

# National Framework Strategy on Sustainable Development of Hungary

*„We commit to promoting and safeguarding our heritage, our unique language, Hungarian culture, the languages and cultures of nationalities living in Hungary, along with all man-made and natural assets of the Carpathian Basin. We bear responsibility for our descendants; therefore we shall protect the living conditions of future generations by making prudent use of our material, intellectual and natural resources.*

...

*All natural resources, especially agricultural land, forests and drinking water supplies, biodiversity – in particular native plant and animal species – and cultural assets shall form part of the nation’s common heritage, and the State and every person shall be obliged to protect, sustain and preserve them for future generations.”*

(Quote from the Fundamental Law of Hungary)

# **Resolution 18/2013. (28<sup>th</sup> March) of the Parliament**

## **on the National Framework Strategy on Sustainable Development\***

The Parliament:

- in order to promote sustainable development, the possibilities of future generations and the long term responsible management of natural resources, as set out in the Fundamental Law of Hungary,
- in view of national and global challenges, as well as the international and common European goals on sustainable development,
- considering the compelling notices of the ever more frequent scientific results and forecasts on circumstances and processes endangering the living conditions of future generations,
- bearing in mind, that one of the main challenges of the democratic political regime in the beginning of the 21st century, is the correct evaluation and management of long term decisions effecting future generations,
- realizing, that creation of a sustainable society requires cooperation between nations, as well as between various stakeholders of the Hungarian society: individuals, communities, enterprises and government,
- considering, that ensuring sustainability requires the balanced conservation and development of all national resources (human, social, natural and economic), therefore requirements of sustainable development will provide each policy area with tasks,
- allowing for the experience gained by extensive social dialogue organized by the National Council for Sustainable Development,

passed the following resolution:

1. The Parliament adopts Hungary's National Framework Strategy on Sustainable Development (henceforth: Framework Strategy) for the period of 2012–2024, entitled „National concept on the transition towards sustainability”, contained in Appendix 1.
2. The Parliament confirms, that
  - a) principles and strategic objectives contained in the Framework Strategy, aiming at the long term, successful existence of the Hungarian nation, must be continuously enforced in legislation – among others in adopting the budget – as well as in creating policy strategy and programmes;

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The Resolution was adopted by the Parliament on the session of 25<sup>th</sup> March 2013.

- b) decisions of the Parliament and the Government need to be made with regards to measures and tasks recommended by the Framework Strategy.
3. The Parliament mandates the Government to
- a) establish a body of state secretaries, responsible for the coordination of governmental decisions effecting sustainable development, facilitating the realisation and enforcement of the Framework Strategy;
  - b) develop a set of indicators measuring sustainable development and ensure the regular establishment, calculation, assessment and reconsideration of the indicators;
  - c) enforce principles and recommendations of the Framework Strategy during the planning of the utilization of development funds available for Hungary at any point in time – especially during the preparation of the Partnership Agreement, Programmes and Operational Programmes in the period of 2014-2020, as well as during the allocation of the development funds still available in the planning period of 2007–2013 of the Cohesion Fund, the Structural Fund and other international and domestic support funds, and regarding the EU legislation proposals it should set aside funds for the pilot projects aimed at the development of sustainability (sustainable settlement models);
  - d) provide a summary every two years for the Parliament through the National Council for Sustainable Development about the governmental measures aimed at implementing the Framework Strategy – supporting the task contained below in paragraph 4. a) of this resolution.
4. The Parliament mandates the National Council for Sustainable Development to
- a) monitor the implementation of the Framework Strategy, endorse the review of the results and report to the Parliament every two years;
  - b) coordinate the review of the Framework Strategy every four years.
5. The Framework Strategy is to be revisited every four years and to be renewed, if needed – especially in case of a significant change in the condition of national resources, or in the direction of domestic or global processes, or in case of considerable changes in the international or European legal environment concerning sustainable development, and if new and significant scientific breakthroughs arise. The creation of a new national framework strategy on sustainable development may be initiated and passed by the Parliament on the recommendation of the Government, or the National Council for Sustainable Development, or the Members of Parliament.
6. The current resolution comes into effect on the day following the day of publication and at the same Parliamentary Resolution 102/2009. (XII. 18.) becomes void.

