

# **„Integrated evaluation of regional development plans and strategies with regard to sustainability”**



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**„Integrated evaluation of regional development plans and  
strategies with regard to sustainability”**

**STUDY**

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plans and strategies'**

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## **Introduction**

*Dear Reader,*

This study is an attempt to elaborate a quantitative methodology in order to examine how successfully micro-regional development concepts outline a desirable development course and those measures with expedient activities helping to follow it, doing it in a complex way taking into account all the different and important elements of development that still form a harmonised system. The method evaluates the concepts on the basis of specific questions, of which analysis makes it possible to evaluate the problems raised by them regarding their reality, importance, the possible recognition in practice, etc. Owing to the novelty of the methodology presented in this study, it requires testing, further improvement and refining in accordance with the findings, for which the help of the readers is also needed. Hopefully this study and the constructive ideas of the readers will contribute to the reasonable development of rural areas.

There are several quotes from the articles and studies of Dr. Ferenc Szakál and Dr. Iván Gyulai in this paper. We think that the rephrasing of these parts is unnecessary, as we could not provide better definitions.

### **Aims of the study**

The aim of this study is to present an evaluation method, which offers guidelines for those who wish to accomplish sustainability analysis of development plans. In order to be able to carry out such an analysis, first the notion of sustainability is needed to be defined and the characteristics of rural regions are needed to be investigated closely. Thus the first part of the study presents the theoretical background necessary for carrying out the analysis, while the second part outlines the method that is the basis of the examination.

Hopefully this methodology will not only be appropriate for the evaluation of already completed development plans, but it will provide guiding principles for those drafting such concepts in the future as well.

## **Background**

### **The basis of sustainability**

#### ***The notion of sustainability (Gyulai, 2001)***

"Development that meets the needs of the present without compromising the ability of future generations to meet their economic needs."

(World Commission on Environment and Development – Our Common Future report, 1987)

Sustainable development is continuous qualitative improvement of citizens' lives without growth beyond environmental carrying capacity. Development means qualitative improvement, while growth means quantitative increase. This is a vision of a "steady state" economy that improves its citizens' lives through qualitative improvement with no increase in "throughput" (the materials and energy that the economy turns from raw inputs into waste). On the contrary, growth means using continually more throughput in order to become bigger, without much qualitative improvement.

(Herman Daly)

When we analyse the above definitions, we find at least four conditions that have to be fulfilled at the same time, so that we can move towards sustainability. These four conditions are as follows:

- Sustainable use of resources
- Use of resources within their carrying capacity
- Fair distribution of benefits arising from the use of resources
- Holistic thinking, the integration of the fragmented institutional system

#### ***Sustainability principles (Gyulai)***

When determining the principles that we regard as the fundamental principles of sustainable development, the above four facets were taken as a starting point. This is important because every principle arises from the same point, which is the notion

of sustainability. Thus it is impossible that inconsistency occurs among the principles, or that they contradict one another.

### **1. The principle of holistic approach**

One of the most important things to recognise about sustainable development is that the problems are system-like, interconnected. This means that the issues of development and environment belong together and should be only handled jointly. No matter from which direction we approach a question, should that be acidification, desertification, famine, agricultural overproduction, overpopulation or the decline of biodiversity, we can recognise the indirect connections among them by systemic thinking.

If things are interconnected with one another, then obviously every phenomenon has its basis, and what is more this basis is an effect in another relation, and has another reason too. Thus should we want to resolve any problem, we have to search for the ultimate reasons.

Is the cause of environmental pollution that we do not have sufficient technical knowledge or that this was not important for us and have not developed our knowledge in this respect? Additionally, if it was not important for us, then why not? Economics does not recognise the externalities. And why does not it recognise them? Because our values are not proper and we do not appreciate the non-material goods, e.g. the healthy environment. And why do we do all this? Since we are not taught this, neither by our parents nor by the schools. And why are not we taught of this? Because the society and the decision-makers do not regard these issues as important. Why do not they hold it important? Since they represent different interests. What kind of interests? Economic interests. Why? Because these interest groups are able to enforce their interests.

Hence we pollute our environment because we lack the necessary knowledge, because this knowledge has not been important for us so far, because the economics has not recognised the externalities, because the values of the society did not demand it, because we were not taught of this in our childhood, because this issue has not been important for the society, because other interests dominate the decision making.

Generally there are different local interests at the beginning of the cause-effect chain, which generate those societal, economic and environmental problems that we realise as local problems and on the whole as a global crisis. Thus any response to a problem can be only determined and completed after disclosing the cause-effect chain. E.g. it is possible to lime the acidic soil, but without ending the causes, namely the environmental causes of acidification long-lasting effect cannot be achieved. Apparently it is always cheaper to cease the effect. The reason of this impression is that e.g. the cost of acidification should be paid by many in lots of places, and this would not appear as the burden of an only sector. If we saw the direct and indirect damage together that are caused by the acidification (decrease in

the agricultural yields, corrosion, health damage, habitat degradation etc.) we would not delay to end the causes of the problems. It is regretful though that the present sectoral approach and administrative regulation is not able to tackle such system-like challenges.

Current environmental protection usually targets the remediation of the created damages instead of their prevention, and it adopts a technical approach in solving environmental problems. This is why they are often called “end-of-pipe” solutions. This expression comes from that environmental protection is usually taken care of at the emission point of pollutants, when for instance filters are installed on smoking chimneys. Naturally it does not solve the technological problems and neither does it respond to the problem of preserving natural resources.

Environmental protection can be seriously harmful in the long run indeed, which only deepens the crisis. For instance an environmental technology may conserve a production process, which is profoundly damaging. Perhaps the emission of pollutant can be cut, but in this case we have not made any efforts to preserve the natural resources or to lessen the harmful effects of the product itself on humans or the environment.

Consequently in the systemic approach it is not about our ability to give technological responses for the created phenomena, but it is about whether we are able to reveal the reasons and to create new relationships between society and nature accordingly. These new relationships demand the revision of not only the production, but also the consumption patterns.

One key issue within the approach is the harmonisation of globality and locality. One basic criterion of systemic thinking is that local acts should be acceptable globally as well. There are numerous local measures in place, which shift the load onto the wider environment or into the future. This attitude is called nimbyism (i.e. not in my backyard!). Unfortunately one part of the environmental movement is also created and maintained by this nimby attitude.

Shifting problems in space and time is typical and has a lot of forms. One common example when somebody does not want to have their own or anybody other's waste in their environment for the sake of their own safety. Typical in this respect is the case of nuclear waste and used batteries. Nuclear waste of high radioactivity imposes a threat everywhere no matter whether it lies on sea bottom, launched into space or buried in the ground in a case. This is a vivid example of shifting both in space and time, as a concrete sarcophagus will give a headache to and cost great sums for future generations, even if it is not their fault. Similar is the “final” disposal of hazardous waste, which somebody sometime has to take care of.

A shrewd way of shifting problems is the incineration of waste. Let us assume that one type of waste threatens the soil when landfilled. When incinerated it is dispersed in the air, then enters the hydrological cycle, gets into the soil and

accumulates in living organisms. The problem is shifted thus between the system of air, soil and water, but will not be solved.

In order not to shift our problems, not to hide them somewhere else, we have to adopt the “common possession” attitude. We bear responsibility not only towards ourselves, but also towards the whole of mankind in the use of natural systems or natural resources. ‘Biosphere’ and ‘nature’ are cross-border notions.

One basic criterion of systemic thinking is that local plans and their implementation should be acceptable in the global aspect as well. However past experiences show that group or individual interests are only seldom in accordance with the interests of the wider community. We can regard the lack of holistic approach, i.e. the equal weighting of all aspects as a shortcoming of the approach in the planning. As the planning cannot tackle the related problems due to the lack of systemic thinking, it seeks for priorities. It is a shining example of short-term thinking, when under the pressure to act we try to pick out a few things, the solving of which seems indispensable though feasible. We know those stories well, when only certain aspects, priorities were taken into account. In the great investments of heavy industry or water management environmental considerations were not prioritised, and nor were the social ones. Afterwards the economy collapsed, the social situation of people became desperate and the environment was contaminated.

Solving the environmental crisis is only possible in a conscious society that adopted a different attitude. This implies the revision of the whole educational process in its targets, methods and educational material.

The educational system relying on analytic knowledge that is fragmented into subjects is not suitable for raising a broad-minded society with systemic attitude. School does not prepare for life nowadays, does not impart a view but only particular knowledge fragmented into subjects, which is hard to use in practice. School is qualifying executive employees and wage earners for fragmented institutes and sectors. The practical knowledge of life, the methods to handle conflicts, the global studies are all marginalised in both education and upbringing. Education on environmental crisis or global problems may only occur outside the schools, on the initiatives of some enthusiastic pedagogues. Education however only touches peripheral knowledge and discloses the symptoms of the crisis, but nobody tries to reveal the connections between the problems, and thus the way of solving them.

Hence the knowledge demanding systemic approach, such as ecological and societal studies, does not and cannot have subjects itself. The reason is that this is about multidiscipline integrating fragmented knowledge and subjects, which cannot be placed in the traditional structure of subjects. Tackling the problem still happens the other way round, it is attempted to integrate broad knowledge into separate subjects instead of forming a system from the specialised knowledge under the umbrella of multidiscipline.

## **2. The principle of integration**

It is worthwhile to go through the way in which the concept of sustainable development emerged. The thought of nature conservation was the first to appear, which realised that at least some selected species and areas should be protected and conserved. It was followed by the revelation that it is not feasible if the environment is polluted, as pollution does not respect borders and evidently does not stop at the edge of protected areas. Gradually the apparatus of environmental protection developed. Yet it was soon acknowledged that reducing the pollutants is not sufficient, but the rational use of the natural resources and the whole environment is also necessary. This recognition brought forth the idea of environmental management. It is apparent that this evolution of concepts is accompanied by the attempts of integrating even more aspects. The classic nature conservation focused on the protected species and areas, the environmental protection put the environment into the spotlight, environmental management attempted to integrate the economic and environmental issues. Eventually the idea of sustainable development, which incorporated the real, existing world of society, economy and environment appeared.

It leaves no doubt that this last stage is the maximum so far, though the real meaning of integration is only understood by few, and not especially put in practice. In our thinking the lack of integration is noticeable in many ways. Let us examine it more closely.

In the explanations of sustainable development the area of sustainability is designated on the overlap of three circles. These three circles are economy, society and environment. Where these circles are in overlap, there lies their integration, i.e. sustainable development. In practice it implies that in this overlapping zone we consider the economic, societal and environmental aspects equally.

When we imagine this form, we can admit that economy and society are closely interrelated things and are embraced in environment in every case. Thus the three equal circles do not reflect the relations between the three spheres correctly.

There is another flaw in this thinking proving the superficial, anthropocentric attitude, which led to the misinterpretation of the notions of environment and nature.

In modern perception nature is identified by most of the people as the remaining natural habitats, and included in the environment as the part of it. The environment indeed is surrounding the people and their associated organisational levels. This perception is emerging from the anthropocentric view, in which the human is the focal point of the environment. Different environments can be thus defined within subjective borders, according to who defines them. .

