be social and intellectual mobility, achieving imaginary and spiritual openness;
- ? to teach the pupils to cooperate with other pupils and get them used to socializing and working in groups;
- ? to change the way of evaluating pupil's activity giving away the exclusive quantitative appreciations.

Learning will become more natural and easier prior to putting into practice these notions.

A second field in which the simplification is important is the mechanisms of financing the educational process at all its levels. The two main tendencies should be the *decentralization* and *diversification* of the mechanisms by which the learning institutions are financed. The present situation when the financing is exclusively made by the state in a centralized manner – quantitatively and uniform- has failed. In no other region of the world, does state financing offer all the necessary funds for the learning system.

This kind of financing should offer only a part of the funds and have the following characteristics:

- ? the respective percentage must reflect the interests of the learning policy that the state promotes (the state must finance all minimal functioning of compulsory learning);
- ? by financial mechanisms, certain fields can be stimulated as a consequence of the general state's policy in different periods of time (promoting the informational society requires greater funds to train specialists in the respective field);
- ? direct financing of a "beneficiary":
 - a) state scholarships awarded directly to the students or pupils;
 - b) fiscal facilities for commercial agents that finance or are the sponsors of different forms of learning.

Besides the budgetary sources, others ought to be activated by means of some stimulating laws. For instance: using the local budgets; the loans for scholarships, which will be returned at the end of the school;

- ? altering the law of sponsorship so that the interest of the beneficiaries of man power increase as concerns the quality and the orientation of learning; resources that may be collected from communities by means of local organizations set up to support learning; stimulating the great factories to organize and finance own forms of learning ,especially the vocational ones.

The following levels of financial responsibility ought to be taken into account when given financial independence: faculties in Universities, managers of researching projects in Universities while the project is developing, departments that put into practice a developing program for new directions and new educational facilities.

All these actions are meant to simplify the mechanisms and to ensure a better use of the financial possibilities that the community has got. They are related to the third way: increasing *the local community's role*.

First of all, learning is the best field that offers a good possibility of putting into practice democracy. Decentralizing learning could find a strong support in the local communities. Different forms of learning would find a better territorial distribution according to the local necessities. Selecting the inspectors and the managers (doh) could be better achieved. Last but not least, the quality of the learning process could win after the civil society's boards fulfill a control.

It would be ideal if every institute of learning or department of a bigger institution would be linked to a structure of civil society able to promote their interests.

Many and complex forms of learning, financement or control thought of being at the base of the learning system lead to simplification, democracy and increase the quality of the process as a whole.

But the success of a reform when concerned with learning cannot be quarantined only by what is going at the respective level. The learning reform is only one of the reform's elements that should take place in the whole society. And a deep reform implies global modification. So, no one should be surprised of an eventual international element of the Romanian learning's reform.

5.2. Synchronization a short term goal

An immediate target of a possible reform must be the restoration of the effective unity between rational, imaginary and the spiritual at man's level, by equilibrating the relation between instruction, training and education at the learning level. Specific methods must be thought and practiced at all levels and forms of learning.

The school staff is the one that will strongly feel the effects of the resynchronization. They have been instructed to use teaching methods that many times become an attempt to the psychological and spiritual integrity of the children. The impact will be smaller on the pupils of younger ages. The results will be remarkable.

Major difficulties are to be expected only because of some possible errors of promoting this orientation. That's why we think of a gradual policy and changes with indirect effects.

Certain organizational measures and the rethinking of the didactic materials could change the present system. For instance:

- ? editing new school-books and structuring the knowledge that suppose the instruction on two levels:

- a) one should contain the compulsory knowledge;
- b) the second containing optional knowledge;

- ? organizing learning spaces, so that they will allow every pupil to learn in his own space;

- ? reorganizing the vocational system that can be attended by anybody who wants to get a skill. The classes should last three months up to three years, and they could be attended in the same period of time with other learning processes by: young people wanting to learn a profession; by the pupils of different high schools; by young people that finished a high school or university and want an extra-skill (for this last category on a payment basis;

- ? reducing the number of the compulsory classes, in order to allow individual learning.

The same level of instruction, ability or education could be reached in many ways. These multiple ways correspond to the different and many inclinations of learning people. Training in a monotonous rate will change the school in an oppressive place, nearly hostile.

The instruction can be organized equally. But learning, as a complex process of education, training and instruction needs a flexible atmosphere.

The difficulties of the transition can be controlled if an efficient system is projected to evaluate the learning activity. Both the problems related to the complexity and those connected with the learning synchronization require exact evaluations by which the effects of the change could be kept under control. A system of evaluating is a kind of "measuring apparatus" that indicates the state of the learning.

To achieve this several things are necessary:

- ? working out some evaluating criteria (internationally compatible);
- ? setting up some independent structures to effectively evaluate the state's institutions or other institutions and interested boards;

? the development of some research activities by which the criteria and the techniques of evaluation can be permanently improved.

A correct image of state of learning is the first condition for a controlled real reform. The results and the evaluating criteria should be made public so that the correct image must reach the people about what the learning process is going to be and what it will produce. Unfortunately the image about the Romanian learning is deformed by stereotype aspirations of the majority of the population and many of the politicians. *Where are we?* and *What should we tend to ?* are questions that the system of evaluating learning must give answers to.

Changing a paradigm in the field of learning cannot only be done by the will of some specialists, administrators or some politicians, no matter how capable and good their intentions are. *Public opinion* plays a very important part. It can influence the behaviour of the families, pupils or students, teachers and local administrations in favour of some options that support the reform or others, which do not.

There are civilized districts in Bucharest where many parents are very happy when the teacher changes a gym class into a maths one. The excessive authority of a teacher as a result of his lack of professionalism is, usually, well appreciated by most parents.

The public opinion is an element that should be taken into account and lead, carefully, to a favorable attitude towards reform.

5.3 Unity, as a long term and final objective

Man must regain control over his world. This world is simpler than him, that's why it can develop more quickly. A natural conditioning keeps man connected with existence and many artificial conditionings connect him with the world. The result is a state of existential tension that undermines man's inner liberty. A real inner or outer liberty can be obtained by an equilibrium between existence, man and world.

Man will be able to impose on to modern society only when his level of choosing will reach the point when the "free" market could be dominated by his options.

The synchronization of the forms of learning creates the chances to end the tension that undermine man's unity. An educated, instructed and trained man is able to make choices based on his rationality and imagination.

Motivation is the most important level of every process of educating, instructing and training. Every learning activity should start through motivation.

The traditional learning systematically neglects this stage. The book of geometry in Romania starts the problems by means of strict definitions followed by a great number of theorems strictly demonstrated. In the Western countries, where *free options* of the pupils prevail, the accent falls on attracting the children's interest towards geometry, by means of practical examples, strange drawings (like Esher's) and simply formulating the problems so that the pupil get interested in. The greatest part of the book contains ways of using the geometric forms. "Learn by doing" is the main idea of the western book. The author declares his pedagogical intentions at the beginning of the book:

"This book was designed so that you and your teacher can have fun with geometry"

The inner unity of he who is learning can be clarified only by means of the free options that he accepts under the influence of a process in which the motivation precedes learning. Such choices will perhaps allow people to determine the evolution of the world towards a man's world.

6) The role of informatics.

Informatics and all its consequences are a challenge, a promise and many times a fulfillment for learning. They are instruments that can be wrongly or properly used. Its use does not change the learning process, but it can strongly influence the final results. There are three functions that exteriorized the most subtle man's inner limits and Informatics achieves:

- calculating by the use of simple algorithms and highly technological machines;
- the communication is that function that makes use of the majority of the actual computerized resources;
- representation is a less evident function today, but is very much developing, offering a flexible support for what could be named a formal experiment.

The weight of the three components of the learning is strongly influenced by the teacher's and pupils' access to informational instruments:

- ? the weight and the intensity of the instructions as an activity fulfilled under the teacher's watch could be reduced;
- ? the individual activity's weight may increase very much and be individualized;
- ? the capacity to represent of the computer may increase the lesson's suggestion;
- ? ending some individual projects is much facilitated by the interactive possibilities of the computing;
- ? the imagination is superior stimulated by the unlimited access to the informing sources.

Informatics allows a new kind of learning style: the knowledge may be organized in hypertext as a structure that can be flexibly altered in accordance with the teacher's wishes or the person that wants to learn. The field of learning gets a secondary place and the subject the first one. The advantages of hypertext as an informational support are:

- ? the flexibility with which it can be generated, altered or brought up to date;
- ? the possibility of containing modules treating the same subject of different levels of difficulty ;
- ? the possibility of being used regardless of the level of learning ;
- ? the capacity to be adapted for the individual level of learning;
- ? the possibility of being virtualized by working in a network of computers;
- ? the possibility of being integrated into the activities of formal experiments and individual projects or of groups;
- ? the possibility of evaluation and self evaluation.

The most important merit of this new informatic activity is connected with the possibility of individualizing the learning. It also allows new forms of cooperation between the teacher and the pupil, between the pupils or the teachers.

Shortly the hypertext is possible due to the capacity of a computing system to give the final form to a learning book, due to its representational possibilities. Only a short imagination will limit the expressivity of this instrument as to the learning.

The skill of information requires a basic training which is relatively accessible. In order to perceive and correctly use the computers' world, one must be:

- ? educated to see the computer as a simple instrument that can do but simple things;
- ? instructed to use the numerous formal possibilities of the computer ;
- ? trained in a close cooperation with this machine in order to accept or not the most impressive results of his imagination.

The computer is an *organon* that does not exempt man from learning essential things, from choosing beyond formal criteria, or to be intuitive or a fantasist. Moreover, it must become the one that stimulates man when concerned with the aforementioned problems.

7. Conclusions

The chapter ending with these conclusions may be amended with specialized thoughts and options. But once it was accepted it can become operational only by *the will* of at least two levels of our society: the political and the civil society.

It's very sad the fact that the Romanian political society is not very interested in learning problems. It's probably incompetence, politicianism badly understood or an act of will difficult to explain, but it can also be the absence of some pressure groups lobbying in favour of the real problems of the education.

Only the civil society can prove to be an effective pressure group in favour of a consistent learning policy. This social segment is insufficiently organized and that also accounts for the disabilities of the state's structures. Decentralizing which we considered an essential agent of the learning policy can find a counter-weight –the actions of a well-organized civil society. The immaturity of some organizations that are implying or could imply in the local policies of learning will gradually be compensated by the implication of some very different agents including professional institutes, whose diversity of interests and options will contribute to the development of the respective schools. The great number of opinions and interests is the key-point as regards to the civil society even if this is aimed strictly towards certain problems.

A clear attitude to learning at all social levels should lead to a individual state characterized by:

- A permanent wish to learn;
- The imaginary's appetite for unusual;
- Education as a way of living.

The triadic approach starts from man and consequently reaches the global. The problems of the learning are not global, but of the man and, well-solved, they serve the world's globalization as a superficial, but consistent reflex of the unity of the existence.

3A. ROMANIA'S NATURAL WEALTH

In the last decade of this century it has generally been concluded that all nations of the world should agree upon a new form of economic development, with actions to save the environment and preserve the natural resources, to enable planetary survival and to eliminate poverty. The deterioration of ecological systems represents a real process that has accompanied the development of human social systems. During the evolution of humankind, the environment has always been subject to increasing pressure, from exploiting resources, changing and destroying natural ecological systems, and using the environment to dispose of mankind's waste. It is considered today that the survival of the Planet depends on finding new solutions to the use of raw materials, and to direct investments, technological development and institutional mending towards sustainable growth. Romania is experiencing not only a deep and complex transition from the former socialist economy to the new market oriented one, but also an active process of international integration. So, as Romania tries to align with the developed countries, it includes as a priority the problems related to the environment in its strategy for a sustainable future.

Romania is a medium sized country (237,500 sq. km, comprising 4.8 % of Europe's total area, and with 22,656,000 inhabitants) and located in from the southeastern part of the Central Europe. It lies equidistant from the North Pole and the Equator, in the middle of the temperate zone, being equally from the northern, eastern and western margins of the continent (2,800 km; 2,600 km; 2,700 km) but closer to the Mediterranean Sea (1,050 km).

The geographical characteristics of Romania are defined by three major European land marks: 1. The Carpathian Mountains; 2. The Lower Basin of the Danube; 3. The Black Sea's Western Shore.

The southeastern Carpathians lie almost entirely within Romanian territory and represent the backbone of Romania, offering a natural fortress. The Danube (2,860 km in length) collects its waters from an area of 817,000 sq. km connecting a series of countries (Germany, Austria, Czech, Slovakia, Hungary, Croatia, Serbia, Bulgaria, Romania, Ukraine) and drains about 98% of the Romania's land. The Black Sea – the ancient Pontus Euxinus, borders Romania for a coastal length of 245 km, and receives the waters of the Danube creating one of our continent's wonders - the Danube Delta.

Romania's position in the continent and its triple status of Carpathian, Danubian and Pontic country explain the meeting on Romanian land of geographical influences coming from Central and Eastern Europe, from Balkans, from the Black Sea and result in a great variety of climate, soil, mineral resources, vegetation, a great ecological diversity and landscape, all of them representing a natural wealth of an inestimable value.

3B. MINERAL RESOURCES

1. Romania's mineral resources in the perspective of the next two decades

Romania has a remarkable diversity of mineral substances, although the level of deposits is incomparably less than those giants of Australia, Canada, Siberia or South Africa. Exploitation of natural mineral resources has historically been inefficient, often aimed only at solving certain social problems, although the trio of oil-salt-gold has supported an industrialization that has exhausted both mineral and human resources. The lack of adequate technologies has resulted in certain resources being only partially used or undervalued. This is demonstrated by the interest shown by some foreign investors in re-exploiting some waste dumps and tailings ponds containing metals (especially gold) that can be rendered profitable.

Under conditions of increasing globalisation of resources, and of the growing market economy in Romania, the problem of providing self sufficiency in mineral raw materials will disappear. The profitable exploitation of mineral resources will become a strictly economic issue with the state's role being reduced to one of supervising exploitation, with respect to more stringent environment laws. In addition, the many methods and techniques of processing minerals will play an important part in developing private businesses. This has started with the setting up of some small enterprises processing decorative materials, mainly the traditional ones (e.g. marble). The testing of the market for other materials will be done gradually and in line with increasing living standards as time passes. There is already a market for semi-precious stones such as chalcedony, garnet, hematite, and lizardite etc.

The non-metalliferous substances will also be important, with plaster stone, bentonite, clay, kaolin, zeolitic tuffite etc. being increasingly required by the free markets. These substances' exploitation is favoured by the absence of any environmental problems. Another example is common quartz, plentiful in the

Romanian Carpathians and which will prove an attraction for European investors interested in mineral resources used by high technologies.

We can conclude that by the year 2020 a modest but varied mineral potential will be possible. The integration with Europe will result in having adequate laws to allow less restricted exploitation of mineral "property" even of those still prohibited, like gold and mine flowers.

An issue that should not be overlooked is the possibility of transforming some favourite mines into natural museums, such as those of Sacaramb, Baia Sprie, Herja, Brad, etc. The experience from other countries shows that this "soft" approach to mineral resources can be as equally profitable as the "hard" approach of conventional exploitation.

2. Resources and the environment: a contradiction?

There is no absolute contradiction between the mineral resources of a country and environmental protection. Usually, there is an equilibrium between the geological surrounding as a support of every kinds of mineral resources and the bio, hydro and atmosphere, equilibrium subordinated to the third law of ecology: "Nature knows best". An unbalanced equilibrium comes with the aggressive action on the surroundings: opening and extracting the mineral substances (spoil heaps, acidified waters), preparation of minerals (tailings ponds) and metallurgy (ashes and industrial emissions). In this last category are included the wastes from power stations using coal, e.g. combustion gases and coal ash. The associated industries (especially the chemical industry) are placed on a similar level as the metallurgy when it comes to pollution.

Schematically, the polluting sources associated with the mining, metallurgical and chemical industries may be classified as follows:

a) *primary sources*, only potential as a rule, represented by accumulating mineral substances;

b) *secondary sources*, very often temporary (e.g. spoil heaps) which can have impacts on the landscape and effects on ground and surface waters. In many cases a reequilibrium is achieved both by seeding grass and trees on the spoil heaps, as well as by gradually neutralising the waters. The average reequilibration time is 15-20 years;

c) *tertiary sources*, with long term effects, by greater impact (e.g. de-canting ponds from preparation factories) that can pollute underground waters, and threaten the landscape up to represent a real danger of crumble. The restoration of these is generally difficult, with high costs. There are about 200 million cubic meters of such secondary mining wastes in Romania, that do not allow any vegetation and can very easy produce crumble of considerable landmasses;

d) *quaternary sources* connected with metallurgical and chemical industries and the thermo-power stations using coal - they have bad effects on the landscape, as well as polluting water and the air. Building chimney produces dispersion of the waste elements but also amplifies the polluted area.

But the restoration of the environment is more expensive. Since the effects can be irreversible and last for centuries, there are many countries where mining and metallurgical pollution were greatly annihilated by restrictions of functioning for some companies potentially polluting and by prohibitive sanctions when they surpass the norms.

3C. THE AIR

Perhaps a suitable name for Earth would be "The Greenhouse" planet. Its atmosphere plays the part of the translucent walls of the buildings with the same name. This cover has proved to be vulnerable to both natural challenges and those produced by man. Both of them are polluting the atmosphere, changing its chemical and physical composition and altering its properties of energy transfer.

By turning the air opaque, the quantity and wavelength of short wave radiation coming from the sun is modified, with larger quantities of long wave radiation being retained in the lower levels of the atmosphere - the result is heating, the "greenhouse effect". The consequences of this phenomenon due to anthropic origins are global: heating the climate, desertification, glacial and ice cap melting, increasing the levels of the seas and oceans, reducing the surface of dry land. All of these could lead to huge material and cultural damage. It is probably man's greatest impact to the balance of our planet's dynamic system. Also, air pollutants change the vertical distribution of ozone in the atmosphere, especially at higher levels.

Also, pollutants participate in processes at ground level and form ozone in the lower troposphere. The pollutants in the atmosphere change the rain's pH.

Events like that in Chernobyl (1986) or the nuclear tests between 1945-1980 represented a number of serious pollution incidents of the atmosphere, and by its capacity of transporting radioactive pollutants, affected the whole planet.

Whilst man cannot interfere with volcanic eruptions, and fire over large areas as happened in the Pacific and Australia recently, his interference is possible with respect to air pollution sources of anthropic origin and their control. On this basis mankind can implement strategies and policies of reducing and/or

eliminating air pollutants and also on the same basis mankind can evaluate the efficiency of these decisions.

It is clear that when taking the control decisions, there are different elements that man can control (the polluting sources) and elements that can only be influenced on a very long term basis. To know and use the dynamics of weather and climate represents both globally and locally an important factor in working out strategies and policies of preserving the quality of the atmosphere.

Essentially, along with the other elements, ensuring the quality of the atmosphere is an element of prosperity.

To keep a balance between the need for a clean atmosphere and of socio-economic development, requires strategies and policies for protecting the atmosphere, which locally, nationally, regionally or globally are the elements of sustainable development. The sustainable strategies and policies to protect the atmosphere must efficiently act on the elements that directly cause its deterioration. The air polluting sources are to be found everywhere: industry, energy, transport, agriculture etc. To act on these polluting sources is to reduce emissions of pollutants in the atmosphere. The best way to act is by promoting the "clean technologies" (more efficient use of natural resources) and also to improve legislation so that the polluting sources are constantly deterred. The air polluting phenomenon is a challenge with incalculable consequences for future generations.

The state of air quality in Romania

The analysis of influences on air quality requires consideration of natural emissions (volcanic eruptions, forest fires, storms etc.) and the human ones released into the atmosphere, and also should take into account the contribution of the degraded atmosphere to the pollution of the ambient surroundings by different chemical changes.

The atmosphere does not accept political restrictions, legal or administrative. There are situations when the pollution from a country or a region is carried a long distance to the countries where the pollution is experienced.

It's worth mentioning that at the end of 60-s and the beginning of the 70-s, the Scandinavians considered the transport of the nitrogen and sulphur compounds emitted in EU the main cause of atmospheric deterioration in Scandinavia. There was a conflict between groups of competitive countries; some of them did not make any effort to reduce the polluting of the atmosphere and the others could not accept to pay for the damages. This conflict has been peacefully closed and the adopted solution was a moral one more than a political or diplomatic one. The *Convention on the transportation of the pollutants to a long distance* opened the way to solve the problem of protection of the environment. Finally in 1992, in Rio de Janeiro a Convention regarding the climatic changes has been adopted. (Romania is part of this Convention.)

In Romania the air quality cannot be separated from the regional and global frame.

The trend in polluting emissions in atmosphere in the transitional period 1990-1993 (in the table no. 1) points out a first stage specific of reform.

Table 1

Trends in polluting emissions and the

Gross Internal Product in the period of 1990-1994

POLLUTANT	YEAR					EU average (in 1990)
	1990	1991	1992	1993	1994	
SO _x	56.5	4.6	41.0	40.0	40.0	36
NO _x	23.5	20.0	15.0	13.3	14.0	37
VOC o M	33.3	29.2	27.0	27.3	28.0	38
CH ₄	84.2	76.4	66.0	66.0	67.0	61
CO	137.5	116.2	108.0	104.9	106.0	137
CO ₂	7374.0	6095.0	5430.0	5300.0	5400.0	8822
N ₂ O	4.6	3.9	3.0	4.3	4.6	3
NH ₃	12.9	11.5	11.0	9.6	10.6	12
Carbon sequestered in CO ₂ emissions	2011.0	1662.0	1481.0	1445.0	1472.0	2300
G.I.P. (%)	100	87.1	80.0	80.6	83.4	

Note: VOC_oM = Volatile Organic Compounds other than the Methane

Generally speaking, the emissions have drastically lowered. But it is clear that this is a consequence of the fall of economic activity that brought the emissions' values to or below the level of some countries in the EU. From 1995 a tendency of increasing or static emissions is observed.

1993 brought the first results of the counter-inflation measures, but also the first essential measures of economic reform, namely the elimination of subsidies from the prices and costs of a great number of goods and services with a significant weight in the population's consumption. Although between 1993 and 1994 there is a modest economic increase, the emissions have the same tendencies as the economy.

It is clear that the policy of protecting the atmosphere neglected economic measures to reduce emissions from the polluting sources. In other words no actions have accompanied the political declarations and engagements from Rio, neither has the adoption of some legal measures.

The conclusion is that simple declarations and even laws, which are not followed by practical steps, mean the continuation of the practice before 1989.

Evidently, for the future evolution of Romania's strategy and policy, maintaining atmospheric quality at the present level equates to a *Statu quo* scenario. The result will be a self-elimination of our country from the globalisation process and loosing any chance to become a member of European Union.

The alternative to this scenario has to be the Revival scenario with political will expressed, with the legal activity of changing the specific laws of protecting nature being started as well as the economic reform.

Romania, as an associate member of the E.U. and participant at the above-mentioned Conventions may benefit from certain international economic and political aid.

The goal of this scenario has to be:

Introducing, developing and maintaining the technical, economic and marketing potential along with reducing emissions of pollutants in the atmosphere.

The options that must be made relate to the following sections of the country's economy: energy, transport, industry, agriculture, forests, waste management, construction, the economic instruments adequate for the protection of the atmosphere.

The most suitable way is first by updating Romanian legislation to the European Union laws.

3D. THE WATER

1. Romania's water resources.

Romania is the beneficiary of an important complex of water resources constituting internal waters and natural lakes, the Danube, underground waters and The Black Sea.

The internal rivers have an average volume of about 40-42 billion cubic.m distributed unevenly between seasons and geographically. This is the theoretical average resource under normal flow conditions. 66% of flowing water comes out of the mountains (21% of the country's area), about 24% comes out of the hills (about 31% of the country's area) and only 10% out of the fields and lower hills (about 48% of the area). The main natural lakes have an average volume of 2.2 billion cubic m according to the Water Cadastre.

The Danube river (in Romania) has an average volume of 170 billion cubic m. from which 85 billion cubic m. represents the theoretical average of Romania's resources (taking into account the international situation of this river).

The underground waters are estimated to contain about 9.6 billion cubic m. as a resource that can be exploited.

The Black Sea represents a source of water that cannot be measured and compared with the other sources. It has only specific potentials: navigation, fishing, tourism, balneology.

From these data we can conclude that Romania has got a theoretical potential of about 138.8 billions of cubic m, that is about 6,000 cubic m/inhabitant.

In the drought years, there are about 92-109 billions of cubic m: with the volume of the internal rivers 23-30 billions cubic m. and the Danube about 60-70 billions of cubic m.

The useful potential in natural regime in the drought years is about 33.9-42.75 billions cubic m: the internal rivers about 3.5-5.25 billions of cubic m and Danube 21.4 – 28.5 billions c.m. for Romania.

2. Romania's water network

Romania's hydrographic network is of 150,000 km in length (78,905 km watercourses that are the state's property according to law).

The registered and charted hydrographic network represents 4,864 watercourses. The total surface area is of about 4,913 sq. km: 1991 canals and minor beds of river; 1,327.3 sq. km. the main 194 natural lakes and 1,594.8 sq. km the 416 piling lakes.

From the whole hydrographic network we point out the following figures: a) 1,842 water courses with a total length of 26,220 km and a surface of 71,000 sq. km, that are flowing in the river Tisa and by this one into Danube; b) 2,958 water courses with a total length of 51,767 km and a surface of 160,920 sq. km that flow into Danube; c) 64 watercourses of a length of 918 km and a surface of 5,480 sq. km which flow in the Black Sea.

3. Managing the water resources today and in future

The need to responsibly manage resources is set by law. The necessary conditions to achieve this are as follows:

- ? taking the best technical, scientific and objective decisions beginning with the planning of the quantitatively and qualitative management, to the coherent exploiting of the waters by all those interested in it;
- ? a specific legal system as regards the rules and laws connected with water and the economy of the country as well;
- ? the acknowledgment of the fact that managing water resources is a dynamic activity and it is subordinate to social – economic necessity, but also to the requirements of the environment.

Estimating the possibilities of maximum efficiency for use of water resources, in the given economic conditions has been done following the scheme for managing the catchment areas of Romania, introduced in 1975. It mainly refers to activities of managing waters with useful potential and opposing destructive potentials, as follows: 1,400 reservoirs with 34 billions cubic m, 2,000 km derivations, 21,000 km of regularising build ups and dams, 149,000 ha of artificial fishing ponds, 6,4 million ha drained lands, 5.3 million ha of land protected against water erosion.

The total scheme presents the maximum potential to be arranged WHAT?, considering that the 7 billion ha proposed for irrigation are more than the necessary potential (no more than 5 billion ha).

Today, the main categories of water connected works are: over 1,270 reservoirs with a total volume of 14.8 billion cubic m, over 6,600 km of regulated water courses, over 8,600 km of dams, about 3 millions ha with irrigation systems, hydropower stations with an installed power of 5,880 MW.

However, the following negative aspects must be pointed out:

- ? in 1989, a volume of 20.5 billion cub.m. of water has been ensured; in 1990 –1995, when the demand lowered to 9.8 – 10.3 billions c. m. by drastic reduction of irrigation and partly industrial uses, consequently, there was a surplus of water but also numerous areas with shortages (especially towns and cities) due to the fact that the surpluses and needs were in different areas and the sources cannot be redistributed;
- ? a relative improvement of the surface water quality is to be seen – not because of any new works on waste water treatment stations, but rather due to the fall of the economy and therefore of the polluting agents; ;
- ? although a lot has been done to protect the land against inundation (the state finished about 72 % of the national project) and 54 % of the surface is protected, many natural calamities of this kind are still taking place.

4. Common elements of ROMANIA 2020 scenarios

No matter what scenario is discussed, the following considerations are to be made after analysing the present situation:

- a) any decision or activity of managing water resources should follow some basic principles: managing water resources is done for every catchment area as a basic unit; management of surface and underground waters cannot be separated; a correct management of waters uses all the potentials of these sources;
- b) all the works and installations, whether functional or not, must be maintained, which requires a sizable budget. Abandoning the works results in material loss and increases risks for the riverside residents downstream. Covering the expenses needed by every project and installation is possible only by modifications of the activities for each project in a close relation with the society's needs;
- c) in temporary situations, the available flow that can be delivered to a section could also function as a dilution factor for the polluting substances in order to facilitate reusing the water downstream in certain economic limits, allowing the polluting agent to rehabilitate or buy new agent to rehabilitate or achieve the purifying equipment and supporting the respective costs for work;
- d) as far as the communal management, strong measures are to be taken, at a faster rate than at present: 1 – to reduce the water loss due to the distribution network and poor housekeeping equipment (this is estimated at 45% from the total volume over the whole country); 2 - to reduce the discrepancies between the localities having centralised water distribution' systems and those possessing canalisation systems: 80% of the localities are connected with the public water supply system, only 24% of them are connected with the public system of canalisation;

- e) to put into practice non-structural measures of flood defence, in connection with town plans that must stipulate the different status of the land, based on the analysis of rate and risk of flooding;
- f) water management works that have been started but are now ceased have to be maintained by financing the respective measures to avoid degradation;
- g) to introduce taxes and tariffs for the products and services concerning water management, according to catchment area;
- h) to analyse the possible and functional ways of strictly separating the specific aspects of state authority and its financial support from those of private enterprises.

Only by a proper appreciation of these economic – financial elements can other projects be devised. The separation of the state's authority from the economic operators at the level of each catchment area and the correct assessment of the management possibilities are imperative.

These hypotheses can be included into the scenarios for Romania 2020 as possible options in this field of activity depending on the state's willingness to finance some social costs (especially flood defences and the wastewater treatment stations).

Scenario R: Renaissance (rapid development and broad modernisation)

Presuming rapid development and broad modernisation, the section of waters management on the basis of the available natural resources and of supplementing the minimum natural resources supplied according to the present stage of fitting out, may supply the water resources of more than 20 billions cubic meters, letting alone Danube and without considering external re-use.

On the other hand, this predicted development is closely connected with new technologies, that will imply important reductions in water requirements, and with adequate technologies necessary to protect and improve the water quality. It is supposed that this scenario allows interfering into a rational use of the water resources not only in industry. For instance, today, about 1.13 billion cum. meter water is supplied for about 13 millions inhabitants (that is 200 c.m./inhabitant/day a ratio corresponding to good comfort. If the distribution networks are improved, the same or a higher quantity of water can be delivered to the population, but using 25% or less from the sources (by cutting the losses on the distribution system).

Scenario D: Decline (the result of great natural or human disasters)

Concerning this scenario, the following actions are necessary:

- ? to maintain in safe and functional order water management works so as to limit the effect of natural disasters;
- ? to prepare the working point and the operators to maintain in safety and avoid any voluntary accident or, at least, to restrict the effects of some internal or external conflicts;
- ? a permanent control of the level of water pollution and taking care of those potential dangerous polluting sources, that can release disasters.

The scenario (S.E.) = slow evolution

In this scenario the development of catchment areas will be slow because of the lack of financial resources. The essential elements by which the management of water resources can help in a greater measure the national economy are:

- ? the available water resources must be reassigned to the tourism, fishing etc.;
- ? to ensure the measuring of the collected and evacuated flows, as well as measuring the behaviour of the present constructions, some cheap equipment must be manufactured by the national enterprises;
- ? restoration of the irrigation system and sustaining a balanced agricultural production;
- ? reanalyse the opportunity for using cheap water transport instead of railroads or motorways.

The scenario SQ: Statu Quo

In this scenario the previous ideas are available. From the point of view of resource management it would be possible to support more efficient agriculture and many activities that are currently underdeveloped (tourism, water sports, sports-fishing).

3E. BIODIVERSITY

Romania's ecological diversity represents more than the result of its geographical influences and more than the sum of the Carpathian - Danubian – Pontic characteristics of the country; it is also the result of internal agents. The country's relief is like a concentric amphitheater and creates the vertical distribution of all elements of relief in a variety of forms from sea level up to altitudes of more than 2,500 m. This diversity is also given by the hydrological network, a truly vital force on our land – all these have created a great variety of biotopes. In a relatively limited space, the distribution of all elements of nature is more obvious in vegetation. The characteristic species of the steppe and silvosteppe are to be found in the lower regions. Climbing the hills and mountains we find the oak, beech and coniferous forests. On the top of the mountains there are the lawns.

Over 3,800 species of macrophite plants are found within Romania and they present a great biogeographical diversity; Eurasian and European elements (20%), Pontic and continental elements (21%), southern and south – east European (18%), circumpolar and alpine (14%), Mediterranean (6%) and Atlantic elements (3%).

Also, fauna (over 34,000 species, subspecies and local variants, of which 33,100 invertebrate, 190 species of fishes, 360 species of birds, 102 species of mammalians) is rich and various; predominantly central – European, also includes other elements from Asia and Europe.

The space between Carpathians, lower Danube and the western shore of Pont Euxin sheltered from ancient times civilisations and populations and it was the birth place of the Romanian people.

At the beginning of the 19th century the first recognition of the beauty and scientific importance of some places in this country appeared. Gradually, more and more biologists, geographers and geologists supported the idea of protecting nature and the necessity of legislation in this respect.

So, after the Congress of the Romanian Naturalists that took place in Cluj in 1928, the first law protecting nature's monuments was voted on July 7th 1930 and "The Commission for Nature's Monuments" was set up.

Between 1930 and 1943, this Commission created in 36 regions (about 15,000 ha) natural reservations (National Park of Retezat, Hasmasul Mare, Letea Forest in Danube Delta, Fânețele Clujului, Zaul de Câmpie, Mociar and Slatioara forests); also the commission established the species of plants and animals that should be protected.

After the Revolution of 1989, the Ministry of the Environment declared another 13 national parks, but unfortunately these were not respected outside the organs of the respective ministry, whose decision had no extensive legislative force. In the spring of 1990 the Provisory Government issued a decision of 11 new reservations (in Vrancea county) after which any new protection was stopped. Also in 1990, UNESCO conferred the title of *Reservation of Biosphere* for the Delta Danube (RBDD), Retezat and Pietrosul Rodnei, the Delta Danube being on the list of World Natural and Cultural Patrimony as well as that of the Ramsar Reservations (The Convention on Wet Lands with International Importance, especially for Aquatic Avifauna).

In spite of the fact that there is a chaotic situation as regards the number, quality and title of every reservation, *Law no. 137/1995 for Protecting the Environment* has stipulated in art. 54 pgph. 2 that "the protected areas and nature's monuments are declared by acts or laws and those declared up to now remain as such".

After 1990 Romania demonstrated both interest and a commitment to preserving biological diversity and natural zones by signing international conventions and by starting to develop legislation and strategic plans for preserving biodiversity. Unfortunately, there is a lack of firm co-ordination, of coherent strategy and adequate institutions for management and for preserving nature. Civil society has also started to participate in the decisions but this is still at the beginning.

Today according to the Ministry of Waters, Forestry and Environmental Protection and the Commission for Natural Monuments of the Romanian Academy, the protected areas in Romania represent 4.8% of the country's area and include 3 reservations (DanubeDelta, Retezat and Rodna), 14 national parks and over 500 areas that have been declared reservations or natural monuments.

