

The national strategy for social-economic development promoted before 1989 was based on the self-support concept in insuring the economy with mineral resources, in order to reduce imports. Its result consisted in the development of a mining sector much more than the Romania's potential of solid mineral resources economically exploitable would have allowed, engaging directly over 350.000 persons and indirectly over 700.000 persons. The situation created imposed the support of the sector by the state, a great budgetary effort being necessary for this purpose.

The reorganization actions of the national economy, in general, and of the coal sector, in particular, undertaken between 1990 and 2006, generated a series of new problems, among which, the sudden decrease of the mining regions' economy, the amplification of social matters, the bareness stress, the achieving of unsatisfactory economic and financial performances by the mining companies and groups, proved to be the most important, by their proportion and effects.

The reorganization process from coal industry, unleashed between August 1997 and December 1999, determined more than 90.000 persons, from an amount of 175.000 employees, to leave this activity. As a consequent of mining activity reorganization, a series of other economic units from the respective areas reduced their activity, phenomenon that determined a sudden economic comedown of these regions and emphasized the social issues by increasing the unemployment.

Such a region, strongly affected, is *Jiu Valley*, where the unemployment is situated between 25%-80%. After identifying the issue, namely the general crisis of Jiu Valley Hollow, automatically aroused the objective of the study undertaken in this work: the social-economic development of the region. In reaching such an objective it is compulsory the working of some development strategies, for which it's necessary to draw up a mathematical-economic pattern. The making of regional development strategies in Jiu Valley requires the realization of the system analysis, the prognosis and the simulation of numerous social-economic indexes.

The approach of the economic development problems supposed for me to have in consideration **the international context and the national background of the regional development**, this representing in the same time the title of the first chapter of the thesis. The transition theory hints, mainly, the transition from the centralized economy to the market economy, with real autonomy of the economic agents, permanently competing. The transition to the competing market economy constitutes the essential premise of revitalizing the economic activity and improving the population's life conditions. Romania's economy was characterized by acute lacks of balance, reverberated in the deep crisis status, generalized, of long term.

The major difficulties that the Romanian society faces, and implicitly Jiu Valley, either social pressures or the necessity of insuring a modern infrastructure, seem to find their solution in the increase of the national/regional product. At the beginning of the third millennium, the fundamental coordinates of human society obliges to identify new strategies, stressing the qualitative sides, namely the working of economic strategies in accordance with the environment requirements.

Beginning with the second half of the last century, a series of new drafts imposed in the economic theory and practice, such as: strengthen economic increase, durable economic increase, durable economic development, human development. However, the concept having

a larger audience at the time-being is the durable development, which is often used as synonym of viable, upholding, human and even ecologic development.

*The durable economic development* insures the satisfaction of the present generation's demands without compromising the future generations' capacity of satisfying their own needs, the economic welfare and the environment preservation needing to mutually support. Fairness appears, in consequent, as a fundamental principle of durable development: fairness as part of the same generation, but also within generations. As a paradigm of development, it was introduced the concept of *human development*, that permanently evolved, being thought today as part of the specialty language of the world development problems.

To Romania's transition to the free economy overlaps the transition to *the society of knowledge*. The transition from the industrial society to *the society based on knowledge* is marked by a series of phenomena and process that characterize the evolution of the human society on the whole and that indicate the fact that we are in the middle of a period of deep mutations. It takes place, on one hand, the globalization of the financial and informational flows, on the other hand, the regional integration, while at the national level it takes place the continuous renewal of states' interest for *the durable development* and for *the edification of a knowledge society*.

The social-economic development of Jiu Valley region cannot be conceived but within the particular framework of regional development, which constitutes one of the essential ways of development concept. Regional development in Romania constitutes, in the same time, a part of the transition towards knowledge society.

The objective and the resultant of the harmonious social-economic development in territorial profile is constituted by the territorial balance, that is carried out – as consequent of the rational attraction and the efficient capitalization of the economic potential, of given geographic conditions and of keeping the ecologic balance – in terms of the insurance of a modern, complex and well-balanced structure of the economy of the region, and a real functionality of territorial subsystems, according to the functionality of the national economic complex.