In fact this confusion leads to the problem that the notion of environment is difficult to make operative, and practical environmental protection is distorted (e.g. nimby attitude). It can be illustrated with an example. A polluting plant on the administrative territory of a local authority is paying business tax or fine to this

local authority. It is possible though that it pollutes the neighbouring settlement, which only endures the inconveniences but does not get any compensation, as the environment is defined by the administrative unit in this case.

The harmonisation of the principle of integration and holistic approach (keeping in mind that our principles are only operative in practice, if they are in harmony with one another) requires the turning round of this conceptual system. Obviously every subjectively defined environment belongs to other systems at the same time too, according to the specific issue under examination. Regarding pollution the environment is the space surrounding the emission source, where the pollution is eliminated. The environment of this same plant regarding natural resource use could be already different. Considering every aspect the environment of somebody could be extended to a huge area. Let us just think over how large that environment is for instance in the view of environmental impact a country could have through its export and import.

There is however something that encompasses these diverse environments, namely nature, which is the common space for both the living and inert world to manifest. Therefore in our view the relationships between economy, society and environment can be correctly interpreted that environment is the source for economy and the supporter of society, and all three are encompassed in the system of nature, i.e. these sub-systems are all parts of it. This resolves the conflict between mankind and nature, which derives from the belief that humans are standing outside of it.

Humans are part of nature and human society is not a system opposing or being separate from it, but exists in interactions with it. Humans cannot be kept alive or preserved apart from nature. The improvement of society is only feasible through the preservation of nature. The simultaneous preservation and use of natural resources is the basis of human existence. Most prevailing ideologies today disregard the necessity of preservation and emphasise the priority of use. The capitalist world view that measures development in growth, quantities, financials, consumption set mankind against nature, which resulted in the exploitation of nature and the destruction of our environment that reached the point, where the existence of nature and mankind on earth is globally threatened.

The realisation of the principle of integration is reflected by the institutional system in place (meaning the institutional system in the broadest sense, which involves the legal and economic regulation and state administration in addition to the specific institutions). Present institutional systems follow the sectoral approach. It is enough to have a look at the governmental structure. Each sector is the presentation of an interest group, and confronts other interests from time to time. Certainly they are the interests interwoven with economic ones, which are prioritised against environmental, health care, cultural etc. interests.

The reasons for sectoral separation can be naturally not only sought in the different interests, but also in the institutionalised form of education. Most people insist on their field because they feel themselves and their knowledge safe only there.

Nowadays every field takes in such a huge bulk of knowledge, that it is necessary to qualify specialists even within these fields. Though it is natural, it should not lead to the narrow attitude of the specialists, and to their incapability to place their knowledge into the great whole system. It occurs because of the narrow knowledge and attitude, that proposals, plans and measures cross one another more and more frequently. So the same government, which takes measures ruining the people, also tries to improve their social situation. Or the same organisation allocates money for projects crossing each other, e.g. for investments with obvious environmental damage, and for its remediation later on.

The lack of integration can be best studied through the legal system. The countless legal regulations that are drawn up in line with the sectors are outstandingly suitable for crossing one another, or to leave legal gaps, unregulated fields.

It is apparent that the changes in the world interconnect every issue of the economy, society and environment, which we deemed and handled separate before. The problems existing in a system cannot be tackled in fragmented institutional structure with separate policies any more. A new institutional system should ensure integration in their structure. It would be necessary to destroy the sectoral system entirely, alter the authority of the sectors and revise their role accordingly.

It is funny when the concept of sustainable development is about integrated institutional system, that those dealing with this question still readily follow the conventional sectoral view. We can hear about sustainable transport, industry, economic growth or agriculture. Though evidently it is pointless to speak about sustainable agriculture without sustainable economy or society, as well as it is pointless to speak about sustainable Europe in an unsustainable world.

### **3. The principle of longevity**

Sustainable development is a development that leaves resources for future generations as well, i.e. it is the long-term use of resources. It is perceptible that consuming societies reached their successes through quick use of resources, during which they did not only use up their own resources, but also colonised the world's resources for their purposes. Therefore these so called developed countries can be neither the pioneers nor the pilot areas of sustainable development, as their societies did not set and achieve long-term goals.

Thinking it over it is a rather modest goal of sustainable development that it should leave resources for future generations. It is modest regarding that our evolutionary ancestors left filled granary to us, i.e. they rather expanded instead of reducing the resources. So that we can do the same, we should examine the way of long-term resources management.

There is knowledge to gain from the operation of the natural system, using which can open the way for long-term management. One principal characteristic of global system is that it comprises subsystems baring the features of the organization and operation of the whole itself. If society is the subsystem of the global system,

which is the philosophical principle, it has to show the characteristics of the global system concerning its organization and operation. Examining the production and consumption strategies of nature and human economy we only find differences. These differences are rooted in the distinction between the strategies of the systems. Long-term strategies are dominant in nature due to its organization, while in society, which misconceived its dependence on its own laws and on that of nature, the short-term strategies prevail. Short-term strategies though become successful through the exploitation of human and natural resources.

The ecological foundation of longevity thus means the adoption of those few principles, on which the system of nature is structured and operates.

The most basic principle from which the operation of nature can be deduced is that the operation of the system is realized in its structure. Namely the structure and operation are inseparable, the operation is the result of the joint manifestation of the elements. This control, as every system is characterised by control and being under control, consequently derives from the elements of the system. Evidently the system is also under control, as every system is a part of another system too, where it is under control and as an element takes part in the controlling. The control tries to keep balance between two sides; it tries to preserve the features of a system just as it tries to change them.

The means of preservation is regulation. Regulation tries to keep the status quo and preserve the features of the system by “setting rules”, thus this is the conservative side of control. The other side of control ensuring that changes take place is steering, which tries to get the system into another state, therefore this is the progressive side of control. Between the two sides control tries to keep the balance. It is important to emphasise that it tries. Since if a system is counter-balanced, it becomes passive and unable to do any work. This means that every system is striving for balance, but by its nature will never reach it. Striving for balance is completely natural, considering that the internal energy of the system is smallest near the equilibrium point and the system is there the most stable. (It is advisable to avoid the expressions such as biological and ecological equilibrium, which are meaningless.)

The striving of the system for counter-balance is ensured by negative feedback. Negative feedback makes the mechanization efforts of the system elements impossible, namely that they could gain too much independence in the system or they could separate from it. The populations of species liable to gradation collapse due to the negative feedback. The stripped trees mean the scarcity of food and appear as negative feedback. In addition the growing population size is followed by the population size of predators and parasites, which become further factors of the negative feedback.

The control of system so depicted is universal, everything in nature happens in this way. Let us think of evolution. The conservative element is selection, which can limit the emergence of new forms. It is decided by the selection which individual is able to stay alive under the given environmental conditions. The progressive

element of the evolution is mutation, when just on environmental impacts new variations are generated, which provides basis for development through selection. It is good that we lead up to evolution, as the long-term feature of it is hardly disputable. Then we ended up proving that there is a long-term aspect in the development of natural systems indeed, and the basis of this is the co-existence of conservative and progressive components. Examining the behaviour of human societies, it is striking that people try to deny the existence of such counter-balance. The belief in sustainable economic growth seems to support this. Humans try to artificially eliminate the negative feedbacks in their way, but as we see it is only feasible for a short while. Therefore mankind cannot expansively develop for a long period, since the continuous feedbacks and corrections would cause relatively small pain compared to what mankind will have to endure by all probability when the accumulated burdens get released.

It is unnecessary to name examples, when humanity tries to eliminate the negative feedbacks. Although being a sinful thought, it cannot be denied that among them are the medicine that defies natural selection, the recently invented genetic modification of organisms or the incentive measures towards continuous economic growth and the countless economic and legal regulations. Let us examine how much efforts people make to eliminate the negative feedbacks of car transport. Everybody knows the negative effects of car transport on air quality and human health, the corrosion caused by air pollution, impacts on nature, the phenomenon of soil acidification, forest degradation, defragmentation, statistics of accidents etc. Still nobody thinks about how the causes could be eradicated and thus how the scale of transport could be made enduring, instead the focus is on finding responses on the effects and eliminating the negative feedbacks.

For instance catalysers are installed in the cars to reduce pollutant emissions, unleaded gasoline is invented to avoid lead emission, costly animal passages are built over highways, highway barriers for noise reduction are installed along residence areas etc. Whatever is invented though, only another problem is generated somewhere else while the problem of mobility is still unsolved.

At this point we can realize how much our principles are interwoven with one another. Now the necessity of global approach, the application of principle of integration and longevity are present at the same time. That is also obvious from the above mentioned that longevity requires long-term thinking and in some aspects temperance as well.

The failure to restrain ourselves may be the most significant impediment of sustainable development, as individualism has reached a level it has never seen before. The stake is not less than to sacrifice the future carrier of the human species for our individual interests and to deteriorate the chances of future generations through our existentialism. Is it really like that? Does it have to be like that? When we regard the values lying on material values, then the answer is a depressing yes. Because however promising the Brundtland Report was, we have to take notice some time that we must cut back our consumption. At least this is assumed by the

Ecological Footprint concept, according to which we have already exceeded the carrying capacity of our planet and everybody should live by only using the resources of their own share.

Another possible answer is that it is unnecessary to persecute ourselves; the only question is what the values are for us and what is the meaning of life. In my experience it should not be asked from an American or European, because they do not believe that there is happiness without material comforts. For other peoples these values are rooted in their history and culture and taken as only natural.

For the European and American technocrats there is another answer as well, they believe in the omnipotence of sciences and technology without any doubts and trust their competitiveness against time. It has to be acknowledged indeed, that the boundaries of our material world can be greatly widened by the new and future results of the sciences and technology. This idea is the lengthening of the present development course and though its success is unpredictable, we feel that it has nothing to do with sustainable development. Sustainable development namely would like to create resources for the future by rethinking global issues and treating the available resources in a different way.

#### **4. The principle of simultaneous use and preservation of natural resources**

As within the relationship between humans and the environment the society and nature mutually affect each other, it is obvious that a balance between human and natural interests needs to be found. Meeting the needs of these two sides at the same time require both the use and preservation of nature. Longevity can be only secured by the simultaneous use and preservation of natural resources. This simultaneity seems to be a contradiction in the traditional view. The financial resources allocated for nature conservation and environmental protection have to be channelled in fact from the already produced material goods. This fact hampers the possibility that the whole society would back up the solving of environmental problems, since it has to restrain itself and draw from its material goods, i.e. make sacrifices. We have to note thus that in the traditional models both in the East and the West resolving the crisis draws serious resources from meeting other needs of the society. Therefore it is illusionary to believe in this system that environmentally conscious societies will emerge where the whole society would undertake the sacrifices and accept the falling level of material values.

Supposedly nobody disputes or can dispute this principle. Still again and again when we look at our approach to this issue, we realize the lack of global view, integration and longevity. The principle of simultaneous use and preservation does not require to put half of the planet aside and use up the other half, but to treat every resource in a sustainable way. Opposed to this, nature conservation, which is showing favour towards nature, saves some per cent and tries to conserve them as they are. Certainly the world would change without humans as well, thus any kind

of conservation is contradicting the nature of systems, making our endeavour impossible. This contradiction in nature conservation culminates when we attempt to conserve landscapes formed by already disappeared human activities through maintaining the status quo with continuous energy input.