ROMANIA'S PRIORITARY OBJECTIVES TO PRESERVE THE ENVIRONMENT

1. The development of legislation and strengthening the institutional capacities to preserve biological diversities and the sustainable use of its elements.
2. Organising the National Network of Protected Areas and ensuring the management necessary to protect the natural habitats and preserving the biological diversity.
3. Preserving in-situ and ex-situ of the threatened species.
4. Integration of the National Strategy for pressuring the biological diversity and the sustainable use of its elements in the National Strategy of Sustainable development as well as in the local and sectorial strategies, plans, programs and policies for a sustainable development.
5. Protection, preservation and recovering the biological diversity existing beyond the protected areas by: a) reducing and eliminating the negative effects caused by the pollution, overexploitation; b) rehabilitation of the ecological systems or habitats badly deteriorated.
6. Protection, preserving and recovering the biological diversity specific to the agrosystems by favourable technologies.
7. Training specialists and educating the common people to understand the necessity of preserving the biological diversity.
8. Implication of the NGO and the local communities in programs and actions to protect, preserve and recover the biological diversity.
9. The development of the special programs of research and monitoring the state of the biological diversity.

Source: Ministry of Waters, Forestry and Environmental Protection (MWFEP) – the National Strategy and the plan for actions in preserving the biological diversity and sustainable use of its elements in Romania – June 1996.

The protected areas are only listed on papers and do not enjoy any real protection (apart from the Danube Delta that has got a special controlling board of RBDD). Only some National Parks are taken care of by Romsilva WHO?, therefore a specialised service core (like the Rangers) is needed.

All the problems related to protected areas in Romania must be taken over by competent persons, knowing the real situation and qualified to appreciate the real value of the reservations. A special law must be applied to protected areas and nature preservation and a special board should be set up in MWFEP that could take over the protected areas and establish the tasks of the central authorities. Only with such an organisation will Romania succeed in alignment to international standards, which is compulsory for a candidate for European Union membership.

3F. AGRICULTURE

1. The development of agriculture in Romania at the beginning of the third millennium

The present situation of Romanian agriculture is a result of incompetence and mixed decisions. The essence of Law no. 18 concerning property rights did not consider land use issues for lands returned to the people. Over 40 million small properties belonging to about 6 million owners leads to the average area of 2.5 ha/owner. A tremendous mistake was the forced destruction of the zootechnical sections of the former Agricultural Production Co-operatives (A.P.C.) instead of reorganising, restocking and buying new technologies together with a system of pricing corresponding to necessary social expenses, instead of the despoiling acquisitions for farmers before 1990. The lack of specialised culture and mistrust as concerns the state that stole the peasants at the collectivisation are also explanations for so called “legal burglary” when all the co-operatives have been closed. The way agricultural reform has been achieved in Romania led not only to the destruction of the large working areas (the large properties being replaced by a lot of small, sometimes insignificant farms) but also to mistakes as regards exploitation of newly created areas. Soil erosion has been favoured by working downhill instead of performing works along the contour lines and by destroying the irrigation systems (practically over 75% of the irrigation network was destroyed). The structures for exploiting the land-reclamation were mostly destroyed ???and this is a country with less than 25 years of practice in this field.

The technologies that have been used to work 70% of the agricultural surface and 80% of the arable one between 1990 and 1998 led to a dramatic decrease of the quantity of fertilisers in use: from 100 kg/ha in 1990 to 16 kg/ha in 1992 and almost none in 1998. A smaller quantity of pesticides have been used to protect the plants and consequently some illness have reappeared to attack the cereals etc. Many agricultural activities are performed very late on more than 3 million ha/year, which cause major degradation to the soil. The damages caused by elements of managerial decline are about 30-40% of the natural offer of the 1992-1997 period.

These elements and the lack of strategies in agriculture (as a field connected with other economical fields) led to a very low internal production. As a result, imports have increased (to ensure food for the population) consuming the hard currency and obliging the country to run into debts with overwhelming interest. As a paradox, the Romanian Government (before and after 1996) considers the high degree of indebteding of a country with practically no foreign debts in 1990, as being a virtue, a sign of civilisation.

2. A solution for the future: combining the resources with the action of the natural agents of the vegetal production.

The essential elements of agricultural production (natural, technological, social and conjectural) will present in the next 20-30 years, some tendencies towards a strong agriculture in a sustainable economy. The tendencies of the solar cyclity of 11?3?3 years determined by the solar explosions, completed with the diminishing of the ozone level because of the increase of CO₂ concentration will act on the natural agents. Besides accentuating the continental characteristics of our climate (expressed by tougher droughts, which will very strongly affect the unirrigated cultures, especially ones that are the basic food for the population), increases in ultraviolet radiation will lead to a rise of the plants' protein level. However, the general diminishment of production due to drought will bring a decrease of the total quantity of proteins.

The use of Romania's soil as a major natural resource is represented by the 14,797,163 ha in use (of which 9,337,092 ha tillable soil). The majority of the soil is of 2nd and 3rd class, with the best to be found in the south and west, but, on a European scale, Romanian soil has an average of 48 points out of the 100 points possible. The last eight years led to a reduction of agricultural area by 311,855 ha, and with 770,837 ha removed from the tillable area. The unproductive areas increased by 122,755 ha. However, the remaining irrigation network on 3.2 million ha, the counter erosion works on 2.3 million ha, the counter-flood dam

protection 0.6 millions ha, the desalinisation works on 1.7 million ha, and the other special deep soil works on more than 2.3 million ha, represent a good start to sustainable agriculture. About 80% of the tillable area is still affected by frequent drought, acidity, alkalinity and this situation requires a diversity of treatments whose costs are estimated about \$ 15 billion over a period of 25 years. If these works are not completed, the existing restrictions will progress and produce a decrease in production capacity of about 25% per year.

With regard to the economical possibilities of Romania, and that its agricultural policy is determined by the requirements of the national economy, and the conditions imposed by E.U. (respecting the principle that for ensuring food security, 0.15 ha tillable is needed for every inhabitant) promoting sustainable agriculture requires the following conditions:

1. To achieve sustainable and intensive agriculture, internationally competitive on about 2 million ha of tillable soils within the systems of irrigation in Lunca Dunarii and on the terraces, where the water resources are sufficient; also, on 1 million ha of soils favourable to intensive and unirrigated agriculture.
2. The development of sustainable semi-intensive agriculture in a predominantly unirrigated regime on 2.5 million ha tillable soil, with local irrigation equipment (under 5% of total), with the objective of becoming a producer of competitive goods if equipped with new technologies; this could be achieved on plains, hills and plateaus with scarce water resources.
3. The development of sustainable and extensive agriculture on about 2 million ha of tillable soil and using about 3 million ha as reserves for pastures and forests (soils affected by pollution, degradation, etc.); this could be achieved on the high hills and plateaus and on the mountain sides.
4. Practicing a sustainable agriculture with predominantly pastoral activities in the mountains.

It is intended to maintain and develop some less intensive systems of using the soil for the other categories of tillable lands, from extensive systems of production up to ecological reconstruction on strongly degraded lands. This Reform claims however, a great implication of the state, by granting differentiated financial aids according to the purpose.

Such an approach supposes a national strategy. An important resource will be water; there is already increasing urbanism (expressed by bringing the urban comfort in the countryside), as a countermigration from the town to the village is going on.

Today there is a 50-60% loss of drinkable and irrigation water, due to the supply network. If the constructors use new waterproof materials for abstraction and distribution, if the use of water is more rational and if new stations to purify and recycle water in smaller systems are built, the water resources will be better used and cheaper.

3. A compulsory condition: using the national potential of the agricultural -scientific research.

Scientific research is appreciated everywhere as a force of production.

Selecting the researchers is, in this field, a neglected aspect, especially in the applicative sectors. In the last 20 years, the Institute for Agricultural Research was crowded with personnel untrained and unwilling to make the sacrifices necessary for a researcher. Adding to this negative selection, the biological process of ageing and retiring of some personalities in the field, the compulsory practice of 5-8 years to train a good researcher and other conditions impossible to be achieved, a very serious crisis of one of the strategically systems of the agricultural production is happening before our very eyes (not to mention the migration of the best researches in USA, France, Holland, Israel, Germany).

We think that the main way of encouraging scientific research today is by developing the material basis of research by building important laboratories in research institutes, universities and in experimental stations, and in granting scholarships and better salaries.

The technological factors refer to general progress in animal and vegetable genetics, mechanisation, biological products instead of pesticides, new agricultural techniques, etc. These elements will penetrate the system combined with development of the special services necessary for the development of workshops, transport and selling networks, private banks.

One of the characteristics of future development will be the variety of types and the dimensions of the agricultural farms, from the family farms of 2-10 ha, farms of 30-50 ha with technical activities, alongside greater associations of 100-500 ha, as the only ones able to access modern technologies.

Computers are already used in agriculture. In the future, they will help to interpret the conditions of different illness and pests, choosing the treatments on the basis of programs to contact suppliers, to buy cheaper equipment and seeds from selecting various offers.

In zootechny the different livestock farms especially the familiar ones will develop complementary zootechnical groups.

Conjectural factors refer to the opening of the country that took place after 1990 and led to an increase in local biodiversity not only positively (new plants and animals came to our region) but also

negatively (many dangerous pathogenic agents appeared and the local livestock and plants were not ready to fight against them).

The Romanian producer is totally decapitalized as against a system where the prices of production did not even cover the producing costs for many years. The differences were paid by the budget but this could not stop the slow death of the state farms. Another characteristic is that the capital accumulations are taking place slowly in the agricultural units (sometimes it takes 12 months to recover the investment in the production). The successfully units are those that practice complex activities, especially commerce and producing industrial food products.

One of the most important agents is **the human** one. By its qualification and its spread on the land this factor is a disaster today: most of the farm workers are old men and women. The small income makes the work in agriculture less attractive because of its harshness and other tough conditions e.g. dust, cold, heat etc. Even if a tractor driver in a state's unit gets a better salary than a doctor or teacher, those that are working in the agriculture are less and less. There are 50.000 specialists with college diplomas, but they leave agriculture for teaching, commerce, banking etc. In the future, commercial experience will be useful for agricultural management. In the years to come we'll see that besides the professions like veterinary doctor, agricultural mechanic etc. new ones will appear especially for superior managing and selling of farm products. The diversity will be beneficial in absorption of labour representing 35% of the Romanian active population. The means used by the government to develop agricultural production, are not yet ready. The laws to regulate production to encourage the research system, and laws to favour credits for farming are incomplete.

Unfortunately, the Ministry for Agriculture and Food, responsible for realising the agricultural policy did not succeed to ensure that necessary factors to fulfill its part of initiator of the Reform, having the express mission of orienting and controlling the development of the sustainable agriculture in Romania.

4. Instead of conclusions.

The logical and legislative process of improving agricultural production is a priority direction for using natural and human resources as a means to consolidate the independence, the social and regional stability of Romania. There are some compulsory conditions that the state, as a general administrator will have to achieve, through the Ministry of Agriculture and Food:

To promote laws for agriculture so as to establish correct economic and competitive relations.

To organise a performance system for producers' training, legally instituted, by which it could test the level of their training in order to award them a license of production. This training should be provided by the Ministry of Agriculture and Food by means of specialists from the regional agricultural centres, whose training will be assisted by specialists in research institutes and Universities.

All the agricultural units will have to evaluate beyond the accounting records, the real balance of the organic matter, of energy and water consumed, to protect the environment and man's life.

d) The Ministry for Agriculture and Food, by its specialised Institutions (like the Academy of Agricultural Sciences and Forestry by its specialised Institutes and agricultural and veterinary medicine Universities), will elaborate strategies that will assess the internal need for agricultural products and the availability for export, and to establish the production costs for every level of production, and to offer a long term direction to agricultural production.

e) The Government must organise the production's development. One of the most important issues is the establishment of correct prices for agricultural land, which could attract investors.

To favour, by law, projects for rehabilitating rural areas by putting into practice the different services necessary for rural development – banks, phones, libraries, pharmacies, hospitals, roads, post offices.

Changing the attitude as regards rural housing and the transfer of capital from other activities (e.g. commerce), to the rural areas will give a new start to agricultural production, which will become a factor generating health and wealth for the entire nation.

3G. THE FORESTS

1. The areas covered by forests.

In ancient times, forests covered the present Romania's land by 75-80%. Consequently, agricultural development and political pressures made by neighbouring empires, especially the Ottoman until the 18-th century, reduced forests up to 50%. Massive deforestation continued in

connection with the greatest political events in Romania's modern history. First stage was when the foreign trade of the Romanian Principates was liberalised as a consequence of the Peace from Adrianopole (1829). Then after the Union of the Principates by the agricultural reform of 1864. Other deforestations continued after the Independence War (1877); after the Great World War, with the great reform of 1921, made mainly on the forests' account, and with the communist' massive deforestation in 1950-1960 (ordered by the Soviet Russia).

The final blow for the Romanian forests came with the Law of the Land Property voted in 1991. In this way the national afforestation average is now only 26.7%, under the critical point and considerable less than the optimal level of 40%.

These anthropic processes of great proportions are the principal elements of the ecological lack of balance in Romania, an element that favours and even determines catastrophic inundation, erosion and aggravating the effects of the droughts and pollution.

The reduction of forests has taken place all over Europe (table 1), but unlike Romania, other countries have initiated and put into practice actions of afforestation, succeeding in balancing the former ecological situation. So, between 1960 and 1990 in Europe, the forests increased by 20 million ha while in Romania they reduced by 100.000 ha.

The situation has been aggravated in the last 8 years, a period when the rate of afforestation was only of 100-200 ha/year in Romania, compared with 3000-17.000 ha/year (between 1930-1980).

Table 1

The area covered by the forests in some European countries

Country	Natural Level (aprox.)	Data for an intermediary period*	Actual state
Denmark	90	2-4 (1800)	12
Switzerland	75	19 (1863)	30
France	80	14 (1790)	26
Ireland	80	3 ()	6
Great Britain	80	4(1895)	10
Romania	80	32 (1920)	26
Slovenia	80	36 (1875)	54
Ukraine	-	12 (1967)	15
Hungary	-	12 (1950)	20
Europe (with out the former Soviet Union)	75	25 (1800)	20

* The reference year is between parenthesis.

Source: *Comptes Rendus du XI^{ème} Congres Forestier Mondial (with completions)*

Possible scenarios concerning Romania's forests can be:

1. Recovering. The project of achieving a large program of afforestation (besides the actual fund of forests that brings the percentage of the afforested areas nearer the most favourable level of 40%, but not in the short period of 20 years). This project implies annual afforestation on 30.000 ha and costs of about 60 billions \$/year. In this way the percentage of national forests increases from 26.7% to about 30%, above the critical limit. This could be achieved by afforesting: abandoned or eroded lands (2 millions ha); outer rings surrounding the great cities, protective "green walls" surrounding agricultural regions. To achieve this large program for ecological reconstruction of the country it is necessary to adopt an adequate law (the Law for the Extension and Protection of Forests in Romania) and, on the other hand, financing the works by budgets and also by international credits.

2. Decline. This scenario is based on the present disastrous rate of afforestation (only 100-200 ha/year), plus the greater decline of forest by destructive agents (droughts, pathogen attacks, deforestation due to the division of the national forest between the former owners without proper protection laws). The result will be the decrease of the forests below 20% of the national land; the recovery will take 60 years and huge costs, possible only with international aid.

3. Slow Rate. It is coming back to the slow rate from of the communist era (2,000 – 5,000 ha/year afforestations) postponing the recover of the forests with two decades, with all the social, ecological and economic consequences.

4. Statu quo. This project supposes insignificant afforestation 100-200 ha/year, for another period of 20 years, marginalizing Romania also from this point of view.

The comparative analysis of the four hypotheses underlines the superiority of the “Recovery” scenario, that ensures the ecological re-construction by silvicultural means, this being a project of national importance.

2. The ecological, economic and social functions of the forests

In relation to the qualities of forestry ecosystems and taking into account the objectives of forestry for society’s requirements, ecological, economic and social functions of forests have been established in Romania, from 1954. The ecological as well as the protective functions have been taken into consideration and according to these functions the forests have been divided into two groups: I – forests with special functions of protection; II – forests with functions of production and protection.

The first group increased from 12% (in 1954) to 60% (in 1960), which proves that in Romania, the special protection functions (of the soil, water, climate, of wild life) are more important and needed than the economic functions.

For the following two decades, three scenarios can be distinguished:

1. Increasing. This scenario accepts increasing the proportions of forests with special functions of protection up to 65%, determined by: a) the interest manifested internally and internationally to preserve and improve the biodiversity as a result of international conventions (Agenda 21), of the UN Conference for Environment and Development, Rio 1992; World Congress of Forestry, Antalya, 1997); b) an increased interest to preserve and improve the landscape; c) the necessity to preserve the forest in the mountains, according to “The Mountains Agenda”, internationally adopted; d) the obligation of our country to extend the surface of the national parks and the protected areas at least by 10% of the forests, considering the remaining virgin forests have a very precious biodiversity; e) the importance of the forests for security of food and for people’s physical and spiritual health.

About 20% of the country’s forests will be used to fulfill ecological functions of high level (mainly of soil preservation).

2. Decline. Possible under pressure of many elements, including the following: a) the pressure on forests caused by the increasing needs of wood and wooden products for foreign trade and internal needs; these requirements could explode in the year 2000, after the recovery of the national economy; b) Disintegration of the forestry fund into hundreds of thousands of small properties, which will be deforested in an incredibly short period of time, as the example of 11,000 ha deforested near the Danube in just a few months clearly shows; c) The tendency to end the special status of protection for some forests of high productivity and quality, in order to solve the current economic problems of the country.

3. Statu – Quo. Characterized by maintaining the present level of the contribution of forests to the protection of the environment, biodiversity and human health. The comparative analysis of the three scenarios underlines the superiority of the first one without excluding the economic functions. Attributing sustainable protection and economic functions to the forest is a complex problem, derived from the interrelations between forestry and other economic, social and cultural fields, and it can be efficiently solved only by means of “A Law of Forest Protection”.

3. The volume of cut wood.

Under conditions of rational forestry, cut wood is an efficient means of optimising the forests’ structure and also an important source of income.

Unfortunately, in Romania, until 1986, forestry exploitation greatly surpassed the support capacity the forest ecosystems leaving deep scars in the quality of the environment, biodiversity and the forests themselves.

There are three possible scenarios for the following decades until 2020.

1. Normal. According to this scenario, cutting will be maintained at the level allowed by the sustainable development of forests in the future. Specialised institutes have completed studies that show a level of 15 million cubic meters/year as acceptable and resulting only from the cleaning operations for forest preservation.

2. Disaster. This scenario may appear under the influence of some anthropical and natural destabilising agents such as: a) lack of control over individual owners of small areas of forests and illegal cutting destroying the forests; b) internal and international pollution that can deeply affect the stability and health of forests will grow; c) increasing local and global climatic changes, in particular the frequency, intensity and length of droughts like those between 1983 – 1994. The consequences of this scenario reaches far beyond year 2020.

3. Underexploiting. This scenario may appear if an economic recession strongly reduces the timber required for industry internally and externally.

3H. Energy

Energy is a decisive element of industrial development. Together with some complex phenomena like the explosive rate of over populating the Earth, the inevitable growth of energy demands and the reality that follows (the deterioration of the environment), confronts mankind with some very serious problems: energy and natural resource exhaustion, preservation of the environment. After the industrial revolution, the evolution towards the development of the resources and the consumption of energy led to a mass production and respectively creation of big amounts of waste, these being the modern civilisation's characteristics that gave birth to this problem.

To assure sustainable development for mankind, a new civilisation should be created for the XXI-st century. The developed countries, great consumers of resources and energy should not be limited only to a partial responsibility for preserving their own environment, but also to use their richness and technology as a base for influence and change on the entire globe.

The developing countries or those in transition will not be able to approach the problems of sustainable development in the near future, mainly due to lack of the necessary financial resources. And this is taking place today when its clear that to insure the following generations' future, a sustainable development cannot happen without an industry and sources of energy ecologically sustainable.

Energy policies and selection of energy resources.

The universal situation – The prediction as to the demands for energy.

Most predictions concerning demands for energy rely on international analogies and comparisons. Many predictions of this kind have been made, but one of the most reliable is the one achieved by the World Energy Council (W.E.C.) and entitled "Energy for tomorrow". The main results of the comparison between the global consumption between 1960 – 1990 and the predictions for 2020 are:

Table no.1

The structure of world's consuming primary energy

Gtep

	1960	1990	2020 scenarios			
			A	B ₁	B	C
Coal	1,4	2,3	4,9	3,8	3,0	2,1
Oil	1,0	2,8	4,6	4,5	3,8	2,9
Natural gas	0,4	1,7	3,6	3,6	3,0	2,5
Nuclear	-	0,4	1,0	1,0	0,8	0,7
Hydro	0,15	0,5	1,0	1,0	0,9	0,7
Traditional "sources"	0,5	0,9	1,3	1,3	1,3	1,1
New sources and renewable	-	0,2	0,8	0,8	0,6	1,3
Total *	3,3	8,8	17,2	16,0	13,4	11,3

* Rounded totals

Scenarios: A – high economic development; B - reference;

B₁ – reference with reduced energy intensities; C – ecological.

Source: Ian Lindsay, *Energy for Tomorrow's World*, BSEC 1st International Energy Congress, Ankara, Turkey, Nov. 1993.

From the above mentioned study we can remark on the following:

- ? whilst between 1960 – 1990 the world consumption of primary energy increased by 2.7 times, a reduced increase of consumption is predicted for 1990 – 2020;
- ? according to these scenarios, in the year 2020 the consumption of hydrocarbons will increase from 5.4 – 8.2 Gtep compared with 4.5 Gtep in 1990 and 1.4 Gtep in 1960;
- ? in none of the scenarios does nuclear energy pass over 1 Gtep in 2020, in comparison with a total consumption of 11.3 – 17.2 Gtep.

The International Energy Agency has also elaborated predictions concerning the evolution of international consumption of energy until the year 2010, in the recent book *World Energy Outlook*. Two scenarios have been examined: 1) *Restrictions of capacity* (with increase of energy demands corresponding to a price of 25 US\$/barrel in 2005); 2) *Economy of energy* following a more rational use of energy. It is also predicted that the price of oil remains constant about 17 US\$/barrel.

In connection with world demand of energy, the book points out the following:

- ? the world demand of primary energy will constantly increase from 1993 to 2010 (up to 10,900 – 11,800 Mtep), that is 1,7 – 2,2 %/year;
- ? natural gas will represent 21 – 24% of the total energy used in 2010;
- ? the demand for primary energy will be satisfied by fossil combustible in a proportion of about 90% in 2000 .

In neither scenario the demand for energy in the year 2010 for Central and Eastern Europe will reach the 1989 level.

A very important investigation as concerns the consumption of energy and primary resources has been conducted at the European Commission by the General Directorate for Energy and entitled "European Energy to 2020. A Scenario Approach". This paper uses the Midas pattern development with DG XII, the model MEDEE and the World Energy model. These predictions are correlated with *The White Book of the European Commission* issued in Jan. 1996 – "A Policy of Energy for E.U." This paper examines four scenarios: *Conventional Wisdom* (CW - the continuity of the present tendencies); *Battlefield* (BF - confrontation between military alliances); *Hypermarket* (HY - a predominance of the market laws and forces) and *Forum* (FO – the predominance of the international co-operation and consensus).

The world energy balance in accordance with the four scenarios until 2020 is presented in table No. 2.

Scenarios up to year 2020 for Romania

Romania has a diversity of primary energy resources – oil, natural gas, coal, uranium, hot springs etc.

Until the 1970s', Romania exported primary energy, having notable reserves of good quality oil and natural gases (up to 1945, Romania was the sixth largest oil producer and exporter in the world).

After 1950, the heavy exploitation of oil, gases and uranium by the Soviet Union exhausted these reserves in such a manner, that, from 1975, Romania was forced to import oil and natural gas from the Soviet Union, at very high prices. Table no. 3 presents the evolution of primary resources and consumption in Romania, between 1989 and 1996.

Between 1965 and 1989, the communist regime was lost in a dream of competing (in terms of heavy industries, heavy equipment production and other unrealistic projects) with the Western powers, thus engaging Romania in a race far beyond its possibilities. By neglecting almost any field of activity except industry, by lack of investments in high performance technologies, by lack of motivation for workers, the communist regime managed only to produce huge stocks of obsolete, poor quality and expensive products and equipment, which even the African countries refused to buy. Thus energy consumption increased to an incredible 3.2 tep/inhabitant (compared to the average 3.4 tep/inhabitant of the European Union) and totally out of proportion with the results (the exports and the quality of the products needed for internal purposes).

Primary total production	6976	8396	9406	0,6	-0,5	1,1	11103	-4,1	-0,5	3,0	12768	-7,2	-0,3	4,4
Solid fuels	1808	2209	2406	1,1	-4,7	-0,1	2756	-6,1	-7,2	1,9	3024	-7,4	-7,6	-2,0
Oil	3147	3227	3347	0,0	1,0	1,6	3688	-4,2	0,1	3,1	3981	-8,4	-2,5	4,4
Gas	1237	1711	2118	0,8	1,8	2,1	2849	-2,9	2,0	4,6	3699	-8,4	1,3	7,4
Nuclear	187	518	628	1,5	-0,2	0,9	700	-1,3	6,8	3,6	729	3,2	22,7	4,4
Renewable resources	597	731	907	0,1	0,2	0,1	1110	-3,3	2,7	1,4	1336	-5,3	6,1	2,4
Gross internal consumption	6787	8184	9266	0,6	-0,5	1,1	10955	-4,1	-0,6	3,1	12615	-7,3	-0,4	4,4
Solid fuels	1795	2190	2406	1,1	-4,7	-0,1	2756	-6,1	-7,2	1,9	3024	7,4	-7,6	2,0
Oil	2980	3066	3206	0,0	1,0	1,7	3537	-4,2	0,0	3,2	3823	-8,6	-2,7	4,4
Gas	1234	1685	2118	0,8	1,8	2,1	2849	-2,9	2,0	4,6	3699	-8,4	1,3	7,4
Nuclear	187	518	628	1,5	0,2	0,9	700	-1,3	6,8	3,6	729	3,2	22,7	4,4
Renewable resources	592	725	909	0,0	0,0	0,0	1113	-3,6	2,4	1,1	1340	-5,6	5,8	2,4
Electric energy	697	986	1229	0,9	0,0	1,7	1555	-6,5	1,3	4,4	1885	-9,3	3,6	6,4
<u>Energy in thermo power station</u>	1548	1969	2353	0,8	-0,7	1,7	3061	-7,4	-0,9	4,2	3769	-11,3	-0,3	6,0
Solid fuels	839	1165	1392	1,5	-6,2	0,0	1642	-8,8	-8,2	2,7	1816	-10,5	-7,9	2,0
Oil	428	328	243	4,8	9,9	6,0	252	-0,9	7,5	5,1	243	-3,1	6,9	8,4
Gas	275	459	692	-1,7	6,9	3,9	1129	-7,0	7,2	6,5	1660	-13,5	5,7	9,0
Biomass	6	17	25	-6,3	-8,5	-6,5	38	-2,7	18,0	-1,1	50	-5,4	38,5	-6,0
Nonenergetic consumption	226	244	250	0,2	-0,3	0,3	274	-2,5	-0,3	0,8	295	-3,9	0,3	1,0
Total energy demand	4894	5655	6324	0,4	-0,5	1,0	7354	-3,7	-1,0	2,6	8369	-7,0	-1,7	3,4
Solid fuels	804	862	881	0,6	-2,7	0,1	988	-2,3	-5,8	1,0	1080	-2,6	-7,2	1,0
Oil	2126	2316	2519	-0,5	0,2	1,4	2807	-4,7	-0,6	3,3	3073	-9,6	-3,2	4,4
Gas	815	988	1137	1,9	-1,5	0,7	1337	0,4	-2,5	2,1	1557	-4,1	-3,8	3,4
Electric energy	587	829	1033	0,7	-0,2	1,5	1310	-6,7	1,2	4,3	1590	-9,6	3,4	6,4
Heating	131	188	183	1,0	2,4	-0,1	229	-6,5	6,4	1,6	269	-6,7	12,6	3,4
Biomass	431	472	570	0,2	0,3	0,3	683	-2,5	0,9	0,8	800	-4,1	1,1	0,0

Scenarios : CW - Conventional Wisdom, BF - Battlefield, FO - Forum, HY - Hypermarket

Source : European Energy to 2020. A Scenario Approach, Energy in Europe, Office for Official Publication of the European Communities, Luxembourg, Mart. 1996

Local resources	51427	58,9	41423	57,4	37063	64,2	34855	65,9	35058	66,1	33603	64,3	34394	61,5
of which:														
Coals	12369	14,2	7486	10,4	6362	11,0	7316	13,8	7562	14,3	7749	14,8	7854	14
of which Lignite	8938	10,2	5547	7,7	4677	8,1	5564	10,5	5793	10,9	5763	11,0	5917	10,6
Natural Gas	26351	30,2	22746	31,5	19690	34,1	17547	33,2	16689	31,5	15043	28,8	14662	26,2
Oil	8868	10,1	7665	10,6	6566	11,4	6396	12,1	6454	12,2	6513	12,5	6492	11,6
Hydroenergy	3146	3,6	2801	3,9	3635	6,3	2979	5,6	3304	6,2	3337	6,4	4189	7,5
Other resources (firewood, renewable sources etc.)	693	0,8	725	1,0	811	1,4	617	1,2	1049	2,0	962	1,8	1166	2,1
Imported resources	34127	39,1	29027	40,2	18772	32,5	16549	31,3	15715	29,6	16679	31,9	19463	34,8
of which:														
Superior coal (including coke)	4848	5,6	4536	6,3	2840	4,9	3995	7,5	2145	4,0	2788	5,3	3009	5,4
Natural Gas	5844	6,7	5803	8,0	4216	7,3	3445	6,5	3601	6,8	3721	7,1	4774	8,5
Oil	21084	24,1	15524	21,5	8119	14,1	6353	12,0	7551	14,2	8089	15,5	8619	15,4
Oil-burning products	367	0,4	735	1,0	1790	3,1	1630	3,1	1644	3,1	1621	3,1	2826	5,1
Electric energy	1946	2,2	2417	3,3	1798	3,1	1126	2,1	774	1,5	458	0,9	189	0,3

Note: 1 tep = 1,435 tcc = 10 Gcal = 41,9 GJ; 1 tcc = 0,697 tep

Source : The National Commission for Statistics, *Statistical Annually of Romania 1990 - 1996*

In order to achieve reasonable predictions for energy consumption in Romania, over the medium and long term, we have used the criteria of the Energy and Power Evaluation Program and those of the Model for Analysis of Energy Demand. The predictions are based on the fact that Romanian economy is becoming a market oriented one, thus its main criteria will be cost reduction, together with better quality of products. This means major modifications to existing production units and building new ones, equipped with modern, performance technologies.

The development of transport was also connected with economic increase and living standards. The needs of energy in agriculture were determined according to the characteristics of machines, soils, for existing and future farms etc. The Romanian Institute for Economical Predictions, using the same methods as the World Bank, estimated, for instance, that the G.I.P. will be 5.8% between 1996 and 2025, relatively close to that of Greece and Portugal.

The alternative scenarios have taken into consideration the evolution of two important parameters: the contribution of the added value by the industry to G.I.P. and the contribution of industry to economic development. They are:

- ? The scenario with a high growth rate, that implies diminishing the added value by the industry in GIP from 32.4% in 1995 to 27% in 2020 and maintaining the industrial contribution to the economic raise up to 2000 and the decrease with 4% between 2001 – 2020.
- ? The scenario with slow growth rate, implying the diminishing of the added value by industry to GIP from 32.4 in 1995 to 29% in 2020 and a decrease of the industrial contribution to the economic growth with 2.3% between 2001 – 2020.

It is obvious that for Romania and other Central and East European countries the consumption of power per capita decreases till 2000 in comparison with OECD countries, but this decline will be followed by an accentuated growth period between 2000 and 2010, while in OECD countries the same indicator will decrease.

Table no. 4

The final energy demands in industry – the average scenario

	UM	1995	2000	2005	2010	2015	2020
TOTAL	10 ⁶	27,10	25,93	26,95	28,89	32,90	37,08
- electrical energy	tcc GWh	4 2858	2 3060	6 3405	2 3890	0 4553	1 5452
- thermal energy	10 ⁶ tcc Tcal	3,515 5737	3,764 5443	4,189 5298	4,785 5521	5,601 6135	6,706 6781
- fuels	10 ⁶ tcc 10 ⁶ tcc	0 8,196 15,39 1	2 7,777 14,39 2	7 7,577 15,19 0	2 7,895 16,21 2	7 8,774 18,52 5	0 9,698 20,67 7
<i>of which for:</i>							
Chemical industry TOTAL	10 ⁶ tcc GWh	7,487	6,593	6,377	6,718	7,961	9,206
- electrical energy	10 ⁶ tcc Tcal	0,584	0,578	0,615	0,673	0,790	0,890
- thermal energy	10 ⁶ tcc 10 ⁶ tcc	1602 6	1414 6	1228 9	1309 4	1587 4	1843 8
- fuels	10 ⁶ tcc 10 ⁶ tcc	2,289 4,614	2,021 3,995	1,756 4,006	1,871 4,174	2,268 4,903	2,634 5,682
Metallurgy TOTAL	10 ⁶ tcc GWh	6,469	6,173	6,665	7,090	7,445	7,691
- electrical energy	10 ⁶ tcc Tcal	1,018	1,030	1,096	1,155	1,210	1,259
- thermal energy	10 ⁶ tcc 10 ⁶ tcc	4094 0,585	3711 0,530	3846 0,549	3977 0,568	4025 0,575	3962 0,566
- fuels	10 ⁶ tcc 10 ⁶ tcc	4,867	4,613	5,02	5,367	5,66	5,866
Oil processing industry TOTAL	10 ⁶ tcc GWh	2,654	2,527	2,66	2,903	3,714	4,174
- electric energy	10 ⁶ tcc Tcal	1488	1423	1512	1650	2073	2366
- thermal energy	10 ⁶ tcc 10 ⁶ tcc	0,183	0,175	0,186	0,203	0,255	0,291
- fuels	10 ⁶ tcc 10 ⁶ tcc	7742 1,106 1,365	7378 1,054 1,298	7693 1,099 1,375	8344 1,192 1,508	1092 7 1,561 1,898	1201 9 1,717 2,166
Heavy equipment industry							

TOTAL	10 ⁶ tcc	1,957	2,103	2,315	2,584	3,091	3,890
- electric energy	GWh	3756	4562	5746	7165	9170	1228 ³
	10 ⁶ tcc	0,462	0,561	0,707	0,881	1,128	1,511
- thermal energy	Tcal	4740	5082	5338	5541	5689	6497
	10 ⁶ tcc	0,678	0,727	0,763	0,792	0,814	0,929
- fuels	10 ⁶ tcc	0,817	0,815	0,845	0,910	1,150	1,450

Source: *Least Cost Power and Heat Generation Capacity Development Study - Heat and Electricity Demand Forecast*, ISPE, Bucharest, March 1997

2 Energy intensity – performance rating for every economy.

The quality of power consumption is evaluated by the power efficiency (a determinant element of the economical efficiency) and represents the increasing effect obtained by energy consumption in order to insure the needs of the consumer. The usual criterion for defining energy efficiency is *energy intensity* (a directly dependent relationship between *energy consumption* and the related *G.I.P.*

Comparing the average values of Romania's energy intensity in 1990 (2.3 kgcc/G.I.P. in US\$), with those of very advanced countries, the results are shocking: Romania's energy intensity was 4-5 times higher than those of France, Italy or Norway and 8-10 times higher than those of Japan, Swiss or Sweden.