*Appendix of Parliamentary Resolution 18/2013. (28<sup>th</sup> March)*

# **National concept on the transition towards sustainability**

**National Framework Strategy on Sustainable Development  
2012-2024**

Passed by and recommended to be submitted to the Parliament by  
the National Council for Sustainable Development  
on the session of 16/May/2012.

Passed by the Parliament on the session of 25/March/2013.

## 1. INTRODUCTION

Human actions are generally aimed at the short term solution of current problems, however the chosen solution also has long term implications – in some cases favourable, but in many cases adverse. These unforeseen implications may not necessarily remain within the borders of one nation, they may exert regional or global influence as well. Consequences of these decisions affect the relations between social groups, or in international terms the relations between affected countries. Implications are different for everyone, and may affect future generations.

Growth or problem solving impairing future generations may take various forms, such as contamination or depletion of environmental resources, indebtedness, demographic deficit associated with an ageing society, or inertia (the problem of „lock-in”) caused by infrastructural investments planned for very long term operation. Problems within a certain generation mainly manifest in the growing disparities of the utilization of environmental resources necessary for reasonable living conditions.

Guiding principles of the transition towards sustainability are coinciding on the international scene, however, there is no one single recipe, therefore we alone can draw up Hungary’s own roadmap and strategy leading to sustainable development. The foundations are laid out in this Framework Strategy, which was preceded by the assessment of domestic non-sustainable processes and conditions, summarized in a document entitled „*Seeking the Future – Report for the Hungarian Society by the National Council for Sustainable Development*”, submitted to the Parliament in 2009.

On 1st January 2012 a new Fundamental Law came into effect, giving particular significance to the Framework Strategy by specifying numerous obligations in the area of sustainability, from reducing public debt to protecting natural heritage. The Fundamental Law lays down the basic values intrinsic to the transition towards sustainability, specifying in particular the principle of sustainable development. According to the Fundamental Law:

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This document functions as a **long term concept** in the system of public policy decision preparation and decision making. It draws up a framework with goals and priorities, supporting decision making, enhancing the creation of a goal-asset-deadline-financial

resources system within public policy strategies or plans aimed at underpinning the transition towards sustainability.

The Framework Strategy intends to **promote a common national understanding of sustainability**, which is not only a political and governance issue, but each individual, family, enterprise, civil organization should live by such values, make such daily decisions and take such initiatives that ensure the achievement of sustainable society.

## **2. GLOBAL CHALLENGES, EXTERNAL CONDITIONS OF THE NATIONAL SUSTAINABILITY TRANSITION**

World population has quadrupled during the last 100 years, life expectancy has significantly increased in all regions of the world, utilization of fossil fuels has become fourteen times bigger, and the global economic output has grown twenty two folds. The number and the rate of people living in extreme poverty have decreased over the past four decades. However, the average world data and the favourable changes in certain regions or in certain indicators hide the fact, that in the meantime the differences between regions and countries in terms of social and economic indicators have increased.

Nevertheless, economic and material growth has a price: we have relied on natural resources at an increased rate. According to some forecasts, the world will soon reach (or has already reached) the maximum of oil production, which will be followed by a 1-7% yearly decrease in the exploitable amount, while demand for energy resources will surge due to the boom in population and the rising need for higher standard of living. The era of continuously booming prosperity since the industrial revolution, based on readily available and cheap fossil fuels seems to be coming to an end.

According to the Millennium Ecosystem Assessment programme of the United Nations, **15 out of the 24 ecosystem services of the world have been significantly degraded** during the past half century. The carrying capacity of the Earth has been exceeded to a dangerous degree in three areas: the speed of the extinction of species, alteration of the nitrogen cycle, and the emission of greenhouse gases. According to OECD calculations, global losses and threats in biodiversity are mainly rooted in the changes in land use: involving natural areas into agriculture, deforestation, erosions caused by agricultural technology, as well as the growing demand for land by constructions and infrastructure. Climate change is also a great danger, which necessitates an even higher degree of global cooperation than the previous threats. It is clearly visible on a global scale, that humanity has „stretched its arms further than its sleeve reaches” by using and exploiting its natural resources beyond their ability to regenerate and renew themselves.