In my personal opinion there is not much difference between the transformation of nature and these types of nature conservation, as both require constant activities and energy input from man. We take the resources necessary for this from nature itself, from the already produced assets. Should nature conservation mean to leave the bits of nature put aside to their own, this would not cost any money and would not cause pain to nature nor here neither anywhere else. On the other hand, things are escalating and since the invention of sustainable development everybody would like to implement sustainable management on the protected areas.

### **5. The principle of prevention and precaution**

These two principles have been coupled because in our opinion if we are precautionous enough, we surely also prevent the happening of anything wrong. The principle of precaution in broad sense corresponds with the principle of global approach, i.e. it requires consideration from various aspects. In restricted sense however it means, that we cannot delay the solving of any problem just because we do not know its every single cause. The lack of scientific knowledge cannot be the reason for the delay of any measure necessary to take. Evidently everybody knows stories, when on the basis that “surely it is not like that”, “it will turn out sometime” nothing happens for resolving a problem. It is enough only to think of the scientific debates and reports, which followed the prognoses of the Club of Rome or raised the responsibility of CFCs in the depletion of ozone layer. Still there are disputes going on about global warming and the degree by which greenhouse gas emissions should be reduced. In Kyoto<sup>1</sup> not even the agreed reduction rate is being realised by the Parties, let alone what would be desirable.

The principle of prevention says that we should not try to tackle a problem when it has been already created, but we should avoid its generation. Mankind profited from the knowledge it gathered during the history with often breaching the principle of prevention. Man could not know what kind of problems the use of his inventions will trigger in the long run. Thus it is a paradox situation that mankind tries to increase wealth through the use of chemicals, while they threaten human health.

Mankind has to face new challenges every day, when it would be necessary to apply the principle of prevention. The most current example is connected to the revolutionary breakthrough of gene technology. The creation, release into nature and commercial use of transgenic organisms transform our planet into an experimental laboratory. No matter whether we are potential beneficiaries or losers

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<sup>1</sup> The venue of world summit on climate change in 1997

of the happenings of the future, we succumbed the temptation and putting aside the principle of prevention in the hope for great profit we launched the greatest intervention of mankind into life and its development, the evolution. Can the scientists thirsty of success, the multinationals expecting even bigger profit and the decision-makers, who released the process, assess the significance of their deed?

### **6. The principle of preserving the adaptation forms**

One basic feature of each living being is the ability to adapt to the ever-changing environment. The survival of each species depends on its adaptation ability. The evolution, which means in this sense the response to the continuous environmental change, generated unbelievably wide variation of adaptation forms. The wonderful thing is that several adaptation forms, from which some are successful and dominant, while others dominated and only vegetate, are created at the same time. Still the change in the conditions can alter the chances. The ones that have been successful so far can fail to adapt to new conditions and go extinct, and their place can be taken over by others that were disadvantaged before. It is important to realise that the response is not given when the changes take place, but the possible responses are created in advance and from this great diversity it is always possible to select, naturally the most adaptive ones.

Similarly to nature, during the long time of co-existence with nature human societies also created a great variety of highly adapted cultures, which presents the just optimal response for the survival in the given environment. It is regretful that the adapted cultures disappear with the same rate as the species. We could ask, why it would matter, since if they disappear, they are unable to adapt to the changing environment and the replacing culture will be more adaptive to the present conditions. The question indeed is rightful and can be answered only with difficulties, when we strive for considering man as a part of nature. Yet in the above case we talked about the adaptation to the ever-changing natural environment, and in this case a culture, which is not adapted to the local environment replaces the formerly existing one. This replacing culture may be able to achieve success on the short-term, but whether it will be able to adapt to the environmental changes brought about itself, is already doubtful. Its success lies of course in the fact, that it receives external support and resources, and this success can be only maintained as long as these external relationships exist and are able to support the system.

### **7. The principle of local resource use**

Local organic cultures undoubtedly reached the high degree of adaptation to their environment through finding the best way of using the available local resources. Regarding the lack of transport facilities this was obvious, as they could not utilize external resources this way. In fact mobilization brought the opportunity that man could commingle different cultures, raw materials and energy sources at global

scale. Similarly mobilization made it possible for the cultures that used up their own natural resources to exploit the resources of others. Its first manifestation was territorial colonization, and after it became socially improper, the more acceptable, however more threatening resource use colonization, which was realized through the outplacement of capital.

The outplacement of capital is the most proper socially among them, as the “developing world” itself desires it as well. Enormous successes may be put down to this strategy; it swept through the world from East Asia to South America, where the capital and the novel technology released unbelievable energies from the resources that remained untouched for thousands of years.

So the outplaced capital offers opportunities for profiting from others’ resources. The ones outplacing the capital thus perform pseudo-development, as their welfare is not provided by their own natural resources, but by that of other territories. The outplacement of capital goes together with the outplacement of technologies, too. The technology transfer though does not always result in establishing the best available technologies relying on the latest scientific technological findings, but just on the contrary usually it leads to the spreading of obsolete and often polluting technologies that are already rejected elsewhere. The underdeveloped world is a cheap market for such actions and in the hope for development also a thankful entrepreneur assisting for this practice.

The expansion of capital and technology transfer without any critical restrictions goes with adopting the European production and its maintaining consumption culture, which irreversibly prevents choosing any other course to follow. The fast expansion of the so-called civilized world’s production and consumption cultures throughout the planet leads not only to the rapid exploitation of natural resources, but also to the degradation of human resources. Production traditions diminish, which were evolved in close co-existence with nature and handled natural resources in a sustainable way. The civilised production and consumption patterns set man against his own production culture, while the adoption of processes promising quick success destroyed the environmentally adequate production structures. In Europe the Europeanism, in the world the civilisation homogenise the world and merge diverse cultures relying on different natural and historic foundations.

Why are the efforts of the World Bank, the IMF, the OECD and the EU to aid Central and Eastern Europe? These CEE countries that always have been idealist can still choose another way! There is only sense to attract capital to these countries, if it surely arrives under market economy conditions. Success is encouraging to everybody. The investor gets his money back with interest, and the countries longing for the paradise of consumption society reach their goal as well.

Recently it seems nevertheless, that this successful construction is wobbling a bit. The economic crisis of Southeast Asia, which was set as a good example not so long time ago, warns of the challenges the global economy and the international

monetary policy have to face. Let us take a closer look at this in order to understand why development relying on capital outplacement is not rewarding and acceptable from the viewpoint of sustainable development. We have already seen that the profit emerging from the outplaced capital gets into the pocket of the investor and the profit produced by the local resources bear interest somewhere else. Still there is a bigger threat to those trying to maintain the economic growth in this way. Capital can be namely disinvested at any time, this is only a matter of decision and a financial transaction. The capital leaves the country if the conditions turn to worse. If the investors are attracted by the cheap work force, they will change their mind if it is not cheap any more and leave for areas where even cheaper human resource is found. Yet nobody would like to remain at this level regarding the salaries for instance in Hungary.

Let us take for example Japan. From the work force being cheap in the era of great investments it became the most expensive in the world just over thirty years. Of course the country became wealthy, but it is not worthwhile to invest the profit that is produced there under such circumstances any more. In order to be able to expand, it is necessary to leave the country and invest the money e.g. in the exploitation of rain forests or the overfishing of seas.

It is easy to admit that if everybody follows this strategy, the colonization of the world's resources will end soon, and practically only the Antarctic is left. It appears "consoling" that the capital produced in Hungary can be still invested more to the East.

Lately Hungary experienced pressure for establishing an economic structure that denies the natural features of the environment, and it should realize the consequences of this today. Aware of this, it should be hardly desirable that society chooses for identifying with the European production and consumption culture. The recent history of Hungary's economy perfectly illustrates the rejection of the principle of local resource use. The structure and operation of the economy was not adjusted to reasonable foundation adequate to human and natural resources, but according to political, power, ideological considerations. Among the features of non-adequate structure are the intensive use of external natural resources and the lack of production and consumption technologies and traditions relying on historic experiences about the environment. The experiences alien to the surrounding environment and culture are prevailing in the economy. As the economy is based on external resources, it did not explore the given national ones, and what is more, it demolished the production cultures that relied on them. This inevitably derived from the ambitious ideas thinking in huge sizes and quick successes. In the economy that relies on huge volume everything small seemed useless and infertile. As for the natural resources and energy, the Hungarian situation was not capable of producing huge amounts and necessarily made the economy dependent on the use of external resources. On the contrary the development of processing industry based on national resources lagged behind. This straightforwardly led to that due to

the great sizes in the traditional structure, its collapse created a catastrophic situation in the whole society and economy, and because of the lack of diverse economic structure and processing industry there is nothing today to ease the tensions.

Centralisation and homogenisation did not have disadvantageous effects only in the economy. The socialist large-scale industrial objectives relying on huge sizes also caused territorial centralisation, and adjusted every peripheral structure to it. It predetermined the settlement structure, transport, culture and education, the exploitation of building industry capacity and employment policy equally. Consequently a totally unfavourable settlement structure emerged in Hungary. The frequently asserted decentralisation however followed an inverse logic, it did not mean the dismantling of bigger units into smaller ones, but the assembling of smaller units around the centres. This Hungarian “systematisation” ceased the farms and small villages, and hindered the development of plentiful settlements. The elements of the typical Hungarian settlement structure disappeared together with the production and community cultures or became unable to function. The eventually centralised structure also indirectly affected the impoverishment of the traditional settlement structure. The centres drained the population and work force, forcing hundreds of thousands to commute every day. The speedily emerging new employment opportunities of the centres, which required each other’s development, boosted the population size. The necessity of ensuring this fast growth could not create however a properly founded settlement concept suitable to human and environment alike.

Residential areas grew around the industrial areas and the overcrowded, unhealthy environment did not serve the good quality of life any more. More and more roads and transport vehicles were needed, nevertheless the transport became slower, and life became more difficult. In order to ease the load on the cities, the industrial plants had to be placed outside; the decentralisation of industry started. However the industry placed outside the cities did not attract the former employees to the rural areas, they rather stayed in the cities. The people in the centres only struggled to serve the structure of the centre, the primer production ceased, and it was replaced entirely by the service sector.

From this point on the cities were supplied by their peripheries, the rural areas, where the primer production took place. This meant the exploitation and colonization of rural areas, which still continues today, as when reallocating the goods and profits produced for the whole society the development concepts prioritise the centres.

Centralisation had thus serious ecological consequences eventually, as an ineffective, energy consuming and resource depleting structure evolved. The environmental loads also appeared to an increased extent. The urban-industrial agglomerations evolving around the centres caused intensive environmental pollution, which resulted in similarly severe health damage.