The high value of energy intensity in Romania was due to: a) the state subsidising the energy sector and practicing dumping prices for energy and fossil fuels even in 1970 – 1980; b) Romanian heavy industry, a huge energy consumer; c) enormous energy losses on the producer-tranporter-distributer-consumer chain (sometimes up to 40-50% of the produced energy); d) the absence of laws favourable for energy savers.

Today, Romanian energy intensity is considered to be 2.5-3 times higher in industry than for international standards. In this condition, Romania imports primary energy resources of more than 1.5 billion US\$ every year.

In order to reduce energy intensity, Romanian industry will have to be equipped with new energy technologies, the transport and distribution network must be modernised, metering equipment will have to be extended to both industrial and individual consumers. All these require great investments, but the results can be impressive: according to an average scenario, the energy intensity of Romania could decrease in 2020 to 50% of the 1995 value (as it is demonstrated in table No. 5). There is also the issue of closing the fossil fuels power plants and replacing them with nuclear power plants and hydro power plants, which may allow energy intensity and energy prices to decrease notably.

Table no. 5

The evolution of the final consumption of power and the energy intensity – average scenario

	U.M.	1995	1996	1997	1998	1999	2000	2005	2010	2015	2020
		Achievements									
TOTAL final consumption of electric power	TWh	46,4	47,5	43,5	42,4	43,2	45,0	53,5	62,0	70,0	79,0
GIP	10 ⁹ \$ 95	35,35	36,85	36,07	35,64	36,50	38,10	50,5	68,5	91,0	118
Energy intensity	kWh/1000 \$	1310	1284	1206	1190	1184	1180	1060	905	770	670
Industry Final consumption of electric power	TWh	26,9	25,7	23,1	21,9	22,2	23,1	26,6	29,9	33,1	36,5
GIP	10 ⁹ \$ 95	11,50	12,49	12,30	11,35	11,35	12,09	14,9	18,01	22,77	29,50
Energy intensity	kWh/1000 \$	2335	2060	1940	1930	1925	1910	1785	1660	1454	1237
Constructions Final consumption of electric power	TWh	0,76	0,80	0,80	0,90	0,95	1,00	1,30	1,70	2,20	2,70
GIP	10 ⁹ \$ 95	2,19	2,37	2,38	2,65	2,79	2,94	3,88	5,14	7,10	9,44
Energy intensity	kWh/1000 \$	347	337	336	340	340	340	335	331	310	286
Transport Final consumption of electric power	TWh	2,20	2,60	2,40	2,50	2,60	2,70	3,10	3,50	3,90	4,30
GIP	10 ⁹ \$ 95	3,43	3,33	3,12	3,25	3,38	3,50	5,13	7,02	10,46	14,16
Energy intensity	kWh/1000 \$	641	781	770	770	770	770	604	500	373	304
Agriculture Final consumption of electric power	TWh	1,76	1,60	1,60	1,70	1,85	2,00	2,60	3,30	3,80	4,00
GIP	10 ⁹ \$ 95	7,08	6,91	6,87	7,08	7,70	8,33	10,79	14,35	17,27	20,06

Energy intensity	kWh/1000 \$	248	232	233	240	240	240	240	230	220	199
Services Final consumption of electric power	TWh	7,70	9,20	8,40	8,40	8,40	8,40	10,4	12,40	14,00	16,50
GIP	10 ⁹ \$ 95	11,15	11,75	11,40	11,31	11,10	11,24	15,8	23,99	33,40	44,84
Energy intensity	kWh/1000 \$	690	783	737	744	757	747	660	517	419	368

Source: *Least Cost Power and Heat Generation Capacity Development Study - Heat and Electricity Demand Forecast*, ISPE, Bucharest, March 1997

3. The part of the electrical power in a sustainable development

At the beginning of the 1980s industrial development has changed significantly. Significant increases in the consumption of electrical power took place in developing countries, but in the developed countries, industry's demand for electrical power decreased. At the same time, companies producing electricity had to adapt to new situations, responding to the new consumer's demands for quality, price and environment protection.

The prices of producing electricity at the beginning of the XXI-st century.

For many years this problem has grasped the attention of experts from UNIPEDE, who, in 1997, finished a report containing the results of an exhaustive analysis. The following hypotheses have been considered in order to obtain the convincing results:

- 1995 level ECU (European Currency Unit), with no fiscal taxes has been used for calculation;
- the new and modern production capacities will start to produce in 2005;
- the calculated costs refer to net energy and do not include taxes for transport and distribution.
- the economic calculation has taken into consideration two stages of discount, namely 5% and 10%;
- Common scenarios have been used for the price of the fuel, both for conventional power stations and nuclear ones.

The results are to be found in Table No. 6 concerning production costs for electrical power in 2005.

The average values prove that all the three alternatives may be competitive, if the price for the used fuels is the estimated one.

The average prices producing electric power in 2005

Discount rate	Scenario Combustible	Nuclear 0,01ECU 95 /kWh	Coal 0,01ECU 95 /kWh	Gas 0,01ECU 95 /kWh
5%	High		3.50	4,14
	Average	3.06	3.29	3,57
	Low		3.10	2,97
10%	High		4,39	4,50
	Average	4.49	4,18	3,96
	Low		3,99	3,30

Source: *Electricity Generating Costs for Thermal and Nuclear Plants to be Commissioned in 2005*, UNIPEDE, Doc. 60.11, Targen, Paris, France, March 1997.

A separate case will be the stations with a combined cycle (gas-steam) for which the values are expected to be more competitive than for those using coal.

Management of Energy

Demand Side Management (DSM) means planning, evaluating, implementation and watching those activities projected by the producer to influence using power by the consumers, aiming at making changes as concerns the consumers consumption of energy, in the way of varying the charge and its proportions, preferably to decrease the consumption”.

This very comprehensive definition is preferred because it underlines some basic features of DSM and namely:

1. DSM influences the clients' consumption pattern;
2. DSM reduces the demands of power and energy without diminishing the useful effects (heating, lightning, cooling etc.);
3. DSM should be profitable both for the producer and for all his clients, not only those participating in DSM programs;
4. DSM should include planning, evaluation, implementation and following the proposed programs. These steps are necessary to compare DSM options with other alternatives and to act accordingly.

DSM represents a dynamic process, so the impact of its options on the charge curve could be changed as to the planning. The charge curve is dynamic and changes over time; the same effect is that of many DSM options.

The development policies of most companies that supply electricity have been built lately on a new vision as concerns strategic planning. This new method is known as the integrated planning of resources (Integrated Resources Planning – IRP) that considers the supplier – consumer relationship as a whole and tries to improve it so that the best use of the energy, natural and financial resources is obtained. The criterion that has been taken into account is that of minimising costs (Least Cost Planning – L.C.P.).

At the same time, the following facts have contributed to the development of DSM programs: the oil crises in 1973, the awareness that resources are limited, the difficulties concerning development of new sources of production because of the great investments necessary, great pressures on fuel prices and the impossibility of a continual price rises for electrical power, the need to protect the environment.

The advantages of using DSM programs that increase the economic performance of the supply enterprises, supported their development and adoption on a large scale in the electric power industry of numerous countries.

The main opposition to DSM initiatives was the conservative attitude of many key persons from the supply companies. Starting from the correct idea (at first) that any reduction of consumption means a reduction of the profits, many managers rejected from the beginning the ideas of DSM. The mentality and thinking of these managers is that the supplier's role and responsibility must end at the electricity supply meter.

However, the activity of great companies producing electricity for many countries, the economic and financial prosperity obtained by developing a large and different set of DSM programs for all categories of consumers (domestic, commercial, institutions, industrial etc.) support, as a unique way of the future development of the suppliers of electricity, the introduction of DSM programs in current and future practice.

4. The Reform of the Energy System

The energy system is a key sector of strategic importance in socio-economic activity. We cannot speak of a modern economy without an efficient energy sector, able to assure and support different economic branches and social development.

The evaluation of the present situation shows the complexity of the problems that the energy sector in Romania and particularly the electrical one are confronted with. The institutional system of today in the energy branch is weak and inefficient.

The general aim of reforms are low costs, and safe supply of electricity for the short, middle and long term, with the conditions for protecting the environment.

To achieve this, some conditions are compulsory:

1. Increasing energy efficiency in resources, production, transport, delivery and consumption.
2. Reconsidering and diversifying the support of primary resources.
3. Reconsidering the existing capacities of production and those under construction.
4. An connection with the West European energy system (UCPTE).

A national strategy should be elaborated to support the development of the energy sector. It will be backed by the concept of sustainable development and will work with the following main instruments:

- ? integral planning of resources;
- ? the national program of energy efficiency;
- ? planning the development and rehabilitation of the production, transport and delivery equipment with lower prices;
- ? a state energy policy.

The new institutional and legal system should assure the following:

- ? effective competition;
- ? a cost policy to make the sector profitable, to maintain its financial viability and attract private capital (foreign and Romanian);
- ? a competitive participation in the transactions with electrical power on the European energy market;
- ? fulfilling Romania's obligations to the European Energy Treaty;
- ? achieving conditions allowing Romania become a full member of EU in the near future.

The reform of the energy system should rely on the EU principles and standards, and aimed at:

- ? **Demonopolization by competition under undiscriminatory and transparent conditions:** the right to choose the producer; the sector's development by attracting private capital; the emergence of independent producers; producing electrical power by effective competition; there will not be producers with a dominant position; equal access to the energy resources; competition to satisfy captive consumers consumption; opening the market (free transactions) for eligible consumers and independent producers.
- ? **Equality as concerns transport and delivery of electrical power.**
- ? **Free transactions between eligible consumers and independent producers; established access to distribution systems for third parties by the system's operator.**
- ? **The negotiated access for third parties to the distribution network.**
- ? **Public service for captive consumers at the level of distribution; equal costs at the national level.**
- ? **Realistic prices, able to cover the costs and assure the financial viability of the operators in the sector.**
- ? **The principle of tariff neutrality and ending of cross subsidies.**
- ? **Decentralization, efficient management with administrative and financially autonomy.**
- ? **Developing and rehabilitating the production capacity.**

The possible structure of the electrical system in Romania could be:

- ? **Consumers:** eligible and captive (public service);
- ? **In production:** thermo and hydro commercial societies with state or private capital (foreign and native); state owned nuclear plants; self sufficient enterprises;
- ? **In transport-**The National Society of Electricity, as an operator of the transport system and respectively as a commercial operator during transition;
- ? **In distribution** –the commercial companies of distribution and have got the right of eligibility, while the captive consumers will be plug in as public service by the distributing societies;
- ? **Development:** planning on the basis of the lowest costs and of integrated planning resources;
- ? **Regulating:** setting up an Independent Regulation Agency.

The proposed structure is a deep change against the existing situation. To reach this proposed structure in a cautious and controlled manner involves certain intermediary stages.

5. Reusable sources of energy – an energy vector of progress and development.

The world public opinion becomes more sensitive as regards atmospheric pollution, and almost everybody supports sustainable development.

The recent energy statistics of the World Council of Energy show that the percentage of reusable sources in 1995 is significant, especially due to hydro-energy, fire-wood and bio-mass (about 15.3%).

Hydro-electricity represents 5% of the world's production but in the U.S.A. it represents 45%. In O.E.C.D. countries it represents 17% in 1995. The other sources of reusable energy (wind, tide, geothermal) represent very little, even in the most developed countries. The hydro-stations as well as the other reusables haven't made an impact on atmospheric pollution. The dams create a change of the natural state of rivers, but adequate exploitation may minimise the consequences to the environment.

Table no. 7

The quantity of the recovering sources of energy as concerns the world energy balance in 1995:

TWh

Type of energy	Africa	America	Asia	Europe	Oceania	Total	%
Coal	473	2917	5981	4623	320	14314	31
Oil	531	4851	4248	4365	171	14166	31
Combustible shale	0	140	0	1	0	141	0,1
Natural gas	161	2936	1415	3620	86	8218	18
Nuclear power	7	712	348	1039	0	2106	4,5
Hydroelectricity	55	1072	503	689	39	2358	5,1
Wood	612	484	1074	156	11	2337	5,1
Biomass	224	758	872	591	49	2494	5,1
Solar energy	0	1	0	0,1	0	1,1	-
Geothermal energy	2	27	19	22	6	76	0,1
Eolian Energy	0,1	3	0	2	0	5	-
Total	2065	13901	14460	15108	682	46216	100

0: Zero value or insignificant

Sursa : *L'hydroélectricité, vecteur énergétique de progrès et de développement*, UNPEDE, Doc. 30.05. HYDROVAL, Paris, Franta, mart. 1995
6. How to achieve a sustainable energy sector

The sustainability of the energy sector may be defined as: *the pattern of producing and consuming energy that increases the contribution of energy production to obtain social and economic benefits for present and future generations, without deteriorating natural processes*. The concept of sustainable development of the energy sector has three objectives.

- 1) maximising productivity in order to strengthen the national economy and improve living standards;
- 2) preventing pollution in order to reduce unfavourable impacts on the environment associated with production, distribution and use of energy;
- 3) keeping national security by reducing vulnerability to variations in the international energy market.

To achieve these objectives there are five elements of the strategic policy.

- ? *Increasing efficiency when using energy;*
- ? *Development of an equilibrium of internal energy resources.* It may be obtained by increasing competitiveness of internal oil producers and extending the role of natural gas so as to promote clean and efficient technologies, also by reducing coal's impact on the environment and maintaining and developing nuclear energy;
- ? *Investments in advanced science and technologies* (including in research);
- ? *Reducing the risks for health and environment;*
- ? *International transactions* in energy markets or participating in international energy investments and programs.

3 I. LAND MANAGEMENT

Organising and managing the land represents the spatial expression of the economic, social, cultural and ecological policy of every society. It is also a scientific field, an administrative technique and a policy formulated so as to be a global and interdisciplinary approach whose aim is the equal development of the land and a physical organising of the space corresponding to the long term

strategy. Shortly, Organisation and managing of land assures the most favoured living conditions, and a rational use of resources, for present and future generations.

In Romania, this action is favoured by the geographic structure itself: the relief, hydrographic network, soils, vegetation, the urban and rural systems are the basic strategic elements to solve both general and particular problems (national, regional, local), beginning with territorial systematisation and urbanism (general, zonal and in detail) etc. ending with organising and managing the agricultural land according to the use (tillable, fruit trees, vineyards, forests, etc.).

The plans for organising and managing land are the basis of Romania's sustainable development, the present projects being the support for future achievements in view of the year 2020.

Thus, *The Plan of Managing the National Land* has been made for four main sections (Annexes 2-7).

? Section I - Communications-has defined the main communication superstructures (road, railway, aerial and naval transport), aimed at connecting the European routes with our network, considering the importance of Romania's geographical position for the N-S and S-W European lines of communication and also rationalising the interior network of national interest.

? Section II – Water: the major task is to administrate the national water resources in an efficient, environmental and sustainable manner.

? Section III - Protected areas of national interest both natural and human made – will ensure the protection, conservation and profitable administration of the natural, cultural and historic riches of the country.

? Section IV- the Network of cities, towns, and villages aims at achieving an urban structure in the national interest that assures sustainable development in direct relationship with the environment, the national internal urban balance and also the external needs (both regional and European).

While the Plan of Managing the National Land (PMNT) is a national development strategy, thus being carried out by different departments and by the Government, it allows also local level or regional authorities to apply it. *There is a Regional and Administrative Territories Development' Plan and Urban Areas Restructuring and Development Plan.*

Some of these plans benefit by international, interregional or bilateral funding (like the Romanian – Hungarian border districts, the Danube Delta), others represent special investments of the Romanian Government for less favoured Romanian regions (Apuseni Mountains Region, Vaslui and Botosani counties)

The main feature of PMNT is urbanisation with the goal to increase the urban population from 55% (in 1998) to 75% (in 2020) of the total population, and also to increase the number of towns while decreasing the number of villages.

In Romania, there are 9 big cities (with more than 300,000 inhabitants), including the capital, Bucharest, with 2 million inhabitants; there are 262 cities (among which 50 are regional main cities, for the country's 41 counties or districts); there are 2,686 small towns and 13800 villages.

The PMNT objectives are that in the next two decades, the total number of cities will increase to 466, the total number of small towns will increase to 3,161 and the total number of villages will decrease to 13,121. Also, what is most important, the degree of urbanisation, the range and quality of urban services and comfort will considerably increase for every category of urban area mentioned.

Today, the classification of Romanian cities is defined in modern terms, considering the number of inhabitants, the economic, cultural and historic importance and the strategic importance according to national and regional interests.

Category	Status	Number	Inhabitants (thousands)
I	Capital	1	2000
II	City of national importance (with potential status of European important city)	6	300 – 999
III, a	City of regional importance (county' capital)	34	100 – 299
III, b	City with national significance (history, culture, tourism)	19	60 – 99
IV	Cities balancing the national urban network	51	30 – 59
V	Cities balancing the regional urban network	151	5 - 29

The classification of the small towns and villages is, correspondingly:

Category	Status	Number	Inhabitants (thousands)
V b	Small town (unifies 3-5 villages)	2686	2 - 10
VI	Villages	13800	less than 3

The PMNT objectives for the second and third phases in the next two decades are: reorganising the communication networks, irrigation systems, forests, farming land, natural and artificial lake systems, at integrated national and regional level, with environmental protection and the demands of a sustainable development.

In 1998, in Romania there were 11,430 km railroads, 72,816 km public roads (24,683 km national roads and freeways and 58,133 county and local roads), 9 city' airports, 2 maritime harbours, several important Danube' harbours, and hundreds of kilometres of navigable channels. The PMNT plans to extend these networks and to connect them to the European ones, within the next 20 years.

3J. THE DANUBE BASIN – DELTA – BLACK SEA

1. The Danube Basin

The Danube hydrographic basin of 817000 sq km stretches across the land of 17 countries. Of all, Romania is the greatest tributary to the river, its drained surface being of 228 580 sq km (28% of the total Danube' drained surface) followed by Yugoslavia with 101 730 sq km (12,5%). In fact, 98% of Romania is drained by the Danube River.

The Danube basin is divided in three sectors: upper basin, from the springs up to Devin Gate, middle basin from Devin Gate up to Clisura Dunarii (or Iron Gates) and the lower basin: from Clisura Dunarii to the Black Sea.

Romania is connected to the Danube River over a length of 1076 km (225 km borderline with Serbia, 476 km borderline with Bulgaria, 209 km on national land alone and 166 km borderline with today's Ukraine, actually an old Romanian land, the Southern Basarabia).

Once, in the Romanian Plains, next to the Danube, there were huge holms and sandbanks, with great environmental importance (being natural filters for any waste or polluting substances carried by the tributary rivers), but also with a significant importance (fishing and wild life), that extended far beyond the needs of the nearby population. Unfortunately, between 1964 and 1985, the communist regime completely drained this area in order to obtain more farming land. The result was a disaster: in only a few years the soil was dry, salty, filled with chemical pesticides used to protect the crops, and the farming on the 435 000 ha drained became an illusion. The fish population and the wildlife were forever lost, the dams are continuously eroded by the strong current of the Danube or by floods and require a huge budget for maintenance and reinforcement, and across the whole Romanian Plains the drying of the underground reserves of water is obvious, thus leading to the death of the Plains' remaining forests and also to the continuous decrease in crops productivity. It is a classical example of what can happen when the natural balance is perturbed.

Today, the Danube carries to the Black Sea 80 million tons of suspended substances every year, mainly bicarbonate (47 mil. t), calcium (12 mil. t), sulphur (2 mil. t), sodium and potassium (6.3 mil. t), chlorine (4.5 mil. t), magnesium (1.5 mil. t), but also nitrogen, phosphorus, oil by-products, metal residues; the average water mineralization being 324 mg/l. Another significant value is the biological oxygen demand (BOD 5), which is, on average 1-3 mg/l (an increase from 1.2 mg/l in 1964 to 3 mg/l in 1977). The result is an obvious decrease of the Danube' fish population, both in quantity (100 times less today than in 1960) and in quality (the size of the fishes, the number of the species).

Regarding this drained area, it is probably more profitable and logical to flood the drained areas once again, in order to restore the natural balance of the region and that of the Romanian Plains.

Regarding the Danube's polluting factors, it is most urgent to stop both the river's direct pollution and that of the tributary rivers – if not, within 20 years, the lower basin of the Danube will be lifeless.

2. Danube Delta

The Danube Delta is 75 km long EW and 75 km wide NS. Its total surface is 564 000 ha. Until 1940 all belonged to Romania. Today 442 000 ha are Romanian land and 121 700 ha are Ukrainian land. Most of the surface is covered by water (65 % permanently and up to 90% at flood time). The only firm land is the two continental islands (Chilia and Stipoc), but there are many major sandbanks, some of them with unique habitats (like the famous oak forest on Letea Sand Bank).

The reed covered surface in the Delta is the biggest in Europe and other species are remarkable: oak, Turkestan ash trees, aspen trees, crawling and climbing lianas). But the fame of Delta is due to its wealth in fish species (most important, the sturgeon family) and water birds.

Between 1878 and 1945 Romania invested in considerable channel and dam works so that navigation between the Black Sea and the Danube stream should be continuous.

Fortunately scientists (like the great Romanian zoologist and biologist Grigore Antipa) warned authorities against interfering with the natural balance, so the habitat remained unspoiled with 340 000 ha permanently flooded, 88 000 ha temporary flooded and 14 000 ha dry lands.

However, after 1950, the Romanian communist regime (under some “friendly” advice from the soviets), came up with a plan for total and swift exploitation of the Delta, thus nearly destroying it.

1) The first idea was of exploiting the reed for the paper factory in Chiscani built especially for that. The only result was the final and permanent destruction of 60,000 ha reed-covered surfaces, and the knowledge that nobody can obtain paper using only reed.

2) The second idea was that of changing a great part of the Delta into agricultural land. Many works have been achieved and in 1990 there were dams and drying installations for 50,000 ha, The result was pitiful. A very convincing example is Pardina: 27,000 ha of dry land, of which 9,000 ha are salted, 3,000 ha are not used, 2,000 ha marshy and the rest is used for pastures.

3) The third ecological attack on the Delta involved changing part of the lakes and marshes into fishing ponds by surrounding them with dams. Exploiting them intensively in order to get huge fish production proved to be a disaster because the fish population didn't have time to recover and the biological (but also chemical) pollution of the waters increased to dangerous levels.

All these actions had two results: 1) considerable decreases of fishing production from a total of 11,500 t in 1953 – 1957 to 7,500 t in 1990. 2) The quality of the fish also decreased, diminishing firstly the valuable species of fish (it is significant that the sturgeon production was 1,000 t in 1900, 55 t in 1970 and 3 t in 1990).

The whole fishing policy before 1989, but also between 1992 – 1996 proved to be wrong and it must be ecologically reconsidered. Exploiting the forests is a real ecological attack, intensified especially after 1990, when the new regime gave the forests in Danube Delta to some private companies and not to Romsilva, an unique exception in the country. These companies executed massive deforestation without any concern for the future or for the natural balance.

Tourism also contributed to degrading the Delta especially by unrestricted hunting, which has led to some rare species of birds near extinction.

Today's image of the economic – ecological situation of the Danube Delta is not satisfactory. However the award of a triple status of international protection has brought proper laws for good management of the Delta and the necessary funds for ecological reconstruction and the Delta' administration successfully began this action after 1995.

3. The Black Sea

The Black Sea is the eastern frontier of Romania over a length of 244 km and its continental platform of 200 km in North that gradually reduces to 100 km in South.

The shoreline presents three different aspects: 1) *low shoreline* of sand banks; 2) *low shoreline* with sands; 3) *high shore* with vertical cliffs (mainly limestone).

The essential element of the sea's influence is a current, which moves sweeping the Romanian coast from North to South. The N – S coastal stream is the essential mechanism altering

the Black Sea shores, transporting the sand and mud brought by big tributaries (Danube, Don, Bug, Cuban, Nipru, Nistru) and depositing them along their coastlines, blocking the estuaries, deltas, and gulfs. But if the rivers are blocked by dams (like Danube and Nipru) the quantities of solid particles diminishes and the stream erodes the coastal line.

The second effect of this circular stream is pollution of the seashore. This is a permanent action, due especially to local polluting agents. In Romania, the main polluters are Petromidia, an oil distillery and Fertilchim a chemical plant. They are placed in the northern part of Navodari and their actions have disastrous effects on the marine life and the quality of the water: 1) Polluting elements are stored in the Navodari beach and in the sea water and the famous children's holiday resort will soon have to be closed. 2) The waste water from the two plants encourages sea-weed that develops out of control, creating a green cover that stops the water from being oxygenated. The fish die and are thrown on the shore to rot.

There is also a natural process that leads to the slow death of the Black Sea, determined by the Bosforus Narrows, only 35 m deep, separating the Marmara Sea from the Black Sea, both thousands of meters deep. This means that the waters from the Marmara Sea, with a salt content (35 g/l) doubled compared with that of the Black Sea (16 g/l), penetrate easily in the Black Sea Basin. Without any exchange streams, the Black Sea Basin has filled in the last hundred million years with hydrogen sulphide, released by organic matter from anaerobic decay. Actually from the average 2,000 m depth of the Black Sea, only the surface section, 200 m deep, is still alive, every thing beneath it being irreversibly lifeless, with the "alive section" getting thinner and thinner, and the dead water rising faster than it would do by natural causes.

For the sustainable development of The Black Sea (fishing, tourism, sea transport etc.) the following measures should be taken by every coastal country:

- a) to stop the pollution and filter the waste water from cities, harbour and businesses placed on the coastal line;
- b) for passing ships to strictly respect water pollution standards;
- c) to create aquaculturing stations to regenerate the fish population;
- d) to stop the pollution along the continental rivers tributaries to the Black Sea;
- e) to find more efficient solutions of protection against the erosion of the shore.

3K. SUSTAINABLE DEVELOPMENT AND THE WAY TO PROSPERITY

After 1990, a series of international meetings (especially the UN Conference for Development and Environment that took place in June 1992 in Rio de Janeiro) offered the possibility to understand why any future economic program of every state will inevitably be connected with a firm and consistent policy of protecting the environment with rational use of resources at national, regional and international scale.

Burning and arbitrarily cutting down the tropical forests, the rate of extinction's, poisoning air and water, global warming and gradually destroying the ozone in the stratosphere are the direct consequences of the impact between consumer civilization with the ecological system of the Earth. There are mainly three disturbing factors: the demographic explosion, the technical-scientific revolution and the world's understanding of its relationship with the ecosystem, denying any responsibility concerning the future consequences of its present actions. That's why in the last decade, sustainable development based on protection of the environment became a global problem for mankind. Practically, no developed and democratic country has a national strategy of sustainable socio – democratic development that does not consider carefully the protection of the environment. The whole western economy, the system of social development of the most developed seven countries, in E.U. or NATO has already considered the protection of the environment. That's why today and in the future, the political forces in every country and evidently in Romania will have to understand and practice models of sustainable development related to the need of protecting the global and the national ecosystem. Unfortunately, in the programs of all the main political parties in Romania and in their action plans, "the protection of the environment" or "the ecology" are, at best, considered associated actions and not as an integrated part of the transitional period.

The protection of the environment by sustainable development requires lowering the exploitation rate of natural resources by reducing consumption or recycling of secondary products. It is expected that six decades, beginning with the year 2000 are needed for such a complex strategy, at the same time with a gradual increase in alternative.

Such a strategy should be the main part of a long-term program of government in Romania. Even the global transition should take into account of sustainable development, if Earth with a doubling population from 1998 (5.7 billions) to 2015 (12 billions people) is able to survive.

The state of the environment in Romania

Romania has nowadays a good natural riches (superior than in many European countries) and the dynamics of the population over the long term is not a limiting element of sustainable development. Still, a process of deterioration began to be noticeable since 1980 and especially after 1990, due to the lack of understanding of the very concept of sustainable development.

The Law no. 137/1995 (the Law of the Environment's Protection) cannot be applied, due to the very confused articles and lack of enforcement powers.

The national network of protected areas is modest: 534 protected areas – 4.8% of Romania's land (1,140,590 ha). Three of them are internationally recognized as a part of UNESCO – MAB Program – Retezat, Pietrosul Dornei and Delta Danube and represent 2.96% of the national land. To complete the network of the protected areas, eight other areas have been proposed in 1991 to be National Parks: Ceahlau, Calimani, Bucegi, Piatra Craiului, Cozia, Valea Cernei, Cheile Bicazului, and Rodna), but nothing has been done so far.

The existence of 14 “hot points” (Copsa Mica, Baia Mare, Zlatna, Ploiesti - Brazi and Valea Calugareasca; Borzesti - Onesti, Bacau, Suceava, Pitesti, Târgu Mures, Turnu Magurele, Tulcea, Isalnita, Brasov, Govora) with an advanced deterioration of the environment and a bad influence on the population's health is well known and still no effective actions or at least plans to change the matter are in progress.

We must underline that 10% of Romania's land is seriously polluted. More than 4 million people are directly affected by pollution and half of them suffer due to chronic pollution; nearly a third of the work force is exposed to a level of pollutants above the standard limits at work.

The most polluted are the waters – 10 billion t. of polluting substances flow into the rivers yearly (only 10% of the quantity being properly processed). In Romania, 300 million tons of waste are stored (growing by 75 million tons/year), while only 20 million tons are recycled yearly. There are also 900,000 ha of soil chemically polluted and 3.8 million tons of toxic substances released into the atmosphere every year.

The energy sector produces about 90% of the polluting emissions in Romania. These values will diminish by 8 – 10% by starting the Nuclear Power Plant at Cernavoda, Unit 1, but the solution is only partial. The Romanian energy intensity is 2.5 times higher than in the European Union countries and Romania is planning to correct this, so that in 2010 the energy consumption should be only 50% of that in 1998.

The developed countries use 1 – 2% of GDP to protect the environment. In the last seven years Romania spent 0,1 – 1% of GDP, after two decades (1969-1989) of no protection for the environment whatsoever.

Considering the GDP, Romania is one of the European poor countries - a serious restriction to improve the environment but also a restrictive condition to its objective, i.e. to become a member of the E.U.

Recovering Methods

The aim of Romania's policy on the environment should be to assure sustainable development. The protection of the environment has got an international and regional component that implies the necessity of international co-operation, the only solution to guarantee the success of the local actions. A close relationship with the E.U., rational use of the transfer of knowledge and technologies, as well as promoting the existing standards and continental norms are key factors for Romania's success. The two directions of recovery are: full use of the human resources and institutional development of our environmental systems; promoting some international relations (especially the regional ones) so as to improve the efficiency of the local actions.

An important part is played by human resources, which should be strongly supported. Also, the policy of privatisation must be declared, explained, promoted and permanently controlled. But is essential that the reconstruction of the economic branches especially those influencing the environment and the population's health should be oriented towards sustainable development.

Considering the three basic elements (human resources, international relations and privatisation) a recovery alternative can be generated:

1. Completing a dynamic, coherent legislative system, and a system of norms and standards to organise socio-economic activity in accordance with the level of resources and the support capacity of the environment.
2. The development of an institutional structure able to allow the approach of integrated environmental protection in sustainable development.
3. The development and strengthening of information systems.
4. Evaluating the debts of economic enterprises to the environment. Future investments must include costs for protecting and recovering the environment.
5. The analysis of cost-benefits for every economic unit. The energy efficiency should be one of the main directions of economic restructuring.
6. Reducing the state enterprises in favour of private ones in order to promote international co-operation.
7. The introduction of Environmental Management Systems (European Standard EMAS, as well as ISO 14,000 series) in the governmental structures and local administrations and enforcing them to all economic branches.
8. Working out the strategy and the programs to recover the Romanian forests.
9. Urgently building a new structure to manage the network of protected areas.
10. The development of a system for waste management.
11. The development of a strategy to protect the natural resources of water and soil, accordingly to E.U. standards.
12. To set up The Environmental Fund, an essential element in an efficient strategy of restructuring and harmonious development of the country.
13. Educational specialists able to use scientific and technological knowledge to solve problems connected with the environment, and increasing the possibility that public opinion takes part in decisions.
14. Permanent adjustment of environmental strategy, related with the reform's stages and the dynamics of the regional strategy.

All these objectives may be achieved if the population will be educated about the environment's problems and sustainable development as a consequence of a coherent plan.

The present economic reform (in our situation the development of the small and middle size enterprises) allows a structure that is able to assimilate the basic European practices of protecting nature and especially those referring to the idea of the responsibility for the prejudices brought to the environment.

The measures adopted by the E.U. to settle the problem of pollution that happens in the past (first by adopting the notion of "ecological debts") has a major importance for the future development of those countries.

If Romania wants to be a member of the E.U., then the laws concerning the environment should strictly be put into practice, their consequences being very serious for many enterprises and companies. Romania has no possibility of spending billions of dollars to recover the environment, but any practical economic initiatives, based on European projects for protecting the environment and their integration in a national policy would prevent the continual degradation of the environment.

The introduction of European requirements and criteria of protecting nature in the program of economic reform of the Small and Middle – size Enterprises (S.M.E.) may become a model to be put into practice all over the country.

S.M.E. can influence the general behaviour of the economic policy and can contribute to strengthening the positive connections between environment and development. That means moving the objective from quantity to quality, with all the positive effects that come out of this process.

Practically, sustainable development represents one of the greatest tests that the Government, Parliament and civil society in Romania will have to face in the next few decades for an efficient use, preservation and improvement of the nation's resources, in order to maintain and develop the ecological processes on which life and prosperity depend.

SUSTAINABLE DEVELOPMENT

General Objective

A general increase of life's quality and future economic development, controlling the ecological processes that influence man's life, the preservation and rational exploitation of Natural Capital.

Main objectives

1. **To assure the level of national prosperity.**
2. **To promote equal chances between this generation and the next ones, including the right to live in a safe environment.**
3. **To protect biodiversity and maintain the systems of life support.**

The ways of reaching the objectives

- ? **to integrate all the objectives referring to social, ecological and economic development into the general strategy of development;**
- ? **to recognise the global dimensions of the actions and policies of development, especially of those related to the environment;**
- ? **recognising the necessity that the process of development should be assured at the same time with the economic growth, with the diversification and quality improvements;**
- ? **to put into practice the best results of some developed countries as far as the protection of the environment is concerned;**
- ? **to practice on a large area the realistic evolution of cost – benefit factors for improving the mechanisms of evaluation and price;**
- ? **to make sure that a great part of civil society participates in deciding the policies regarding sustainable development.**

Priorities for Romania

This concept should be applied in all subsystems that give the size of the country's economic development, so that the objectives of sustainable development become operational in Romania.