The approach of the *regional development* process must clarify, to begin with, the territorial background of work of the analyzed problems – the region, together with the aspects that define it, as well as the causes that lead to the necessity of its physical make up, as an entity. The aggregation in regions is useful regarding the description, and is important when there is a significant degree of interrelationship of the units and activities from their inside, so that the whole mean more than the amount of the parts.

In the Romanian post December transition it has been precisely delimited, especially in the last decade, one of the foreign policy objectives, later turned into the objective of the whole society: *Romania's integration in the European Union*. Based on the deep changes from the end of the century and of the millennium, this new objective of the Romanian foreign policy was dictated, especially, by two elements: the evolution of world economy on the patterns imposed by the globalization and regionalism, and the need for security of our country. The analysis and the prognosis of the macroeconomic indexes led to important conclusions, a main advantage of Romania's fast integration being supplied by the span of the economy towards the rest of the world.

The reification of the development, at a macroeconomic, mesoeconomic or macroeconomic level, supposes the building of some patterns with the help of which to follow the theoretic evolution of real systems. Thus, the second chapter called **Modelling of the regional social-economic systems** presents methods and techniques used in the modelling of the regional development, namely prognosis and simulation patterns. At the end of the chapter, I've particularized a simulation model in regional profile, that being, actually, the model with the help of which were obtained the evolution filmscripts of "Jiu Valley" system, resulting, in this way, the development strategies of the region.

After the analysis of the larger framework of the task, I passed straight to the target-area of the work, the third chapter being called **Jiu Valley – coal center with important social-economic difficulties**. *Jiu Valley* constitutes the most important spokesman of coal industry of Romania, area with serious social-economic issues. The Petroșani Hollow economy still strongly depends on the **coal industry**, what makes that the other sectors also remain underdeveloped. After 1991, pit production increased, almost constantly, until 1997. The pit demand decrease, from 7.1 million tones in 1997, to 3.7 million tones in 2001, due to the reorganization of the industry in Romania, led to the restraint of mining in Jiu Valley. Although after 2001, measures to stop the decrease of production were took, the years 2003 and 2005 show the resumption of the decreasing trend of production. The number of employees knew a continuous drop down, the most significant downward evolution being registered between 1997 and 1999, after 2001 being chosen a slow downward evolution, suitable with the demands of increase of labour productivity and avoidance of major social convulsions. The dynamics of coal production and number of employees led to the increase of physical labour productivity, but insufficiently comparatively with similar mining units from abroad.

The future of coal industry in Jiu Valley, throughout the estimates of the National Company of Pit (NCP), is defined by the stagnation of coal production after 2007, by the constant decrease of the average number of employees (up to 10.400 employees in 2010), resulting an increase of physical labour productivity up to 620 tones/person/year.

The sequel of the investment effort, in the coal industry from Jiu Valley, is justified, first of all, by the fact that there are coal industrial reserves, on terms of which the company has a sale market of its coal products above the present production capacity. NCP has in service the technology of producing better products, competitive also on the foreign market, fated to the clean-perfect combustion systems that harmonize with the ecologic standards. Moreover, there are also national reasons: on one hand, coal demand on the international market is increasing (the impact due to the explosive increase of the earth oil price, from the last period, being able to cause major changes in reconsidering the position of coal), and on the other hand, the coal import, at this moment, is unfavorable, even at the company's production price, without having in view the necessary currency resources and transport conditions.

In the *processing industry* is working almost 15% of the labour. The advantages of this branch consist in the existence of skilled workers and of small but valuable sectors (such as: timber, fabrics, PVC and food industry manufacture), and the disadvantages include the absence of a substantial sector concentration, the lack of managerial and trade experience, market accessibility and limited exploitation of technologies, and the lack of foreign investments. *Constructions* insure approximatively 4% of the engaged labour, however it's to be expected for the sector to profit the public works directed towards the reconstruction of the physical infrastructure of Jiu Valley, being able to play an important part in the creation of jobs for the dismissed miners.

The *services sector* is important for the engaged labour, 34% of the jobs coming from this sector, although many of them depend on the coal industry and the related sectors. The beauty and the variety of the environment, as well as the opulence of the cultural elements (artistic, architectural, ethnographic and historic) confer upon Jiu Valley a remarkable touristic potential. The disadvantages are related to the damage of the environment provoked by the coal exploitation, the underdeveloped infrastructure, the limited quality of accommodations and touristic services and the inaccessibility of the region for the tourists outside the regions.