The production structure in agriculture was adjusted to “Eastern” demands, which was mainly characterised by the narrow product range and huge volumes. Through the reintroduced supports it was easy to achieve mass-production for the demanded goods. This frequently lacked any agro-ecological considerations, and led to a production structure, which was alien to the system in which it existed. The development of large-scale production, the monocultures, the pressure on the given ecological conditions, the overuse of chemicals and artificial fertilizers pressed agriculture towards unsustainability.

In the first years after the change of system, the collapse of the socialist industry and agriculture brought a temporary improvement in the state of environment. Later the stabilizing economy moving towards market economy made capital influx possible, and through the commence of economic growth the load on environment and resources increased again.

One basic feature of capital outplacement is that it occurs according to the wishes of the investor, as the recipient country warmly welcomes the capital, as the politicians put it. This welcome generally means soft restrictions for the investors, otherwise they would not come to that country. It is obvious as well, that capital goes to less risky places and will not initiate investments that are unlikely to produce immense profit. This is the reason why huge investments were first made in the formerly underdeveloped service sector, and only in that case into the heavy industry with great environmental loads if these loads did not have to be overtaken. This is done by the state, which tries to solve these problems caused by some interest groups from the tax revenues paid by the citizens. Should these interest groups have to pay for these costs, they would not invest in this sector. If the passenger lobby paid for the societal costs of transport, they surely could not find any investor.

It is worth to notice, how great interest is there for services, e.g. for public utilities. There is not any significant, i.e. solvent settlement, which have not been approached by enticing offers regarding waste disposal or sewage treatment. Most local authorities got rid of this responsibility indeed, devolving the burdens that are caused by the investors’ greed for profit to their citizens. It is already apparent in the EU integration process that the planned funds will aim at the underdeveloped infrastructure, i.e. they will provide their own investors with assistance from public money in order to make full use of their existing capacity. It is beyond debate that ISPA targets do not have anything to do with sustainability, as not even the environmental investments are surely in line with sustainability principles. That is certain though that the development of transport infrastructure is opposite to sustainability targets.

Another problem concerning capital allocation lies in the limited availability of resources. Local population cannot command their own resources, as they do not possess the necessary capital. Lacking it, they become wagers, and though their standard of living will rise undoubtedly for this period, they will not become capital owners and will not acquire resources for development. Though even if

they acquired, they could not use these resources, as the potentials have been already utilised by others.

The lack of identity of investors to the local assets, landscape, environment, culture and people also causes much concern. The officials, potential investors see stupid fussing in the local people's resistance, when they would not like to see some development alluding to their values, which they allege as their reasons. They are stupid, they wish evil on themselves. Unfortunately the lack of identity of the investors is reflected in the treatment of environment too, as it is not more than a resource increasing their personal profit.

The dependence on external profit can be also enhanced by the effort of the present politics to integrate the structurally dual economy. Hungarian economy is dual in two respects. It is divided in two geographically regarding the level of regional development, while the dominant presence of multinational companies is separated from the numerous Hungarian small and medium-size enterprises.

A possible means of integration is the extension of supplier activities of Hungarian small and medium-size enterprises. This proposal though enhances the dependence. Which is better for us, a structurally and territorially "dual" economy or an integrated one? If the Hungarian small and medium-size enterprises are independent, they are not exposed to the threat imposed by the leaving of multinationals and the retrieval of capital as they stand on their own feet. If we commingle these two circles, we make the small and medium-size enterprises vulnerable. Thus standing on more legs is better. Territorial duality causes considerable dilemmas similar to the above mentioned. If the Eastern part of the country develops more slowly from its own resources, this can be beneficial, especially in the case of a major retrieval, which puts the development of the Western part on risk.

The most significant issue with regard to sustaining the current development dynamics is deemed to be the low salaries. This can jeopardise development relying on capital allocation the most. In this respect we (will) find ourselves under double pressure (soon). One derives from EU integration, after which salaries cannot be kept at the same level as today, though as we know, this is one main enticement for foreign capital. There is also another pressure to improve competitiveness, which can be achieved through low costs against the whole world including for instance the tiger economies. This would not allow the raise of salaries, since as we can see it everywhere the company managements try to cut them back in order to satisfy the owners' efficiency requirements. Are there still identifiable reserves for cutting the costs at companies in foreign possession? Because if not, then the only factor can be the salary costs.

It is also greatly worrying that recent small- and large-size investments are still established under soft environmental regulations. Environmental impact assessments are obligations, which would not mean the prevention of the investment, but in most cases are rather only administrative formalities. We cannot fully know, how those several smaller or greater businesses that were launched in

recent years will impact our life and our environment. Waste businesses are worrying, which in most cases do not target the proper treatment of waste, but only serve the financial interests of the circles organised around it. As another example the consumption and use of numerous imported products without any environmental assessment can impose health and environmental risks.

The intense expansion of service sector and the immense increase of trade relations affect towards the boosting of transport. This together with the transit situation of Hungary is the reason for developing the transport infrastructure. The few still existing areas in close to natural state may be threatened first of all by this intense infrastructural development in the near future, as these establishments occupy territories, cause environmental pollution, destroy the ecological network and directly or indirectly interfere with the natural ecosystems.

It is also apparent that the solutions found in urban development and in public services are not sustainable either. Waste management is not driven by intention to reduce the amount of waste, but by a business attitude that is disputable from environmental perspective. The extension of drink water supply was not coupled with the more and more urgent protection of drink water resources, and wastewater management did not develop in a harmonised way with it either. The even more expensive public transport changes the earlier good public transport behaviour, and the use of individual transport vehicles is growing.

The environmental awareness of society is rising very slowly; the political and macro-economic decisions still do not regard any environmental considerations. Neither the growing poor, nor the growing wealthy strata of the society regard the environmental issues connected to development and to their own individual life.

All in all, it can be concluded that the present “development” courses are not pointing towards creating sustainable societies. Increasing the consumption is a tool for economic growth, where the values of environment and natural resources cannot play a main role in shaping the market. That is why this pricing system that does not reflect any values not deriving from its material interpretation and that shifts the amplifying costs of environmental degradation into the future at the same time is sustained.

### **8. The principle of environmentally adequate use**

This is a widespread practice that if an ecological system is not able to satisfy one of our desires, we will make it adequate for this. If something is too dry, we irrigate, if something is too wet, we drain, if there is no energy, we transfer it to that place etc. The natural environment is transformed according to the needs and is attempted to be held in that state. Of course this is only feasible with continuous energy input, as the system tries to return into the natural state. In our opinion it is an outstanding waste of energy, if somebody attempts to keep a system in the desired state against the natural conditions, instead of finding a way for its optimum use.

The example of the farming adapted to the changing water level can be set against the melioration of inundation areas. This organic farming method relied on the ecological conditions and used the distinct geographical micro-layers in a very differentiated way for agriculture. The people used the underwater territories as they were, the permanently wet areas according to the water level, and the areas prevented from the floods for building houses. That is to say the people adapted to the water level, and did not try to adjust it to themselves. Namely the first one depends on them, while the second does not. On the opposite the draining of wet areas require permanent supply of money, energy and work, while its effectiveness is doubtful, its efficiency is low. Another important distinction has to be noted as well. This kind of farming is an adapted culture, possesses plentiful knowledge on the environment and its activities need thinking all the time. Melioration on the contrary destroys the micro-layers, the ecological differences, makes the system homogeneous and so does the treatment of it. The knowledge is vanishing, the activities are taking place according to the provisions, and they do not require the continuous thinking and innovation. Thus the culture itself becomes impoverished, as the diversity of the surrounding world decreases.

The historical analysis of the Hungarian agriculture reveals clear examples, when the economy disregarded its natural foundations and did not obey the environmental conditions, but it did the regulations. The structure and products of the Hungarian agriculture was not and is still not determined by the environmental conditions, but by the preferences of the agro-protectionism today. These preferences made the system that had been diverse in its conditions homogenous, and forced the farmers to follow the production structure inefficiently with high costs and investments.

The central regulation forced uniformity on the farmers. Consequently the system had to be transformed according to the expectations. For instance an area unsuitable for grain production had to be made suitable for it, as the central regulation preferred that. The regulation is expressed through the support system, and as grain production is preferred to animal husbandry, the systems that would be suitable for livestock raising have to be made suitable for grain production as well.

The transformation and also the maintenance of systems require energy input, while the maintenance entails continuous additional activities and expenditure. Namely not the farming adapted to the environmental conditions, but the environment was transformed to the requirements. Naturally neither the farming can be efficient, nor the natural environment can be protected.

Another impediment of sustainable agriculture is the lack of environmentally adequate agricultural technologies. As Hungary is mainly a flat country, thus the agricultural technologies, machines, etc. were also adjusted to this condition. The adequate agricultural technology of the smaller, but still not insignificant hilly areas did not evolve, the same heavy machinery is at disposal, as on the plains.

Thus a main principle of sustainable economy is that the adequate use of every system, as well as the production structure and technology adjusted to it should be found. Where efficient farming is not possible with our current knowledge, the socially and environmentally most useful solution is to ensure the natural or close to natural status.

## **9. The principle of preserving stability and diversity**

The relationship between diversity and stability is obvious. The more elements a system comprises, the more stable it is. The various elements mean various relations and much organisation within the system and assume complicated relationships. Such system is difficult to remove from its stable status, as even if a few elements are destroyed, there are still many others that can comply with the changing environment. Let us remember that the main feature of every system is the adaptation to the environment. The ability for adaptation of a system containing more elements is thus obviously better, as there is a greater variety of responses to the changes in the environment.

This may be easier to understand through the example of economy. The economy with a diverse structure and production is more stable than that with a narrower production spectrum. Namely if market demands change, the need for some products may fall, but there are still numerous products with remaining demand. The farmers that grow only maize on their fields may lose their whole annual harvest in a dry year. The farmers growing only potato may lose a part of their profit also because the harvest has been too good in that year and the price of potato is suppressed.

Apparently in every such case two things confront each other. One is strive for stability, another is production. Obviously it is simple to cultivate huge plots with the same technology and then deal with the trade of only one product. In a good year the farmers benefit a lot, however they may also lose profit in a bad year.

When we examine the issue of stability and production at system level, then clearly all subsystems have to be diverse for the sake of stability, and among them there may be subsystems both with smaller and greater net production. Natural climax communities are stable and have small net production, while pioneer associations are less stable and have great net production. When we regard wheat field as such a pioneer system, it is understandable why people want to sustain these systems with great net production, as the output from such system is the greatest at one moment. When considering all habitats, in order to maintain stability as many habitat types and as much area have to be preserved as much is possible. On the other hand if we consider the production, then as much pioneer systems are needed, as much is possible. If we compare this to the principle of simultaneous use and preservation of natural resources, we should optimise the system so that it becomes sufficiently productive, but still adequately stable at the same time.

When we consider how poor our production systems are, we can understand why we live in instable systems. In spite of the great species diversity, we utilise only a fragment of them for agricultural purposes. Even on global scale, from the more than two million species on the Earth only a few species are involved in agricultural use. The picture is even worse when we look at the distribution of the few utilised species. For instance in Hungary only two species, wheat and maize cover more than 20% of the total area of the country.