In this respect it's necessary to produce studies for sustainable development of all human activities. We can mention a project for sustainable energy, which is going on at UNESCO Department for Energy within the Politechnical University in Bucharest.

Such projects should provide a start to working out the National Strategy of Sustainable Development, an essential document for a country that wants to progress. That's why UNDP created the National Centre for Sustainable Development, under the care of the Romanian Academy and the Black Sea University Foundation.

The following actions are a priority in this period:

1. **Stopping the economic – industrial activities that significantly change the quality of the environment and the population's state of health.**
2. **Fulfilling the human fundamental needs: jobs, food, energy, water, housing, health, education, professional satisfaction.**
3. **The protection of biodiversity, the maintenance of Romania's Natural Capital and the permanent watching of economic development's influence on the environment.**
4. **Assuring a sustainable development for agriculture and the Romanian villages and raising the rural economy to the level of the west – European countries.**
5. **Offering concrete elements of sustainable development to urban areas. The introduction of mortgaging credit to stimulate the building of houses.**
6. **New jobs for young people and for those that have lost their jobs as a consequence of reforms, by encouraging, promoting and sustaining small and medium sized enterprises and the individual initiatives that can and must contribute decisively to the national income.**
7. **Laws to sustain the reconversion of industries to eco-industries, the recovery and use of waste, the general use of renewable resources**
8. **A law of the National Fund of Environment as an instrument to finance the objectives and actions of nature protecting including ecological restructuring. Consequently, the creation of further opportunities for the unemployed and the small and middle – sized enterprises, and the reconversion of waste lands, an important asset for any economy.**
9. **Adapting national education to the present and long-term needs of society, aligning it to world practice; offering equal chances for all schools, urban and rural.**
10. **To put into practice the conventions that Romania is a signatory to and are directly implied in sustainable development.**

4A. PREAMBLE

In the following pages we account for only two possible scenarios, considering the internal and foreign socio-political conditions:

1) The optimistic scenario: Romania reached the level of the average European countries, and by 2020 it will be integrated in Euro-Atlantic structures alongside the other Central and Eastern European countries. The boundaries are just the same with the present ones, but some steps as to the monetary integration have been made, the travelling visas in the Enlarged European Union disappeared, some foreign investors are present in significant number in Romania. The initial social problems of the transition have positively been solved and the unemployment rate stopped at the European level. In a period without military conflicts, the political confrontation between USA, Canada and EU with the former Soviet Union and Arabian countries did not degenerate in irreducible antagonisms but settled to be a cohabitation, in spite of the economic and cultural discrepancy. The competition with the countries in East Asia is going on only in the economic field. The demographic problems of China, India, Africa and Latin America are going to be mastered and the genetic engineering solved the problem of food for the whole world. It has been established by international agreements that the petroliferous resources and the natural gas be mainly used in petrochemical industry (thus avoiding El Nino-like disastrous consequences), while the transport and energetics are especially relying on nuclear power plants. The rate of the cutting in Earth forests (especially rain – forests) slow down but the cuttings do not cease; however, the concentration of dioxide carbon does no longer increase because there are new methods to stimulate the vegetation of the oceanic phyto-plankton. Although many earthquakes occurred in our country, they did not brought major destruction, like those in 1977. The polluting of Danube and the Black Sea has been reduced according to the international agreements and the oil pipes crossing the Black Sea and our country helped the recovering of the Romanian petrochemical industry. The roads structure and informatics in Romania reached the European level. The social and medical assistance in the country is also of European type. The G.I.P./ per capita is about 50% of the average level of E.U.L. in the same period. The total export is about 30% of G.I.P. in 2002 and 40% of G.I.P. in 2020.

2) The pessimistic scenario; supposing that Romania's integration in the Euro-Atlantic structures lasted more than we expected, partly because the socio-economic development was delayed and partly because of the strange western proposal made in 1997, regarding Romania's admittance only at the same time with the Baltic Republics. The social movements due to the political instability, the strikes and the lack of foreign investments led to the constant differences between the G.I.P. of Romania and that of the Enlarged European Union (E.E.U.). Because of some natural disasters (drought, earthquakes, floods, soil erosion, landslides, epizootic) and of the technical-economic underdevelopment, the agricultural production maintained at same levels, that couldn't compete with those in E.E.U. The pollution of the underground water and the urban areas caused serious social problems.

4B. Directions for prosperity IN ROMANIA

The following seven main directions of prosperity are considered possible in the optimistic scenario, relying on the human resources and also the Natural Capital of our country:

1. **Agro-zoo-silvic development**, based on the genetic engineering and an agrochemistry being able to avoid the excess of fertilisers and pesticide, stressing upon the genetically improved species of plants.
2. **Informational development**, relying on the intelligence (expressed in programs and computerised languages) and resulting in the passage from paper based information stocks to the optical CD data.
3. **Touristic development**, by using Romania's natural resources (mountains, Black Sea, forests, rivers, lakes, Danube Delta etc.) and corresponding services, including roads, railways, airports, telephones, Internet.
4. **The development of some industrial branches** with successful chances to compete on the international markets such as: chemical industry, synthetic fibres, wood furniture, electronics and with international participation, of machines and heavy equipment (cars, trucks, ships aeroplanes).
5. **The development of biotechnology** (still inferior today to that of USA, EU and neighbouring countries like Hungary) will bring a spectacular improvement to the agricultural production.
6. **The development of some traditional researching fields** such as biospeology, medicine, chemistry.
7. **The development of researches concerning reducing the pollution** of urban areas, of the Danube and the Black Sea.

4 C. THE PERSPECTIVES

OF THE FOLLOWING FOUR DECADES AS CONCERNS THE WORLD SCIENCE AND TECHNOLOGY

The scientific discoveries have never been so very rapidly applied into practice than in the XX-th century. It is supposed that this tendency will become more prominent in future, so that some of the predictions rely on existing discoveries or partial knowledges that will be completed in the future. Some possible discoveries are to be seen in table 1.

Table no. 1
Techno-scientific predictions for the next 40 years

Anul	
1999:	Anticonceptional pill for men
2000	Genetic therapy against cancer.
:	:
2001	Interior decoration with huge flat TV sets able to broadcast TV programs or permanent static images.
:	:
2002	Holograms will be the next form of artistic expression.
:	:
2003	Cellular and mobile phones will include visual equipment – thus, the communication will be complete
:	:
2005	Contact lenses will be connected to the Internet.
:	:
2006	Clothing materials will include sensors enabling them to cool or warm the body.
:	Construction materials will include stress sensors enabling them to prevent people before the breaking point arrives.
2007	Auto-traffic will be changed utterly by the introduction of: anticollision car-radar; freeways with electronic network for autopilot; geostationary satellites for orienting and positioning of the vehicles.
:	:
2010	Home robots, voice activated, will do most of the domestic chores.
:	:
2015	Genetic researches, will allow the increase of the average life-span to 100 years.
:	:
2016	Holographic phone.
:	:
2017	Landing on Mars. First permanent base on the Moon.
:	:
2020	Commercial airlines will use Vertical and Short Take off airplanes (VSTOL). Also the huge Flying Wings (capable of carry considerable cargo) will have a range of 10,000 km and a cruising speed of 1,000 km – thus the airfreight will be much cheaper.
:	:
2022	Artificial human conception in incubators.
:	:
2030	Artificial kidneys, harts, lungs, livers, arms, legs and eyes available for the general public.
:	:
2040	Controlled nuclear fusion.
:	:

An example of international co-operation as to the research is classifying the human genome, which is still developing. It's the most expensive research in the history of humanity and surpasses any other expense that the USA and the Western countries have ever made and scientists expect to be able to use its results for cures to the genetic diseases (like cancer).

4D. ROMANIA'S SITUATION

IN SCIENCE AND TECHNOLOGY

Of all four global scenarios that have been discussed in the first chapter, simplified versions of the optimistic and pessimistic ones will be predicted:

1. *The pessimistic scenario* is the one that does not pay to much attention to science, learning and health, even if there are no conflicts, natural disasters – so, the difference between Romania and the EU countries increase.

Significant progress has been made after 1989. First, there is freedom of travelling abroad, of buying foreign scientific bibliography, to co-operate with advanced centres of the world researching, as well as international scholarship for Romanian young people who are going to

specialise in different fields of activities. Many universities train students in foreign languages. Scientific equipment and documentaries have been received from abroad. The Romanian Academy and its research centres receive 16% of the National Research Budget; the rest goes to the Ministry of Research and Technology, which co-ordinates the Research Institutes (including those of the Medical and Agro-Forestry Academies). However, the present situation of the Romanian research is far from being satisfactory. The reduced percentage from the budget (0.3-0.5% from the GIP in 1993-1998) for research, and the lack of modern equipment and documentation are obviously as it is the depopulating of our researching institutes by "brain drain" to the advanced countries.

As concerns the basic scientific research the efficiency is given by quantitative and qualitative indicators. The quantitative ones are: (I) The number of articles and essays' published; (II) The number of quotations in the scientific world of these essays about national researches. In "Current Contents" (section of the "Science Citation Index" the most prestigious scientific bibliography' publication, edited by the Scientific Information Institute from Philadelphia, U.S.A.) there are only 4 Romanian scientific publications, which is far beyond Hungary, Poland or Czech Republic.

So, after the scientometric quantitative criteria, based on quotations, Romania is placed on a very low place. In a very recent issue of the "Scientific American", entitled "Lost Science in the Third World" relying on the information offered by the publications of the Institute from Philadelphia it is said that 30% of the total number of the world scientific publications come from USA, while from every other advanced country (England, Germany, Japan, France) come only 5-9%. Russian Federation contributes with 4%, Hungary, Czech Republic, Poland and Bulgaria between 0,22 and 0,92% while Romania, Albania and the countries from the former Yugoslavia has everyone only about 0,05%.

As a conclusion of the pessimistic scenario it may be said that if the urgent measures are not taken, the situation will go on deteriorating and Romania will depend only on imports of foreign products and technologies and will be considered only a source of raw materials, industrial products of a reduced value, and intelligence available for emigration.

2. The optimistic scenario

The Romanian researching has got a tradition in some fields of activity and it is know all over the world. Emil Racovita set up a new science (biospeology), Gheorghe Marinescu used the cinema for the first time to study the neuromotor illnesses, Costin Nenitescu is well known in the world chemistry' scientific literature. Other Romanian scientists' names are known to the scientists all over the world: Spiru Haret, Stefan Procopiu, Alexandru Proca, Nicolae Paulescu, Petru Poni, Grogore Antipa, George Emil Palade, who was born and educated in Romania has been awarded the Nobel-Prize for medicine in 1974 for discovering the ribozomes in U.S.A.. All these traditions and others facts make plausible an optimistic scenario if the following measures are urgently adopted:

- 1) A greater attention to the high degree education, to the research, technological transfer, innovations, health and culture, first of all by granting corresponding budgetary resources.
- 2) Creating research laboratories with modern equipment for different priority fields such as biosciences, the chemistry of the materials, the miniatural technologies. Only in this way the young people that are studying abroad may be determined to come back from the advanced countries and bring their contribution to the development of the Romanian sciences and those who study in Romania will remain in the country.
- 3) Computers in libraries: all researching places must be connected through Internet, and have access to all classical and modern means of documenting. Electronic publishing and broadcasting by World Wide Web of the main scientifically magazines issued by the Romania Academy.
- 4) To grant the social status, functions and decent salaries to the researches as well as to the universitarians.
- 5) To ensure that the state's Office for Inventions and Marks assure a real protection to the ideas and inventions patented in Romania etc.
- 6) Equal development of the four financially, human and material resources of researching:
 - a) The Romanian Academy's institutes;
 - b) The Ministry for Research and Technology' institutes;
 - c) The research in the Universities;
 - d) The state and private industrial research.

7) Financing the research relying on programs and competition ("peer – reviewed grants") both from Romanian resources and those offered by international organisations.

8) Adopting some priority directions of researching (that are going to receive larger sums of money) chosen accordingly with the field that Romania can compete in.

4E. Informatics

and Communications

The most important revolutions in researching and technology in the latter part of the XX-th century and in the first part of the XXI-st century are considered to be those in Informatics and Biosciences.

In Romania, the last nine years, the informatics was oriented towards *software* since there is no way the Romanian industry could produce *hardware* compatible with those on the market. This field (software) is a possible break through for Romania, due to its human resources, and, with foreign investments it could achieve surprising results in the next decades.

Romanian communications include TV (state owned and private) networks, both free TV and cable TV, radio stations and phone networks (with an infrastructure of optic fibres). There are also some beginnings of Internet presence but the number of computers connected with Internet in Romania related with the number of inhabitants is smaller than in Bulgaria, Hungary or Estonia.

4F. Services

According to Naisbitt ("MEGA TRENDS"), the Marxist dogma referring to the value that is the result of labour and is represented by the material production is denied by two evident proofs:

- a) in the developed countries, less than half of the active population is still implied in the production of material goods (that represents only a part of the G.I.P.), the others working in the services (E.Q. education and tourism).
- b) the information is a value, although it's not material.

Romania's geography offers great touristic attractions: Black Sea beaches, Carpathian Mountains, lakes or hydrothermal resorts, natural monuments (secular fir-woods, Danube Delta) or those built by the man, the monasteries in the North of Moldavia, in Agapia or Curtea de Arges, the antic fortresses and cities of Histria, Adamclisi, Sarmisegetuza or the medieval ones in Transylvania and Moldavia) and many other attractions that should be rediscovered or invented.

Unfortunately, the Romanian tourism of the last decade has known a strong decline. The rush privatisation led to sudden and "miraculous" fortunes for some, but also to the destruction and the decay of the infrastructure. What's worse, only recent, the infrastructure absolutely necessary to the development of the tourism became a problem that the Government chooses to acknowledge. Romania can attract tourists as well as France, Italy, Spain, Greece, Turkey and Egypt from the potential point of view. In the last decades, the Dalmatian sea - shore and the Bulgarian one have received a great number of tourists. Since, due to wars or other problems they are not longer available, these tourists can be interested in Romanian resorts with proper advertising, with entertainment, transport and communications infrastructures:

1. Offering services differentiated by their quality and value. It is Henry Ford's principle that helped him become very rich: small earnings are much more valuable than few great ones. There fore, Romania must develop a network of 1-3 star hotels and motels, before investing in huge 5 stars luxury hotels.

2. Leasing hotels and restaurants to competent managers.

3. The development of the internal art and folk art export by creating centres specialised in marketing, advertising and selling such products.

4. The Romanian unique landscape and historic monuments must be made popular by guide-books of the greatest specialised companies, like Fodor and Michelin as well as through movies, postcards, albums.

5. The therapeutic values of the thermal carbo-gas and salted springs in Techirghiol are far from being known to foreign visitors. If one can undergo a cure in Olanesti, Baile Felix, Baile Herculane, Covasna or Mangalia, tens of other places are yet very much at the 1940' standards (in lodging and logistics).

6. Connected to tourism is also the export of excellent Romanian mineral water if the industry of plastic bottles will be well equipped.

7. There is also the totally neglected problem of recycling the glass, the paper and the metals (especially aluminium). The tourist are very intrigued because they are accustomed to be fined when they do not obey the prescriptions of recycling in their countries, while in Romania, thousands of metric tones of precious non-ferrous metal are clump to garbage every year.

8. To advertise the touristic objectives a proper marking must be used. Not only road signs to allow the drivers to reach the destination, but every hotel and city hall should have and distribute free postcards and touristic brochures.

9. Using its strategically position as a place to supply the planes on their way to America, Middle East, India or Far East (or even North-East Africa) could organise short holidays, 1-2 days' tours for the tourists that stop here. In this respect, an excellent example is Island.

4.G. TRANSPORTS

1. The road network

In the next two decades we expect that the road network will develop by building new highways in Romania, to connect West Europe with the Black Sea and the Balkan Peninsula (see the map no. 1). There is a close relation between the average income per capita, the means of transport and the distance covered by every inhabitant that is obvious in the urban and transport development.



Map no. 1 European Highways – existed and planed



In the most developed countries in the world (for instance USA and Canada) the individual income is 10 – 20000\$/per year and the population's density is reduced – so, travelling by personal car covers about 90% of the transport. The subways, the buses and other ways of transportation are limited mostly to the urban areas, but air-transport raises continuously, reaching 15% of all types of internal transport.

In West Europe and Japan the income is also very high but the population's density is greater and the distances shorter than in North America, so travelling by personal cars represents about 70% of the options, and high-speed railtrains compete successfully with the aeroplane.

The following diagrams show the tendencies in the next decades. (The world traffic is expressed in km/man/year).

Between 1960 – 1990 – travelling by automobile was constant in the world' transport (53 – 54%) but it is going to decrease to 43% in 2020. The transportation by train is continuously decreasing, from 20% in 1960 to 10% in 1990 and probably to 6% in 2020. Traveling by airplane or monoray represented only 3% in 1960, but raised 9% in 1990 and will be 25% in 2020.

Will these tendencies reflect in our country too? First of all the highways connecting East and West, North and South will be finished. New laws referring to the car transportation will be issued, forbidding the engines which pollute.

2. The air transport

Modernising Otopeni Airport will allow Bucharest to take profit of its geographical position. Besides the airport taxes it is a very good occasion to make advertising for Romania and develop the tourism offering to the passengers the possibility of buying a variety of goods with no extra taxes.

3. The maritime and fluvial transport

Romania did not yet take advantage of the waterway between Northern Sea and Black Sea by Rhine-Main-Danube. Owing to the predictions concerning the economic development of the eastern part of Black Sea (Georgia & Azerbaidjan) the problem regarding fluvial and maritime transportation is more and more actual.

Unfortunately, the wrong policy as regards the Romanian commercial fleet led to inestimable loses, today the sea and river fleet representing only 20% of the 1989' level..

4H. INDUSTRY

If in the past centuries Romania had been "merely an agrarian country" after the second world war major investments have been made in heavy industry respecting the soviet model and partly prompted by U.S.S.R that was exporting iron ore to Romania and imported very cheap cast iron and steel. The great steel factories in Galati and in Calarasi had no national base thinking of the iron ore or good coal, but had to obey the soviet pattern.

Some of the investments relied on the home resources – for instance the chlorosodique industry and the petrochemical one. Unfortunately the Romanian oil reserves were almost drained, especially by the huge consumption in behalf of Soviet Union (1948-1968). The extra quantities of oil for processing were going to be imported, based on long term contracts. A series of wrong decisions caused great damages to the Romanian economy: imports from Soviet Union (1970-1974), Iran (1974-1980) and Iraq (1980-1990), ceased because of monopoly prices, wars, changes of government etc. Another industry that has been exaggeratedly developed that of producing aluminium, extremely energy – intensive. Heavy equipment and electrotechnical industry, automobiles, trucks and chemical–pharmaceutical industries, artificial and synthetic fibbers, the textile and furniture industries have been very successfully between 1950 and 1980.

Also the aircraft construction and military equipment industries have received large investments and it would be stupid to waste all the equipment and a very skilled labour force.

The scientific research and technological development will strongly influence the priorities that are going to help the industrial development in the following decades. A selection of the profitable industrial branches should undoubtedly be done and one of them is chemistry and the connecting branches. Although the cement industry and that of building materials is polluting and energy- intensive it has many possibilities and will always have customers, especially after French companies bought the greatest Romanian factories of that kind.

The most profitable branch of the chemical industry is the one using the great deposits of salt in our country. However, the chemical – pharmaceutical industry asks for great expenses in research as it is seen in image no. 3.

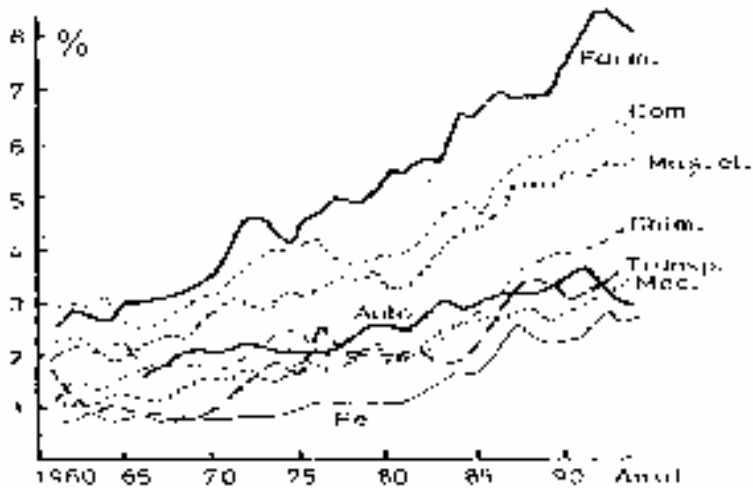


Image no. 3:

The report between Research & Development expenses and business increase, considering the industrial field

Japan is an excellent example: in 1990, the expenses for C&D in auto, chemical-pharmaceutical, electronic and electrical machines branches have represented increases of 150 – 200 times more than in 1960!

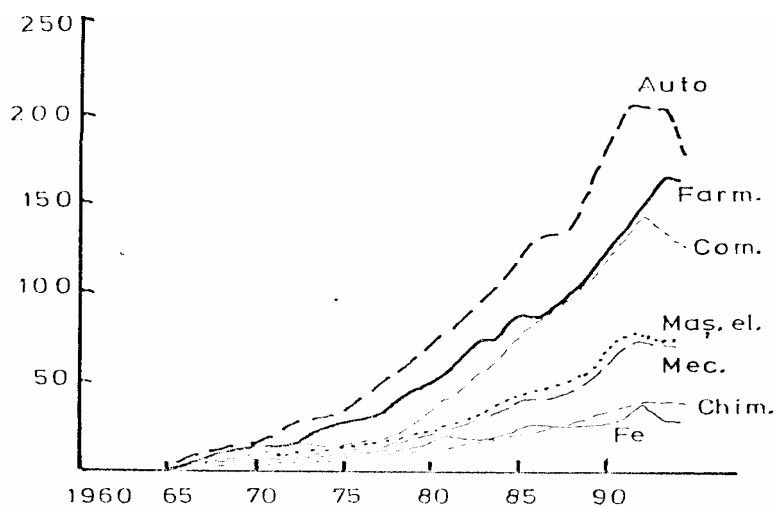


Image no. 4 Average expenses (compares to 1965) for R&D in Japan's main industry

A tendency that has come out of the technological researches in the last years in the chemical industry is that of using some catalysers of expensive metals (rhodium, molibden, tungsten, titanium). The greater cost of the catalyses is compensated by increased productivity and superior quality of the products.

The Romanian automobile, trucks, buses, aircraft and the military industries will not be able to compete the western ones without associating with foreign companies. The first steps have been made by DAE WOO cars and, possible, with COBRA helicopters.

Of all 35000 years of Homo Sapiens history, only in the last century the average life span increased significantly. According to some theories, there have existed three epidemiological transitions of human kind:

1. The one caused by shifting from hunters and migrators to farmers and sedentars about 10000 years ago that produced agglomerations of people. That brings the spreading of different diseases: the plague, typhoid fever, small pox.

2. In the last 150 years, Louis Pasteur discovered the microbes and introduced asepsis in hospitals: dr. Paul Erlich succeeded in healing the syphilis, Gerhard Domagk and Alexander Fleming discovered the cure for most of the diseases. The vaccines can prevent many illnesses, so in the developed countries, the average life span is over 70 years and the majority of the deceased are due to arteriosclerosis, diabetes, cancer, osteoporosis.

3. Unfortunately, we witness the third epidemiological transition caused by the global ecological problems and by some viruses or retroviruses. The science is still unable to fight against them, but even well known viruses become resilient to any medication. Therefore, only the medical field can prevent a going back to the Medieval times of world wide spread plagues.

1) The Nation's health as a result of the changing.

Biochemistry, biophysics, immunology, molecular biology etc. have created a new perspective of the world and the human being. Science is trying to find potentially dangerous genes and to create new medicines to fight against them. We are now in the first stages of knowledge concerning the way and place that the consciousness appears in the human brain. In the past, researching was in an uncomfortable position due to its incapacity to examine the brain thinks, feels and stores of the information (the memory). Today, new methods, like PET ("position emission tomography"), MRI ("Magnetic resonance imaging"), CAT ("Computerised axial tomography") opened the possibility of monitoring the organs and especially the brain.

Between 1990 and 1999 the mechanism of all organs has been demonstrated and the problems of diagnostic are not as difficult as 20 – 30 years ago. The organs began to be repaired or replaced, while the genetic engineering realised how our hereditary deficiencies are "programmed".

2) The Fear of Future

Besides the remarkable results of the technological progress, the fear of the consequences generated by these developments led to different reactions and protests of the world public opinion. The ecological movement has got a wide extension and its predictions proved to be real. The disaster from Chernobyl, for instance, was evidently a motivation for the potential danger of the "peaceful atom". The introduction of the herbicides and pesticides (whose positive effect was "the green revolution") led to the pollution of the rivers and tillable soils and contaminated the food of animal origin or vegetable with toxic products for human body. "The acid rains" and "the Earth heating effect" are also connected with the technological progress can be compared with the nuclear holocaust. However, in Romania, there are scientific achievements and valuable traditions as concerns virology, immunology, biology and cellular pathology, molecular glicobiology although the biomedical research remained in the last 20 years far beyond the researches in other European countries.

3. The new genetically industry in full extension

The adult human beings lose their possibility of regenerating the missing organs or those deteriorated after birth.

We are unable to regenerate or to replace the greatest part of our tissue excepting the skin, blood or some other types of cells. An American company of biotechnology (Ontogeny Inc. Cambridge MA) is working to decipher the genetic mechanisms that can generate these processes, as a genetic cure for any illness, from osteoporosis up to Parkinson. This company succeeded in separating three of the mentioned genes in the development of some organs (the brain and the nervous cells, skeletal bones etc.). Some of these genes may be created in the laboratory and injected in the brain of those that suffered of Parkinson, so as to regenerate the cells destroyed by the neurodegenerative diseases.

The medicine enters in a new era and the illnesses can be predicted before their out burst. Medicine will be come a preventive discipline and the introduction of corrected genes into the human cells will prevent or heal a lot of illnesses.

Today, more and more researches are implied in the greatest technological effort of mankind, greater than *Manhattan Project* or space programs, namely deciphering the messages from the human AND. The researches are financed by the governments of the industrialised countries, especially USA and France. Project of the Human Genome is intended as charting and the identification of human genes (esteemed to be around 100,000) until 2010 – 2020. When all genes will be identified and catalogued, this Project will be for Medicine the same as the Periodical Table of Elements was for the development of the Chemistry.

Until the end of 1997, 50,000 genes have been identified. The pharmaceutical companies have been using the new discoveries of genes to obtain new medicines. In this situation the results of the Project of the Human Genome will lead in the next century to a scientifically and technological revolution.

4J. ORGANISING AND FINANCING THE RESEARCH AND DEVELOPMENT FIELD (R&D)

If we are going to research at the level of the international standards and if we intended to take really a project of the international co-operation and to be able to cope with the best international scientists, we must assure financing and a permanent high qualified personal, well paid, well motivated and well equipped.

In comparison with its neighbours Romania has no understanding of the importance of science and technology developed by education and basic research. This crisis is much more severe than it looks. Both politicians and public opinion think that we can buy patents and modern technologies, and therefore Romania does not need sciences and fundamental research, which cost too much. But the modern industry is depending on the science, and technology, on the necessity of educating people. Only in this way we shall be able to answer rationally to the multitude of problems concerning the living and working in a universe continually connected to the permanent development of science and technology.

The Research and Development (R&D) field in our country can be best discussed only by comparison with the international situation and its contribution to every nation' economy and living standard. Two diagrams express the situation in Japan: no. 5 shows the evolution in time of the number of researches and auxiliary personnel (first number increases much quicker). No. 6 shows the increasing of the proportions of the number of researchers in comparison with the Institution's profile: between 1960 – 1975 the number of researchers of the governmental institutions doubled and is stationary thereafter; in universities it increased 6 times between 1960 – 1995 and in the industrial companies the increasing was of 9 times in the same period.

In the developed countries the expenses for R&D field are much higher than in the Central or Eastern European countries. To be able to cope with it, a country like Romania should assure over 2% of GIP for R&D and technological transfer.

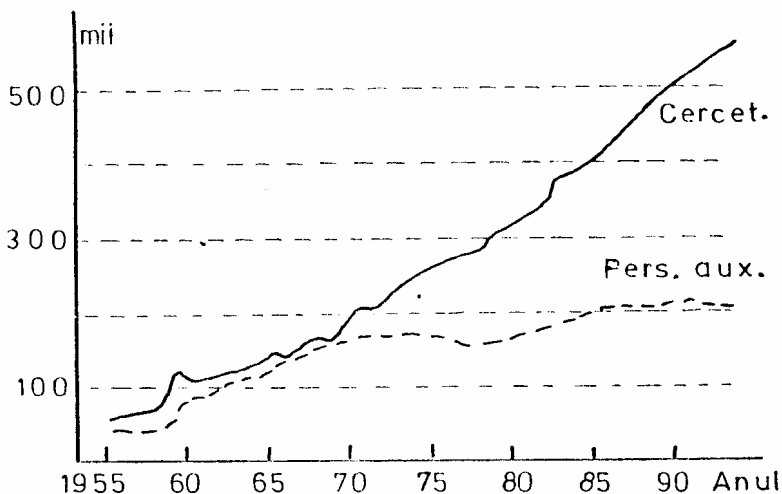


Diagram no. 5 Situation of research personnel (researchers and auxiliary personnel) in Japan

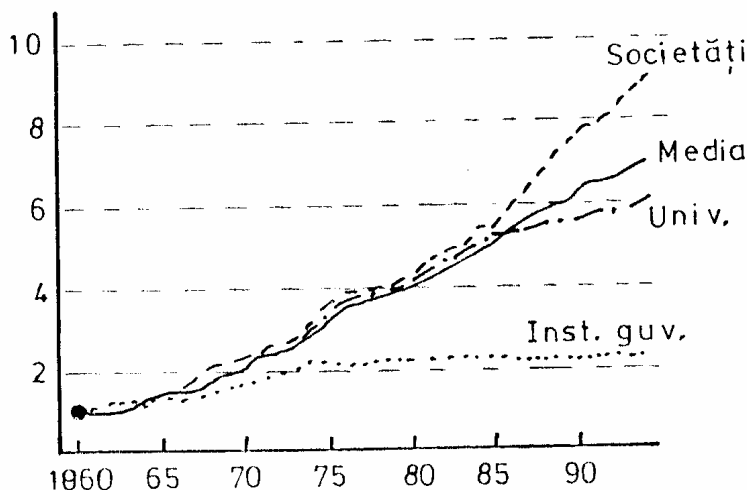


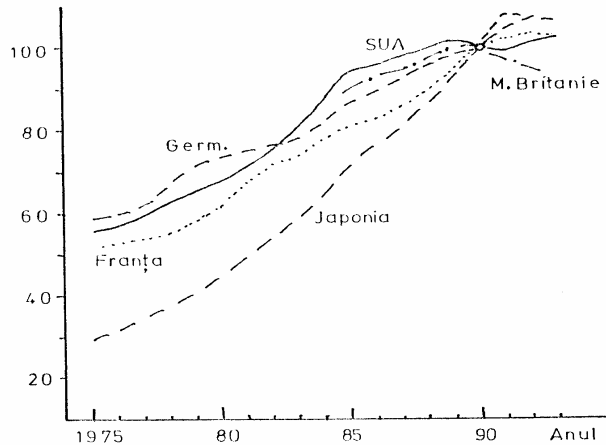
Diagram no. 6 Variation of researches (since 1960) in Japan, according to the institutions' profile
(governmental, universities, private companies).

Diagram no.7 shows the expenses for R&D (referring to 1990) of five developed countries. It is obviously that Japan and France increased the sums while in England the expenses of this kind lowered after 1990.

Diagram no. 7 Average expenses for R&D for five developed countries

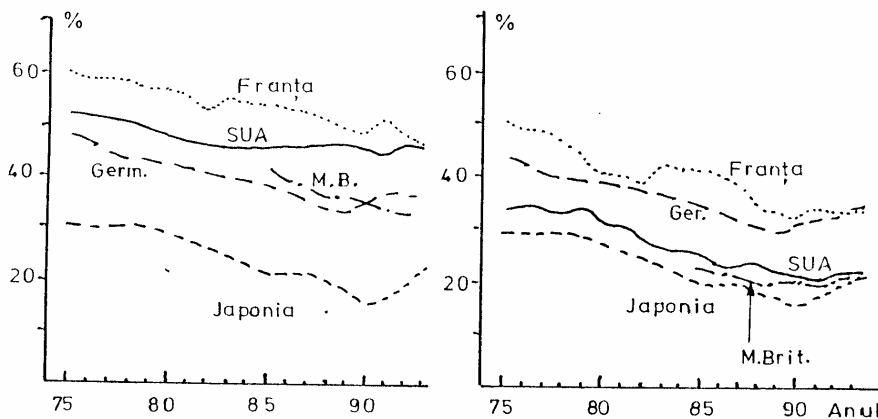
Diagram no.8 shows the percentage for R&D expenses financed by the government for the same countries. If we exclude the military expenses (diagram from the right side), the budgets of all these five countries become an homogenous group and show that the respective budgets have suffered a slight lowering because the industry take over, more and more, the expenses for R&D.

Diagram no. 8 Percentage for R&D expenses financed by the Government (left – including



military expenses; right excluding them) for five countries

Diagram no. 9: The percentage from GIP reserved for R&D in the same five countries, including the social and humanistic sciences. As to Germany and USA it is seen an increasing of from 2.3% to 3% between 1975 and 1985, followed by a slight reduction after 1990 about 2.6%. For England and France the increase was from 1.7% up to 2.3%. The greatest increase was that in Japan from 1.9% in 1975 up to 3% in 1990.



percentage of GIP for R&D in the same five countries, including the social and humanistic sciences.

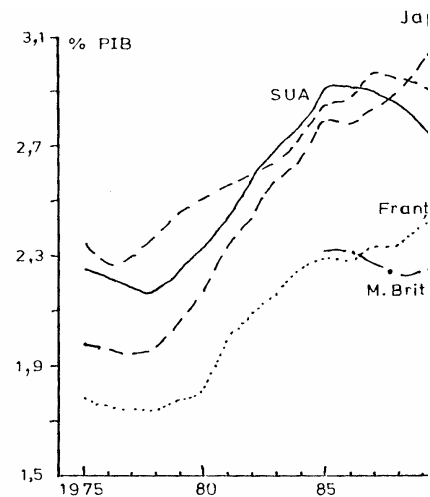


Diagram no. 9 The

The following four diagrams (parts of diagram no. 10) shows the contributions of different financing sources (industry, universities, government, private institutes) in four high developed countries: Japan, United States, Germany and France. In all four countries, the major contribution is due to industry. In France, the governmental financing is on the second place, while in Japan and Germany, the universities equals the government..