Furthermore, not only natural resources have suffered from overexploitation, since we have overburdened our socio-economic systems as well. In spite of the expanding global economy, maintaining and raising income levels on individual, as well as community basis is hindered by the fact, that as international competition is growing, employment

opportunities are shrinking. Caring for those excluded from the labour market is obstructed by decreasing community revenues, increasing expectations, as well as spiralling debt. Widening income gaps create breeding ground for social extremities, knowledge gaps increase, as well as inequalities in the access to information, resources, jobs, healthcare, training and education – even though right now is the time for a shift from creating well-being by exploiting natural resources to utilizing human and social resources at an increased rate, using the inputs of all humanity.

Hungary has also taken part in the global depletion of natural resources and the international trend of state indebtedness. With regards to certain resources, the direction of global and national processes differs: on a global scale the rapid expansion of the population is a major threat, meanwhile in numerous European countries and even more so in Hungary, the rapid decline in population causes problems.

We can witness numerous processes worldwide, which are clearly unsustainable and threaten to have dire consequences. By the second half of the 20th century, humanity has created such production and consumption methods, which require the ever accelerating exploitation of natural environment, the basis of human existence, resulting in the extinction of other species, changing the climate, depleting non-renewable resources. It has become obvious, that **with current common technologies and consumer attitudes it is impossible to satisfy the needs of well-being of both today's population of 7 billion and of the 9 billion expected around 2050** – our Earth is insufficient for that.

**Societies must change the values and goals** they have lived by until now: alongside increased well-being, it is also important to establish the conditions and limits that need to be taken into account, that should not be exceeded during the course of ensuring or expanding well-being.

Sustainability having significant external exposure, we need to be prepared, that international efforts for sustainability might not fulfil their objectives, therefore our priorities might slowly shift from prevention to adaptation.

### **3. INTERPRETATION OF SUSTAINABLE DEVELOPMENT**

#### ***3.1. Sustainability serving well-being***

According to the widely accepted definition of the UN's World Commission on Environment and Development ("Brundtland report", 1987) sustainable development is the „ability to make development sustainable - to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs”. According to the Declaration of the World's Scientific Academies (Tokyo, 2000) „sustainability requires to meet current human needs, while preserving the environment and natural resources for future generations.”

Sustainable development was initially defined in relation to the human utilization of the elements of the natural environment, according to which satisfying the needs of present generations is limited by the requirement to not leave future generations with depleted natural resources. Sustainability means the continuous renewal of humanity, responsibility for the future manifested in actions, adaptation to the changing environment, in order to conserve the quality and quantity of natural resources. Development means improvement in the process of adaptation.

This Framework Strategy employs the term of sustainable development in a more general sense, but not rejecting the primary significance of ecological limits.

We believe that with regards to the **development** of human society, it is an important principle for individuals to be able to decide autonomously about the meaning and content of well-being – within the boundaries of certain general social norms and national traditions. We also believe that human communities as well as a nation also have a concept of well-being (*public well-being*). By development we mean the expansion of conditions and opportunities related to the interconnected and balanced well-being of individuals, communities, nations and the entire humanity. We emphasize, that quality life has not only a material dimension, but mental and spiritual as well.

We consider public debates healthy about how to lead a quality life and about values by which social changes should be evaluated and assessed, thus providing basis for judging the direction and extent of development.

According to ecological observations, changes in living systems may only be considered as "development", as long as the rate of increase in the system's performance is in line with the availability of resources required for the renewal of the system. Economic system regularities suggest that needs can never be met entirely, since fulfilling human needs is always restrained by the scarcity and shortage of resources.