The possible solution is to increase the proportion of species utilised for agriculture. This is good for the economy, because its stability enhances, and it is good for biodiversity, as it becomes the own interest of man to preserve these utilised species. The more species are involved in agriculture, the more species are preserved, while the proportion of monocultures decline.

The societal aspect of diversity is cultural diversity. Every attempt to eradicate or forcefully assimilate cultures into others tries to create uniformity, impoverish humanity and its future. The diversity of different cultures, natural systems, living creations, ideas and opinions all provide the possibility for a balanced development with perspectives in the future.

### **10. The principle of non-material benefit**

The quality of our existence is determined both by material and non-material values. In today world the main measure of value is money and the security provided by the material goods. These values determine the preferences of people. However we are getting poorer, the values of what we were deprived by the material world are missing from our lives. The feeling of mutuality, love, peace, the appreciation of health and the respect for natural environment are missing or depreciated.

Thus peace, mutuality, equality, love, knowledge, health, clean and aesthetic natural environment that are prerequisites for the material wealth of individuals and the society should be elevated to the level of values. The security provided by the natural resources, the preservation of the services of the environment, the drinking water, the clean air, the unpolluted environment, the aesthetic landscape are all necessary for our existence and cannot be measured in money.

There are also other values that cannot be measured in a material way but can be more closely linked to our economic successes, and for which nobody pays their price. Economics regards natural resources as economic capital besides labour and monetary capital, but it treats natural resources as free resources unlimitedly available.

When going to the market it is worthwhile to think over why the products cost their price. First the VAT comes to mind, and then the profit of the farmer, the invested capital, the seeds, artificial fertilisers, pesticides and wages, and the taxes paid on all of them. Is there any cost of the natural resources covered in the prices? For instance are the value of soil, the environmental loads caused by the artificial fertilisers and pesticides, the place taken away from nature and the ecosystem replaced by a monoculture paid for? Obviously nobody has ever paid for them.

Consequently the full value of natural resources is not paid for. The price is formed without taking into account the whole value of natural assets, thus no financial resources are created for sustaining them. Who and from what resource should pay for sustaining the natural resources? State collects money from citizens in various ways: in the form of taxes, charges, under even newer pretexts.

However during the reallocation of these sums hardly any or no money at all is spent on the preservation of resources. Thus the question is, whether new tax should be invented or the existing state revenues should be allocated in a way that enough is devoted for these tasks.

### **11. The principle of use within the carrying capacity**

“The Earth can satisfy everybody’s needs, but cannot satisfy everybody’s greed.” Clearly the carrying capacity of biosphere at a certain scientific-technological level limits the number of individuals that it can support. All three elements of this relation are in interaction with one another. If the population size exceeds the tolerance of the system, the carrying capacity will decline even despite the improving scientific-technological level. Initially this leads to the falling living standard of some groups of individuals, then perhaps to the decline of the population size. From a different point of view this relation points out however, that if scientific-technological level rises while the population size stagnates, the living standard of the population can be improved within the carrying capacity.

Carrying capacity shows how many individuals the given environmental system can support under the given conditions of use. Carrying capacity is a universal principle in nature, and it equally applies to the human population, just as to the communities of other species. Thus we can pose the question: how many people can the biosphere support? It seems that it can definitely support as many people as are currently living on the Earth. Is it sure?

No. The increase of consumption can derive from the increase of the population but also from the increase of consumption of the given population. The consumption can be increased in a sustainable way until the carrying capacity is reached, and after that point it is still possible to grow for a long time, but only on the expense of the reserves. After some time though, when the system is depleted, its carrying capacity will decrease. As we have diminished the available resources at the given time, the population will collapse and will fall eventually under the actual carrying capacity.

This phenomenon is vividly illustrated in the essay of Garrett Hardin (1968), where he calls the use above carrying capacity the “tragedy of the commons”. Picture a pasture open to all, where ten herdsman keep ten cows. Each animal weighs 1000 pounds. One herdsman though wants to double his gain and adds one more cow to his herd. The grass is now allocated among eleven animals, thus their weight decreases to 900 pounds, while the total weight of the cows remains constant. The herdsman with the two animals gains 800 pounds on this deal, while all the others lose 100 pounds each. Evidently the other herdsman get envious, and they would also like to have an additional cow on the commons. When four of them do so, they will increase their profit after the two animals compared to that after only one, because they will gain additional 200 pounds to the original 1000 pounds. However to reach this profit the other six herdsman should not complain about

their loss and should not want to add additional animals to their herd. If already five of them follow this course, no one of these five will benefit, only the other five will have a loss. Should those five herdsmen want to reduce their losses, they will likewise decide to keep more animals on the commons. In the case of 20 cows the total weight of the two animals of each herdsmen would be zero pounds, the yield would be -1000 pounds compared to the original profit. Thus if every herdsman, who feel encouraged by the profit of the others, adds one more animal to their herd, the field deteriorates, and so do the animals' condition. Hence the story ends with the 100% loss for the herdsmen.

### **12. The principle of connectedness into cycles**

The cyclical nature of material flow is realised both in the whole global system and its subsystems. The production, consumption and degradation processes ensure the material flow through the connectedness of the elements and local and global biogeochemical cycles. However the human economy is rather characterised by linear production and consumption processes. Due to linearity the efficiency is low, the energy loss is high and the waste from production is abundant. The degradation phase is almost totally lacking from the system, thus the waste from production is not utilised in the subsequent production process, but turns into unwanted waste to get rid of. This lacking degradation phase does not stimulate the improvement of the resources use, thus their sustainable use cannot be achieved either. On the contrary, the complete cycle involving production, consumption and degradation phases improves the efficiency of resources use, e.g. the surplus of production is fossilised in the biogeochemical cycles. Man does not grab even the existing opportunity to adjust his production waste to the degradation of the natural system, as this is made impossible through the elimination of waste and the artificial materials that are alien from nature.

### **13. The principle of subsidiarity**

The principle of subsidiarity means that decisions are taken at the level where the competence is the most verifiable, i.e. those communities that will be the most affected by the consequences should make the decision. The "local" attribute of sustainability possibly proved to be the most important in other approaches as well. The necessity of using local resources, the economic means adapted to ecological conditions, the preservation of local, adapted cultures have been already emphasised above, and in this relation the local decisions gain an outstanding significance. It should be noticed though that applying this principle does not bring necessarily good decisions towards sustainability. If the community does not have the capacity that enables them to realise the importance of the other principles and apply them in practice, the local decisions will only intensify the problems.

For implementing the principle of subsidiarity there is a need to weaken the central power, to ensure the right for healthy environment, to extend local knowledge, to democratise local public life, to raise environmental awareness.

The ecological foundations of sustainable development provide the basic principles of sustainable social and economic structure. Society is built up from individuals and their communities commissioned with rights. The interests of individuals get into conflict through the communities or just on the contrary identify with the interests of other individuals or communities. The selection of different interests is provided by the mutuality. The mutual generosity, the revival of community feeling in this structure is not a compulsory order of the community, but the possibility for existential expansion of the individual. Opposite to the monolithic power structure issuing obligatory orders to everybody, which leads to the demolition of mutuality and the generation of individual and group interests, in the new structure the individual desires become the organizing forces of the community and they care for their own businesses in the decentralized controlling system. Decision-making is placed where the decisions have their affects, the central responsibility is reduced, and so as the chances of mistakes deriving from schematising. The feeling of freedom and the actual involvement in forming the future of the community increases.

The better operation of local controlling systems relies on the more realistic knowledge and analysis of the local situation. The decision-making is preceded by the situation analysis, the recognition and elaboration of alternative solutions, and the reconciliation of interests. In every phase of the decision-making process it is necessary to reconcile the interests with the upper levels within the structure, to keep the principles of sustainability, and to reconcile the environmental, societal and economic interests.

The foundation of community can be the individual will, the feeling of belonging to somewhere, the identification with the most distinct interests, same activities, ethnical groups etc. Community building and the freedom of operation are in close relation in establishing a society with ecological objectives. First because the ecological society requires the existence of the societal, community basis, second because the level of local authorities and administration provides the opportunity for the real assessment and solving of environmental problems.

Every element of this structure can be linked to the reality of environment, society and economy. Thus not the artificial county borders, but the borderlines of concise self-controlling units suitable to the natural, economic, ecological, community and production conditions can be drawn. In this case the order and harmony is ensured by the necessity of continuous adaptation to the circumstances and not by an outside will. This heterogeneous system, which takes into account the local conditions, ecological circumstances, available resources, traditional production practices, the composition, qualifications and culture of population etc., is more stable and flexible than the monolith structures both in social and economic respect at the same time. Due to small economic units the economy is able to give flexible,

rapid, proper responses, and the transitions, changes do not cause great convulsions.

#### **14. The principle of co-existence**

Regarding the structural change towards sustainable development the main point is the replacement of the monolithic system with a diverse one, built up from small structural and economic units. Similarly to society, which is formed from individuals, families, their interest groups and spiritual communities; economy is also comprised of small economic units connected to individuals and their communities. In this case not the taking advantage of each other, but the co-existence with each other is realised.

The apparently discrete units, which complement and mutually serve one another, are eventually organized into greater units. This structure consisting numerous elements can behave as a system and realise a democratic control that is suitable for the given situation and not alien from the system. Control derives from the essence of the system, thus cannot be regarded as an artificial construction separated from it.

This is a vision of a co-existing society, in which the individuals, local communities and greater organizations complement, but not dominate one another. The main point of co-existence is the “live and let live” principle. It is not enough however to realise the co-existence within the human society, we also have to co-exist with the surrounding natural world. The principle of simultaneous use and preservation of natural resources is re-emerging in the “live and let live” principle of co-existence. Man has to acknowledge the necessity of co-existence with other creatures of nature, realising the innate fact of mutual dependence, as man is also part of the natural system.

Presently humanity lives neither with the surrounding other creatures nor with itself in peace, and not co-existence, but domination and the maintaining of dependence is realised. According to UN statistics the wealthiest 20% of the world population share almost the 83% of the produced goods and profit, while the next 20% also possess almost 12%. It is easy to admit, that if everybody lived as those belonging to the second 20%, only 60% of the currently used resources would be demanded. This means that sacrificing the wealth of the richest 20%, 60% of the world population would still live at an acceptable good standard, while the planet would also dispose of 40% of its burdens.