Diagrams 3-10 shows the contribution of the four developed countries for R&D. Some statistics for 1981 and 1991 (including more countries) are presented in the table 2 and in table 3. It is seen that for the 19 countries chose for these tables a substantial increase took place between 1981 – 1991: from 1.39 to 1.74%. It is also remarkable that in all the developed countries the industry contributes with at least 50% of the expenses for R&D.

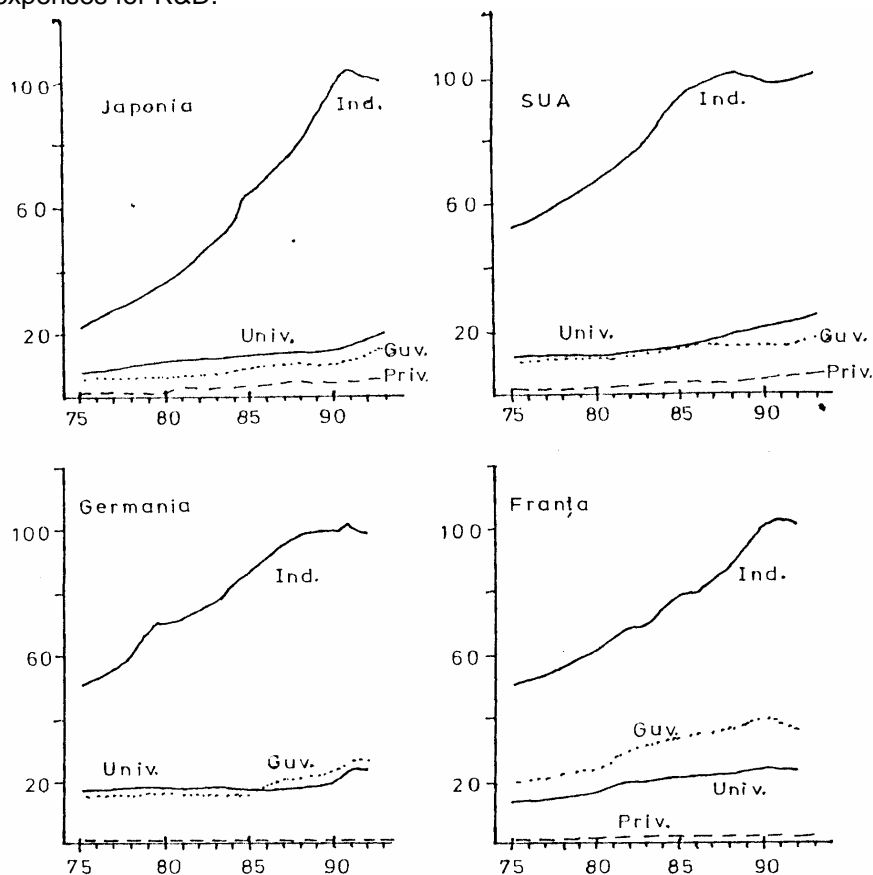


Fig. 10 Average expenses for R&D field, in four developed countries compared to 1990 (considered to be the highest point, estimated 100), and including the research in social and classical sciences

Table no. 2

Financing of R&D in the 19 countries, by the industry

Country	% of total C&D		% of GIP	
	1981	1991	1981	1991
1	2	3	4	5
Switzerland	68,3	74,5	1,56	2,13
Japan	62,3	73,1	1,45	2,25
Belgium	66,5	70,4	1,02	1,19
Germany	58,0	63,3	1,42	1,78
Finland	51,9	62,2	0,62	1,17

(table 2 continued)

1	2	3	4	5
Ireland	37,7	61,0	0,25	0,54
Sweden	57,3	58,2	1,27	1,66
Holland	44,0	53,5	0,88	1,16
Austria	50,2	52,5	0,59	0,79
Great Britain	48,8	50,0	1,18	1,14
USA	48,8	49,7	1,20	1,40
Spain	45,9	47,8	0,18	0,42
Denmark	42,2	46,8	0,46	0,72
Italy	50,1	46,5	0,51	0,63

Norway	40,1	45,1	0,52	0,84
France	40,9	43,9	0,82	1,05
Portugal	30,0	27,4	0,11	0,14
Island	5,7	24,0	0,04	0,25
Greece	15,6	19,2	0,03	0,09
<i>AVERAGE</i>	45,5	51,0	0,74	1,02

Table no. 3.

**Financing R&D in the 19 countries, by the Government
(as %GIP)**

Country	1981	1991
USA	1,21	1,35
France	1,07	1,15
Sweden	0,89	1,09
Germany	1,00	0,96
Norway	0,74	0,96
Holland	1,00	0,90
Great Britain	1,19	0,83
Denmark	0,59	0,70
Island	0,57	0,69
Austria	0,55	0,68
Italy	0,48	0,67
Finland	0,55	0,66
Switzerland	0,49	0,65
Japan	0,62	0,53
Belgium	0,48	0,45
Spain	0,21	0,41
Portugal	0,22	0,33
Greece	0,17	0,32
Ireland	0,41	0,26
<i>Average</i>	0,65	0,72

For the European Union, the table no. 4 shows the different percentage of government financing according to the state's resources: the developed countries contribute with 0.80% of GIP, while the developing countries contribute with an average half of this percentage, **but they also doubled their contribution** for R&D field from 1981 to 1991.

Table no. 4.

**Financing of R&D (% of GIP) by state budget
in regions from UE**

Region	1981	1991
European Union (average)	0,62	0,63
EFTA	0,63	0,79
States with less than 15 millions population	0,56	0,64
Scandinavian countries	0,67	0,82
Portugal, Spain, Greece	0,20	0,35
Latin language' countries	0,50	0,64
Great states	0,79	0,80

Table no. 5 shows the percentage from the total R&D fund (financed by the German Research Organization) attributed for the four fundamental scientific fields,

Table no. 5

**Distribution of the total fund of the German Research Organization
(Deutsche Forschungsgemeinschaft)
(%)**

Year	1988	1991
<i>Field</i>		
Biology and Medicine	34,0	36,1
Natural Sciences	27,3	26,1
Engineering Sciences	23,5	24,4
Social and Economical Sciences	15,2	13,4

Table no. 6

**The percentage of GIP attributed for R&D
and the level of the Human Development (LHD)
for Central and East Europe (11 countries)**

<i>Country</i>	%GIP attributed for R&D	The place of the country according to its LHD, among 175 states of the world	
	1997	1996	1997
Slovenia	1,79	34	35
Czech Republic	1,29	37	39
Poland	0,80	56	58
Hungary	0,79	46	48
Estonia	0,70	68	71
Bulgaria	0,62	62	69
Slovakia	0,51	41	42
Lithuania (Latvia)	0,50	81	76
Romania	0,39	74	79
Russia	-	57	67
Moldavia (Bassarabia)	-	98	110

The Level of Human Development includes: average life span, national degree of education, and real value of GIP/inhabitant. Comparing the values of LHD for 1996 and 1997, it is clear that they are dropping dramatically for all these countries (except Lithuania).

It is not accidental that only the first countries on the list were chosen to become partners in NATO and EU, and Romania must learn from this experience.

Chapter 5 - ECONOMY

The collapse of the totalitarian economy system of socialist type and the transition of the market democracy in central and east Europe, confers international consolidation connotation and new dimensions, holding the possible consolidation of international equilibrium, the intensification and multiplication of the relations between states, zones and world regions, and the identity affirmations of entities.

Box no. 1 International challenge

The contrary of some convictions, the collapse of the soviet empire and the end of east –west conflict didn't unleash the "end of the history" and the victory without sphere sharing by influence occidental model of "market democracy", even " the history return live this" a power rivalry between the states. These market on recompose process to international view, simultaneous characterise interdependence growing at planetary scale in economic, environmental and political plan and fragmental resulting of the asserting for other cultural, political and social types.

We are still far away from a new international order because of the absence of the legitimate actors: the states are no more real actors in this meaning and the regions didn't become still this kind of actors, them being far away from forming a social block and to assert like real strategic actors.

The conditions of a problematic excess given by the growing of planetary stakes in the international community remains a vague reality, but the intergovernmental institutions (ONU) looks like they are overfulfilled. The world is in work feather, common objectives and game rules clearly settled and accepted.

Source: Hugues de Jouvenel, *Futuribles*, No. 208,1996, p.5

Like a major phenomenon of this end of millennium and the start of the new millennium, world wide has an economic part as much as attractive from the point of view of the evolution anticipation on long term of economic phenomenon and processes at national, regional and international scale. The speed with what the changes are producing in economy, inclusive the Romanian one, without doubt, it is extremely big, what explains the scope of the preoccupation, in the prospect domain and the economic previsions.

In the detachment sight of some possible evolutions of Romanian economy at the 2020 horizon, the first part of the study axis of the analysis the main characteristics of this one in the transition period until the year 2000.

5A. THE ECONOMIC FRAME OF TRANSITION. DYNAMICS AND STRUCTURES

1. General objectives and coordinates of reform

The transition of the socialist economy type unperformed weak competitive like the capitalist one it is a complex and multidimensional activity. Consider the society in its integrity and its relations with the outside world. It supposes and imposes correspondingly changes, in time and space, between all the segments of the social organism, including the outlook plane and the economical operator's behaviour.

Such as, it suppose the careful study and to value the national potential from the perspective of the acceleration process for touching the level of the developed countries.

The transition is more then an usual reform; it is a deep system change what makes necessary the creation of a new key institutions of the market, even if the essential elements are common for many countries.

The objectives of the transition perceived in the perspective of some functional markets on one hand must defeat the inertial forces of the other hand to project creating and consolidating some economical structures principally new and durable. Here are the main objectives of the transition that have been approved from the beginning:

- ? passing on from a totalitarian politic system, undemocratic, to a new democratic order based on the state of rights principles, on the principle of many parties (pluripartidism), the separation of the state's power, establishing a new type of relations between the political power and the civil society. It is what we could name the achievement of a political transition, like an expression of people's aspiration for justice and democratic freedoms;
- ? passing on from the hipercentralised economy to an opened market economy. This means the unreglementation of the old and bureaucratic administrative system of the economy management and the set up of new institutions, mechanism and some rules for the good function of economy;
- ? integrating in the Euro-Atlantic structures and the development of an economic co-operation with all countries, especially those neighbouring The Black Sea and with the dynamic economies from the

region Asia-Pacific capitalising the advantages resulting from the globalise economy in Romania's benefit from valorising the all potential, even the human one;

- ? the achievement of a political and social wide concord like an economic reform foundation; the avoiding and/or attenuation of the fragmental processes and even social exclusion, creating a viable system of social security and protection, concentrated on the most detrimental groups.

Sure, the achievement of those majors objectives in there interdependence it is a simultaneous process of *destruction-construction* and relative *stabilisation*, permanent market by: a) the (past) legacy load which in condition of an insufficient measure coherence of reform and some applications inconsistency it increases "the structural nervousness of the system "; b) the different construction speed and the working of the different market and the communication system between them; c) the dialogue syncope and the social partnership; d) the tensions induced by the youth age, the brittleness of some market institutions and especially the low knowledge and application.

In this summary context are presented the main co-ordinates of reform which confers legitimacy are:

a) the growing of the institutional frame of the market economy: an advanced relative process, but still unconcluded existing some hot zones which requires to be settled;

b) the economy opening and the increase of its functional capacity to hold the competition pressure on the extern markets before of all the intern market of EU. In this way it was action and it actions through mechanisms, how are they:

- ? the economy liberalising and the long-term insurance of one durable macrostabilisation of one healthy economic grow;

- ? the decentralising and strengthen of the local autonomy, the development of initiative and contractual spirit;

- ? the elucidation and property right settlement economy privatising and restoring the attenuation and elimination of the structural tensions from the system;

c) The development of the participative democracy dialogue and social partnership with different interests groups (employers, trade unions, professional association, etc.)

d) The insurance of the political and social stability through the conditions created for increasing the life standard for bettering the life quality, avoiding the phenomenon of fragmentation, exclusion and "social nervousness".

Box no. 2 The people and the transition

"Ultimately the country transition will be according the answer to the following question: "The people are living better then before? Equity – the way in which the advantage and difficulty are sharing is important. But the people's life in the transition period it is not just an equity problem. The work productivity essential for the economic increase depends on the knowledge, skills, motivation and the human's health. Therefore, abolishing the extreme poverty, preserving the human capital and their adapting to the needs of a market economy, supports the development as well as the social justice and the capacity of the political support."

Source: W.B. From Plan to Market, World Development Report 1996.

2. Macroeconomic dynamics.

The evaluation of the Romanian economy in transition period 1990-1993 marks the first stage of crisis, specific to the way in which the reform has been achieved, registered an inflation rate with three ciphers, started in force at the end of 1990 when it took the first liberalisation measure of the prices. The high inflation rate was due to the distortions of prices accumulated three decades and the accelerating fall of GIP because of confrontation of some production structures from the centralised economy with the formation process of market mechanism.

In 1993 the subvention have been eliminated from the prices and tariffs of a lot of products and services. The lower rate of the reform and postponing the action of the market mechanisms represented another factor of inflation increasing.

The first favourable results of anti-inflation measures in 1993 have been felt in 1994 when the inflation was half of the precedent year. After a relative lessening of the inflation rate, in 1994 and 1995 it established a growing in 1996 and 1997 when all the prices were liberalised.

The GIP evolution between 1990 and 1996 point out a continue diminution (decrease) between 1990-1992, in the following years a slight increasing is tacking place followed by a decrease (-3%), foreseen for 1997.

Table no. 1

The main macroeconomic indicators in 1990-1996 period

	1990	1991	1992	1993	1994	1995	1996
<i>Dynamics, %</i>							
Gross internal product	100,0	87,1	80,0	80,6	83,4	89,3	93,0
Gross added value in:							
-agriculture		88,1	76,5	87,4	90,0	94,5	91,4
-industry	100,	87,2	75,2	76,0	78,2	84,3	91,5

-constructions	0	80,6	76,1	94,9	120,	129,	138,
Employed people	100,	99,5	96,5	92,8	3	7	5
The creating of the fixed capital	0				92,4	87,7	...
Exports	100,	68,5	77,3	82,3			
Equilibrium variables	0	73,9	75,6	84,7	98,3	109,	114,
Unemployment rate ¹ %	100,	3,0	8,2	10,4	106,	5	1
Yearly inflation rate	0	174,	210,9	256,	5	136,	132,
The percentage in GIP of the:		5		1	10,9	9	6
-commercial balance	100,		-7,3		136,	9,5	6,3
-consolidated budget balance	0	-3,8	2,3	-4,3	7	32,3	38,8
-monetary mass (M ₁)	100,	2,6	12,6	2,7			
External debt, mil. US\$	0	14,4	247	7,2	-1,4	-3,5	-4,3
Current balance, mil. US\$	-	1143	9	3357	-0,5	-0,7	-4,1
	5,1	-	-1564	-	5,3	6,8	7,1
	-8,9	1012		1174	4562		
	-0,4				-428	5408,3	7071
	27,1					-	,5
	230					1639	-
	-						2571
	3337						

1) at the end of the year

Source: National Commission for Statistics, *Annual Report 1986*; National Bank of Romania, *Annual Report 1995*; *Trimester Report no. 1/1997*; UNDP/NIER, *National Report on Human Development. Romania 1997*

Consequently to the radical reform undertaken by the new government, thinking of a future economic increase.

According to the predictions elaborated in the Government's Councils for reform, the yearly average rate of GIP between 1998-2000 will be of 2,3 % in 1998; 3,4 % in 1999; 4,0 % in 2000.

These prediction dynamics have been the start point to establish the GIP /per capital in 2000, for the GIP scenarios until 2000. GIP dynamics was influenced all the time by the evolution of the added value from industry, which is still the most important branch of the economy. The decline of the industrial output was mainly due to the restriction of high costs of rigid structures difficult to adapt to the energointensiv character of them as well as the increase of the stocks.

The agricultural production decreased less then the industrial one. These results have been obtained in the conditions of some changes that have taken place into agriculture. Still the agriculture contributed in a great measure at the lessening the social economic tensions, in the period of sever decline of Romania by absolving a part of the population who had lost their job and by assuring great part of food for population.

The reserves of the added value increase in agriculture are still insufficient valueless and represents an priority trump for the economic increase in perspective, even if we have in view the efficiency still small and the big possibility of concentration to the small proprietries in profitable agricultural exploitation.

The foresight as concerns the gross added value in agriculture for the period of 1997 and 2000 is of 2 % in 1997; 3,33% in 1998; 4 % in 1999 and 4,8 % in 2000.

The oscillate dynamics of GIP in the respective period was a result of a complex of elements which influenced unfavourable the record of the work forces, savings and investments.

The changes of system in the Romanian society influenced the working force and the market creation in this field.

Romania has got a significant human potential quantitative and qualitative. The dimension of the total population the age structure, the population proportions in work age situates Romania on the second place after Poland in the countries found in market economy transition in the Central-East European space.

In 1996 the population able to work (16-64 years) represented over 15 millions of persons; the civil active population of about 10,1 millions; the civil working population 9,4 millions. On the background of demographic age process, started two decades ago, one of the working force characteristics potential from Romania is the youth. In 1996 67,9 % of all the population in Romania were working what situates it over the average of EU(15) and OECD in 1995 (Annex 5.2). Only Italy, Holland and Germany had such a situation. The number of the working population in 1996 in Romania was superior of that of EU and OECD for 2010/2020.

The indicators that weigh the manpower's evolution have got opposite trend as concerns the sense and the intensity. So, the potentially active population - when the possibilities of the secondary education and learning have reduced and the university ones increased and respectively the employed population can be expressed on a descending curve.

The number of unemployed and the unemployment rate increase in a first stage and then beginning especially with 1995 presents a decreasing tendency. Consequently the active population decrease with 7.77 pp (764 thousand of persons) more that the decrease of the total population (2.5 pp), the employed population decrease with 15.5pp meaning the disappearance of 1.440 labour places. The decline of employing the manpower will go on until 2000. According to the Romanian Government's strategy in 1997 the civil employed population will decrease in 1997 as against 1996 by 250 thousands of persons and by

2000 with 450 thousands persons. Recovering the economy, a strong economic increase after 2000 is supposed to induce a quarter percentage as to the employed manpower when the labour market is more flexible and the achievement of higher results.

Through certain evolutions of the labour market are still insufficiently clear and unfavourable to an efficient functioning of the market mechanisms, Romania has got the advantage of a relatively young and very cheap manpower in comparison with other country.

Another influencing element regarding the economic results, in this period, was the low capacity of economising and of investments. The investments in 1996 had not reached the level from 1989.

Due to its economic potential, the Romanian economy can be attractive for the foreign investors even if their value is for the moment only about \$ 3 trillions. About 70% of the secondary capital market is owned by foreign investors. In 1996, 25.2% of GIP was the fixed capital, and it is predicted that in 2000 the percentage will reach 29,7%.

Putting into practice some radical measures for reform beginning with 1997 could create the premises of reducing the differences and start the increasing according to the market economy. Of all the most significant lacks of balance we can mention the commercial balance, external payments and the public budget. Even in such conditions, Romania has got a low external indebtedness (18% of GIP in 1995) in comparison with Bulgaria 87 %, Hungary 72%, Czech 36% and Poland 31%.

3. Changing economic structures

The brittleness of the economy transformations in 1990-1996 period and the necessity to continue the reform rapidly until the year 2000 in the consolidation scope of the market relations, the economy revitalise and the grow reengage are relevant and a serious structural parameters.

The rapid falling down of the industrial production resulted in diminishing the contribution of the industry in the creating economic values: anyhow industry is still dominated by material and energointensiv branches; mineral products, chemicals, rubber and plastic, metallurgy, etc. Liberalising the market and commerce, the development of the services in the 1990-1996 period.

The participation in the creating the gross added value in 1996 of 19.3% in agriculture, 42.7% in industry and constructions and 34.4 % in services points out the important possibilities regarding the economic roundabout.

Table no. 2

Indicators of the structural changes

	1990	1991	1992	1993	1994	1995	1996
The percentage in GIP of the gross added value in:							
- agriculture	21,8	18,8	19,1	21,0	19,9	19,9	19,3
- industry and constructions	55,9	42,2	43,1	39,0	42,7	41,1	42,7
- services	26,5	34,8	40,6	36,9	33,7	35,8	34,4
The percentage of the private sector in GIP	16,4	23,6	26,4	34,8	38,9	45,0	52,0
The percentage of the employed people in:							
- agriculture	29,1	29,8	33,0	36,0	36,5	34,5	34,8
- industry	43,5	39,9	37,1	35,8	34,4	33,6	33,0
- services	27,4	30,3	29,9	28,2	29,1	31,9	32,2
The percentage of the employed people in the private sector	9,2	33,6	41,0	43,8	49,2	50,7	...
The percentage of the investments in GIP	19,6	14,2	14,7	14,1	16,1	18,0	
The percentage of the private sector in total investments	4,3	8,1	15,6	26,0	36,8	39,3	51,4
The private sector percentage in total export (FOB), %	0,2	15,9	27,5	27,9	40,3	41,2	

Source: National Commission for Statistics, *Statistical Annually of Romania –1996*, UNDP/NIER , *National Report on Human Development. Romania 1997*

As concerns the structure of the employed population the strongest and the most surprising characteristics resides in the accentuated action of redistributing the manpower in the favour of agriculture. This was practically a retreat for the manpower from the second sectors, the contribution of the services being very modest. Between 1990-1994 this was a very intense process but after that is diminished. To quote, the primary sector wins in 1994 in comparison with 1990 about 500 thousands working places, the secondary one loses over 1271 thousands working places and, unbelievable the services lose 56 thousands working places. Between 1994-1997, yet only the tertiary sector creates working places +118 thousands, the primary one loses 392 thousands persons, and the secondary 576 thousands. As a consequence of these movements, of difference in rate, the evolution of employed people is changing so that in 1996 is almost equally distributed for the three sectors.

The actual structure of employment is very different of that existing in EU; with 35.6% as concerns the agriculture. Romania surpasses about five times EU average in 1995 (5.3%) and respectively with 15 pp the highest level of an EU member (Greece 20.4%). As concerns the population employed in the secondary sector, our country is placed next to the EU average; in services only 51.3% of EU average (Annex 5.2). Going on with the economy's restructuring rural development and especially the private sector will contribute to modernising the structure of the employed population probably expressed in the strong demising of the population employed in agriculture; the relative stability of that in the secondary sector (about 30-33%) and respectively a strong increase of manpower in the services. An important factor, which is the initiator of the structural changes, is the property. For the moment the weigh of the private sector at the creation of the GIP is over 50 %, agriculture is the branch where the private sector is the greatest (85%). If the privatising goes on like this in the non-agricultural sectors, the industry and services will be the most significant ones in creating the values in economy and the weigh of the employed population. The structural modifications in economy, the way they are produced mainly one of the principal means that participates in the balanced economic development, an economic increase of quality.

5B. ROMANIA'S ECONOMY LOOKING UP TO 2020

The evolution of the Romanian economy now and in the future depends on the complex processes and phenomena of the *globalising* and *universalising* the world economy whose elements underlines every national economy, more or less.

The extension and intensifying of the international changes of goods, services, finances and information take place in an area of a limited *global market* which supposes that the national economy adapts at the regional, zonal, sectional structure which are contributing to stabilisation, equilibrium and flowering. In this context of universalisation, as a permanent process, Romania's economical and social development in the future implies both particularities and common elements hinting at the orientation, objectives and the political means of implementation, accepting the rules and the general mechanisms of the national economy is one of the basing challenges of the economic, science and practice which in their attempt to solve the respective relation cannot evade the problems connected with the implication of a national, adapting, compatible and consistent form the universalising.

Box no. 3 The international integration can be useful for reforms

The international integration is vital for reform to succeed in the transitional countries, taking into account especially their history of autarchy. The imports contribute to the competitively in their markets. The exports is a source of increasing and learning. In certain fields, the direct foreign investment is the only way to get skills, markets, and money. The institutional integration is also vital. Penetrating the World Trading Organisation (WTC) will stimulate the success as the market and will offer a certain protection against some arbitrary commercial barriers. It is also important that the rapid access to WTC will strengthen the politic of maintaining a free commerce in the respective countries.

The integration of the transitional economies is a system of global trade will be good for the world economy. OCDE – countries are greatly interested to encourage the transition by the policy of “the open doors”. Enlarging the EU by including some of the transitional economies may presume initial greater adjusting costs, but the adjustment at the commercial exchanges is a less important question than the budgetary effects.

Source: W.B., *From Plan to Market, World Development Report, 1996*, p.145

1. Scenarios of the GIP evolution between 2000-2020

The methodological premises

The prospective analysis is relying on a series of methodological premises, which we refer to in the following lines:

a) Breaking out the short and medium term tendencies from the Romanian economy, inclusive on the base of some economical, mathematical models (the regression analyse and correlation, functions of production, etc) led to the conclusion that the extension of the tendencies expressed in the period of transition for a long term development in Romania do not justify from many points of view and namely:

- ? the changes in the evolution of the main economic indicators are irregular;
- ? the macrostabilisation lasted for short time, and it was frail and without significant influence on the real economy;
- ? the most part of the macroeconomic evolutions registered till now, showed structural dynamics unfavourable or inconsistent, which cannot be extrapolate;

b) In the approach of the future long-term evolution of the Romanian economy the method of scenarios and international comparisons has been used for the following reasons:

- ? the scenarios are largely used to reveal the future tendencies of the main macroeconomics means;
- ? the method of the international comparisons offers the possibility to get some experience and different structures of the economic world increasing; by international comparisons it was intended pointing out the specific of the Romanian economy.

Resorting to the scenarios method in long term it was also encourage by using some methods, very sophisticated from point of view of hypotheses and mathematics solutions, gives uncompleted results for countries with economy in transition. So, based on the models used in Project LINK, for countries in transition, for Romania it was predicted, for example, a level of exchange rate of about 4468.7 lei for \$ 1 USA, for 1997. In fact, in February-November 1997 period, the exchange rate leu/\$ was over 7200 lei. Without denying the utility of such prediction models, on short and medium term, we consider that, on medium and long term, such methods are less reliable from objective reasons against the economy turbulence and the randomise processes and phenomena from economy, in the transition period.

Concerning the possibility to identify, by positive approaching, some regularities and development tendencies, based on the research of Romanian economy evolution in 1990-1996 period and the predictions until 2000, we used the method of regress and simple and multiple correlation analysis, putting on functional dependence, for example, the volume and the dynamic of GIP, against one or more variables, such as: employment people, gross formation of fixed capital, etc. It was attempt more functions to explain the inflation rate (measured by the index of consumption prices) compared with the evolution of interest rate, the exchange rate and the wages.

From the point of view of the present organisation the results in the case of Romanian economy take weak values. These reduced growing of intensity are explained by the fluctuated situation of rapid modifications in the transition period economy weak structured.

Premises. Scenario I (SI)

Tacking into account the low level as well as the necessity of recovering Romania's economy for a rapid integration in EU we adopted the idea of doubling the GIP/capita every ten years in the period 2000-2020. Practically, this means a yearly increasing rate of GIP/capita in Romania of 7.2% in the two decades. This idea was the start-point of the first variant (SI V₁) of the SI Scenario.

Considering that it is not possible to keep constant such a high rate (7.2%) for a long period an yearly increasing average of 5 % have been decided.

Premises. Scenario II (SII)

Romania's adhering to the objectives of the political, economic and monetary Union of UE, internal boundless market of it is one of the strategically long-term objectives of Romania's economic-social development. In this situation the variants of scenario II are as the follows:

The relative level of GIP /capita in Romania predicted for 2020.

SII variants	% from the medium level of GIP/capita of UE, in US\$ at PPC in 2020
SII V ₁	80,0
SII V ₂	70,0
SII V ₃	60,0
SII V ₄	50,0
SII V ₅	40,0
SII V ₆	30,0

Of all the six variants of the scenario II the first are considered to be very optimistic which can be achieved with many efforts and an economic and political situation internal and external very favourable and simulating.

The last two variants (SII V₅ and SII V₆) are included in an evolution which *does not satisfy* enough the exigencies of a functional market having the right performances which correspond to the objective of joining the EU though on a first approach, it seems that it would have the highest probability of being

accomplish, among others, thanks to some inertial factors and factors depending on the behaviour more difficult to overcome.

The SII V₃ and SII V₄ variants could be considered as satisfying the exigencies of the integration of Romania in the E.U. as well as the possibilities of mobilisation of the resources, of the reorganisation and development under the condition of some functional market mechanisms. We base our affirmations also on the fact that a series of countries which are members of the E.U. (Spain, Portugal, Greece), at the time of their joining the U.E. and also at the present time, had and have level of the GIP per capita which doesn't overturn a lot half of the medium level of the indicator for the entire union.

The Scenario of the Doubling of the GIP (SI)

The hypothesis of the doubling of the GIP per capita every ten years in Romania, in the period between the years 2000 and 2020, which requires an annual medium progress of this indicator of 7.2% is based on the necessity of intensifying the economic development in our country with the help of a more efficient use of the material and the human resources which are available under the conditions of the market mechanism as well as the registration of such rhythms on long-term in a series of national economy (see table no. 3), which can add a bigger degree of realism to our hypothesis.

The analysis for a number of 133 countries between 1970 and 1995 points out a differentiation on groups of countries of the annual medium rhythm of the GIP growth, related to the level of economic development. Thus on the whole number of the developed countries the evolution of the GIP between 3.2% and 2.0% have been registered during the entire analysed period, while the developing countries (with a low level of GIP per capita) have been characterised by higher rhythms of growth.

Included in these medium dynamics there are cases of countries which succeeded in registering rhythms over 7.0%, which are equivalent with the doubling of the GIP every ten years (see table no. 4). Obviously, this extremely raised rhythm can't be registered but in a limited number of countries having special economic results and considered as possible "miracles".

Table no. 3

The Annual Medium Rhythm of the GIP per capita Growth, on Groups of Countries, Related to the Level of Development

<i>Group of countries</i>	Period		
	1970-1980	1980-1990	1990-1995
Countries with a low income	4.3	6.0	6.8
Countries with a medium income	5.5	1.9	0.1
among which:	5.1	2.3	-1.5
-lower*)	5.9	1.3	2.6
-higher	3.2	3.2	2.0
Countries with a high income	3.6	3.1	2.0
Global total			

*) this group of countries includes also Romania

Source: W.B., *World Development Report*, 1995, 1997.

Compared at the level of aggregation from table 3, the differences of the GIP progress between the developed and developing countries, between 1970 - 1995, in our opinion, wasn't by far capable to ensure a diminution of the disparity, especially of the between the two groups of countries. The analyses based in some value indicators and in physical expression points out the insufficiency of the necessary evolution to catch up with the developed countries, in a predictable horizon of time. Obviously, such a finding doesn't have to install surrendering and defeatism but it must generate high efforts in finding together favourable solutions for the two, by groups of countries now placed on distinct levels regarding the competitiveness, the level of the productivity of the work, of the technologies, of the life standards and generally of the human development.

Table no. 4

The Number of Countries with a Medium Annual Rhythm of the GIP Growth over 7%

The group of countries	1970-1980	1980-1990	1990-1995
------------------------	-----------	-----------	-----------

	number	%	number	%	number	%
Countries with low income	4 of 45	8.9	3 of 49	6.1	3 of 49	6
Countries with medium income	13 of 63	20.6	7 of 57	12.3	13 of 57	22
Countries with high income	2 of 24	8.3	1 of 26	0.5	2 of 26	7

Source: idem table no. 3

Among the countries with high medium annual rhythms of the GIP in the decade between 1970-1980 we can mention: The Republic of Korea (10.1%), Egypt (9.5%), Singapore (8.3%), Brazil (8.1%), Malaysia (7.9%), Indonesia (7.2%).

In the decade 1980-1990, such rhythms were registered in: China (10.2%), The Republic of Korea (9.4%), Thailand (7.6%), and during the period between 1990-1995 are to be noticed specially China (12.8%), Malaysia (8.7%), Singapore (8.7%), Thailand (8.4%), Indonesia (7.6%), Chile (7.3%), The Republic of Korea (7.2%).

The world experience points out the possibility of the doubling of the GIP every ten years in a significant number of countries, which constitutes an argument in favour of embracing such a hypothesis in the case of the Romanian economy too, because Romania is a country which is included, in accordance with the classification of the World Bank, in the *group of countries with the highest coefficient of verisimilitude* of achieving such an evolution.

Adopting the scenario of the doubling the GIP every ten years in Romania absolutely implies the direct corroboration to the factors and the conditions which led to such a dynamics in those countries, to drawing conclusions referring to potential endogenous factors and the fructification of the auspicious external frame of Romania.

The doubling of the GIP every ten years can be plausible taking into consideration the potential of our country, which is still insufficiently used, and also the option for the integration in the EU, though it presupposes a special effort on long term in the efficient stimulation of the internal and external factors of the economic growth. The scenario of the doubling of the GIP every ten year actually admits up or down deviations from this medium resultant, taking into account the influence of a complex of factors among which the amplitude and the duration of the economic and the technological cycles are, beyond doubt, among the most important. The complex of political factors and instruments which can ensure such a dynamics of the GIP in Romania in the future is strongly influenced by the success of some reforms which are consistent and compatible with the stimulating forces, which can unleash the free initiative, the system of the private property, the efficient effort materialised in a high productive and hard work.

An other condition of the superior dynamics of the economical growth in Romania refers to the achievement of the lasting macrostabilisation (non-inflationary growth) and the presence of a rate of unemployment which must be as low as possible, according to the specific requests for the social and economic development of Romania and to the efficient functioning of the mechanisms of the concurrent market, on the internal level as well as on the external one.

The presumption of the diminution of the rhythm of the GIP from 7.2% to 5.0% every year is sustained by the fact that, between 1970-1995, a big number of countries having significant results placed themselves in this type of evolution which presupposes the existence of the cycles.

The results of the estimations for both variants of the first scenario for Romania are rendered in table number 5, the medium annual rhythm of the GIP growth, between the years 2000 and 2020, being of 6.08% , in the SI V₂ case .

Table no. 5

The Scenario of the Evolution of the GIP per capita in Romania between the Years 2000 and 2020

The anticipated level of the GIP in the following variants:	Years			
	2000 2020	2005	2010	2015
SI V1: doubling at every 10 years (7.2% medium annual rhythm)	4520	6400	9040	12800
SI V2: the diminution of the rhythm from 7.2% (years 2000-2010) to 5.0% (years 2010-2020)	14725			11540

Note: The estimated proportion of the GIP has been rounded.

The comparison between the proportion of the GIP per capita, projected for Romania and for the countries which are members of the EU-15 at the horizon of the year 2020, in the case of the SI scenario (table no. 6), reveals anyway the maintaining of some important disparity between our country and the medium level of the EU-15, under the conditions in which the relative disparities reduced.