The development of the activity in the *trade sector* can be attributed to the privatization process and to investments in private sector. Based on this system is how the trade network developed, determining the improvement of the territorial distribution of the retail units, the enlargement of the trade surface and the more efficient use of the existing

spaces, and on the other hand, insuring the flexibility of the relations with the industrial suppliers, the increase of the competition among tradesmen and the improvement of the quality of the goods offered to the population.

In the *telecommunication* system of Jiu Valley took place important improvements and this fact substantially strengthens the business infrastructure. The existing road networks are well built and the planning of a road towards Băile Herculane would substantially contribute to the facility of the access in the area. The railway joins Petroșani of Simeria on the main line București-Arad-Budapesta. An optic fibre-way was already installed between Deva and Craiova. The expansion of the telecommunication domain is also reflected in the number of phone subscriptions (an increase of more than three times).

No doubt that *labour market* represents one of the most sensitive domains of the Jiu Valley Coal Basin. By its permanent narrowing, by the lack of solutions at the regional level, dramatic situations of the population from the area were reached (the average number of employees almost halved between 1992 and 2005).

The official statistics show an increasing trend of rate of unemployment in Jiu Valley, between April 2004 and December 2005 (up to 12.3 %), while at the national level the trend is decreasing (approximatively 6.2 % in December 2005). However, facing these values, we are still reserved, the abstention being argued by the polls realized for ANDIPRZM, in which, depending on the status of the employed person, between 2003 and 2005, the significant percentage belongs to the unemployed persons (55% in 2005), representing an increasing trend. In the same time, for example, in 2002, the official rate of unemployment (according to AJOFM Hunedoara) in Jiu Valley was of 20%. In reality, considering the estimates of some local leaders, the unemployment had reached 56%, while from the data offered by the town halls, the unemployment would have been situated between 20 and 63%. Personal estimates show a rate of unemployment higher than 50%, with a decreasing trend by the year 2005, when it drops below this limit. This difference is explained by the different way of calculating this index, respectively by not taking into consideration the unemployed out of evidence, but still looking for a job and not having any stable income.

Through *TIC*, the development level of communications is lower than the national average. The *Internet access* is characterized by limited access and use, both at households and enterprises level. In the chapter *the use of technology in schools* it can be remarked the relatively low level of the endowments of schools. *The use of technology in administration* is limited, first of all, by the fact that the majority of public services are lacking of information technologies. Regarding to *the use of technology in the enterprises' sector*, it's visible the non-accommodation of the enterprises' activity for an efficient use of the new technologies. TIC opportunities in Jiu Valley are multiple (having in view that the region benefits of a special attention in the last few years), among which we identify the following: including the local administrations from Jiu Valley in e-government national programs; the experience can be extended in order to render informational another services; pilot-programs for increasing the access level to TIC resources; The virtual opening of Jiu Valley.

It's a large scale known fact that the *environmental matters* from Jiu Valley are serious, among the greatest mentioning: the effect of coal industry (abandoned mines, sterile dump heaps, the pollution of Jiu river), the coal combustion (gas emissions by the Paroșeni power station, plant stacks, coal home combustion etc.), the administration of home junk scrap, other junk scrap. Relied on internal and external settlements, but also with the help of the Local Action Plan for Environment (elaborated by APM Hunedoara) and of the study "Jiu Valley Region – Multi-dimensional Assessment" (World Bank Report) were proposed a series of objectives for getting a clean environment, structured on the three categories: water, air, soil.

**The economical-financial analysis** of the companies in Jiu Valley between 1996 and 2005, on the main activity branches, leads to fundamental conclusions for the formation of an accurate image about this area. In this way, the monoindustrial character of the region,

together with the domination of the extractive industry, marks the indicators calculated at general level: those follow, in general, the registered level for the extractive industry. The evolution trend of the economical-financial indexes of the extractive industry is, with small exceptions, unfavorable. In exchange, electricity presents favorable evolutions. Agriculture, although it has, in general, favorable evolutions, holds a reduced percentage in the regional economy. Constructions, Trade, Transport and Communications, other economic activities constitute branches of which the evolution writes down, in the majority of the cases, on a upward curve favorable situation). The processing industry has oscillatory evolutions, from a rate to another. The category “Hotels and restaurants” appears with astonishing evolutions (positive), this branch (tourism) being often invoked as a solution of the economic crisis of the hollow. The companies from the TIC domain, throughout the favorable evolutions from 1996-2005, justify the huge expectations relate to the contribution of this domain to the general development of the society.