#### **15. The principle of heuristic self-organization**

The principle of heuristic self-organization is built upon the system theoretic and behavioural model of economic organizations. This principle basically refers to the nature and method of control. It assumes that there is a connection between at least two levels. This is the case in regional and rural development in the relation of the state (central) bodies and the regions, or in the relation of the regions and the

settlements. This principle is based on the recognition that in the case of particularly complicated organizations and dynamically changing environmental circumstances the numerous factors determining the behaviour of the system, their connections and interactions cannot be perfectly known and modelled. The controlling organization (at the upper level) should not therefore even try to control in the details. Rather it should shape the environmental circumstances of the lower-level organization, so as this latter reacts with a behaviour moving in the desirable direction, towards the desirable results with the help of its autonomous, self-initiating and self-improving activities. It is clear that the self-initiating behaviour of the lower-level organizations with great autonomy also results in numerous mistaken acts, but the activities evoked and maintained with the help of the environmental circumstances and the so called “integrated effects” will quickly lead them to the right solutions (heuristic search). This type of control clearly requires more efforts from the controlling organization than for instance if it controlled with the means of instructions (laws, decrees). As the system-theory defines this principle, this allows greater variety and diversity for the controlled organization, while at the same time it is possible to decrease the difficulty, diversity and consequently the economic burden (the costs) of the maintenance and operation of the controlling organization by the same proportion. It is also necessary to note here, that development stands for the exploration and realization of new activities and solution alternatives by its very nature. What new and consequently unknown is, cannot be planned in advance by e.g. the “regional development council”. The new things (information, acting possibilities etc.) can be only generated by the diversity of organizations. According to the heuristic self-organization principle it is inappropriate for instance to announce financial support opportunities for the construction of gas network within the framework of infrastructural development. Instead as an “integrated effect” only the support for the upgrading of the energy supply should be usually announced, since in several areas the local small power plants built upon the production of agricultural energy contribute better to the development of rural areas and to sustainable energy economy than the system based on imported gas. However it is possible that local communities would find even more reasonable, novel solutions. Several examples can be found in literature on the failures of regional development, which is based on deterministic view even though elaborated by “experts”.

## **The system-theoretic approach of regional development**

The system is a whole comprising parts, where the elements in their interactions create a new feature not belonging to the parts, but being a characteristic of the system itself. This feature is the organizing principle, the purpose of the system. The parts of the system are also systems themselves, the elemental forms of the whole system (Szakál, 1993). Integration is actually a system-theoretic concept, which means that the number and intensity of connections, interactions and

relations are increasing among the parts of the system, and so do the functional versatility of the system as well as the mutual dependence and determination of the elements, while the independence of the parts is decreasing. The precondition of integration is that other connections of the elements are getting looser, their number is decreasing (disintegration), and the difference between the elements is falling (Szakál, 2001).

Thus the rural region should be defined as the closely integrated system of natural, human and man-made resources existing in the rural region, and as the closely integrated system of agricultural, other economic and non-economic human activities, and environmental, landscape and natural management. It is also essential, that other activities present in the rural region can be only regarded as parts of the rural system if they bear the characteristics of rural areas and they are in close connection with other subsystems of the rural system, contribute to the undisturbed development of the whole and do not destroy its structure (Szakál, 2001).

Should we interpret the rural region as an integrated system, we have to determine the purpose or organizing principle of the system. It can be stated, that the rural region works properly and it is healthy and developed if maximum welfare is provided through the available natural, human and man-made resources. This should serve first of all the people living in the region, but in many aspects the whole society as well. Hence the healthy functioning and development of each region are also the interest of the whole country (society), therefore the whole society should provide help as well. Additionally the interest of both the citizens living outside the region and the whole country must be taken into account in the development concepts of the micro-regions. Thus the particular micro-region as the subsystem of the whole could fit into the system of the bigger region or the country in a harmonic (synchronised) way (Szakál, 2001).

The integrity of the system becomes obvious if it disintegrates by itself or as the result of affecting external forces. If a subsystem or a significant element gets damaged or destroyed, this appears in the disturbed function or destruction of other elements. This is easily recognisable in the decline of rural regions during the last decades. The drastic drop in agricultural employment led to the decay of the communities in the settlements and the decline of cultural-societal activities, but also to the destruction of natural values and landscapes.

If we regard a micro-region as a unified system, it is natural that all of its resources, minor activities, etc. should adopt in accordance with the development targets of the whole micro-region. This means that the development of each part must be subordinated to the targets of the whole. Nevertheless the contrary is also true, if the development of certain parts falls behind, it holds back or fully prevents

the results of other developments from evolving. This also implies that the subsystem with the weakest performance or the weakest connections in the system will determine the effectiveness of the whole system. To illustrate this through a practical example, if the processing capacity of a region is increased, but no harmonic growth in the production follows, the processing cannot run in sufficient capacity (and by this efficiently). Perhaps (if it affects products saleable in tourism) it decreases the tourist appeal of the region and may have various affects that result in undesirable consequences for the future. In accordance with the abovementioned the subsystems and also the connections among them should be examined separately on the basis of organizing principles and sustainability criteria.

### ***Targets and tasks of regional development concepts***

The Hungarian legislation on spatial planning created a legal framework for the establishment of micro-regions, the compilation of development concepts and their tasks. The spatial planning concept is a planning document, which forms basis for and affects the long-term comprehensive development of a country or region, and determines the long-term, comprehensive development targets of the region for the actors of sectoral and related spatial planning and development. In order to help the drafting of the concept and so as the different regions' concepts can be adjusted to one another, the structure (table of contents) of the concept is determined by law.

The regional development concepts are to create a system necessary for the healthy functioning of the region and to determine its organizing principle. According to the concept the subsystems have to be examined and the connections among them have to be revealed first. This is important to clarify, because we can only have substantiated expectations towards the concepts after this has been done. This is particularly essential in the case of this particular study, in which we carry out the sustainability evaluation of the concepts. In compliance with the abovementioned it is not the task of a concept to elaborate every detail of the accurate implementation, but it has to establish a basic system of connections. This greatly determines what kind of research methods and indicators we can use in investigating them.

As we have already pointed out, the healthy, well functioning region provides maximum welfare by the use of the available natural, human and man-made resources. Thus the gauge of the development is not the usual GDP indicator. However as the elaboration of a practical welfare index is difficult, first we must at least achieve that the GDP index is modified by subtracting the negative effects occurring in the rural area (population decrease, aging communities, loss of cultural values, destruction of nature etc.) and adding the positive services (landscape management, preserving and promoting cultural values etc.) (Szakál, 2001).

The determination and calculation of similar indicators require detailed and professionally accurate impact assessment in the case of every project to be implemented. This would mean a several-thousand-page study for every project even at micro-regional level. This is not a target of a concept to explore this, which also implies that we cannot get results by the use of GDP-like indicators. As the development plans present concepts, we have to study, if they can theoretically contribute to the emergence of well-balanced functioning regions that are viable on the long term.

So we assume, that a development plan can only establish the future of a region that is healthy and stable on the long run, if the sustainability principles are considered in the drafting of the concept. In this case there is a chance that the determination of the projects will also happen in accordance with the sustainability principles, i.e. the different developments can act towards sustainability in the region.

### ***How well founded is the development?***

The sustainability of the concept does not provide guarantee to the sustainability of the project to be implemented. Besides the principles necessary in the concept there are many concrete conditions that have to be fulfilled applying to the particular projects. The existence of needed conditions has to be proven by well-based impact assessments, and it is also necessary to examine how much the particular project contributes to the targets of the concept. To illustrate this through an example: it is possible that the establishment of a pig-processing farm is sustainable in a region, but it is necessary to know for this, if there is livestock in the appropriate vicinity for the expected processing capacity of the farm, if the production starts on the ground of well-based market research, if the returns have been calculated and what the expected affects are on local tourism, environment, nature, etc. Besides the business plan these impact assessments have to cover the management, the marketing, the quality control, the schedule of implementation, the capital need and every area that affects the long-term success of the project. In addition, the long-term regional impacts of the development have to be assessed as well. Should the information not be available, there is a risk that though the project theoretically depicts a positive future, the practical implementation does not contribute to the achievement of the targets set in the concept. In an extreme case it may also increase the instability and deteriorate the development potential of the region.

### ***The significance of connections with the neighbouring micro-regions***

As every micro-region is a subsystem of a greater region, naturally they cannot develop in isolation. However well based a concept may be, if it isolates the region from its wider environment the inviability of the region can be predicted with full

certainty. Should we like to adopt an integrated approach to regional development, we do not only need to reveal, establish and operate the connections inside the region, but also outside it. For instance, if the development plans of two neighbouring micro-regions with similar characteristics have not been harmonized with each other e.g. regarding the processing capacity development of two recently built fruit processing plants, besides the problems of fully utilising their capacities they may also get into a such a competition, which weakens both enterprises (and thus both micro-regions). Instead the products of the two micro-regions could be processed jointly, or they could be sold together in a complementary way through the reasonable co-operation of the two micro-regions. This is why every development that may have affects beyond the borders of the region should be harmonized with others.

### ***The necessity of harmonising the different development plans within the micro-regions***

Today there are few regions left in Hungary for which at least three development plans relating to different areas (nature conservation plan, urban planning concept, forest management plan, game management plan, water management plan etc.) have not been written yet. They often work out development concepts in specific fields, setting out goals independently without any regard to other regional plans. The main role of the complex regional development concept is to determine common goals, organising principles for the different regional activities through the harmonisation of these plans. However well based and attractive a tourism concept may be, if the forests are clear-cut, nobody will go on excursions in the neighbourhood. It may seem a silly example, and still it is unfortunately possible. It is a systemic problem when the organising principles of the subsystems are not harmonised and as a result they have adverse affects on each other.

### ***The link between the protection of biodiversity and rural development***

Nowadays the protection of environment and nature is getting more emphasised in development concepts. Sensitive natural areas that can only be managed under restricted environmental conditions are designated. Some areas are under protection with the conservation of natural values as the only concern. As nature conservation measures also have affects on the development of rural areas, it is worthwhile to present their relationship. Innate to rural lifestyle, local people have a closer and more indirect relation to nature. During the last decade (resulting from the decay of the rural area as a system) this relation became more unilateral, which led to the deterioration of natural assets. This was due to the clear subordination of natural resources to the different needs of production in the rural system (besides the break down of their other functions). Nature cannot be cut off from the rural

region, thus its protection cannot be cut off from rural development either. We can only secure the protection of biodiversity in the long run if society recognises its necessity, and it is ready for sacrifice for the sake of this goal. This applies to the wider society just as to the people living in the certain region, as the locals uselessly protect nature, if it is negatively affected by the wider environment (acid rain, the aggressive pesticide use of the neighbour etc.). In compliance with this, the protection of biodiversity can be only supported by rural development, if the need and wish for this is intensified in people by the effect of development. Besides raising awareness and supporting nature conservation, the promotion of an economic situation in that nature conservation also leads to an increase of income is essential.

### ***The structure of development plans***

As we have already pointed out, there is a clear structure available for the elaboration of development plans in Hungary, which means that the information is gathered by certain logic, which indeed affected the content of the concepts. Therefore it is necessary to examine not only the content, but also the characteristics of the structure, i.e. how much the structure (table of contents) of the present concepts help to fulfil the sustainability principles.

The situation analysis, the vision for the future and the elaboration of implementation needed for reaching these goals are the main logical elements present in every complex development concept. It is worthwhile to reformulate the indicators mentioned above in thematic structure and to adjust them to the structure of development concepts.

It should be examined,

1. ...if the situation analysis forms an appropriate basis for the identification of sustainable goals and their implementation.
2. ...if the vision for the future built upon the situation analysis are sustainable.
3. ...if the implementation of the programs accomplishes the vision for the future.