The comparison with the countries of the EU-15 has been made in two variants (scenarios) of development of those countries: the normal development (ND) and high development (HD)¹¹.

¹¹ The estimation of the GIP per capita for the EU-15 has been made on the basis of two scenarios suggested by the OECD (*Globalisation and Linkages: Macro-structural Changes and Opportunities*, Richardson P. editor, OCDE/GD/97/147, Economic Department, Working Paper no. 181, p.66) as it follows:

Scenarios:	Rhythm (%)		GIP per capita in the EU-15 in the years :		
	2000-2010	2010-2020	2000	2010	2020
- Normal dynamics (ND)	2.0	1.3	23340	28450	32370
- High dynamics (HD)	2.8	2.3	23340	30760	38600

Table no. 6

**The GIP for Every Inhabitant in Romania (\$, PPC),
% of the medium level of the EU-15 countries**

Scenarios for the EU-15:	Years		
	2000 2020	2010	a.
-Normal dynamics (ND)	19.4	31.8	55.2
-High dynamics (HD)	45.0		
	19.4	29.4	46.8
	38.1		

Note: For Romania in the hypothesis: a) of the doubling of the GIP every ten years;
b) of the diminution of the rhythm from 7.2% to 5%.

Under the condition in which the countries in the UE are developing in a high dynamics and in Romania the rhythm of growth is reduced from 7.25 to 5.0% every year, on the horizon of the year 2020, the income per capita in our country will represent only 38.1% from the EU-15 level.

***The Scenario of Approaching the Medium Level
of the European Union (SII)***

The objective of Romania joining the EU, foreseen to be realised at the beginning of the XXI century, is at the basis of the elaboration of the second scenario (SII) of the development of the Romanian economy. Actually, with the help of this scenario dynamics of the GIP per capita in Romania, between the years 2000-2020, towards the "criteria of convergency". With the view to this, there were adopted six variants (SII V₁-SII V₆) which aims to the attainment of Romania of the following proportions from the medium level of the GIP per capita EU-15 in 2020 as it follows: 80% (SII V₁); 70% (SII V₂); 60% (SII V₃); 50% (SII V₄); 40% (SII V₅); 30% (SII V₆). The evaluations are made at PPC.

The anticipated levels of the GIP per capita for the average EU-15 are the same as the ones used before, according to the scenarios:

- ? normal dynamics (ND);
- ? high dynamics (HD).

The results for the calculations for the SII V₁-SII V₆, presented in the table no 5, offer us elements for the substantiation of some strategies of economic growth in Romania, which can be later differentiated in variants, policies and sectorial and micro-economical dynamics for the allocation of the resources and for their efficient use.

The rapprochement of Romania to the level of the GIP per capita in the EU-15 on the horizon of the year 2020, in a proportion of 70%-80%, presupposes very high rhythms of economical growth (8.4-10%) on long terms, much higher than the ones in the SI scenario of the doubling of the GIP every ten years. We mention also the fact that this alert rhythm corresponds to the scenario of the "Renaissance" (R), which would have as a result getting out from the "purlieus" and getting closer to the "centre" for Romania. From the global experience, it results that the performance of maintaining, on a long term, a rhythm of almost 10% has been registered in China (1980-1995) and in the Republic of Korea (1970-1990).

The development of Romania in a medium annual rhythm of growth of the GIP per capita between 3.9% and 6.3% would have as a result obtaining only 30%-40% from the medium annual rhythm of the GIP per capita estimated for the countries of the EU-15 in the year 2020, which can't be considered as sufficient to cope with the exigencies of competitiveness and efficiency, from the perspective of the integration in the EU and the globalisation of the markets.

The six variants of the SII scenario offers us points of assistance, references for the undertaking of some measures of reform (the capacity of revitalisation of the economy by making stronger the endogenous factors of the growth, free flow of commerce and capital, fiscal consolidation, structural reforms etc.),

measures of reform which are concordant with one or other provocation generated by entering the drive of development, imposed by the globalisation or the remaining out of this one.

Table no. 7

The Level and the Dynamics of the GIP per capita in Romania on the Horizon of the Year 2020, According to the SII Scenario

The SII variant	GIP per capita in Romania			The necessary annual rhythm of growth (%) of the GIP in Romania according to the scenarios of the EU	
	in % from to the average of the EU	in \$ (PPC) according to the scenarios for		ND*)	HD*)
		ND*)	HD*)		
V ₁	80	26160	30880	9.2	10.0
V ₂	70	22890	27020	8.4	9.3
V ₃	60	19620	23160	7.6	8.5
V ₄	50	16350	19300	6.6	7.5
V ₅	40	13080	15440	5.4	6.3
V ₆	30	9810	11580	3.9	4.8

*) ND = normal dynamics; HD = high dynamics.

Note: The medium annual rhythm (r_{V_1, \dots, V_6}) which is necessary for the growth of the GIP in Romania in order to achieve the proportions between 80% and 30% from the medium annual level of the EU-15 in 2020 (SII V₁-SII V₆) has been calculated on the basis of the general formula, presented before.

Diminishing the results of the estimations in the SI and SII scenarios, we can draw the conclusion *that the necessary and sufficient medium rhythm of growth of the GIP per capita for the next two decades mustn't be lower than 6.6%*. It appears evident that the economic development estimated from the point of view of the quantity for the horizon of the year 2020 has to be accompanied by a series of quality aspects having as goal the stabile human development, an efficient economic structure and functional mechanisms of market, the re-enforcement of the informational society and the intensification of the innovation.

Bringing together the quantitative and the qualitative aspects of the economical growth, on long term, in Romania, presupposes the valorisation of the opportunities, offered by the real factors of restructuring and development, and of the comparative advantages, in order to be achieved the goal of the growth of the incomes in the economy, in high rhythms, as guarantor of the continuity of the human development.

2. Restructuring and developing factors

During the transition period and after this, for restructuring and developing is necessary a pluridisciplinary approach in a continuous confrontment with the ineluctable entropy low, which puts in a new long term vision the interference between the economic phenomena and the demographic, social, technological and scientific ones, and also with the natural resources and the environment.

This approach also implies the complex evaluation of the main growing' factors (quantitative, qualitative, endogene and exogene) in the condition of their potentioing by the market globalisation and liberalisation, taking into account of the specific available resources, the actual state of the economy, the transforming and restructuring required.

In this context, the present study is proposing to emphasise aspects and trends concerning the long term evolution of the human resources and working force employment, gross creation of the fix capital and the role of the investments, Romanian foreign exchanges. The long term evolution of the above mentioned economic growth factors is intrinsically connected with the large Romania' opportunities to valorise its main "trumps":

- a. favourable geostrategic position and political stability;
- b. the relative youth of the population, which means a high level for the demand of long term consumption goods and a low level of salary costs;
- c. the availability of the natural resources (agricultural land, forests, energetic resources, minerals etc.) and human resources;
- d. the population' dimension and implicitly the measure of the demand, which attracts industries based on great scale economy;
- e. the existence of some production capacities sub-exploited;
- f. a relative low level of the external indebting;
- g. great opportunities for developing and modernising the infrastructure and the services related to production, consumption, tourism, transport, financial and banking activities, insurance, consulting and international assistance etc.;

h. great possibilities for the extension of the private economical sector by selling the state actives, creation "de novo" of the private firms, attraction of the foreign capital.

Such factors, favouring the redressing and the long-term development, are reflecting the national economy' potential which is sub-evaluated from the point of view of the economic growth propulsion in the globalising context.

The idea that the Romanian economy is now like "a capital sub-evaluated at the world exchange"¹ pleads for a more efficient joining between the available local resources and the strategic management.

Box no. 4 Economic growth sources

Starting of the years '50, the approach adopted in the Harrod-Domar model was extended in order to be considered a more comprehensive list of economic growth sources. These sources are referring to:

- ? the growth of the active working force as a result of the demographic growth, of the participation rate or of the unemployment absorption rate;
- ? the improvement of the working force quality through education, experience and qualification at the working place;
- ? the increasing of the efficiency through a better allocation of the working force, which means its movement from the activities with low productivity to other ones with higher level of productivity;
- ? the increasing of the capital stock by savings both in public and private sectors (corrected with the took out of function because of the moral and physic wear);
- ? the improvement of the components of the capital stock by a superior design and technological innovation;
- ? increasing efficiency by a better allocation of the capital stock, which means moving the capital from low productive fields to high productive ones;
- ? the efficiency increasing by developing activities based economies of scale;
- ? the efficiency increasing by reducing the distortion elements like: (1) preferential taxes, for resources use by some economic agents; (2) levy and licences which embezzle the resources flow, even in the fields where they can be efficiently and (3) monopoly elements and other restrictions which hinder the efficient allocation of the resources in the economy;
- ? the efficiency increasing by identifying the cheaper and better modalities for producing the existing products;
- ? the efficiency increasing by improving the existing products.

Source: x x x *World Economic Growth. Case Studies of Developed and Developing Nations*, Edited by Arnold C.Haberger, 1991, p.4,5.

In accordance with the intensity of the growing factors use and the adapting capacity to the rapid economic changes, in Romania the acceleration and the deepness of the on-going economic and social reforms will create favourable premises for the end of some important stages of the transforming process and the passing to the sustainable macro-stability, to the competitiveness growth with constant rhythm in consensus with the national demand for economic and social progress, and also with the integration in the economy of the Unite Europe.

Working force and its employing

The human dimension of the sustainable development has a growing weight in the long-term projections of the different international organisations (OECD, U.E., B.I.M.) and governments². And this fact

¹ Daianu D., *Transformation as a real process*, IRLI, Bucharest, 1996, p.128.

² UNDP, *Human Development Report 1997*, New York, Oxford University Press, 1997; W.B., *Workers in a Integration World, World Development Report 1995*, New-York, Oxford University Press 1995.

is completely normal if we have in view: a) the lower performances of the working market in the last decades (persistent unemployment, unequal revenue, precarious employing), as braking factors of the health economic growth, focused on human being; b) the delay of the working market at the national and international level faced to the liberalisation of the goods and services market (trade) and of the financial ones; c) the strengthening of the competition pressure upon the national and international markets as a follow of the integration-globalisation of the economies, as a possible favourable factor for technological changes, productivity and employing; d) the need of preventing the break of the social cohesion, of the individuals and/or families exclusion generated by the lack of jobs.

In the White Charter of the E.U. the dependence between *growing-competitiveness and employing* is considered as the nucleus of the new European construction. The employing in its double quality as factor and finality of the economic growth - measured by the intensity of employing or by work appearing productivity - is a priority for development strategies in the first two decades of the third millennium.

In this global context, shortly presented, Romania has on long-term a package of resources, conditions and factors favourable to an unceasing development.

Taking into account, first of all, a series of general factors which are defining the economic-social environment of the future development, respectively: the achievement on the long term of a solid macro-stabilisation, the conclusion of the privatisation-restructuring process and the creation of the market mechanisms, the increasing of the economy' functionality and the consolidation of its competitiveness capacities. Differently said, the reaching of the trajectory of the economic and social progress for the Romanian society. Secondly, the fact that Romania has an important working potential, younger than one from many developed countries and from the countries in transition to the market economy is, from the beginning, a favourable factor for development. This allows not only the valorisation of the national resources, including human ones, but also what is very important, the increasing of the capacity to learn, to incorporate and to use the progress of technology and the transfer of knowledge, and the advantage resulting from the international co-operation, from internationalisation and globalisation.

Box no. 5 Transforming the economic growth in working places:

The community will need both sustainable economic growth and a model of intensive employing, in order to approach the objectives of employment and unemployment.

This thing will involve changes in social policies and employing field expressed in the working market structure, taxes and social security stimulants.

The community has to improve the long-term competitiveness, to avoid the excessive short-term reactions to the exchange rate fluctuations with the price of competitiveness. This means to invest in people, to develop an active policy for encouraging new economic activities and economic growth in the national and international competitive sectors.

The high productivity, generated in extremely productive sectors, "feeds" all the sectors of the economy, and is in the centre of any development model. The productivity must increase for guaranteeing the international competitiveness of an economy and for improving the material wealth, which is distributed to the whole Community. In the same time, the reach of a country induces the growth of the relative importance of the sectors with high labour content, thus contributing to the distribution of the created wealth and to the improvement of the supplementary conditions for its increasing.

All these involve significant changes, but don't represent an unregulating of the European markets. They rather signify a system of rules, rationally remodelled and simplified, which will promote the employment without loading with this change those who already have a precarious position on the labour market.

All the member states are affected on short term by the serious problems of unemployment. The scale of these problems must not divert the Community from the long-term objectives. The short-term problems must be co-ordinated with the long term imperatives concerning the opportunities extension for employing and assurance that the economic and social progress keep the same rhythm.

Source: European Commission, *Growth, Competitiveness, Employment. The Challenges and Ways Forwards into 21 Century White Paper*, Brussels 1994.

The projection of the working force implies, on the one hand, the estimation of the working force offer made by active population and, on the other hand, of the demand for working places, of adjusting this on an extremely dynamic market with firm internationalist tendencies. Thus, the projection supposes to take into account a lot of factors, different by nature, sense and intensity, which interface and interact. Some of these factors, especially the qualitative ones cannot be quantified.

The working force offer – measured through the population with the age able to work – has a high demographic load. Depending on the considered factor, the delay, the size and its evolution are also depending on the demographic phenomena, the rate of including in the education the population aged between 15-24 years, the participation rate of the population, total and by groups of age³.

Box no. 6 Methodological statements

In the endeavour of estimation the size and the evolution of the working force in Romania, in the period 2000 – 2020, we started from the following elements:

- a. population prediction in two variants: “constant” (V_c) and “recovering” (V_r);
- b. the activity rates of the population, by groups of age in 1996, resulted from the Household Working Force Investigation (AMIGO) 1996;
- c. the estimated unemployment rates for the years 2000-2020;
- d. for methodological and international comparisons reasons, we considered as *population with the age able to work, the population between 15-64 years*. Such a hypothesis is convergent not only with the methodology of The International Working Bureau, but also with the guidelines of the new Pension Law, which recommends the gradual prolongation of the retiring age, in the condition of equalising it for men and women;
- e. concerning the *activity rates*, by groups of age, we chose those from the AMIGO Investigation, which is built in respect with the methodological principles of The International Working Bureau (Annex no. 5.3). In addition, we kept these rates constantly for whole period – which can be a blame from methodological point of view. This choice is based on the hypothesis that the decrease of the participation rate of the population aged between 15-24 years, as a result of the increase of the involving in the secondary and high education process, is in great part counter-balanced by the increase of the population aged of 65 years and over, so that the total activity rate does not modify.

All the estimations refer to the active population, total employed population, not only to the civil one. That's why there are size differences for some indicators calculated for active and/or civil employed population.

The working force demand (dimensions, structure, trend) has, by excellence, economic determinations. This is the result of the action of economic factors, internal and external and of the other markets functionality stage.

According with the mentioned hypothesis, the population with the age able to work is different as dimension and trend in the two variants (constant – V_c and recovering – V_r).

In the case V_c , the population with the age able to work will reach 13,967.8 thousand persons in 2020 year, in decrease with approximately 1,315 thousand persons (-8,6 p.p.) comparing with 2000 year. It is noticed that there are some differences in-between the period. Till the 2005 year, this indicator has a growing dynamic (0.6%), after this starting to decrease, in 2020 reaching only 90.8% of the 2005 level.

In the case V_r – which corresponds to a demographic model with stationary population – the old aged population is in 2020 of 14,900.6 thousand persons; comparing with 2000 year, it is registered a diminution of 397.8 thousand persons (-2,6 p.p.). In between the period the trend is similar with that from V_c : increasing till 2005 year (+0.9%) and respectively decreasing, incomparably slower after this year. Between 2000-2005, the growth is of 136 thousand persons. In addition, even if the descending trend appears after 2005, faced to this, the population with the age able to work will be in 2010 less with 83 thousand persons, a superior level than one in 2000. In both variants, these fluctuations – which, finally, are the expression of the demographic ageing process – represents the result of the change of age structure of the population with the age able to work, in the favour of aged groups.

Table no. 8

Population with the age able to work, active population, unemployment rate, unemployed number and employed population in 2000-2020

	Population aged between 15-64 years Number %	Active population Number %	Unemployment (BIM) Un- 2000= empl. Number	Employed population ²⁾ Number 2000= (thou.
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³ See: *Evaluation of Human Capital. Strategic Coordinates of the working market evolution in Romania* (Steliana Pert, coord.) IRLI, 1997.

	(thou. pers.)	(thou. pers.)	100.0 rate (%)	empl.	100.0 pers.)
CONSTANT VARIANT					
2000	15282.7	11566.2	11.0	1272.3	10293.9
2005	100.0	100.0	100.0		100.0
2010	15377.9	11329.5	9.8	1102.9	10226.6
2015	100.6	98.0	86.7		99.3
2020	15112.5	11037.6	8.5	938.2	10099.4
	98.9	95.4	73.7		98.1
	14630.8	10671.7	7.0	747.0	9924.7
	95.7	92.3	58.7		96.4
	13967.8	10237.7	5.5	563.1	9674.6
	91.4	88.5	44.3		94.0
RECOVERING VARIANT					
2000	15298.4	11601.0	11.0	1276.1	10324.9
2005	100.0	100.0	100.0		100.0
2010	15434.4	11618.2	9.8	1138.6	10479.6
2015	100.9	100.1	89.2		101.5
2020	15351.3	11749.0	8.5	998.7	10750.3
	100.3	101.3	78.3		104.1
	15096.6	11874.5	7.0	831.2	11043.3
	98.7	102.4	65.1		107.0
	14900.6	11921.1	5.5	655.7	11265.4
	96.4	102.8	51.4		109.1

Note:

- 1) The number of employed people, calculated with the formula: active population x unemployment rate. In both variants, the unemployment rate was kept constant.
- 2) The employed population calculated as a difference between the active population and the unemployed number.

“CONSTANT” Variant:

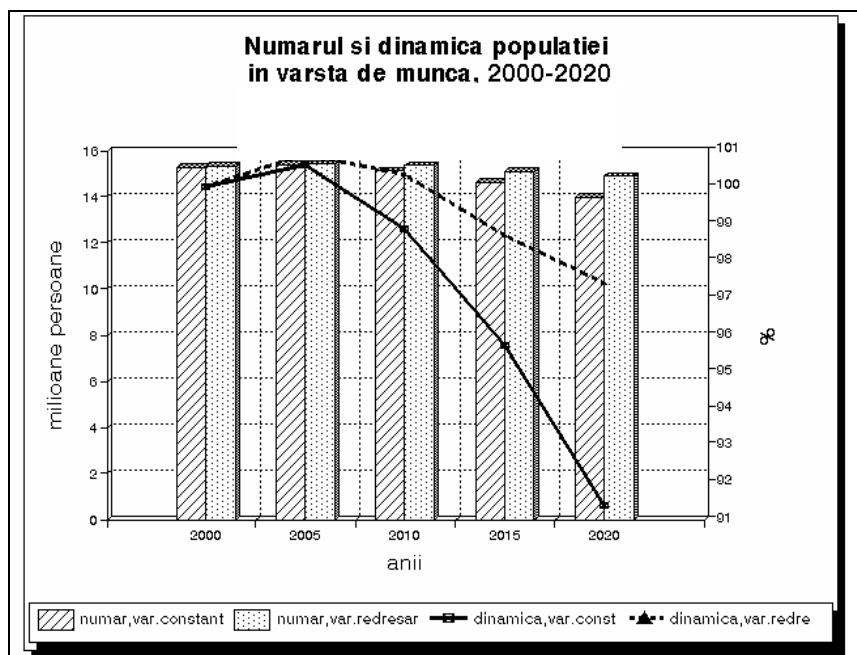
- ? The fertility from 1996 (1.3 children for 1 woman) keeps constant.
- ? Mortality by age from 1996 keeps constant, the average lifetime: 65.11 years for men and 72.79 years for women.
- ? The external migration from 1996 keeps constant: a negative sold of 20,000 persons.

“RECOVERING” Variant:

- ? The fertility will increase, so that the total fertility rate reaches the value 1.5 in 2000 year and the value 2.07 (the level of generation replacement) in 2010 year and after this year.
- ? The mortality will decrease, the average lifetime reaching in 2020 year 73 years for men and 79 years for women.
- ? The external migration will decrease, the sold becoming zero in 2010 and after this year.

Graphic no. 1

The number and the dynamics of the population with the age able to work in 2000 – 2010 years



The active population in V_c will be in 2020 year of 10,237.7 thousand persons, compared with 11,566.2 thousand in 2000 year, reduced with 1,328.5 thousand persons. Contrarily, in V_r , the active population increases from 11,601 thousands persons to 11,921 thousand, an

absolute increasing of 320.1 thousand persons (2,8%). Those two variants are different not only because of the population' dimension but also because of the trend. In V_c , during the whole period, the active population has a constant ascendant dynamics, in 2020 being only 88.5% of the 2000' level. The decrease of the active population is more accelerated than that of the population aged between 15-64 years. Contrarily, in V_r , the evolution of the active population is joining an ascendant curve, having – comparing with 2000 year - the following increases: 0.1% in 2005, 1.1% in 2010, 2.4% in 2015; 2.8% in 2020.

Besides the demographic factors, the evolution of the active population depends on the evolution of the macro-economic indicators and obviously on the evolution of employed population and unemployment.⁴

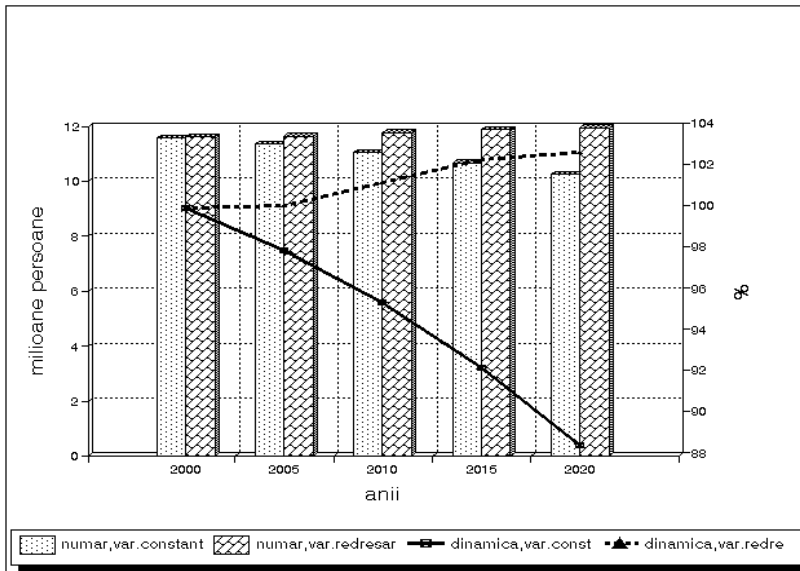
Between 2000-2020, because of the reasons above mentioned, convergent with the related objectives of some prestigious international organisations - BIM, OECD, U.E - and governments from developed countries, including the dynamic Asian economies, the employment of the working force, the increase of the performances of the employed population, of the employing policies efficiency, the reduction of the unemployment to acceptable dimensions "non entropic" are among the priorities of the development⁵.

Graphic no. 2

**The number and the dynamics of the active population
between 2000-2020**

⁴ See: *Labour Markets and Social Policy in Central and Eastern Europe, Transition and Beyond*, editor Nicholas Barr, Oxford University Press, 1993.

⁵ BIT *Promouvoir l'emploi, Rapport du Directeur general*. Conference International du Travail 82^e session 1995, , Geneve, 1995; Choisir l'emploi. Rapport du groupe "Emploi", preside par Bernard Bruhnes, La Documentation francaise, Paris, 1993; Employment in Europe 1996, European Commission, Bruxelles, 1996.



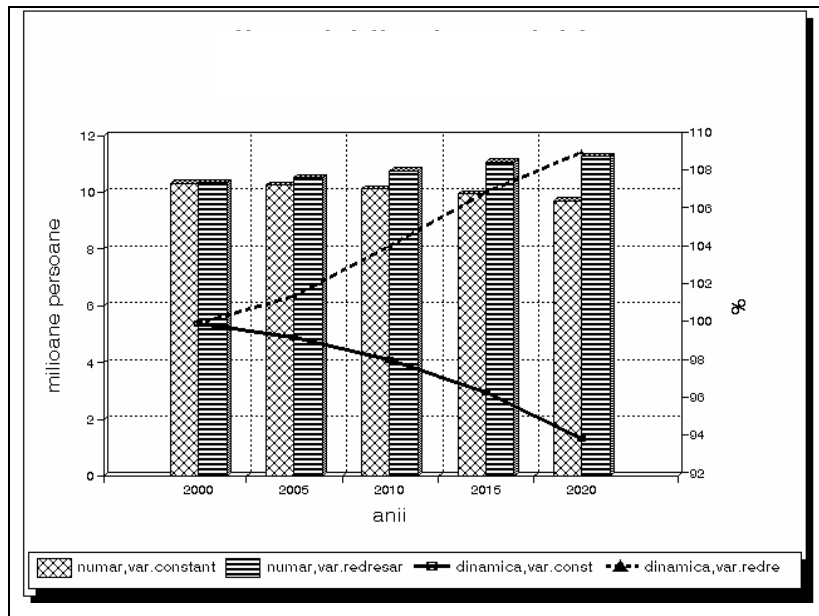
In 2020, in the V_c variant, the employed population will be 9,674.6 thousand persons, decreased with 565.3 thousand persons compared with the level from 2000 year (10,293.8 thousand persons). After an increase till the year 2000, at approximately 1,272 thousand persons, the number of unemployed people will decrease, reaching 563 thousands persons in 2020, which is corresponding to a decrease of unemployment rate from 11.0% to 5.5%.

In the variant V_r , in 2020, the active population increases with 9.1% comparing with the year 2000, from 10,325 thousands persons to 11,265 thousand persons, with an increase of more than 940 thousands persons. The unemployment rate, which was considered constant in both variants, leads to a greater number of unemployed people in this variant, but with a descendant evolution, from 1,276 thousand persons in 2000 to about 656 thousand in 2020. This is variant which can prove to be, in both cases too optimistic concerning the working market dynamics, if this last one doesn't deeply change the aspects concerning institutional organisation, the quality of management, the redirection and the efficiency of the working market policies, in its interdependence with the fiscal, monetary, investment and social policies.

The number and the evolution of the employed and unemployed population in 2000-2020

The dynamics of the employment, 2020, are, in dependent on economic study is relevant resilience of the employment at rates of GIP the two and SII.

Table no. 9
The resilience employment at variants for the growing between 2000-



Graphic no. 3

volume and the working force' between 2000- great part, the rhythm of growth. For this to examine the working force' the growing supposed by scenarios SI

of the the different rhythm of GIP 2020

	V ₁	V ₂	V ₃	V ₄	V ₅	V ₆
Scenario I (SI)	2,9	2,5	x	x	x	x
Scenario II (SII)	3,7	3,4	3,0	2,6	2,2	1,6

Source: Calculated, based on the data from the tables no. 5 and 6.

Between 2000-2020, for one growing percent of GIP, the working force employment increases with 0.4%. The resilience of the employment, at the GIP growing rhythm of 0.4%, stays between the limits settled on the basis of econometric studies, according to which one percent of GIP growth, "coeteris paribus", induces an increase of the employment between 0.2% - 0.5%. Obviously, depending on the dimension of the GIP growing rhythms projected in our scenarios, the increase of the employment is different. Thus, the resilience of the employment, at the GIP growing rhythm has values between 3.7% (SIIV₁) and 1.6% (SIIV₂).

But, to reach the projected level of the working force employment - excepting the quality of the economic growth rate - is also depending on the macro-economic and structural policies, on one side, and on the working market, educational-training and social policies, on the other side.

The replacement rate of the working force and the ratio of the economic dependency - which express synthetically the demographic ageing process and respectively the employment process - are different in the two variants as size and evolutions.

The replacement rate, in the variant V_c, is worsening, decreasing from 87.4% to 61.4%. In the variant V_r, this rate has fluctuating evolutions: decreases in 2005, comparing with 2000, from 88.5% to 79.2%; in 2010 reverts at the 2000' level; increases in 2015 becoming 101.7%, decreases in 2020 to 98.9%. Anyhow, above these periodical fluctuations, its values are more favourable than ones from the variant V_c.

The ratio of the economic dependency, for different reasons, has an improved, positive trajectory: in the variant V_c, decreases from 1,168.2 unemployed persons at 1,000 employed persons to, respectively, 1,042.9, and in V_r from 1,169.1 to, respectively 1,042.9. However, the value of the economic dependency ratio generates pressure on the economy, equally from the performances, investments, fiscal policies aspects etc.

Concluding, based on all the date presented, we appreciate that the variant V_c *cannot be accepted as an option for the future* because it leads to: the decreasing of the working force offer in the conditions of a quicker demographic ageing, the decreasing of the employed population; pressures on the budget and on the governmental expenditures for supporting the social policies a.s.o.

The construction of a performance economy, functional, able to deal with competition pressure in integrating - globalising conditions, will be accompanied by significant movements in the structure of the working force employment. Firmly engaged on the trajectory of passing from an agrarian tendency in the structure (between 1990 -1997) to a tertiary structure "via" building a performance, efficient and competitive secondary sector, the changes in the structure of working force employment are simultaneously result and factor of the development. They are, at the same time, expressions of the appearance and development of a new model for working force employment. But, the speed and the intensity of these changes remain dependent: on the general capacity of the economy to support them, on the increase of solvable service demand of the population and of the production sectors, on the communication - cooperation relations between the national market and the foreign ones and, first of all, on the unique market of the E.U. This also supposes the assimilation of the specific community "acquis".

Which can be the evolution of the structure of the working force employment at the horizon of 2000?

In our scenario, we started from two imperatives considered in their interaction: a) the valorisation of the Romanian economic potential, at the performance quotation, by selecting those sectors and activities which create added value and which can become - in the conditions of concurrent pressure - symbols of the competitiveness and economic dynamism; b) the modernisation of the employment structure and the approaching of the structures from the developed countries, first of all of those from E.U. Between these limits, the main coordinates of the evolution of the working force structure will be: a) the decrease of the population employed in agriculture; b) to keep at a relative constant level (about 30-32%) the population employed in the secondary sector, considering that the process of massive structural adjustment will be ended. Even if the tendency of the decrease of the population employed in the secondary sector is general, in some developed countries, including the E.U. members, this population is about 30-36%. The secondary sector, industry and construction will still have (and couldn't be otherwise) a great importance both in the creation of GIP and in the employment. The desindustrialisation and the pseudo-tertiary sector cannot be accepted as a sound solution, on long term; c) the continuously increase of *the number and structure* of the population employed in the service field.

In the variant V_c, the population employed in the *primer sector* will decrease in absolute volume with more than 1,945 thousand persons, the percentage reaching in 2020 year 15%, compared with 33% in 2000. In the *secondary sector*, both in absolute and relative measure, the employed population increases slightly: +213.6 thousand persons, respectively +4 p.p., being in 2020 32% of the total employment, compared with 28% in 2000. Finally, the population from the *service sector* increases with about 1,113 thousand persons, from 39% in 2000 to 53% in 2020.

In the variant V_r, while the evolutions, in relative terms, are similar with those of the variant V_c, the changes in absolute terms have the following values: - 1,717 thousand persons in the primer sector; +714 thousand in the secondary sector; +1 994 thousand persons in the tertiary sector. The percentage of the population employed in service sector, in 2000, stays under the E.U. average, approximately at the actual level in Greece and Portugal.

Table no. 10

The structure of the employed population, by sectors

	Primer sector		Secondary sector		Tertiary sector	
	(thou. pers.)	%	(thou. pers.)	%	(thou. pers.)	%
CONSTANT VARIANT						
2000	3397.0	33 ^{*)}	2882.3	28 ^{*)}	4014.6 ^{**)}	
2005	2965.7	29	2965.7	29	39 ^{*)}	
2010	2524.9	25	3029.8	30	4295.2	
2015	1984.9	20	2977.4	31	42	
2020	1451.2	15	3095.9	32	4544.7	
					45	
					4863.1	
					49	
					5127.5	
					53	
RECOVERING VARIANT						
2000	3407.2	33 ^{*)}	2891.0	28 ^{*)}	4026.7 ^{**)}	
2005	3039.1	29	3039.1	29	39 ^{*)}	
2010	2687.6	25	3583.4	30	4401.4	
2015	2208.7	20	3423.4	31	42	
2020	1689.8	15	3605.0	32	4837.6	
					45	
					5411.2	
					49	
					5970.7	
					53	

*) estimations of the National Commission of Prognosis

**) calculated on the basis of the percentage estimated by the National Commission of Prognosis

Besides this great changes in the working force employment by sectors, the most important movement which all the countries must face to, is *the significant increase of the demand for well and highly qualified working force* and the corresponding decrease of the demand for unqualified or semiquified working force. This process takes place in the conditions of the evolution towards a new employment model, of the working market flexibility, including its internationalisation, of the development of partnership, of a new type of organising the work and the industrial relations⁶.

Certainly, there are sectors that loose working places, but also there are sectors and activities that create working places. There is the opinion that the effect of those last sectors will be greater than of the first ones, so that, in all, the sold will be positive (Annex no. 5.6). This is the reason for which we estimate that *the variant V_r is the most truthlike*. In the case of Romania, the factors, the activities and the branches which will contribute to support the working force employment, to keep the unemployment rate between reasonable limits, could be:

- ? developing, diversifying and industrialising the activities in rural area, which could offer a large scale of opportunities for employing the rural population (small industry in rural area, acquisition and processing the farm produces; the distribution of the farm produces; service for agriculture and for the rural population, including education, health, social assistance etc.);
- ? establishing the priorities and the direction - through market mechanisms - for the development of some industrial sectors towards the internal market and export. Among these, the following branches could have an increased potential for the employment: farming and food activities, light industry (textiles, confections, leather goods, footwear), informatics, telecommunications, infrastructure, civil engineering, etc.;
- ? relaunching the services development from a treble perspective: a) revigouring the activities with great potential of employment and added value creation: leisure industry, internal and especially international tourism, agroturism and rural tourism; b) impelling the development of new services strongly connected with the market economy functioning: banking, financial, insurance services; public and private services for intermediation on the working market; research and development services including technological transfer and dissemination; social assistance for handicapped or home services; c) the penetration and the remaining in the

⁶ *L'Europe de l'emploi ou comment font les autres.* (Preface par Bernard Brunhes), Les Editions d'Organisation, Paris, 1994; *L'emploi en Europe 1995*, Commission européenne, Bruxelles, 1995.

international service market - a part of the market with rapid development - (informatics, communications, banks, insurance, consulting, education a.o.).

The qualitative and quantitative changes in the volume and the structure of the working force employment in Romania in the view of the year 2000, are directly dependent especially on the investment' dynamics in human capital, on the total investments' volume in the economy generally. On the other hand, the public and private investments, in the process of human capital growth, will be more and more interdependent and mutual potentionning for economic efficiency.