The social-economic development strategy of the Jiu Valley Coal Basin is the result of the consultation and participation of all the interested elements in the area and outside it, such as the most disfavored groups, local communities, national companies, regional authorities, non-governmental organizations, as well as governmental institutions, of the examination of some groups of specialists attracted with the support of the World Bank and of the Industry and Resources Ministry. The main objective of the zonal development strategy is constituted by the development of the private sector, each of the specific objectives contributing to the reach of this purpose. The objectives proposed by the inter-ministry Commission reflects the social-economic necessities of the Jiu Valley region, constituting the centre of its development, which are:

- ▶ The stimulation of the creation of new jobs through the development of the private sector;
- ▶ The modernization and the exoneration of the infrastructure of the region;
- ▶ The support and the consolidation of the sector activity – stressed on the industry, constructions, tourism, manufactory industry and associated services;
- ▶ The implication of the local community in the development of the region;
- ▶ The transformation of the environment in another one that sustains a diversified economy and a good quality of life;
- ▶ The promotion of Jiu Valley and of its opportunities on the national and international market.

The reach of the objective of the strategy needs the insurance of the *financial resources* proper to the proposed actions. The estimated effects, direct or indirect, are: the long term creation of approximatively 11.500 jobs; the development of an attractive business environment for local and foreign investors; the development of the private sector, capable to engross the personnel who will leave the mining activity; the realization of an attractive environment for the touristic activity extent; the adjustment of the educational system to the new demands of the economic agents and of the activities developing in the region; the insurance of a active social assistance addressed to the disfavored groups.

The mankind transition towards the informational society – the knowledge society obliges to the use of modern technology in the prognosis of the social-economic development of Jiu Valley. Thus, the projection and the realization of an informatics system, as a support of the modelling and simulation of Jiu Valley system, constitute an objective of the work. This objective is reached in chapter four, called **“The projection of the territorial informatics system for the development of Jiu Valley region”**. At the beginning of the chapter there are presented a series of theoretical aspects related to the management of the informatics system development. The targets are, in consequence, matters such as: design and development strategies of the informatics systems, devices for the automatic assistance of the development process of the informatics systems, but also trends in the evolution of the informatics systems technology.

I've realized the objective of the work through the SADPRO Soft application (Simulation - Analysis –Diagnosis – PROgnosis), which purchases the supply of data, information and development patterns referring to the social-economic environment from the Jiu Valley. Relatively to the future projection of the informatics system, the territorial distribution of the places that compose the area constitutes one of the essential characteristics of the system submitted to the study. Beside the distribution, the necessity of using more data basis represents another fundamental element. Starting from these two explanations, I've tried to identify the technologies with the help of which to obtain a slender application, with a modern interface, efficient, that replies in the highest degree to the main purpose of the study: the informational support for the social-economic development of the Jiu Valley region.

In order to reach the objective of the work, that of developing an informatics system for the system-object Jiu Valley, it needed to refer to a series of **data basis administration technologies**. *The integration of the data basis support in the framework of the administration applications* represented the moment of a qualitatively fundamental for the economic informatics systems. The way of realizing the connecting to the data basis constitutes the first step in the realization of some administration informatics systems or those of decision attendance, that binding for the distribute data basis as well as for the client-server ones. Between the informatics systems dedicated to the economic environment and the data basis there is a strong connection, which allows the insurance of the main functions of those programs.

For the realization, manipulation, maintenance and exploitation of the data basis I've used complex program packets known under the name of *Relational Data Basis Administration Systems (RDBAS)*, presenting multiple advantages, among which simplicity, opportunity for on-line processing of the transactions.

The informatics systems "Jiu Valley" will contain data from each town of the hollow, on one hand, and on the other hand, users are at distance, in the places of the hollow or in other places, so that the distribution of data is inherent. As a consequent, we will appeal to the **distributed systems technology**, respectively to the distributed data basis administration systems (DDBAS), *representing software systems that allow the administration of the distributed data basis and do the distribution transparent for the users*.