On the basis of the structure drawn up in advance the SAPARD strategic and operative plans also go into detail about the micro-programs and projects, as well as the timing and resources need of the implementation. Both sections contain important information concerning sustainability. It is obvious that every theoretic basis and study is futile if not sufficient time is provided for learning, collecting information, etc. during the implementation. The financial planning clearly shows, how much money is devoted to the plans that are often elaborated in details on paper, which is the best indicator of the real priorities of the planner.

## ***Creation of a viable vision for the future***

One of the most fundamental questions arising about rural development is why rural areas have to be developed. Both in Hungary and other countries indicators that are usually generated from the analogous urban indicators describe rural areas (population density, workforce employed in agriculture, infrastructure per capita etc.). These indicators do not represent the positive values of the rural areas, but give a comparison on how much the rural areas are “behind” the urban settlements. These figures will never achieve the standard of urban settlements, as due to the greater territorial dispersion originating from the nature of rural regions (less consumer per m<sup>2</sup>) and the differences of other characteristics there are transaction costs (the maintenance costs of the system) constantly higher in rural areas than in urbanised territories. Unfortunately there are often rural development targets identified that try to improve these kind of figures. There are many problems related to this. First these indicators do not show the real existing values of rural regions. Second as we have already mentioned due to the settlement-structure and other characteristics rural regions will be always behind the urbanised towns taking the presently calculated economic efficiency as basis.

We take the problem of sewage treatment from among the infrastructural developments as an example. Several times more sewage per territory unit is produced in cities than in rural areas, which makes the capacity use of sewage treatment surely better than in rural regions, where in relatively big area little sewage is produced. This difference also appears certainly in the finances. Visibly the rural areas will always lag behind regarding the economic “efficiency”, and what is more they would even lose their rural characteristics if these indicators got even. Staying with the example of sewage treatment, we can also approach the issue in the following way: sewer system is necessary because the households cannot treat the already hazardous waste they produce, consequently the problem is needed to be sold centrally. In rural regions though substantial amount of sewage can be reused or treated properly without centralisation (root zone purification). Visibly the urban region is in a disadvantaged situation, since if the central sewer system does not function the homes become “unliveable” immediately, while the rural inhabitants do not depend on such external factors. Not to mention the environmental impacts caused by the urban sewage treatment as compared to family scale solutions. Nevertheless the extension of sewer system in the villages is continuing, which, as we have seen, rises two problems; the sewer construction costs are definitely larger, and what is even more important, we do not utilise the values deriving from rural characteristics but on the contrary we create a dependence situation.

This is merely an example, after which many others could be enumerated in order to show the values of rural areas different from those of urban settlements. They have to be used and developed as only these could form the basis of a rural development plan. Instead targeting to improve the figures lagging behind from

urban point of view, it is much more important to develop the existing values of rural areas.

So what are these values and why do they have to be developed?

Clean air, silence, indirect relation to nature, the quality of human relations, the opportunities for considerable self-supply and numerous additional values characterise the countryside. Sadly enough, there is a tendency that these values are pushed into the background or disappear entirely. In the present consumer society one of the most dominant values is the level of income. The people move from rural areas into bigger towns, because there are the job, studying and cultural opportunities. Consequently the values of the countryside, which the children certainly do not experience in the classroom but in their everyday life, are not taken as values but as natural living circumstances, and they are not taught in schools any more. Besides we can observe the decay of our organic culture through the media and in our human relationships (not to mention the pastime opportunities of the youth).

The lack of job opportunities in the countryside can be also attributed to the fact that jobs can be more efficiently created in the urban than in the rural areas. We can call every job that does not rely on the characteristics of rural areas and does not have any connection with them an urban job. For instance a machine works does not have direct relation to its environment and to the values of the countryside, and it works more efficiently in more densely populated areas, as workforce is more easily available there. Several such plants went bankrupt in rural areas, and then it became clear that the unilateral dependence of rural people is similar. Unfortunately we try to develop and keep viable these areas by establishing more progressive, though similarly operating plants instead. By now we have reached the point, where the majority of people in rural areas cannot supply themselves because of the evolved dependencies. Thus we have to pursue the goal of providing opportunities for the people in rural regions, so that they are able to live and get along there by relying on rural conditions without the dependence on urban areas. (We deliberately do not talk about job creation, after all which farmer would regard their field as their “job”?)

Studying the GDP indicator it turns out that rural regions do not produce as much values as the cities. Can this mean that urban life is the desirable goal to reach? Can we say that the cities maintain the countryside? The answer is no. We can mention the situation developed after the Second World War in Hungary, when the people from the cities took every value from the urban areas to the countryside and changed them for “one kilo flour”. Where was the need and dependence more apparent, and who depended on whom? One serious value of the healthy countryside becomes obvious in this example, namely the stability originating from the relative independence and the buffering capacity that protects it from the

negative external effects. One could say that it only applies to food production, which could be also done by big agricultural companies, so the cities do not depend on the villages indeed. Unfortunately it has not been experienced anywhere in the world that big agricultural companies could produce without serious destruction of the environment (erosion, deflation, the pollution of groundwater because of artificial nutrient additives, etc.). On one hand it cannot adopt to the changeability of nature because of the pressure to increase the efficiency. At the same time these companies have to accept such market rules that do not make the compensation of negative externalities possible. Not to mention that every present large-scale technology greatly depends on external resources as oil derivatives or electricity, and the price of such external inputs greatly affects the efficiency of the company. (The connection of such energy resources with international politics can be also mentioned.) It is visible that an external price rise can easily turn the profitability of a company into loss making, especially because these companies keep the price gap to a minimum due to competition. The narrow price gap can only produce great profit if the produced quantity is huge, hence instead of quality production mass production can be the only strategy for them.

We have to develop rural areas in order to preserve these values, and we have to be aware that this is not only the interest of the countryside, but also of the urban areas.

How can we preserve these values, if we know that these characteristics only represent values for those who experience and appreciate them? The answer simply is that we can only achieve this, if there are people and communities living in the countryside. Currently a significant part of the people in the rural areas live there only under constraints, because their available capital (real estates, cash) is not sufficient to enable them to settle down in the cities. Should we accept that rural values can be only preserved if there are people living in the countryside, and this is the goal of urban people, too, the only target of rural development could be the enhancement of communities that want to stay and live there. Hence this should be the organising principle of rural development and everything happening in the region should be subordinated to this. Every other issue can be linked to this principle e.g. nature conservation, because whoever stays in the countryside voluntarily does not want to live in a destructed, desolate environment. Moreover they will participate in improving their environment themselves, i.e. they will develop the values of the countryside. (This also depicts the role of state in rural development a bit differently.)

In order that somebody would want to live in the countryside, one of the most essential needs is to provide appropriate living standard for their family and the opportunity to do what they like under rural conditions. The development plan reaches its goal if it assists the communities in this, while emphasising rural values

and not urban ones when the living standard is defined. Should the plans help the communities to identify common goals (and not to implement external goals merely), a community building process, which is detailed in the section on the heuristic self-organising principle and which is one of the most dominating motive in rural areas can begin.

Following this logic however, we also have to accept that “filling the rural areas with people” cannot be a target and the entire loss of population of some region with the total abandonment of agriculture is possibly the sustainable way in some cases. If the population loss of a region is against the interests of a smaller or larger community (nation, stratum of society), this certain community has to undertake to ensure the resources needed to establish and maintain life in that certain region.

## **The basic principles of the research methodology**

By now we have summarized the basic principles that contribute to the elaboration of a sustainable regional development concept. This section presents the methodology how these principles are studied in the micro-regional development strategies.

In order that we can assess the realisation of sustainable principles in the strategies, first the identification of suitable indicators should be done.

There are two types of indicators present in the study. One is the group of the so-called hard indicators, which can be measured by concrete numeral figures, for instance the number of livestock per m<sup>2</sup>. These indicators provide exact results and have units of measurement. Another group is the so-called soft indicators not giving concrete numeral figures, but indicating quality also in the form percentages. (For instance for the question: has the plan assessed the biological diversity? The answer could range from “not at all” to “yes, fully” and also as a percentage: 0-100%.) An important concern about both indicator types is that they should be measured objectively. It is more difficult in the case of the soft indicators; however, great efforts should be made to meet this requirement. We have already pointed out that it is not necessary to go into detail about the projects in a development concept, for which hard indicators would be most suitable, while on the contrary sustainability principles can be rather examined through soft indicators.

For the proper interpretation of the indicators the following should be considered:

1. The objective measurability of the indicators
2. The exploration of connections between the indicators
3. Preparing a priority list of indicators within the certain groups
4. The harmonization of various indicators with different measurement units, i.e. their unified expression in absolute numbers for the sake of comparability

Seven **question groups** based on the presented sustainability principles are compiled. Some question groups condense some closely related principles, e.g. we tackle the principle of the simultaneous use and preservation of natural resources and the principle of environmentally adequate use together. There may be questions referring to more important topics than others, thus they all have to be aggregated into one indicator within each group. The method can be taking the average of the indicators in one group, but sometimes there is a need for another

assessment method. In this study we regarded the questions equally important, therefore we used simple average calculation within the groups.

The seven question groups are:

1. The principle of integration
2. The principle of holistic approach
3. The principles of environmentally adequate and local resource use (the principle of use within the carrying capacity)
4. The principle of preserving stability and diversity (the principle of preserving the adaptation forms)
5. The principle of non-material values benefit
6. The principle of subsidiarity
7. The principle of heuristic self-organization

Adapting to the structure of the development concepts, all the questions target the situation analysis, the vision for the future and the programs of implementation. By this we can gain a picture e.g. how much the principle of integrity is realised in all these sections.

**The research questionnaire**

Number of question	The principle of holistic approach
101	To what extent does the situation analysis highlight the cause-effect connections and (environmental, economic, social) impacts of the revealed facts?
102	Does the plan outline the long-lasting (environmental, economic, social) effects of the determined goals?
103	Does the plan examine the expected long-lasting (environmental, economic, social) effects of the projects?
104	To what extent do the expected results of the development contribute to achieve the vision for the future?
105	Does the plan analyse the (environmental, economic, social) situation outside the region?
106	To what extent is the establishment of interregional connections outlined in the vision for the future?
107	Does the plan examine what effects the implementation may have on its wider environment outside the planning area?
108	Does the plan outline a monitoring system for the implementation?
<b>The principle of integration</b>	
201	Does the plan explore the connections between the different sectors?
202	Does the plan explore the connections lacking between the different sectors?
203	Is there a goal to establish connections currently lacking between the sectors?
204	Do the projects provide solutions for the establishment of connections currently lacking between the sectors?
205	Is there a goal to connect the development area to other areas?
206	Does the plan explore the possible connection points of the projects to other projects?
207	Does the plan examine what risk of the malfunctioning of a field may pose on the functioning of the whole region?
210	Does the plan assess the interregional connections?
211	Is there a goal to expand the interregional connections of the sector?
212	Does it examine whether the projects contribute to the development of the interregional connections?
213	Does the plan assess other development plans applying to the region?
214	Does the plan seek the possibilities to build connections with other development plans applying to the region?
215	Does the plan assess the current negative external effects?
216	Does the plan examine the potential negative external effects of the development?
217	Does the plan provide proper solution in order to avoid or lessen the negative externalities caused by the development?