6A. THE EVOLUTION OF THE STATE AND PUBLIC ADMINISTRATION IN ROMANIA UNTIL YEAR 2020

1. Prolegomena

1.1 Romania and Europe

The submission, on June 22, 1995 of the Romanian proposal for adhesion to the European Union, together with the national strategy of preparing the adherence, was done further to another important moment, respectively the coming into force on February 1st, 1995 of the European Agreement of an Association between Romania and The European Communities, (signed in Brussels on February 1st, 1993 and confirmed by Romania by the Law no. 20 of April 6-th, 1993).

In its preamble, as well as in other European agreements with Central and East European countries, it is shown that the Romania's final objective is to become a Union's member and that both parts believe this association will help Romania to reach the objective of the integration.

On the occasion of Copenhagen Summit (21-22 June 1993) it was underlined that the adhesion requires the applicant country to have firm institutions, to guarantee the democracy and pre-eminence of the LAW, to observe the human right and the existence of a permanent market economy, as well as the capacity to resist to the competition and the forces that act in the economy inside the Union.

Later on, the European Council in Essen of December 9-10, 1994 adopted the preparatory strategy of the associated Central and East European Countries in order to adhere to the European Union.

In the Introduction to the **Report on the preparatory strategy of adhering to the European Union of the Central and East European Countries** it is said that the purpose of this strategy is that of allowing this Countries to prepare progressively their integration into the Union's internal market by adopting in stages the Community achievements (l'acquis communautaire). The **White Book** adopted during the European Council in Cannes (June 26-27, 1995) emphasises the main measures to be taken in all sections of the internal market and a certain order is proposed so that the national legislation should be integrated in the Community legislation. A great importance is paid to establish new structures that will allow putting into practice and observing the law and as well as achieving the economic reform, taking into account that adhering to the Union involves accepting all the Community acquis. In the conclusions of the **White Book** it is shown that the transition processes in the Central and Eastern European Countries to the political and economic system like those in EU it's a complex processes that claims the democracy and civil society consolidation, the implementation of correct macroeconomic policies and industrial restructuring, legislative changes and liberalisation of commerce both with the Union and the neighbouring countries. Considering the provisions of the European documents concerning the integration and the ones of the Association Agreement, Romania has made efforts to respond to the adhesion requirements to the European Union. Though, the existent situation at the end of the first semester of 1997 was not appreciated as being fully satisfactory.

1.2 The deficiencies regarding the Romania's middle term obligations concerning the Community acquis.

On July 16 Th, 1997, the European Commission made public its opinion regarding the Romanian proposal to become member of the European Union. According to the published document, Romania could not assume its middle term obligations (appreciated to be five years). Though Romania tries hard to fulfil the political criteria, it will meet serious difficulties to compete with the market forces in the frame of the Union. Besides Romania did not assume the essential elements of acquis especially as for the internal market.

At the end of 1998, the Commission presented a new report, which noticed some progress, but also important set backs, thus the negotiations for adhesion could not start.

Up to now only six countries have been considered economic and political prepared to start negotiations and have been nominated by the European Commission to the European Parliament: Poland, Czech Republic, Hungary, Slovenia, Estonia and Cyprus. As a conclusion, Romania must take the necessary measures to fulfil the obligations assumed by a Union member before 2001, thing that involves a progressive development rhythm.

Of course, in the frame of these measures even the probable evolution of the European Union shall be taken into consideration.

The European Commission assessment considered every candidate's achievements until May 1997 and their progress perspectives on a middle term, at the request of the European Council in Madrid, relying on the adhesion criteria.

During this assessment was analysed the progress of the candidates up to May 1997 and was prepared the probable progress on middle terms regarding especially the economic criteria and their capacity to implement the Community acquis, taking into account that their evolution is fast, presently including also the security, justice and domestic and foreign affairs, and the monetary union.

In Agenda 2000, are the European Commission's conclusions in connection with Romania's request to adhere to the European Union present some important deficiencies:

- a) Insufficient respect regarding the law at all levels of State institutions and regarding the basic human rights. Concerning this matter it is shown that the legal and domestic affairs institutions, also the legal apparatus are in the incipient phases of the reform, their progress in trying to achieve the obligations imposed by the community acquis being limited. The function of the justice is not satisfactory due to the lack of the specialised judges, funds, procedures complexity, great number of new regulations that are to be applied and reduced capacity of the community rights uniform application. The constitutional control is insufficient considering that the decisions of the Constitutional Court may be removed with a parliamentary majority of two thirds and the people's advocate prerogatives as well as his possibilities to practice them are not defined as precision. It is also shown that some regulations regarding the competence of the police are ambiguous and the Ministry of Justice is insufficiently aligning its legislation to the community norms as regards fighting with the organised crime and the corruption.
- b) The shortages in the public administration compromise the rhythm and the quality of harmonising the domestic legislation with the community legislation.

In this respect it is shown that owing to the lack of an official status of the local authorities and of the financial resources practising, the local autonomy is hindered. It is also revealed the absence of the public employee's statute, low level of wages and generally speaking, the necessity of a global institutional reform.

The Commission has also noticed some advantages connected with Romania's geographic position, the size and youth of population, low levels of wage costs as well as some positive elements that could be taken into consideration for the future evolution of the country:

- a) The existence of democratic institutions whose stability seems to be sure.
- c) The programs, the measures and the commitment that the Romanian authorities have taken after November 1996 in connection with the Justice, Home Affairs and generally respecting the basic human rights.

1.3 References regarding the middle term evolution of the European Union.

The European Community's main goal was initially to establish connections among the Western European countries, especially between France and Germany so as to assure a permanent peace, stability, prosperity and solidarity. This political strategy was left behind later by the economic one, due to the new commercial policy, the environment, competition rules, the agricultural problems and monetary ones, all these requiring deep reevaluation of the Community's competence.

The matter of foreign security, conditioned by the instability of some European areas, is a major asset of the occidental states. Also, by opening the internal borders, is more evident that is necessary to fight against the organised crimes.

The problem that may arise is the one of the Union's final political and juridical form so that the diversity of culture, language and the specific of every nation to be maintained. It is admitted that the Institutional and political system of the Union has a special character, because can not be confused with a classical intergovernmental organisation having its own large powers, budgetary resources, exclusive competence, a legal system with vast implications. Also, the system cannot be compared with any of the national Institutions belonging to the members of the Union, because the European Parliament and the Council of Europe are not two sections of the some body, so the equilibrium of the powers in the Union is not exact expression of the classical principle of the powers' separation.

At the same time, the Community institutional system cannot be compared with that of a federal state, a confederation or an international organisation. In the same time, for a better activity, the Union needs a strategy, which will offer it more flexibility, efficiency, coherence, democracy and transparency, gradually removing the agents that are causing changes in the system.

On the occasion of motivations exposure at ***"General frame for a project of revision treaties"*** (Dublin II) issued at the request of the European Council, it is shown that during the extraordinary meeting that took place on Oct. 5th 1996, the heads of States and Governments stated that the Union has got the necessary means to fulfil the needs of its citizens, that it may have a part in international relations taking into account its possibilities and responsibilities, and that it may fulfil the task of restructuring the whole continent.

It is also mentioned further that the European Union is confronted at the beginning of the XXI century with numerous problems namely the very fast evolution of the international situation, the general economy and its effects over the labour, the competitiveness, drugs, international criminality, immigration pressure, ecological unbalance and, of course Union enlargement. The main objectives of the Intergovernmental Conference in 1996 were stated by the European Council in Florence: the full respect of the human rights, free circulation inside the Union, citizens protection against international criminality, environment protection, consumers protection, establishment of open and transparent functioning institutions, respect of subsidiary principle, enforcement of external and security politics of the Union, defend of the member states,

economical agents and workers rights, an institutional reform responding to the requests of the Union enlargement.

They are also questions regarding the capacity to create the conditions for a common budget so as to offer acceptable terms for the CEE Countries and those in transition; and, of course, problems related to external politics and common security (EPCS), conditions necessary for the future European defence.

These incertitude have determined some scenarios for year 2012 having as main goals the enlargement of the Union to the East, a common currency (EURO) and EPCS system

The scenarios are relying on two important ideas - both from the political and economic aspect point of view and namely to what extent a state is integrated related to the introduction of the common currency and the stage of European defending and foreign policy, both pursuing solutions having as goal a balance between the national independence and politic union.

As it was clear before the closing of the Inter-governmental Conference held in June 1997 (Amsterdam) and in the frame of analyses regarding the Union expectations on medium and long term, the member states prefer to deal with urgent matters (especially the ones regarding EPCS), rather than deal with the reform of institutions that was, however, a priority of the Conference objectives.

Or, this reform involves, between others, the unanimity system replacement with the one of the majority votes, the rebalance of Council of Ministers' votes, the modify of the European Commission statute - especially regarding its obligations towards Parliament and Council - also, a less bureaucratic and more "every man's Union.

1.4. The perspective of globalization

A hypotheses that cannot be neglected in the prognosis of the EU development is referring to the idea and the impact of the globalization on the justice, standards, the ways to the strengthening of the democratic societies and civil society.

"Globalization should not be understood as wholly an economic concept, or as a development of the world system, or as purely a development of large-scale global institutions. In my view, globalization refers to the increasing impact of action at distance on our lives. The concept describes the increasing inter-penetration between individual life and global futures, something which I think is relatively new in history" said A. Giddens at the UNRISD Conference on Globalization and Citizenship.

2. The State and the Law in Romania 2020

2.1. Imitation, inspiration, originality

Central and East European countries that have been confronted with the complex juridical problems during the transition to the market economy looked for a model, the Japanese, Swedish, Spanish, and Austrian ones being the most favoured. But these models have to offer only partial solutions that even if integrated in the systems of a country, must take into account its particularities and special conditions.

Although, the problem of influence exercised by the law of one country over the law of another one, or of the foreign models impact over a national law system, have been underlined many times, the opinions are yet, quite different.

One of the opinions is that the transplantation of some laws and legal institutions is very difficult if there are fundamental differences between both systems.

Another opinion is that such a transfer can be made easily if the laws and institutions are being borrowed from a prestigious and influential state.

2.2 Middle and long term references

The evolution of the State and Law conception in Romania implies studies on the models offered by the other states, but also considering in the same time, the Romanian traditions. Thus:

- a) *The reform should be achieved by adopting a general concept about the State*, as being the entity which serves the public interest, watching over the individual human rights and interests.
- b) If the *commutative justice* is relying on the persons' equality and refers to their relations, and the *distributive justice* follows dividing the goods and obligations towards the society and considering the inequality that exists among its members, the *social justice* will assure the stability and keeps the equilibrium between society and its members, authority and liberty; the political power will be limited by the person's rights, especially the individual freedom and private property, and the juridical rules will follow the achieving of the common interest.
- c) The difference between the positive Law and natural Law will disappear in time, the general law principles often obtaining the character of compulsory rules, even in the absence of written text, the natural law providing a number of principles for the state institutions as to respond to the exigencies of the social justice,
- d) In this situation is established the state of justice characterised by the absence of the arbitrary power of the leaders.

The idea of a State of law and justice has been adopted by the Romanian lawyers from the very beginning of the XX-th century. In their opinion such a State should respect its own laws, limit the rights in

their reports with the citizens, respect those law principles considered to be everlasting, underlining that with the help of the State of justice will reach at the full legal accomplishment.

It was also revealed that in Romania, such a state had been enforced by the Constitution of 1923, although there were some deviations from its rules.

The Romanian doctrine after December 1989 tried to define the idea of state of justice prior to find its juridical expression in the Constitution of 1991.

In the same year it is analysed the idea of the state of justice, some recent opinions regarding the state of justice are discussed and are exposed also some problems connected with the relation between legality and legitimate, legislative inflation, the human rights and are revealed some characteristics of the state of justice at the level of certain institutional regulations (United States Constitution and Romanian Constitution from March, 29, 1923).

In this way some essential features of the State of justice are pointed out: power subordination against the state, pyramidal structure of power and its diffusion to a great number of organisms, citizens fundamental rights and liberties guarantee regarding the exercise of power by legal and politic control, limitation by the two others of each of the three powers (legislative, executive and judicial), an differentiation of the executive power and of the judicial power in order to be allowed the control between the existing authorities framed in the system of the same power.

Another concept is that the State of justice, reflecting the coexistence of the two distinct social entities, state and right, of their reciprocal rapport manifested as relations between power and normatively, is a social reply to the excess of power and a solution to prevent it implies the political pluripartidism, the free political competition, supposes the power's democrats expressed by sovereignty, by the electoral system based on the universal, direct and secret vote, free elections for Parliament, the supreme place has to be occupied by the Constitution, the separation of powers governing by respecting the rights of the minorities, respecting the free market economy, the private property and equality of chances, the civil society right of associating, the independence of the judges, the press liberty and of all mass-media means and the respect of rights and fundamental liberties. Synthetic, in Romanian doctrine of 1990-1997 are retained the following legal features: to respect the principle of human rights and liberties, to devote the separation principle of the state and justice independence main powers separation.

In the same time, are underlined some defaults that are to be removed in the future, as; legal inflation, delays in publishing the legal norm in rapport with the status of social life, multiplication of legal errors, insufficient operatively and receptivity of the administrative organisms regarding the use of the regulations, excessive exercise of judicial power abusing of the prerogatives of the judges independence (judicial dictatorship).

Referring to Romania's Constitution from 1991 and the system in our country it is shown that the new Constitution establishes in art. 13 "Romania is a State of justice, democratic and social where the man's dignity, rights and liberties, the free development of human personality are supreme values and are quarantined, guarantees a large spectrum of human fundamental rights and liberties, establishing also the necessary rules regarding their exercise. The regulations of public authorities must hinder the abuse of power, all the legal act shave to be subordinated to the law, existing the Constitution revision possibility as to not be allowed to the legal empowered ordinary person to modify it (art. 147 align. 2 and art. 148 from Constitution).

Is affirmed that regarding the period of transition that "if our new fundamental law gives expression to many exigencies of the state of justice we may not affirm that the Romanian state is a state of justice. From their reflection in law up to their use in reality there are some more steps to be achieved, processes requesting time and effort".

Speaking about 1997, the Romanian doctrine points out the concept of the State of justice and its motivations- political, juridical, economical, social, ideological underlying, at the same time, some deficiencies that will have gradually to be replaced.

In year 2020, the State of justice proclaimed by the Constitution will have to be the real institution to assure a unitary legislation, the basic human rights and liberties according to the Universal Declaration of the Human Rights (1948), The European Convention of the Human Rights (1950), with other international instruments referring to the Protection of the Human Rights and the basic liberties.

e) The necessity of an administrative reform appears very pregnant from examining the measures taken in the European countries due to the economic recession and the deficiencies recorded in the public sector. The changes that took place followed the relations between the rules and the society, the relations in the public administration at different levels (central, regional, local) management organisation of the Central administration.

The researches in OCDE (1990-1993) revealed that the internal measures have been liken for modernising the administration and the tendencies that seem to exist regarding the administrative reform especially as to the services, consumers interests, use of human resources, informatization, rentability control and the assessment of results, introduction of new governing and financial administration systems.

The political administrative apparatus has got an essential mission- to establish the finalities, to propose projects, to mobilise the energies to accomplish ambitious continental objectives taking into account the economical integration conditions

If the XX Th C. consolidated the States, the problem is what will it happen with these structures in the XXI-st century. It seems that already exists the premises for a new kind of state that shall be concerned with its people problems, with the respect of national and regional traditions, shall have a greater

opening regarding the different forms of association and shall review closely the administration system, ways of organisation and financial administration.

In some European countries have been elaborated certain programs to modernise the public administration- " New Steps" program (England), "Circulaire Rocard" an administration modernising program (France), while in Germany, if is not a preoccupation at federal level, there are initiatives in most of the provinces (lands).

Main idea is a new model of financial administration in view of a greater and better efficiency by according much more liberty to department and offices so that they may develop their own financial and personnel system, existing also a control and stimulation system based on performance factors.

Is also considered the federal state that may be a solution for the third millennium, because has as base a method of social and organisational analyse of economical, social, politic institutions, fight against concentrated powers that are not subdue to a democratic control, clear apply of the power repartition principles and power participation.

Anyway, after Romania shall become member of the European Union, the national administration will not be only an expression of his own power, taking into account that many administrative regulations will mark the results of idea exchange and models comparison with the other member states and with the Commission. Also, shall have to be eliminated the eventual deficiencies of administrative authorities in executing the communitary rules.

- f) In the State of justice the principle of the local autonomy and the public services decentralising is promoted

The 1991 Constitution establishes at the art. 119 that the public administration of the domestic administrative units is based on the principle of local autonomy and public services decentralisation.

Both principles are interdependent but they are acting together in order to achieve both local autonomy and unitary leadership of the country. But between the local autonomy requested by the local public administration bodies and the tendency of central leadership exist a non correlation that has to be outrun, the last ones remaining to deal only with the matters regarding the general interest of the society.

In 2020, the norms of the administrative right could form a law that shall reveal the balance between both tendencies, the accent being put on the autonomy and decentralisation principles.

3. Adjusting Romania's Constitutional system to the exigencies of the European Communities.

The communitary Law can be practised in the normative administrative and judiciary departments, but the most important problems are the Constitutional ones.

The approval of the European Union's Treaty (Maastricht) required that all members revise their Constitutions to adapt them to the new exigencies of this stage of the European Constitution.

Thus, the members of the European Union, have succeed to accomplish the balance between the constitutional provisions and the exigency of adhesion at this new stage of European construction by admitting, in certain conditions, the sovereignty limitations or the transfer of some competence to the international institutions; they also showed national determination to respect the communitary laws.

Romania's Agreement Associating to E.U., in art. 69 says that harmonising its present and future legislation with that of the community it's an important condition to integrate in the community, so that its legislation gradually become compatible to that of the Community.

It is obvious that a modification or/and a supplement to the Romania's Constitution will be necessary in order to adhere to the European Union, the legal order of the European Community being considered by the jurisprudence of the Court of Law as independent of the one of the member states; the communitary right issued by the treaties is considered to have autonomous source.

Considering the traditions and the aspirations of the Romanian people, the specific conditions of passing to the State of justice it would be possible that in 2001 or at the latest in 2020 Romania's Constitution to give expression to *a system according to which the temporary transfer of abilities to International organisations requires a law voted by the qualified majority of the Parliament*. It is also possible that until then a federal ensemble to be created and to rely on a European Constitution, case in which the Constitutional alterations shall be considered insufficient.

4. Achieving a legal system compatible with the communitary laws.

The acceptance of a certain hierarchy between the communitary and the National Law is unquestionable, the communitary rules are considered to be integrated in the juridical order of every state-member of the community, as underlined by the Court of Law of the European Communities, and in case of conflict between a domestic right rule and a communitary one, the last one prevails.

So, the Court of Law motivates the right arise from an autonomous source is to be preferred to the domestic right, no matter what is the meaning of the last one because, contrary the communitary character is lost and the legal base of Community is disputable.

Although the Romanian laws and the communitary one have a lot in common, the national legislation will deeply change in time regarding the structures and the necessary measures to decrease the gap concerning the development level.

The White Book concerning the associated countries in East and Central Europe and their preparing to be integrated in the Union's internal market contains some objectives that Romania should achieve up to the adherence: the accomplishment of the legislation approach by using a proper co-ordination mechanism that will stimulate and survey this processes that reflects own interests and priorities with the support of PHARE program.

The institutions that will be settle up include an important system of rules regarding the most important areas and the old legislation that coexist with the new one shall be reviewed, modified or replaced.

A great attention will be paid to the legislation regarding the circulation of goods, the gradual

establishment of the free exchange areas, the circulation of the services, the persons and the capitals,

payments economic, cultural and financially cooperation and in general for the accomplishment of the

provisions of the European Agreement establishing an association between Romania, European

Communities and their member states.

In order to co-operate and put in practice common actions with the Union's members as to justice and internal affairs, certain measures to prevent and fight the terrorism and other forms of international criminality, like slavery, forced prostitution, crimes against children, drugs, racism, xenophobia will be taken.

Also, the judiciary co-operation must also be strengthen as regards the fight against corruption, harmonise the rules regarding the commercial and civil laws conflict, co-operate with the custom domain, etc. It is our strong belief that even before year 2020 Romania will fulfil the conditions for a fully co-operation with the Union's members and the communitary institutions as regards the justice.

Of course the solutions that will be adopted in order to achieve the reform in the same rate with the European countries and Romania's abilities will correspond to the communitary and international Right's exigencies and the Romanian specific and traditions.

The accomplishment of the legislation harmonisation shall be based on serious studies at European level but also on the Romanian doctrine' criteria in defining this method that had lead, in the theory and practice of the member state, at different interpretations.

Also, in this context shall be realised the communitary *acquis* understanding, mainly regarding the administration, justice and domestic security, taking into account that in the "General Frame for a reviewed treaties project" (Dublin II) is foreseen the progressive accomplishment of a liberty, security and justice common space until 2001, a reform in the domain of the third pile of the European Union Treaty.

Table no. 1

Variant "0" of the strategy for the Law and State's development
up to 2020.

The necessary measures	Period
<i>I. State and administration</i>	1998-2020
1. Adoption of a complex of conceptions.	1998
2. Social justice.	1998
3. Diminishing the discrepancy between the positive and natural Law.	1998
4. The state of justice a real institutional system thinking of passing on to the social state (Welfare State)	1998-2001
5. The reform of the central, regional and local public administration.	1998
a) Doing away with the shortcomings of the administrative authorities as to putting into practice the communitary norms.	1998-2001
b) Promoting the principle of the local autonomy and of decentralising.	1998-2001
<i>II. The internal juridical system</i>	1998-2020
1. Adjusting Romania's constitutional system according to the exigencies of the European communities.	2001
2. Establishing a juridical system compatible with	1998-2020

the communitary one.

5. Scenarios

There are, as indicated in the previous pages, two scenarios, considered by the degree of reforming two main groups of problems:

a) prevail of law at all levels of state apparatus and the respect of fundamental rights concerning the legal and domestic affairs institutions reform, by harmonising the legislation in accordance with the communitary acquis;

b) the public administration reform.

Between 1990-1998, the normative activity has known a certain evolution, but far to be satisfactory.

Table 2

Normative activity, 1990 – 1996

Year	Decreets	Laws	Government Decrees	Government Ordinances	Total	Average number
1990	150 D.L.	142 L.	1367 H.G.	-	1659	
1991	-	82 L.	857 H.G.	-	939	
1992	-	130 L.	861 H.G.	28 O.G.	1019	
1993	-	95 L.	796 H.G.	27 O.G.	918	
1994	-	146 L.	981 H.G.	70 O.G.	1197	
1995	-	139 L.	1105 H.G.	45 O.G.	1289	
1996	-	142 L.	1567 H.G.	44 O.G.	1753	1462

It is to be seen that after December 1989 a number of decrees- laws have been initiated so as to replace the former communist ones, have been approved laws to replace the abrogated legislation, this being done through a great number of Government Decrees.

After a year when the number of the normative instruments was only half in comparison with the prior year between 1992-1995 the legislative activity increased with an approximate constant value.

In 1996 the number of legal instruments surpassed even the one of 1990, especially through a great number of Government Decrees at which were added the Government Ordinances, this explained by the necessity of removing the discrepancies in reform appliance and by the change of Government further to the elections that took place in November 1996. Unfortunately, even in 1997 – 1998 the number of Government Decrees and Ordinances increased, as compared with the Laws and Decrees issued by the Parliament.

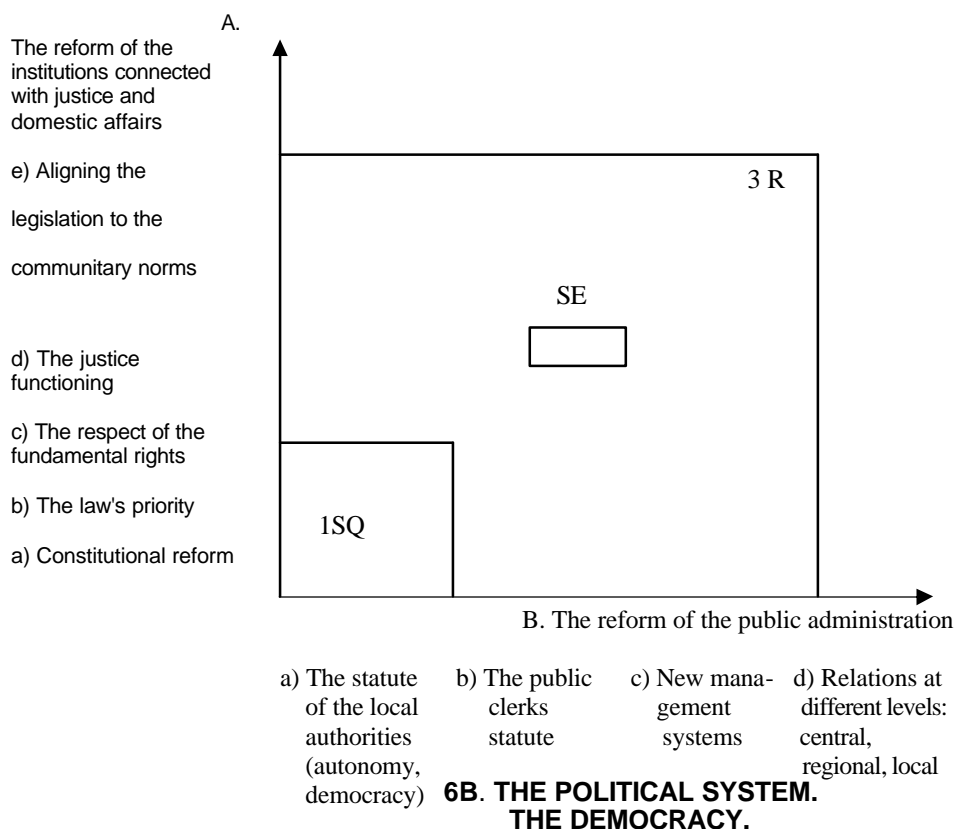
The development perspectives looking up to 2020 could have the following configuration:

1. **Statu Quo (S.Q.):** A rate of 3-4% of fulfilling the two reforms will lead to a greater difference as against the developed countries and even in regional context. This scenario implies certain delays in achieving the objectives A (a-e) and B (a-d), indicated in table no. 3, and the reforms may continue after 2020.
2. **Slow Evolution (S.L.):** A rate of 4-7 % of fulfilling the two reforms means a gradual replacement of the deficiencies from A and B. The horizon 2020 will point out a partial fulfilment of the reforms and especially in the legal system.
3. **Renaissance (R.):** A rate of 7% as regards the fulfilment of the two reforms would leave Romania to the successes indicated in variant 0.

CONCLUSIONS:

Considering the elements shown the 3. (R) scenario can be successful, but the probability shows that 2. (S.L.) scenario is more realistic.

Table no. 3



1. The political system

1.1 The Constitutional principles.

The state organisation of Romania is based in the new Constitution from 1991 and in the organically laws which has been edict in terms of the Constitutional stipulation such as, The Law concerning the legal organisation and the Law of local public administration.

The general principles taken off these settlements regard the sovereignty of the people exerted by his representatives and, in some of the cases, by referendum, political pluralism, the powers separation in state, local autonomy and decentralisation and also the state of right.

Thus, at art. 1 of the Constitution is specified that Romania is a sovereign state and at art. 2 paragraph 1 is specified: "The national sovereignty belong to the Romanian people which is exerting by its authority and by referendum", and at paragraph 2 of the same art. establishing that "No group or person can exert sovereignty in its proper name".

At art. 8 from Constitution is established the *pluralism principle* "The pluralism in Romanian society is a condition and a guarantee of the constitutional democracy", it means that both at political organisation level and at individual level exist the possibility to assimilate and to express any opinion in consideration of the needs and the requirements of the state of Low.

At paragraph 2 of the same art. it is shown : "The political parties are set up and develop their activities under the terms of the law. They contribute to define and to express the political will of the citizens respecting the national sovereignty, the territorial integrity, the order of the law and the democracy's principles".

According to art. 8 stipulations, paragraphs 2, 37 and 30 from Constitution, in Romania is established the *principle of many parties*, abolishing the principle of one party from the communist period. In the light of this principle, the political parties enjoy the liberty of their set up, to establish their own program, and of the law order and performing this, respecting the national sovereignty, the territorial integrity, order of right, and of the democracy principles, understanding that the assumption of not complying with these requirements the parties are eliminated out of the low.

The principle of power separation in the state isn't specifically provided in the Romanian Constitution, but from the mode in which the authorities are organised it is clear that its requirements are carried out.

1.2 Public authorities

Constitution considers the *Parliament* like "representative and supreme authority of the Romanian people and the unique legislative authority of the country" (art. 5, paragraph 1). The Chamber of Deputies

and the Senate are elected by universal, equal and direct vote, secret and free expressed according to the electoral law (art. 59, paragraph 1).

The President of Romania "is elected by universal, equal and direct vote, secret and free expressed" (art. 8, paragraph 1). In consideration of the stipulations of art. 8 from Constitution, corroborate with art. 85-93, the President accomplishes three principal functions: to represent the Romanian state (art. 8, paragraph 1); to defend and guarantee some fundamental values, art. 80 specifying "he is the guarantee person of the national independence, of the territorial unity and integrity of the country"; also " he watches that the Constitution should be respected and the good function of the public authorities" (art. 80, paragraph 2.).

The Government of Romania is the central authority of the executive power with political and management role, which results from the stipulation of art. 101 from the Constitution: "The Government, by its powers invested by the Parliament, assures the achievement of the internal and external policy of the country and the general management of the public administration".

The judicial authorities find its principle settlement in art. 123-133 from the judicial Instances the Public Ministry of the High Council of Magistracy.

Thus, the art. 123 shows that "justice is made in the name of law" (paragraph 2) and the judges " are independent and are submitted only to law" (paragraph 2). The Public Ministry "represents the general interest of the society and defends the law order and also the citizens rights" (art. 130, paragraph 1). It exerts its prerogatives according to principle of the legalism, of the impartiality and of the hierarchical control, under the authority of the Minister of Justice.

The High Council of Magistracy constituted by magistrate, elected by the Deputies Chamber and Senate, proposes to the President of Romania the nomination in function of the judges & prosecutors (art. 133. par 1) and has the role of Discipline Council of Judges (art. 133, paragraph 2).

The Romania's Constitution rules also the "*People's Solicitor*", institution who's role is "to defend the rights and liberties of the citizens" (art. 55, par. 1), a new institution in Romania, like the *Constitutional Council* which has, mainly the perspective of the lows' constitutional control, before the promulgation of these (art. 144, point a) and decides on the "exceptions risen before the judicial instances regarding the unconstitutionality of the laws and of the judicial orders" (art. 144, point e).

The local autonomy and decentralising principle of the public services finds its expression in the 119 art. from Constitution: "The public administration from the territorial-administrative entities is founded on the local autonomy principle and that of the decentralising of the public services" (art. 119 , par. 1). This principle can not be considered limited to the local public administration but like a general character principle the Constitution contains also dispositions regarding the *responsibilities* "from the regulated authorities".

The deputies and the senators are thus having parliamentary immunity and they may not be retained, arrested, searched or sent in penal or contraventional judgment without agreement of their Chamber and only after they are heard. The judgement competence is pending on the Supreme Court of Justice (art. 69, par. 1), with some exceptions referring to the flagrant contraventions (art. 69. par. 2).

In the 70 art. there is regulated the principle of the opinions independence, the deputies and senators not being able to be judged for the votes on the political opinion expressed in exercising their member's mandate.

The mandate of the President of Romania is given in the same conditions, art. 84, par. 2 sending to art. 70.

Regarding the political and judicial responsibility of the President of Romania for the facts of the acts committed in exerting his function, we observe that the responsibility toward the people stays, practically in that he wouldn't be reelected for a new mandate and this doesn't require a special text even if there are Constitutions that provide such responsibility. The President of Romania may be dismissed in the case of committing "some sever facts by which to infringe the provisions of the Constitution", respective the proceeding provided in art. 95 (his suspending from function when it is proposed by at least one third of the member of the deputies and senators, with the vote of the majority of those and after consulting the Constitutional Court and the organisation of a referendum in less than 30 days from the agreement to suspend him).

He may, also, be put under accusation for a high treason "with the vote of at least two thirds of the Justice Supreme Court in the terms of law. The president is dismissed by law on the date of the final condemned decision (art. 84). Normally, other Constitutions do not define this offence (art. 68, par. 1 Constitution of France, art. 90 Constitution of Italy etc.).

The Government responsibility, on political field, appears from the providing of the art. 108, par. 1 according to which this responsibility do exist toward the Parliament, each member of the Government political responding solidarity with the other members for the Government activity and for its acts. In this way the Government may be demitted if the two Chambers in common meeting withdraw the confidence of the majority of the deputies and senators (art. 112, par. 1, combined, according the case, with art. 113, par. 2).

Related with the penal responsibility of the Government members in art. 1, point 2 it is settled that the application of the penal impeachment may be done only by the Chamber of Deputies, Senate and the President of Romania, for the facts committed in their function exercise and, if they are judged belongs to the Justice Supreme Court. The President of Romania may dispose the minister's suspension from their job. Their responsibilities and convictions must be adjusted by a law regarding the ministerial responsibility (art. 108, par. 3).

1.3. Settlement of the rights, liberties and fundamental duties.

The Constitution of Romania rules in the same time the fundamental rights and liberties, especially in the Title II named "fundamental rights, liberties and duties", which is considered, as a rule, also related with the general principles established in the Title I and with the providing of the Title IV referring to the considerable duties of the State.

In this context, some principles are the base for ruling the fundamental rights, liberties and duties that is: the right of equality of rights (art. 16, par. 1). The principle ascending to which restraining the exerting of a right or a liberty may be done only if it is imposed by defending the national security, the order, the health or public moral, preventing the consequences of a natural calamity or of a sever disaster. The restriction must be in direct proportion with the situation which generated it and that couldn't attain the existence of the law or of the liberty (art. 49), the principle of the free access to justice (art. 21 and 47), the principle of the universality of rights and liberties (art. 15), the principle of the interpretation and of application of the Constitutional providing the citizens rights and liberties of the Universal Declaration of the Human Rights, of the pacts and other treaties in which Romania is part (art. 20, par. 1), the principle of foreign laws priority face to internal laws in the case that does exist some non concordances regarding the fundamental human rights (art. 20, par. 2), the principle of Romanians protection abroad (art. 17), the principle of protection of foreign citizens of the stateless persons which are living in Romania from the point of view of persons and properties (art. 18).

The rights acknowledged in the II Title are provided with judicial guarantee, for example the right to life and to physical and mental integrity of the person (art. 22, par. 1), the individual liberty and person's security (art. 23), the right to defence (art. 24), right to free circulation in the country and to health (art. 33), the rights to property and the debts to the state (art. 41), the right to inheritance (art. 42) etc.

There are ruled, also, the fundamental duties such as: faithfulness to the country (art. 50), respecting the laws and the Constitution (art. 51), defending the country (art. 52), exerting the constitutional rights and liberties with good face, without infringe the rights and the liberties of others (art. 54).