Therefore **sustainability** should be defined in a way that any generation, while striving to create their own well-being, do not deplete their resources, but conserve and expand them both in terms of quantity and quality for future generations. The interests of those unborn, and therefore without voting right, may only be protected by current generations limiting their own freedom through moral, constitutional or institutional restrictions. Boundaries need to be drawn up, which can not and should not be crossed, and own freedoms need to be limited in order to not succumb to temptations.

Even though the most common topic in the context of sustainable development is that of the technologies enabling it (renewable energy sources, recycling, etc.), creation of a sustainable society is a more wide scale and primarily cultural issue. The fundamental question is how a human community could be capable of a continuous and successful adaptation to the ever changing (economic, social-human, natural and constructed) environment, as well as how it is capable to admit to the requirement of limiting its own needs. Therefore sustainability is a new set of relationships between individuals, societies and the natural environment, where human actions are guided by the established values.

Humanity's response to this challenge is **cultural adaptation**: the necessary alteration, development, adjustment of values, institutions, socio-economic structures, scientific and technological knowledge, in response to external challenges, based on traditions, respecting and conserving values, safeguarding the social texture. This may be enhanced by developing and amplifying the belief systems of the members of society. Cultural adaptation does not mean allowing for any environmental change as a consequence of limitless actions, just because we may be able to adapt to it anyway. It should form part of the cultural adaptation to prevent the emergence of unfavourable conditions, which may later become external condition for future generations. **A nation's strategy of sustainable development is the concept of such cultural adaptation.**

### *3.2. Four primary resources that need to be sustained*

The resolution adopted at the UN General Assembly of 2005, reinforcing the Millennium Declaration of 2000, identified three interconnected and interdependent dimensions of sustainable development: economic, social and environmental.

The definition of sustainability employed in this Framework Strategy dates back to the original definition, attaching importance to all three dimensions, discussing each of them equally and in detail, complementing the social dimension with the human one – which is of particular importance in the case of Hungary.

One important experience of the not so distant past and present of the Hungarian nation, is that meeting the needs of future generations may be hindered not only by the qualitative and quantitative decay of natural resources, but also by the scarcity, depletion of other resources (population, economic capital). Based on these considerations, as well as on the experience of the common international discussions on sustainability over the past 25 years, a fundamental principle of the Framework Strategy is that the **creation of goods** – either products and services produced by market coordination or public goods provided by the state or other institutions – **essential for enhancing the material, mental and spiritual well-being of every generation, requires four basic, indispensable resources: human, social, natural and economic.**

Every generation needs **human resources**: knowledgeable and skilful individuals in appropriate quantity and in good health. Society cannot afford to lose the skills of the disadvantaged groups. Although there is no relevant statistical data, economic value of the human capital likely exceeded that of the material capital around the turn of the millennium, rendering humans the **most important resources of the nation.**

Well-being is impossible without **natural resources** in appropriate quantity and quality. The conditions of the natural resources is interconnected with certain issues of the highest strategic importance, such as food, energy and environment security, and their conservation serves public well-being, economic development and quality of life in the long term.

Ecosystem services provided by natural resources are direct and indirect benefits for society, produced by natural and human-regulated ecosystems. Amongst the benefits are provisioning services (food, animal feed, raw material), natural cycle regulating services (climate stabilization, pollination, flood control), supporting services (nutrient cycling, soil formation), and cultural services (recreation, education, art inspiration).

National resource management must include not only restrictions, but also measures to ensure the sustainability of long term resource supply in the case of exhaustible, non-living natural resources (mineral and energy resources), for example establishing strategic inventories or inventory accumulation capacity, securing multiple sources of supply.