I've realized a presentation of the client-server architecture features and of the types of architectures, because the client-server architecture constitutes a de facto status for the majority of the present informatics systems, imposing as a compulsory condition for the optimization of the accessibility to the informational resources available throughout the data basis administration systems. The spreading of the Internet combined with a more and more acute mobility and accessibility need determined the generalization of this architecture in the framework of the data basis applications or of other informatics systems.

The look towards the Internet made necessary the use of a script language in the SADPRO Soft. My decision was to choose the PHP language. The rolling of an application on the Internet, beside the use of a script language, needs the existence and the use of a HTTP web server. The orientation towards the Apache server was influenced both by the type of chosen script language (PHP), and due to server quality.

The conceiving of some "*Integrated informatics systems*" fated to include the whole county, also connected to the "*The informatics systems of the Administration and Home Affairs Ministry*", obliges us to design the informatics system "Jiu Valley" as an opened system. As the objective of the work hint the realization of the informatics system "Jiu Valley", its development implies the display of the following steps: analysis, projection, implementation and test.

The analysis of the object system constitutes the first step in the projection of an informatics system, representing the stage with maximal importance, because by the way in which it is achieved depends the success of the realization of the forwarded system. Following the already- done analysis I've discovered that the main limit of the present informational

system in Jiu Valley is constituted by the data spreading, so that we cannot realize, at a certain moment, a whole characterization of a place or of the entire region. It's not possible a correlated analysis of the economic subsystems (industry, constructions, services, agriculture etc.) with the social one (demography, health, culture, education etc.). Or if we want to deepen the analysis on economic subordinated branches: industry (coal extraction and preparation, food and drinking industry, textile and fabrics industry, ready-made clothes industry, timber manufacturing industry etc.), services (activities of financial and banking institutions, real estate transactions, public administration, education, health and social assistance etc.), with the implications they have in the extended background of Jiu Valley region, there isn't such a possibility. It's true that there are many data concerning the Jiu Valley Hollow and its component places found at the county institutions (the Sanitary County Department, The County Regional Statistics Department, The County School Inspectorate etc.), but this ones cannot be related with another ones, not even one with another.

Also, there isn't an informatics system of the area which includes all these data. However, there are many informational systems at different institutions or economic units, which aren't yet interconnected. For this purpose, it must be mentioned the functioning of other informatics application at the Labour Office from each town, at the local financial Administrations, at the Population Record Office, at the 6 town halls, the local hospitals, the University of Petroșani, at the National Company of Pit from Petroșani (with the subordinated units, where informatics applications function), at the thermal power station Paroșeni, as well as in other major economic units.

The made informatics system purchases the dismissal of these drawbacks. However, it mustn't be understood that an isolation of this system from the other ones is desirable, by the contrary, it will remain an opened one, keeping the connection with different county or international institutions, but it will be centered on the local institutions (especially the town halls). The most important objective of the new informatics system will consist in offering a whole vision on the matters from Jiu Valley, leading to the substantiation of some regional development strategies.

*The projection of the system* has as a result a high level strategy for the realization of the informatics system and the building of a solution, that being the moment of defining the architecture of the informatics system, namely of the components of the system and of the interdependences between them together with the technology demands of the information (software, hardware and communication equipments). The architecture I've chosen for the "Jiu Valley" system is that of the data basis systems, also known under the name of transaction managers, being data basis of stocking and accessing information.

The system Jiu Valley is made of many patterns or subsystems: economic, social and environment. At their turn, each one of these subsystems can be divided, their particularization being made until the obtained level is considered satisfactory. That way, it results:

- Economic subsystems: industry, constructions, services, agriculture etc.:
- Social subsystems: demography, health, culture and education.

The decomposition may continue, resulting, for example:

- ▶ *In the industry subsystem:* the extraction and preparation of coal, food and drinking industry, textile and fabrics industry, ready-made clothes industry, timber manufacturing industry, publishing houses, polygraphs and recordings reproducing on holdings, machines and equipments industry, junk scrap and recycling material rests recovery;
- ▶ *In the services subsystem:* activities of financial and banking institutions, real estate transactions, public administration, education, health and social assistance, different associative activities, entertaining, cultural and sport activities;

- ▶ *In the health subsystem:* infectious and parasitical diseases, tumors, circulatory diseases, respiratory diseases, digestive diseases, diseases of blood and homeopathic organs.