<b>The principle of environmentally adequate and local resource use</b>	
301	Does the plan assess the ratio of local and external resources use in the current economy?
302	Does the plan prefer local resource use?
304	Does the plan assess the local resources available (including different types of landscape)?
305	Does the project build on the available local resources?
306	Does the plan evaluate the extent of current local resource use compared to their availability?
307	Does the plan evaluate the efficiency of current resources use?
308	Is there a goal to improve the efficiency of resources use?
309	Does the project improve the efficiency of resources use?
310	Does the plan examine the chances of the depletion of resources?
311	Does the plan examine the carrying capacity limits with regard to the planned developments?
312	Does the project provide proper solutions to maintain, renew and increase the natural resources?
313	Do the goals include the improvement of local ecological conditions?
314	Do the projects contribute to the improvement of local ecological conditions?
315	Are there indicators identified to monitor the changes of carrying capacity?
<b>The principle of preserving stability and diversity</b>	
401	Does the plan examine the feasibility of other alternative methods (in production, processing, services and education) for the development of the sectors?
402	Is there a goal to improve the development of the alternative methods in place?
403	Does the project contribute to the establishment of the alternative methods outlined in the vision for the future?
404	Does the plan assess the impacts of the alternative methods mentioned above?
405	Does the plan prefer the production, processing and service methods that are traditional in the region?
406	Does the plan assess the natural values and conditions?
407	Is the protection and enhancement of biodiversity included in the vision for the future?
409	To what extent does the plan assess the societal diversity of the region (nationalities, employment, qualifications)?
410	Is the preservation of societal diversity, its maintenance at a proper level and its promotion among the goals of the plan?
411	To what extent does the project contribute to the development of a healthy societal diversity determined in the vision for the future?
<b>The principle of non-material value benefit</b>	
504	Does the situation analysis assess the regional traditions and practices?
505	Does the vision for the future take the regional traditions and practices into account?

506	To what extent does the development contribute to the preservation and fostering of regional traditions and practices?
507	Does the plan assess the benefits and problems deriving from the attitude of local people?
508	To what extent does the vision for the future contributes to the awareness raising of local people that is justified by the situation analysis?
509	To what extent does the development contribute to the awareness raising of local people?
<b>The principle of subsidiarity</b>	
601	Was the opinion of the local people sought during the elaboration of the development plan?
602	Is there a goal to strengthen the rights of local people for participating in decision-making?
603	Does the plan enhance the possibilities of stakeholder groups for decision-making in the development of their own and of their community?
604	Does the plan assist local people in reaching their own goals?
605	Is the project supported by the local community?
606	Does the plan contribute to the development of communities to the level where they are able to participate in the decision-making?
<b>The principle of heuristic self-organization</b>	
701	Does the plan assess the activity and self-organization of the people in the region?
702	Is there a goal to improve the self-organization of local people?
703	Are there measures that promote the activity and self-organization of local people?
704	To what extent does the plan support local initiatives? (In other words, how flexible is the plan?)

The seven question groups outlined above are examined in the following sectors:

- Agriculture (including processing and sale besides production)
- Tourism (including the infrastructural developments connected to tourism, e.g. accommodation capacity increase)
- Industry (e.g. in handicrafts: raw material production, processing, sale)
- Services (information centres, counselling, cultural opportunities, entertainment, etc.)
- Infrastructure (road infrastructure, sewage treatment, heating, drinking water, telephone, etc.)
- Nature conservation (environmental NGOs, clubs, specific nature conservation projects, etc.)
- Education (basic education, 'Life-long' education)

The question groups have to be answered for each sector, by which we can gain a picture how much the sustainability principles are realised in the development of the specific sectors (regional subsystem).

There are numerous important questions related to the sustainability principles, of which some key topics are highlighted in this questionnaire. Aiming to elaborate a research methodology, we tried to make these questions easily answerable. The range of questions can be consequently widened and modified according to the subject of the evaluation.

The questionnaire follows the logic of the structure of the development plan, namely it splits the questions on the basis of the situation analysis, the vision for the future and the outlined projects. It is important to note that the questions on the situation analysis cannot be immediately answered, as only if we know the targeted development of the plan can we judge if the situation analysis is sufficiently elaborated. Thus some questions on this topic can be only answered after the second reading of the document, with full knowledge of the concept.

Scores ranging from 0 to 6 can be given to the questions.

- |   |   |
|---|---|
| 0 | This question is not relevant to the specific topic |
| 1 | Not at all (0%)                                     |
| 2 | Only to a very small extent (20%)                   |
| 3 | It occurs sometimes (40%)                           |
| 4 | Yes, usually (60%)                                  |
| 5 | Yes, in an overwhelming majority (80%)              |
| 6 | Yes, fully (100%)                                   |

Lower scores should be given to questions for which no information at all or hardly any is available. It also indicates to what extent the answer on the certain question is well founded, justified and thus expedient in the document. Higher scores should be given to questions that are well founded and elaborated to the extent expected from the plan.

There are questions that cannot be interpreted in the case of some sectors, we indicate this by scoring 0 point. The zero value does not count into the average, the question is regarded if it had not been posed.

It is often difficult to determine the score accurately, as it is possible that some opportunities, concerns to be taken into account are not mentioned in the plan. For instance we can score more points for the question “Is there a goal to connect the development area to other areas?” regarding tourism if we “know” that it is possible and justified to connect the tourism with agriculture, processing industry,

infrastructural developments, etc. Thus it is necessary to know the functional possibilities of the regional subsystems as well as their functional mechanisms.

When examining the programs (the implementation), the questions refer to the projects. It may happen that more projects can be found e.g. related to agricultural development, thus the answer to these questions must apply to the whole sector.

The objectivity of the answers can be best ensured, if a short explanation is added. This can be a reference to a page or paragraph that shows the idea affecting the evaluation the most, or this can also be some thought missing from the plan. The explanation can be useful for three reasons. First we can look it up in order to back up our opinion afterwards, second the results of the evaluating diagrams can be traced back easily and supported by concrete reasons, and third our evaluation becomes clear for others, too.

When filling out the questionnaire it is important to answer the questions in a consequent way. There may be questions emerging in relation to different principles that can be linked to one another. For instance if 1 point is scored for the question “Does the project provide proper solutions to maintain, renew and increase the natural resources?” certainly 6 points cannot be scored for the question “Does the plan provide proper solution in order to avoid or lessen the negative externalities caused by the development?” either.

## **The interpretation of responses**

The responses can be examined with the following methods.

1. **Evaluation of answers to specific questions in their relation to every sector** By this we can examine for instance how important the question a “Is the project supported by the local community?” is considered in the plan regarding the different sectors.
2. **Evaluation according to the question groups and sectors.** We evaluate the answers given to the seven question groups related to the certain sectors, i.e. we infer the realisation of the particular principle(s) in the certain sectors from the average of the answers in the question group. For instance we can conclude how much the principle of preserving stability and diversity is fulfilled in the planning of agricultural developments.
3. **Evaluation according to the sectors** With this method it can be pointed out, how much the sustainability principles are fulfilled in the specific sectors (by taking the average of the scores within the sectors). When comparing the different sectors, this method highlights the sectors in that the sustainability considerations were taken more into account, and the developments are better founded. In addition when amending the plan the less profoundly elaborated sectoral plans can be further improved.
4. **Evaluation according to the question groups** Taking the average of the results within each question group, it shows how much the certain principle(s) are realised in the whole of the document. For instance how much the holistic approach was adopted in elaborating the plan.
5. **Evaluation on the basis of the structure** In this case we examine how much the sustainability principles are altogether realised regarding the situation analysis, the vision for the future and the projects of implementation.

For the evaluation of the answers a simple Excel chart, which presents our opinion on the plan in the form of diagrams and average values on the basis of our answers is elaborated. (The Excel file can be downloaded form the website of CEEWEB: [www.ceeweb.org](http://www.ceeweb.org).)

The answers have to be fed into the questionnaire in the “questionnaire” worksheet of the evaluation.xls file. Apart from completing the questionnaire there is nothing else to do manually, the calculations are made automatically by the macro function of the program. The average of the question groups are calculated with omitting the 0 values, as these questions cannot be interpreted in the given context. The averages within the sectors and the question groups are calculated as appropriate, the program shows the results both graphically in diagrams and numerically in the table generated in the “calculations” worksheet. The averages of the question

groups within the different sectors are presented in the diagram of the “detailed” worksheet. The second diagram in the „principles” worksheet contains the cumulated average of the sectors, which reflects the realisation of the sustainability principles in the whole of the concept. The “sectoral” worksheet shows the realisation of sustainability within the certain sectors. The fourth diagram (“structure” worksheet) evaluates the sustainability with regard to the structure of the development plan, i.e. how much the situation analysis, vision for the future and the projects of implementation fulfil the sustainability principles.

## **The interpretation of diagrams**

For the proper interpretation we have to keep in mind that the method evaluates the concept and not the developments to be implemented in the future. As we have already detailed above, so that the implementation really contributes to the stability and the long-term development of the region, there are many practical aspects to be taken into account in addition to realising the sustainability principles. *This method wishes to evaluate how much the concept provides a basis for the long-term, balanced functioning of the rural regions.*

According to the scoring system the low score average means that the plan does not provide sufficient information on the extent to which the certain sustainability principle is realised. The low score does not necessarily mean that the given part of the plan is “unsustainable”. It does suggest however, that due to the insufficiency of information there is a risk that the considerations crucially important in setting a healthy development course for rural areas have not been taken into account in the drafting of the plan.

We can identify the bottlenecks of the certain sectors, i.e. what may limit the efficiency of functioning according to the Liebig’s law of the minimum. On the basis of these identified bottlenecks it can be highlighted which sectors of the concept should be further elaborated.

The averages within the sectors point out which sectoral plans were elaborated the least thoroughly in the concept, while the structural analysis shows how much the situation analysis, the vision for the future and the projects of implementation contribute to fulfil the sustainability principles.

## **The grouping of sustainability principles**

The questions target the sustainability principles. Some questions are explained in order to avoid the misinterpretations and the differences in the assessment deriving from them. Explaining the questions is one of the most complicated tasks of this study, as plentiful aspects should be considered. Some basic guidelines are given

for answering the questions, but further research is needed on the questions, their interpretation and the scoring. One of the best methods could be the evaluation of a development concept by more experts, because this reveals the different interpretations of questions, and thus provides opportunities for their correction and clarification.

The following should be considered when giving the answers:

1. No high scores can be given to questions on the situation analysis if the situation is only presented very superficially (e.g. “it is hardly possible to survive on agriculture work, because the products cannot be sold”). In this case not the real reasons and problems are explored, but only the current situation is described, on which no sustainable development strategy can be based.
2. About the questions on the vision for the future the main concern is how much the answers correspond to the sustainability principles.
3. Regarding the projects the attention should be paid to concrete things. For instance higher score is expedient to be given on the question “Is the project supported by the local community?” if it is concretely outlined (e.g. it is described in details that contacts have been established with farmers, craftsmen, teachers, etc. personally or through questionnaires) and not a far too general, meaningless explanation is given (e.g. there were negotiations on the program with local people).

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