The basis of a society's material growth is economic resources: **physical capital, financial capital as storage and transmitter of value, technological knowledge in the form of intellectual property and know-how, and built environment.** The technical standard of the means of production, the quality of infrastructure, the reliability of investment and credit institutions, determine not only the value of produced goods, but influence the scale of natural capital required in the process of production and consumption. Utilizing and realizing the full potential of human resources is also impossible without economic resources. One form of human capital is especially interconnected with the economy: entrepreneurial capital, encompassing entrepreneurial knowledge, experience and skills. **Entrepreneurs become the cornerstones of sustainable development by discovering the unexploited forms of value creation and managing the utilization of the majority of human, natural and human-created physical resources.** Their knowledge is vital in decisions concerning public affairs, and they play a crucial role in organizing and financing civil society. The conduct and opinion of successful entrepreneurs sets an example for the aspiring youth.

Moral norms and values, relationships and trust between individuals, as well as organizations, institutions, cultural activities and cultural heritage make up the **social resources** of a nation. Social capital is the result of historical development, therefore its quality is largely determined by the relation of individuals and organizations to the crucial stages of this development (national history), as well as to the intellectual and material recollections (cultural heritage). Common history, common traditions, common heritage and the responsibility towards passing all these on, as well as towards other members of society and future generations creates opportunities for cooperation, as well as for experiencing national cohesion and for strengthening identity, and plays a key role in the foundation and development of knowledge and in social inclusion.

Social resources are not only prerequisites of well-being, but also essential for the right decisions about the utilization of other resources. Individual way of thinking, values, attitudes and key competences may to a great extent facilitate or hinder the process of finding the right course to sustainable development. Therefore **prudent spending, long term planning, rational risk taking, capability for development and renewal are essential resources of sustainability.** Maintaining and expanding human, natural and economic capital practically always requires the cooperation of people. Since there is no cooperation without trust, **there is no sustainability without attitudes, norms and institutions supporting trust.**

It is the political virtue of individual members of the nation, along with political institutions based on wisdom that form the ultimate assurance of democracy, based on the political culture of the community. Political culture is derived from the European cultural tradition, the heritage of antique-christian-enlightenment humanism. Mitigating the tension and the contradictions between the short and long term consequences of our decisions, sacrificing some of the current consumption for the sake of protecting and developing national resources, as well as investments in the future, may only take up meaning within this aforementioned cultural medium, or in a tighter context within the Hungarian nation as a political community, including the transborder parts of the nation.

Requirements and conditions of maintaining resources are based on their relation to human society, whether they are external (original volume is independent of human actions) or internal (humanity is capable of expanding the volume). The external ones are the natural resources: society and economy function within the geochemical and ecological system of the Earth, as a subsystem. **Therefore the primary task with regards to natural resources is to respect the limits given by default. On the other hand, human, social and economic resources may be expanded and consumed or depleted capital may be restored to a certain extent.** Regarding resources, this systematic approach should be the cornerstone. However, it is not stipulated of all the above, that the value of natural resources should not be increased by improving the living ground of protected species, by the recreational utilization of nature, or by technological developments enabling the exploitation of previously unavailable mineral resources.

Nevertheless, it should be taken into account, that we may have sovereign influence on some domestic aspects of sustainability, but on others our influence may be limited. Among the aforementioned are our lifestyle affecting our health, our training and education system, the amount of natural gas that may be exploited from our territory and adaptation to climate change. On the other hand, our influence is limited with regards to climate change, Earth's population and successive migration processes, and the depletion of mineral sources not available domestically. **The Framework Strategy is built mainly around the issues of domestic sustainability, however, the goals laid out also mark the priorities that Hungary should follow in the course of international cooperations.**

Enforcing the requirement of sustainability means that future development may no longer be based on indebtedness or on the unlimited exploitation of natural resources (as constantly increasing exploitation of non-renewable fossil resources or food production in excess of the renewal capability of soils). Different and new ways of creating well-being must be discovered.

In summary:

**Sustainable development is aimed at enhancing a happy and senseful human life and at expanding public well-being while containing human actions within the limits of Earth's carrying capacity, maintaining and developing the quality and quantity of expandable human, social and economic resources.**

Our responsibility towards future generations commands us to **continuously protect, maintain and develop the four national resources**. Therefore, **sustainability policy is a group of political actions aimed at developing the resources of our descendants, stimulating investments with such an objective, as well as curbing decisions that would result in depleting resources**.