**The projection of the junctions of the “Jiu Valley” system**, as a complex stage which defines especially the distributed systems, is realized by covering the following steps:

- ▶ **The identification of the junctions** – in the system “Jiu Valley” were identified as main junctions the most important towns of the hollow, namely: Petrila, Petroșani, Aninoasa, Vulcan, Lupeni and Uricani. There is a single central server that will administrate the entire data basis, however, at town level, we find a central station having the function of administrating all the problems that may occur at local level. In each main junction there will be secondary junctions, as it follows: The Record Population Office of the Police, The Civilian Status Office of the Town Hall, the Hospital, The University, The Labour Office, The Financial Administration, The Environment Preservation Office of the Town Hall, The National Company of Pit, The Coal Working Livezeni, The Coal Working Aninoasa, The Coal Working Lupeni, The Coal Working Bărbăteni, The Coal Working Petrila, The Coal Working Lonea, The Coal Working Uricani, The Coal Working Valea de Brazi, The Coal Working Vulcan, The Coal Working Paroșeni, The thermal power station Paroșeni, The Coal Preparation Plant. In the same time, the central junction from Paroșeni must establish a series of connections with different county data centralization institutions, as it follows: The Sanitary County Department, The County Regional Statistics Department and The County School Inspectorate;
- ▶ **The analysis of the local processing demands** – consists in the identification of the local application demands or of the distance local and global data, of the ways of processing and of the users of each junction. The local applications hint the gathering of the data at the gathering centers, but also operations made by each main server in order to obtain the necessary information for taking the decision at the local level;
- ▶ **The analysis of local data communication demands** – has in view the geographic relations between the junctions, the data source and data traffic loading. The data source is conditioned by their nature and will be the following: *the data about the population health* will be gathered from the hospitals and from The Sanitary County Department; *the data necessary to the demographic analysis* will be gathered from the Police (The Record Population Office), hospitals, The Sanitary County Department, The Civilian Status Office of the Town Hall, The County Regional Statistics Department; *the labour analysis* will be made upon the data from the Labour Office from each town and from The County School Inspectorate; *the economic data* will be gathered from many places: The National Company of Pit (from Petroșani), some economic units reminded for each central junction, the Trade Book, The County Council, The Prefecture of the Hunedoara County;
- ▶ **The selection of the processing equipment of the junctions** – supposes the analysis and the orientation towards the different hardware components necessary for the gathering, if needed, the processing of the primary data. The designed system, being an open system, will allow, besides the existing junctions, the introduction of new junctions, in any subsystem.

**The administration of the data.** For the administration of the data basis in the application that I’ve realized I decided to use MySQL. The data basis of the SADPRO Soft, formed by 9 tables, each one with its own integrity rules, was designed having in view the characteristics of the MYSQL system. The data basis created in the SADPRO Soft application is called *VJSoftBD*.

**The security of the data** constitutes an essential objective of the informatics systems, in general, moreover of the distributed ones. In time, it has been created a diversity of patterns, algorithms and security methods, respectively identification and elimination of the

technology vulnerability devices. The security solution on which I remained for the application SADPRO Soft – one of the most appreciated in the field – is Message-Digest Algorithm 5 (MD5).

In the last chapter, named **Prognosis, diagnostic-analysis and simulation with the “SADPRO Soft” application**, is described the functioning of SADPRO Soft application. The projection of the informatics system Jiu Valley has as result the achievement of the program packing called “SADPRO Soft”. SADPRO Soft is a unitary integrated and open informatics system, having as main objective the data, information, solution-patterns supply in order to solve the social-economic matters in Jiu Valley. SADPRO Soft, from the functional point of view, is conceived as a whole in which the data are introduced only once, and its functions are grouped in specific modules. In the conceiving of the application functional modules was took into consideration the maintenance needs of the system, as well as the objective of this system. The functional modules of SADPRO Soft are: actualization, visualization, diagnosis-analysis; prognosis; simulation.