Some of the duties of the State compel it to provide decent life standard (art. 43) and those regarding growing the quality of life (art. 134), basic human rights, defence of the property right etc.

It may be note also that there are missing sometimes the state duties referring to some rights and liberties, following that this to be carried out to the normal law maker, for example, different forms for the social protection of children and young people are established by law (art. 45, par. 2) the conditions and limits of the exerting of the damaged person in on of its rights by a public authority are established by the organic law (art. 48, par. 2), the conditions and limits of exerting the strike right and the guarantee required to offer the basic service to the society are established by law (art. 40, par. 2) etc.

2. Democracy

2.1. Representative democracy and direct democracy

The Constitution of Romania acknowledged in this way the *representative democracy* and the *direct democracy*.

The *direct* representative organs are: the Parliament, the President of Romania, the local Councils and the Mayors.

In basis of the art. 102, par. 1,2,3 and of the art. 85 if may be considered indirectly representative: the Governmental, the Constitutional Court, High Council of Magistracy, the County Councils and the Peoples Solicitor.

In what does concern the direct democracy, this is expressed by the referendum is provided related to the entering in force of the Constitution (art. 149) and with the Constitution revision (art. 146), when the initiative may be taken by at least 500.000 voters (par. 1) in terms shown in par. 2.

The Romania's President being elected by universal, equal, secret and legal expressed vote (art. 81, par. 1) may be demitted by referendum from his position by at least one third from the number of deputies and senators (art. 95).

In the sometimes, in art. 90 it shows that " the President of Romania, with the Parliament's consulting, may ask people to express by referendum, its will regarding the national interest problems".

The referendum is submitted in all cases to the Constitutional Court which "is watching for the proceedings respecting for the referendum's organisation and progress and confirms it."

2.2. Principles and specific features of the democratic system (regime)

Democracy is related to the collective decision process, each of the members, which constitute the association having the same participation right to the decisional process.

In this way are underlined the two basic principles the one of the *control exerted by the people* on the collective decision taking and the other of the *equality of rights* of each in exerting this control.

The democratically system implies, generally, 4 constituent elements such as: free and equitable elections, government that works with transparency and responsibility toward the law making power, civil and political rights respecting and the existence of a democratic (civil) society. The democracy and the

Law State appear being like complementary notions. In a successful synthesis, it shows that the democracy is the political transposition of the State of law and this State is the judicial expression of the democracy. Also, an authentically democracy can survive only if it's modelling in a law state and a modern law state if it doesn't want to deny itself must open the democracy road. In a suggestive picture, democracy and Law State are like two magnets, which are bearing themselves toward the same pole.

Inside the Romanian doctrine, in some attempt to define the system of representing the general interest in the western states, there are in emphasised some features, like existence of representative institutions with could be able to express the interests of all social categories, selecting of the representatives by a system which implies establishing of the candidates by the political parties and the appointment directly and periodically of them by the electors, recognising of the opposition right to criticise the government's decisions and to make applications to change it on democratic way, the transparency of the decision act and the control of the public opinion, broad political liberties, narrow respecting of the laws, exerting the political power like a social function, a strong political culture.

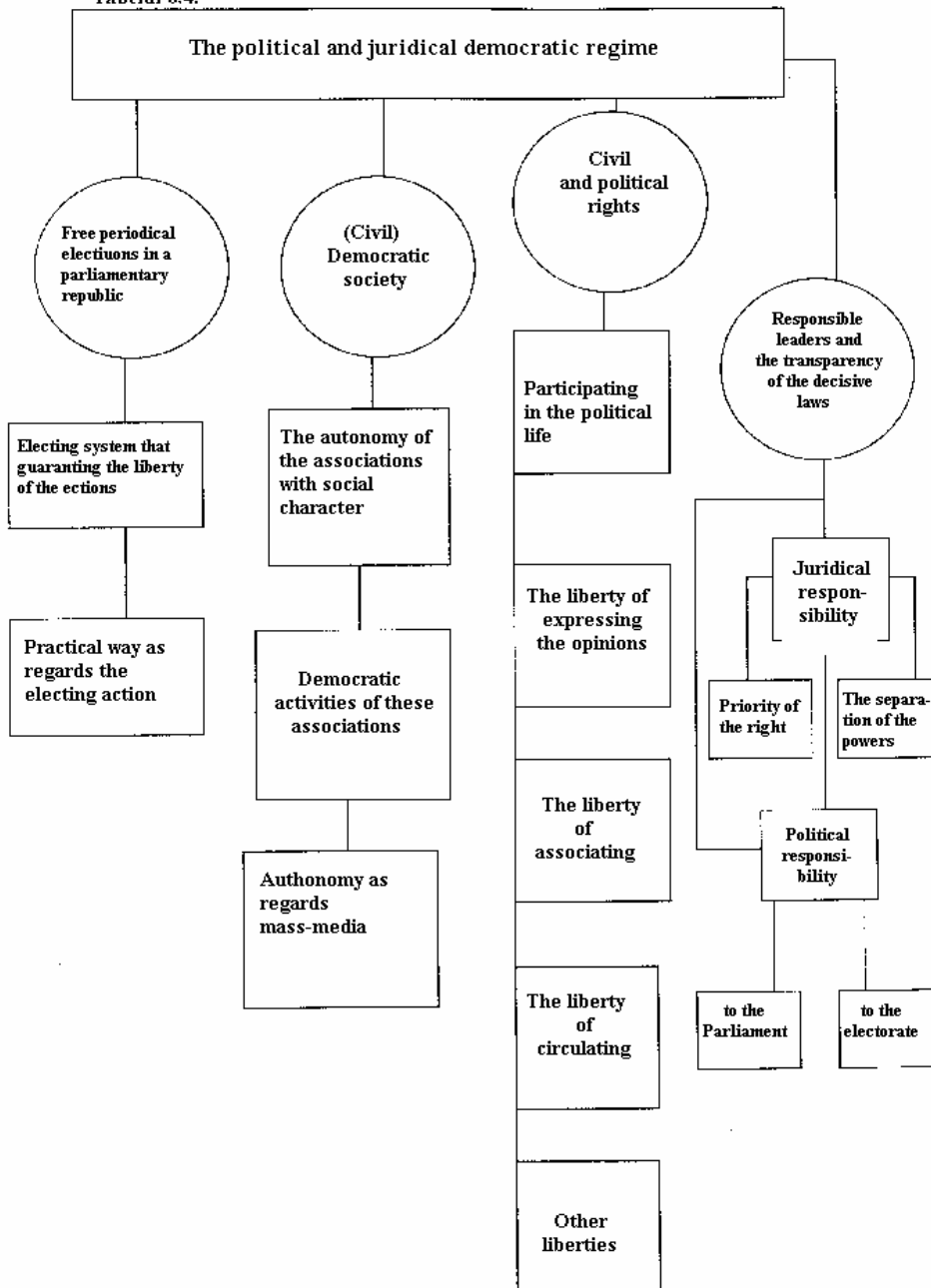
The tendency for the economical and political democratisation is regarded as a global tendency, strongly mediated, and some theorists from the Third World and also from the West asking for new values systems, the recognition of the global interdependence. People will consider themselves, gradually, making part from alive system, sharing a common identity and authority will internalise and the power will belong to each on of the individuals.

It is interesting also the tendency to pass from the *representative democracy to the participative democracy* in which people must take part efficiently to the decisions taking powers with impact on there own life. The beginning of this democracy in America is constituted by the unprecedented growing of the referendum and of the initiative role after 1970, which means the direct democracy.

Thus the perspectives for a stronger democracy in the year 2020 depend upon the following scheme:

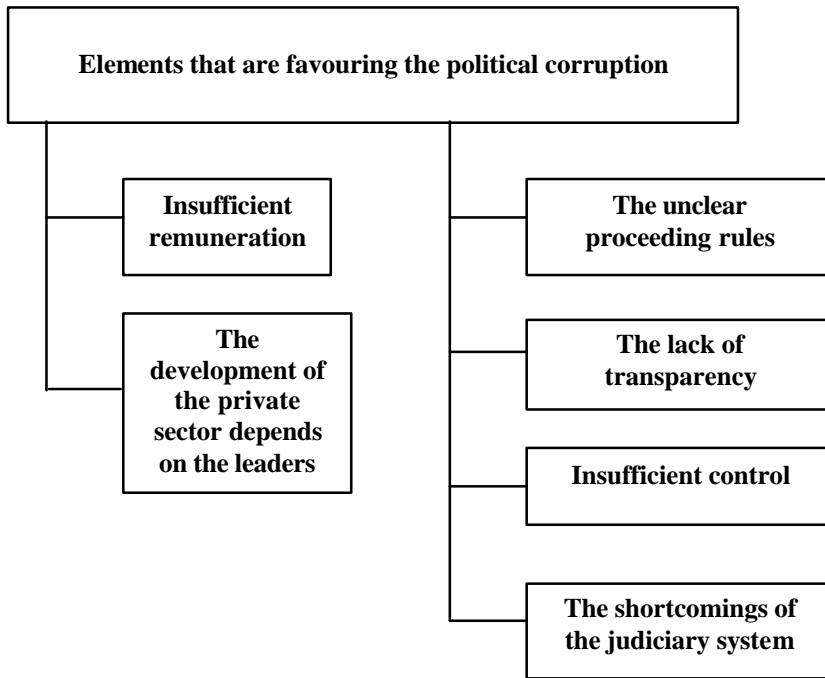
Table

Tabelul 6.4.



The realisation of this scheme implies removing the *corruption* on political and social plane.

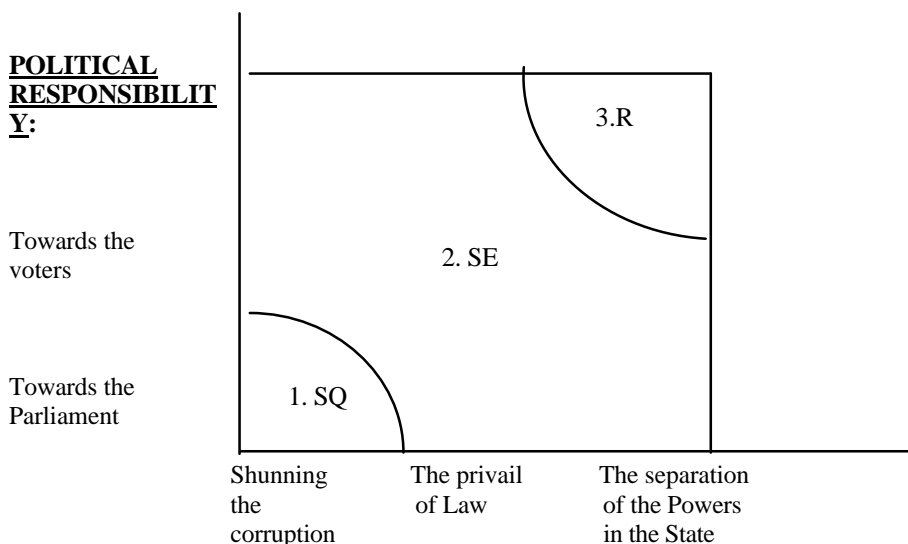
Table no. 5



The two scenarios chosen for the years 2020 are related by the *judicial responsibility and the political responsibility* of the governors:

1. Statu Quo (S.Q.) – The realization in rate of 3–4 % of the conditions required for the entire judicial responsibility of the governors will lead to a higher discrepancy toward the developed countries and also in regional context.
2. Slow Evolution (S.E.) – The realisation of these conditions in a rate of 4-7 % implies a sustained fight against corruption and growing of the transparency degree of the governors decisions.
3. Renaissance (R) - The realisation of these two conditions in a rate of 7 % implies a growing of primacy of Law inside a system of separation, co-operation and control of the four powers in state and also a drastic remover of the conception phenomenon by concealing the causes that determine it.

Table no. 6



Conclusions

The probability favours the 2 EL scenarios.

Judicial and legal responsibility

6C. THE CIVIL SOCIETY

1. Concepts

According to table no. 4, the civil society is a constitutive element of a democratic system.

The importance of this fact increased considerable because the XX-th century's dictatorships controlled all social institutions and censored them regardless if they were fascist or communist.

The concept of "civil society " can not be easily performed and for some people it seems a paradoxical concept, which is delimiting itself differently inside relation between state and society.

In this way, as noticed recently, if in a state all is well carried on, the state and society forms a harmonious couple, in such a way that one of the elements of the concept disappear, typically the civil society living herself represented and governed by the state. On the contrary, if things don't go too well and the established orders contested, the protest beaks out and also the force of the "civil society" which however appears like an amalgam of unnoticeable unties and without a clear structure. Consequently it's a state crisis and of attempt to open a dialog on different forms like for instance the pluralist democracy.

There are two different interpretation of the concept. A *negative interpretation* that is the civil society implies a limitation of the state powers, preventing it to regulate the social activity and help the different fields of life in society. In a *positive interpretation*, the accent lies on setting up inside society of several centres, which could constitute a relay of the public opinion but also a pressure instrument against the public powers.

The characteristic features of a "civil society" could be: market economy which decentralizes the economical decision and creates broad actions and reforming possibilities inside civil society; the autonomy of the media considering that in democratic system it's required efficient independence toward the government and the private interest groups; the centers with independent competence toward the state, which have the possibility to estimate the political problems and the public powers actions from different points of view ; also, an ever broadening net of volunteer associations in different fields of the social life which defend people's rights in the respective matters.

Such associations – which may engage in depending democracy – may be trade unions, professional associations, protecting associations: women, children, human rights, religious organisations etc., and they have the possibility having on view the expression liberty, to obtain recognition of a consultative role in some fields.

However having in view the autonomy and the way of financing, it appears the question of how their existence and activity could embarrass the public power activity.

Generally, the government consults different associations, which activates in civil society, like the trade unions and the dialog leads many times to acceptable solutions. In this way we may say that the association which function according democratic principles rather supports the democratic process than embarrass it.

It must be kept in mind however that Romania suffered, before 1989 the most terrible communist dictatorship. There weren't premises for the appearance and development of a civil society. There weren't neither conditions like in Poland – were "Solidaritetea" opened a new chapter in the history of Eastern Europe, by declining the authority of the leader party - or the growing of the people's will like in Cehoslovakia – in which , after "The Spring from Prague" the political option of Charta '77 anticipated a new form of the policy, characterizing the post communist ideology, which finds its expression in civil society. Even in Hungary the dissidence was not submitted to a severe regime after 1980 and Hungary seemed to be the most advanced country from the Soviet block, from the intern liberalization point of view.

2. The private property role

The private property is specific for the market economy and a *fundamental institution of the civil society* and also a protection form for the political liberty.

Of course, the private property has a legal regulation with some limitations.

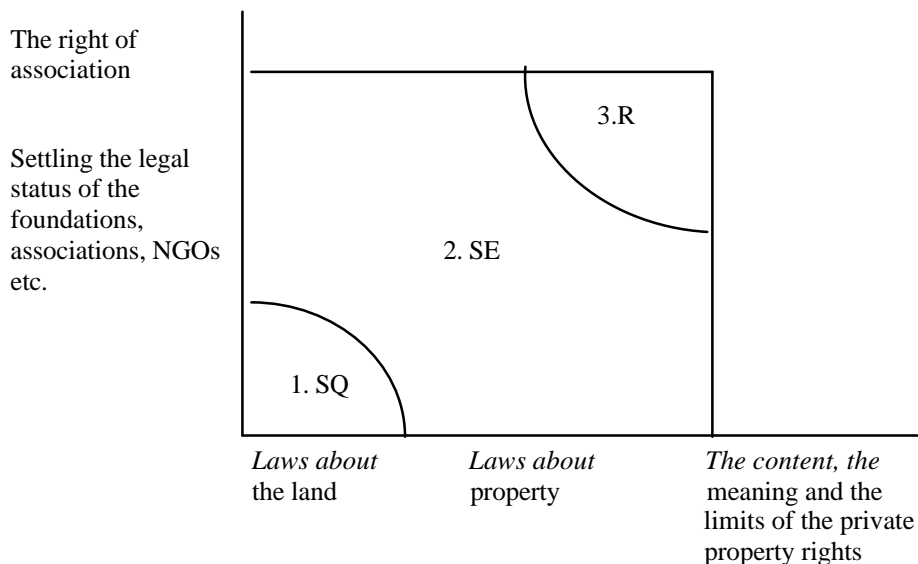
In art. 41, par. 1 from Constitution it shows that the property right and debts over the state are guaranteed but the content and limits of these are established by the law, and in par. 2 in the same art. of it is showed that the private property is protected equally by law, regardless the titular but the foreign citizens and the stateless persons could not receive the property right on grounds. In par. 3-8 are provided also other principles measures regarding expropriations which are admitted only in case of public utility established according to law, with right and previous indemnity, in general interest works to respect the obligation regarding environmental protection providing good vicinity etc.

In art. 135 par. 1 it is established that the *state protects the property* and in par. 6 it is specified that private property is *inviolable* in terms of law.

Beside the constitutional provisions we mention: Law no 58/1991 of the commercial societies privatisation; Law no. 55/1995 for accelerating the privatisation process, the Urgency order no 15/1997 to modify and completing of law no 58/1991, Urgency order no 38/1997 to modify and completing Law no 55/1995 for the privatisation process accelerating etc., legal acts that are following the realisation of the *transfer of the state property into the private sector*.

A main important role was distributed for the Law no. 18/91 of the land property referring to all kind of lands, regardless the destination and the title on which they are owned or the public or private property from which they are apart.

Table no. 7



Because the laws about private property are the Parliament' privilege and duty, being *organic laws* (art. 72, point k from Constitution), along with *association rights* (regulated in art. 37 from Constitution in sense that "Citizens may associate freely in political parties, in trade unions and other association forms" (par. 1), as well as the *content and the limits of the private property rights*, it is clear that they will be always strongly influenced by the political factor.

CONCLUSIONS:

In consideration of the present tendencies, it seems that the private property development and the association right extension rate will rise to 4-7%, which corresponds to the scenario Slow Evolution.

Chapter 7 – CONCLUSION

7A The nucleus of anticipations looking to the year of 2020

1. Discussing the future, thinking of globalisation

For some decades now, the globalisation has become a planetary social and economic system and it will exercise a growing influence on the development of all countries in the first part of the following century.

Civilisation is a part of globalism and is defined by knowledge, science and technology whose rapid impact is universally acknowledged. Another characteristic of the actual globalisation trend is democracy with its merits in human rights and freedom, and governments legally elected, efficient and based on social cohesion.

The globalism may prevail or not, according to the perception of its values in every country's culture. The cultural phenomena are constituted in different systems of faiths, customs and traditions, which can resist to or facilitate the changes.

In the long term social-economic evolution influenced by globalism, the following tendencies are to be noticed: the singularity of the civilisation which relies on learning; the progress of the political institutions and respecting the basic rights; the economy founded on the market and competition; sustainable development; the prevail of the informatics; tensions between regional cultures and global civilisation.

Romania's social economic evolution in the next 20 years may be approached by evaluating the globalising tendencies specific to the society and its main branches. Thus are born "the scenarios"; unlikely the statistical and mathematical models, their results do not enlist in the sphere of the probabilities, but in that of possibility. The history proved that any prospective method remained somewhere under the influence of the results. Taking into account the effects of the world's evolution on Romania's development, these tendencies have been concentrated in several scenarios.

A. The regional integration and the globalisation

Since Europe has known the most advanced form of economic integration (institutional and juridical), some other world's regions started a similar process, which leads to ASEAN in Asia and MERCOSUR in Latin America. Also, a new zone is going to be formed in subequatorial Africa, as secondary effect of the peaceful reconciliation in South-African Republic. The most probably configuration of the great global powers will be: USA- Canada; Europe; Japan; China; Russian Federation; Brasilia (and Argentina in MERCOSUR); South Africa and it's region. Discontinuities may appear in the slow evolution of the Arab world, of the Moslem solidarity and in India. However, there is not gone to be a clash between these regions, because of their growing interdependence, and common interests.

It is possible that, in spite of the tensions between globalism and the regionalism, the globalism will advance, due to its technology, finance, universal market and information monopoly. It is also possible that once this spirit is strong enough, it will determine a reform of the UN, creating a new international institution, able to achieve what the League of Nations and later the United Nations were never allowed to.

B. Ending the great conflicts and the historical reconciliation.

Following to the French and German reconciliation in West Europe, after NATO expanding to the East of Europe and the peaceful settlement of long and serious crises like that in South Africa or the China's sovereignty over Hong Kong it is plausible that the peaceful solutions prevail. Indeed, the talks between P.L.O. and Israel are considered a universal test and if the results will be positive, a new, strong, economic region will be created. In the future, new reconciliations can be achieved, based upon common economic interests, provided that these will prove stronger than the old regional hatreds.

C. The Economic Development

The world can only profit of the new formulas: The regional development (instead of every nation developing by itself), local and zonal development (instead of centralised development), the universal exchange of technologies and finances, the ambition of the small and middle-sized countries to win a place in the global system, by associating and co-operation rather than competition, the discover of new sources of energy, advanced technologies and composite materials. All these have not only a regional positive impact, but also a considerable social one, filling the gap between rich and poor, bringing new motivations to people and human kind to evolve.

Thus, according to the foresees of A, B, C situations and elements, emerge an optimistic scenario, that can be called "The scenario of one civilisation".

Unfortunately, there are three tendencies identified today, which act contrary to this evolution, leading to the "30 years war" scenario, the most unfavourable for mankind.

a) *Dissolution and the resistance to civilisation.*

The dissolution or breaking up of older or younger states is ever present on the globe in the last decade. Be it by mutual agreement (Czechia and Slovakia), by conceived forms (Walonia and Flanders, or England, Wales and Scotland), by all-out war (former Yugoslavia, Sudan) or by public unrests or discontentments (Quebec), these phenomena are usually the result of old antagonism, fuelled by foreign interests to destabilise a nation, a state or a region. Theoretically, its main reason is looking for an own identity relying on cultural elements (history, tradition, religion, language). Practically, no such dissolution knew any chances of success without strong (sometimes-open) support from outside the nation or the region involved.

The culturalism and its militant forms rise above any other considerations in the third world, being the mental obstacle in accepting the offer of the present civilisation. It spreads even in the most developed societies in the form of the postmodernism or returning to the "purity" of the primitivism and traditionalism. The complexity of the modern life, the ever increasing population's density on Earth, the alienation and man's bewilderment raise the desire for dissolution which lead to breaking the society into opposite communities and groups. If these trends are not countered, the result can be anarchism at national, regional or even international scale.

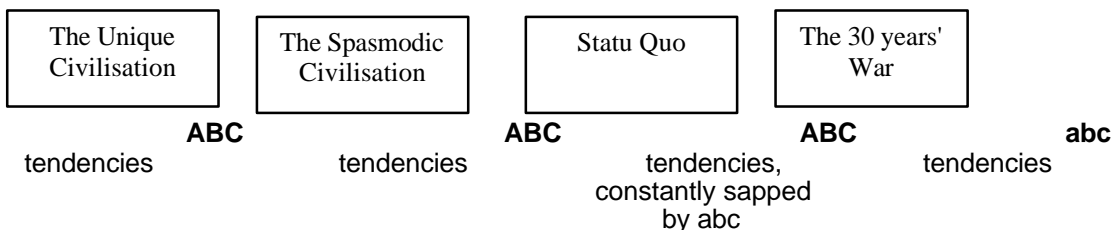
b) *The fail of preventing the conflicts*

Another element of this scenario is the countries' inability to have peaceful relations in a world with anarchical regimes and an enormous wish of change (also regarding the will to accept or refuse the globalism and the modernism). The techniques of peaceful closing up the conflicts are more difficult and complicated than those referring to the violence. They suppose a political culture and national maturity, which are not always "available"; that is why local and regional conflicts are still possible, even very probable.

c) *Anarchical situation.*

In spite of the fact that the equalitarianism has known recent set backs even in the countries that relied on egalitarian doctrines (like communist states), the inequality of wealth's distributing in the society will generate ever present phenomena of protest and defraud, manifested in open conflicts or social dissolution states (drugs, violence, anarchism).

The three negative contemporary tendencies (a-b-c) tries to destroy "The unique civilisation", to produce a humanity incapable to self-govern and victim of self-destroying phenomena. Between these two scenarios (**global civilisation** and **the thirty years war**) are two intermediary scenarios S.C. - Spasmodic civilisation (a doubtless increase, but with ups and downs) and S.Q.-Statu quo (a moderate evolution, with great sacrifices and heavy costs). As a conclusion, the mathematical structure of the world scenarios for 2020 would be:



Romania's scenarios for 2020 are the following:

1. *Renaissance (R)* - the achieving of a rapid developing and a complex modernisation. Unfortunately, both the international and regional conditions, as well as people's mentality, deep rooted in traditions, made this scenario improbable.

2. The opposite scenario, the *Disaster or Decline (D)* produced by great natural disasters or external and internal conflicts. There are real chances to avoid this scenario even in the worst international situations, as the last ten years proved.

3. *Slow evolution (S.E.)*. This scenario (very probably) will allow to Romania to rise above the present periferical status and remain in a zone of unsatisfactory prosperity and a partial modernisation, with numerous social problems.

4) *Statu quo (S.Q.)*. It 's not the expression of the present regress, but of a stagnation characterised by slight increases which will increase the differences between Romania and the developed countries.

II) Demographic evolutions.

The starting point in evaluating the demographic tendencies is their analysis on a representative period for Romanian society. The last eight years of building up the democratic institutions and passing on to the market economy offers some anticipate elements. Among the main characteristics of this period are the cumulated and negative effects of the communist regime's savage interference on the human rights by prohibiting (in 1967) the abortion. Following this, since 1990, the transition's costs proved to high to many young couples. As a result, the demographic balance between 1990 and 1998 was negative, with the tendency to extend its effects in the next decades. In this period the population has reduced with 1% (about 230,000 inhabitants). Also a very serious problem is the alarming rate of ageing in Romanian population (in 1998, people over 60 years old, reached 18% of the population).

A worrying phenomenon is the reduction of the average life span (or hope to live at birth), which decreased from 69.5% in 1994 to 69.0% in 1997. Although these tendencies are important and with sensible influences on a long term, it is estimated that after 2000 they will suffer major changes. The simplified evaluations referring to long term projections (up to 2050) are as follows:

Scenario/year	1996	2000	2010	2020
Equilibrium	226087	22396	22682	23014
Increase	22608	22394	22874	23534
Reference	22607	22309	21308	19764

Romania's population is projected very similarly by foreign specialised institutions and international boards. UN projections for EUROPE estimates Romania's population in 2020 less than our estimations, both for the Equilibrium Variant (21.4 mil.) and the Increase Variant (22.3 mil.), while the Reference Variant presents a higher level (about 21.6 mil.) However, since most predictions foreseen an increase of the Romanian population, the governments to come must have a systematic and realistic approach towards it, as well as for the negative phenomena of changes in the structure of urban-rural population (Romania being the only European country with a stable 45% rural population, and clear tendencies of migration from urban to rural areas).

III) The evolution of the economy

The prospective evolutions are considered first up to the year 2000 and finally for the following two decades:

1) The experience of transition between 1990 –1997.

In this period, there are several turning points. First come 1990 – 1992 with the new democratic constitution and some timid steps towards a market oriented economy. However the costs reflected in the dramatic decrease of the G.I.P. (in 1992, the G.I.P. was only 75% from the 1989' G.I.P.).

Beginning with 1993, the economic growth is visible again but the reform fade to nothing, the industry is financed by the budget, the national currency (leu) is over-evaluated for the following 4 years as a result of the direct intervention of the government in the National Bank' policy and the prices are state controlled – thus, the 1996' economic stagnation become obvious and the results proved disastrous for the following 2 years.

Then, new options of the Romanian voters brought to power (at the end of 1996) a government oriented towards reform, although hesitant when it comes to the social costs and the trade-union' pressures. Even so, the costs of the few structural changes were extremely high: the exchange rate leu/USD suffers a shocking blow (from 3,500 lei/1 USD in October 1996 to 10,000 lei/1 USD in January 1997); the G.I.P. in 1997 decreases with 6.6% compared with the one in 1996; the inflation was 300% in December 1996, 151.4% in 1997 and 49% in 1998)

Evolution of the main macroeconomic indicators in 1995 - 1998

	1995	1996	1997*	1998*
GIP (compared to the previous year considered 100%)	7.1	4,1	-6,6	0-1
The percentage in GIP of the commercial balance' deficit	5,7	9,5	8,2	5,9
Annual inflation' rate calculated according to the prices' indicators (for consumption' goods and services)	27,8	56,9	151,4	45,0
The deficit of the general consolidated budget	2,5	3,8	3,7	3,6
	6573,	8377,	9241,	

Effective external debt in millions US\$	1	4	0	
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Source: Minister of Finance, Report on the state budget on 1998

A simple analysis demonstrates that the artificial increase of the industrial production (10% every year in 1995 - 1996) brought the shocking and unnecessary increase of the external debt and of the commercial balance' deficit.

Between 1997 - 1999, the consecutive state budget had to cover tens of billions lei for the losses of state monopoly branches, the state' owned industrial plants, the state' owned farms, the state' financed consumption prices in 1993 - 1996.

Only the coal extraction' industry cost the Romanian budgets more than 4 billion US\$ between 1990 and 1989; being completely inefficient, the only purpose it is kept alive is the social unrest the miners could cause at any attempt of reform (indeed, the coal miners already caused three major social incidents in 1990, 1991 and 1999).

However, between October 1998 and February 1999 the government increased the pace of reform more visible and effective than in the previous 20 months.

If this pace will remain constant, there are real hopes for an economic recover beginning with year 2000.

2) Optional variants for long term economic increase.

The concentrated expression of the Romanian economy development is the evolution of G.I.P. and has got the same importance for the future of the society and the population's dynamics. Due to the characteristics of the economic increase, in order to predict the dynamics of the G.I.P., two reference points with some variants have been used: the high rate of economic increase and the constraining exercised by the need to modernise and integrate the Romanian economy into the European one.

The two premises have got scenario I (SI) and scenario II (SII). As regards scenario I, the double of GIP/capita every ten years between 2000 and 2020 has been acknowledged. This means a GIP increase of 7.2% every year for 20 years (variant one, SI-VI).

According to the variant two (SI-VII) in the second decade (2010-2020), the average increasing rate would go down to 5% per year, which is more plausible. The scenario of higher increases implies deviations up and down from the annual averages.

Scenario I, with two variants, of GIP per capita' evolution in Romania between 2000 and 2020

GIP estimated level (7.2% average increase every year)	Year				
	2000	2005	2010	2015	2020
Variant one: doubling every 10 years (7.2% every year)	4520	6400	9040	12800	18080
Variant two: from 7.2% every year (2000-2010) to 5% every year (2010- 2020)				11540	14725

According to the statistics, the developed countries usually confirm low rates of GIP' increasing, concentrating on important economic effects. The medium developed countries reach high rates of GIP increasing and underdeveloped countries have, sometimes, even higher rates than the previous category - but this do not allowed them to fill the gap between their economy and those of the developed countries.

Countries with an annual rate of GIP' increase higher than 7%

Category	1980 - 1990		1990 - 1995	
	number	%	number	%
Countries with low income per capita	3 din total 49	6,1	3 din total 49	6,1
Countries with average income per capita	7 din total 57	12,3	13 din total 57	22,8
Countries with high income per capita	1 din total 26	0,5	2 din total 26	7,7

Most of the countries with an annual rate of more than 7% are included in the group with average income per capita (which include Romania): in the eighties, the best example would be Republic of Korea (9.4%) and Thailand (7.5%), while in the nineties, Malaya (8.7%), Singapore (8.7%), Thailand (8.4%), Indonesia (7.6%), Chile (7.3%) and again Korea (7.2%) are worth mentioning.

According to the World' Bank, Romania could achieve an increase of GIP more than 7% per year, but with certain conditions to fulfil.

The second scenario (SII) is based on the Romanian's goal to become a member of the European Union; thus between years 2000 and 2020, the Romania's GIP must reach the level of the average GIP per capita in the EU, estimated by OECD as follows:

Scenarios	Rate (%)		GIP per capita (in US \$), in the years		
	2000 - 2010	2010 - 2020	2000	2010	2020
Usual dynamics (DO)	2,0	1,3	23340	28450	32370
Higher dynamics (DI)	2,8	2,3	23340	30750	38600

The evaluation in six variants of the GIP's rate in Romania, in the case of the scenario SII, gives the following results:

Level and the dynamics of GIP/capita in Romania in 2020

Second scenario SII	GIP per capita in Romania			Necessary increase of the GIP annual rate (in %), following EU scenarios	
	in % from average of EU	in US\$ (PPC) according with EU scenarios		DO	DI
		DO	DI		
V1	50,0	26160	30880	9,2	10,0
V2	70,0	22890	27020	8,4	9,3
V3	60,0	19620	23160	7,6	8,5
V4	50,0	16350	19300	6,6	7,5
V5	40,0	13080	15440	5,4	6,3
V6	30,0	9810	11580	3,9	4,8

If Romania wants to get closer to the average European Union's GIP/capita in the year 2020, that implies annual rates of increase estimated to 8.4 - 10%, a rhythm able to lead to the double of Romanian PIP at every ten years. This evolution corresponds to the "Renaissance" scenario and it is not easy to be followed.

By comparison, both Variant 3 and 4 of the second scenario (SII-V3 and SII-V4) are more realistic and requires a minimum 6.6% annual increase of the GIP per capita in the next 20 years.

7B. ROMANIA AROUND THE YEAR 2020

To talk about the position of a country in the world of the following two decades supposes to evaluate this future world. Will it be peaceful or teared by conflicts, prosper and calm or a place of catastrophic events? The scenarios proposed at the beginning of this book give place to any possibility. In all the considered cases, the action of some considerable and visible forces may be taken into account: rapid technological changes, the tendency towards globalism, the variety of cultures, the predominance of the economic, new types of administration and partnership, the supremacy of the knowledge. In such a world, the individual successes are rapidly forgotten, no mater how brilliant they are. The countries win no prizes in any field. Their prestige and, sometimes their realities are replaced by their "image".

The Romanian society has known three great moment of total and unconditioned Union along its long history (1598 - 1600, 1877 - 1878, 1917-1918), that influenced decisively Romanian and the surrounding regions' history. But history shows that, besides virtues and unquestionable qualities (courage, self-sacrifice, endurance) Romanians have got certain imperfections too (first of all the refusal to learn from others' experience). It is also to be noticed an incapacity (ever present in the modern history), to perceive the democracy as a right and an obligation to assume and delegate responsibilities, to take one's own destiny in one's hands, instead of delivering it to some paternalist or charismatic leaders, most of them lacking a clear vision on the future.

Today, when Romania is facing its most challenging dilemma in its modern history, the personalities and the people are equally responsible of the choice that are about to be estimated and judged by the future generations. In these conditions, Romania's position depends on the scenario it will choose. This book does not intend to give final answers but to stimulate orientation to the future in our society, as well as the appetent for greater efforts, tipping the balance in favour of trusting the latent energy of Romania's potential.