### ***3.3. The way towards sustainability: the balance between individual and common responsibility***

Maintaining and developing the nation's resources is only possible by numerous daily decisions of individuals, families, corporations, communities and various levels of government. The failure of the planned economy clearly demonstrated the limitations of centralising decisions on resource utilisation. Rationality, as well as freedom needed for a meaningful human life requires that faulty individual decisions are not superseded by centralised decision making, but by a **society, which acknowledges and supports individual and community decisions aimed at maintaining and developing resources**.

The two fundamental elements of a society promoting sustainability are the value system and the institutional system. On the one hand, individuals making decisions on resources need to follow appropriate values, personal goals and motivations. On the other hand, social rules must appropriately control or encourage decision makers. In other words, some elements of social capital play a key role in achieving sustainability.

The most fundamental question of the institutional system is what sort of decisions and responsibilities should be allocated to individuals, families, corporations, civil groups and various levels of government. **Only a balance of individual, family, corporate, civil and governmental responsibility can ensure the conservation and development of resources**. Unsustainability may arise from two disturbances: (1) responsibility is not taken by the individual decision making entities (value problem), (2) responsibilities are not distributed evenly between decision making levels (institutional problem).

Taking responsibility by a decision maker means both long term planning, saving and making sacrifices in the present, and at the same time taking the opportunities bravely, innovatively, putting trust into the future. This kind of behaviour should be supported the value and institutional system. Policies and the government may exert positive influence through institutions, not by directly „turning individuals virtuous“. Governmental programmes may only reach their goals, if they are supported by the value system of the society, which should be shaped not only by the citizens and their initiatives, but also by political representatives and state officials. On the other hand, the institutional system should be conceived not only by the government, but by private enterprises, civil organisations and other communities as well.

**The decision system anchoring sustainability must be based on the principle of subsidiarity**, according to which responsibility and decision making may only be

transferred from individuals to a higher institutional level, if the lower level is incapable of performing its duties. In other words, the burden of proof must be borne by those who wish to assign responsibility and decision making to larger groups and more centralised institutional entities. Four levels of responsibility and decision making may be defined:

- i. ***Individual decisions.*** The cornerstone of each successful society is taking primary responsibility for one's own prosperity. The community must provide opportunity and support for everybody to manage – in accordance with their capabilities – the resources necessary for life-long well-being. The most important institutional foundation ensuring the aforementioned is private ownership and individual rights. The ownership of divisible resources, whose units may be utilised independently (private goods) should be assigned to individuals. With regards to sustainability, the first benefit is individuals becoming strongly interested in utilising resources for their own long term prosperity (own future). The second benefit is that it is in the individuals' interest to sustain resources for others if they are able to take advantage of sale or heritage. The third benefit is that utilisation of private resources is usually accomplished through cooperation, that affect the participants favourably. Therefore, if conditions exist for free, voluntary cooperation, not only the owners will benefit, but others as well.
- ii. ***Family decisions.*** Personal prosperity requires family cooperation, which alone justifies the support of families. Furthermore, it plays a vital role in the transfer of resources between generations – it is an essential decision making mechanism, to assign this task to the families. The role of families with regards to sustainability is clearly fundamental.
- iii. ***Decisions of non-governmental (intermediate) institutions.*** Individuals and families utilise their personal resources mainly in cooperation with others. With regards to some additional resources in common use (non- or limitedly divisible), individual and family decision making is insufficient due to external influences. Autonomous communities, civil organisations, churches and corporations are important grounds of both types of cooperation.
- iv. ***Governmental decisions.*** The government – by maintaining the rule of law – plays a key role in drawing up the operational framework of individuals, families and intermediate institutions, as well as in promoting cooperation within the society aimed at the conservation and development of resources. In case decentralized cooperation runs into difficulties, direct governmental participation may enhance the cooperation by supporting, but not substituting the responsibility of individuals, families and intermediate institutions. (An example of this is the government taking a role in the pension and healthcare markets in response to their failures.) Conservation of resources in common use, serving many individuals or even a whole nation is also a very important governmental function. Such resources are language, cultural heritage, some natural resources, as well as certain aspects of resources yielding mainly private profit (medical services, public education as driver of social cohesion and economic growth).