After the general presentation of the application, at the beginning of the chapter, we find the way of Administration of the informatics system “Jiu Valley” inside the SADPRO Soft application (Administration of Classified List, the Introducing of data).this is followed by the presentation of the module through which it is possible the *Analysis of the Jiu Valley social-economic system* (the visualization of the data with SADPRO Soft, the diagnosis-analysis of the Jiu Valley system). The last two paragraphs of this chapter describe the key functionalities of the SADPRO Soft application, namely the prognosis and the simulation: *The Prognosis of the “Jiu Valley” system with the SADPRO Soft application, The Stimulation of the “Jiu Valley” system with the SADPRO Soft application*. The resulted informatics system, throughout its functionalities, allows, on one hand, the fastening of the framework of the analysis, throughout the data referring to the most important social-economic indicators from the places of the Jiu Valley region, and on the other hand, offers modern decision instruments to the public administration authorities.

The use of the computer in the analysis and the prognosis in territory, following, in fact, the social-economic development of the studied object system, supposes the building of a **statistical-mathematic pattern**, through which to realize a simplified representation of the social-economic reality, using graphics, diagrams and equations in order to reflect the interdependences between phenomena and the studied process. The pattern of social-economic development in regional profile is the complex result of mixing the prognosis patterns and the simulation patterns. With the help of the patterns there are realized different simulations that stand for some evolution scripts for the social-economic system in Jiu Valley.

**The prognosis** has been made by the use of SADPRO Soft application. Although, at a first view, the evolution of the social-economic indexes presented seems random, there are, for the majority of them, very precise explanations. In conclusion, I consider that the trends issued from the estimations constitute directions of the zonal reconstruction, reason for which they must be included in the Jiu Valley development strategy.

The proposed social-economic development pattern in regional profile for Jiu Valley is a pattern that constitutes the framework of the simulation realized throughout the SADPRO Soft application. The simulation pattern is a Monte Carlo model. The purpose of the pattern is the estimation of the main synthetic indexes for the economy of the area, corresponding to an increase of the zonal IGP (Internal Gross Product) and to an hexogen picked structure, in terms of the balance of the production and of the factors insuring the achievement of the economic policy objectives.

In drawing up the development strategies, as in the design of the decision hold systems, the trend obviously manifested in the last few years is that of appealing to script, respectively the simulation of the evolution by changing the values of the variables that appear in a system. That is also the decisive argument in introducing a simulation module in the SADPRO Soft application.

The analysis of the three scripts presented in the work, with the recorded plus and minus, must start from the balance “*economic increase/labour increase*”. In the first script, naturally developed, without external interventions, it would be registered an economic increase (IGP and GGP increase) accompanied by the increase of the permanent capital and the decrease of labour. In the second script, the economic increase similar to the first script is accompanied by a faster increase of the permanent capital (the annual investment addendum, compared with the first script, is of 145 millions in 2006, reaching 1.4 milliards lei in 2010) and of the labour stagnation. In the third script, in search of the solution for the social problem (by creating new jobs), in the context of slower economic increase than in the first two scripts, we have a faster increase of the permanent capital (comparatively with the Script 2, it is needed an extra annual investment in permanent capital, from 96 millions lei in 2006, to 1 milliard lei in 2010), but, it is recorded for the first time the increase of labour. I consider that, in order to ground the development strategy of Jiu Valley region, the script that answers the best to the present state of facts is Script 2, because, even if it is obtained only a stagnation of labour (an that in terms of a permanent capital investment effort), an economic increase similar to the first script is registered (where took place a reduction of labour).

The work ends with a part of **Conclusions and Proposals**, which constitute the main results of the work.

The sustainable human development, concept that gains more and more, at the time-being, folds very well upon another concept that enforces, in the same time with Romania’s admission to the European Union, that is, the knowledge society. The purposefulness of the study on these themes, in terms of the transition of human society to the informational society – the knowledge society, cannot be other than the conceiving and the fulfillment of some informatics systems that help reaching easier and faster the solutions.

Because history demonstrated that, due to extreme labour conditions, the population of Jiu Valley is predisposed to violent reactions, the reform in Jiu Valley will have to contain as a nucleus the social dialogue. It is possible that, from a certain point of view, this attitude should be equivalent to the slowdown of the reorganization, but, it is preferred a slower advancement, but constant, to a voluntary acceleration that contains the risk of returning – throughout social convulsions- to the starting point or even lower.