Since short term optimisation associated with democratic political systems is conflicting with the national interest of long term resource accumulation and conservation, it is **necessary to develop an effective network of institutions** (constitutional provisions, automatic regulations, non-governmental organisations with limited authority), which are **capable of advising decision makers about the essential prerequisites for the appropriate conservation of national resources and in certain cases may be able to enforce the necessary resource protecting measures.**

We also emphasise, that ensuring sustainable development is not only carried out by such non-governmental mechanisms and institutions. A government empowered directly by voters, tackling merely current problems and on the other hand non-governmental control mechanisms and institutions independently ensuring sustainability, would be a senseless task distribution. The goal of sustainability transition is the creation of a political culture, where the electoral mandate assigned to representatives incorporates to a certain extent the demand for the maintenance of national resources, and public policy decisions constantly involve the analysis and assessment of long term consequences.

A complete distribution and specialisation of tasks would be inappropriate also due to the fact, that even though the Framework Strategy stresses the significance of the assessment of future investments, capital formation and resource conservation, it is equally important to cater for the well-being of present generations. Depletion of resources based on ignorance towards the future is just as wrong as the overrating of future interests and the resulting asceticism. Political communities therefore need to make decisions about their actions based on a careful consideration of both present and future interests, in the light of past experiences.

Last but not least, the system of responsibilities ensuring sustainability should be considered fair by the members of the political community. One main condition of this is rendering an ever growing part of the society capable of taking individual and family responsibilities (utilising and expanding their own resources). An additional prerequisite is sharing the public burden by each individual contributing proportionately to the maintenance of common resources.

### ***3.4. The vision of a sustainable society: Hungary in the future***

A nation is only capable to succeed continuously in the long term, maintaining permanently the conditions and opportunities of well-being, if its values, everyday actions, political culture and institutions reflect the need and ability to consider long term effects and if its consequent decisions are wise and balanced.

The result of the sustainability transition should be a harmonic **Hungarian society, following and preserving its values**, founding prosperity on the basis of value creating work, health, knowledge, ethics (based on faith, trust and respect) as well as family, community and national cohesion, and global responsibility.

Members of the sustainable society value **moderation** and **efficiency**. Individuals are linked by **mutual and solid trust**. Value based thinking and acting is founded on understanding, sympathy, affection and mutual generosity. The key to success is persistent **work**, resourcefulness, readiness for development, **value creation** for the own good as well as for the others and not acquiring resources created and maintained by others or selfishly exploiting the efforts of others in the family, community, corporate life or by the use of politics. Savings and expansion of wealth are more important than consumption, just as taking pleasure in what we have is more valuable than acquiring just for the sake of it.

Social institutions and governmental decisions are supportive of **individuals taking responsibility** and looking after their own well-being, and promote value-creating **cooperation**. Private property and individual rights are respected, as conditions for individual responsibility and prosperity. Civil initiatives, religious communities and business corporations – complementing and supporting each other according to their profiles – provide fertile ground for social cooperation; the government recognises and supports them. Social security systems – as pension and healthcare – are based on rational individual responsibility. The government's responsible budget management and monetary policy ensuring the maintenance of the value of the currency, create favourable conditions for individuals and their associations to be able to plan for the long term and reap the harvest of their efforts.

In order to preserve unimpaired mental, spiritual, emotional and physical health, an individual needs to receive recognition and to achieve **self-fulfilment within the community** and the society. Therefore the model of sustainable society should ensure a course of life, including employment and earnings, enabling such self-fulfilment.

Cultural activities, protection and value-based development of cultural heritage boosting identity, as well as cooperation with Hungarians living cross-border, all play a vital role in **reinforcing positive values** related to sustainability.

The lifestyle of individuals and the support of the natural environment, the community and the society enhance the **preservation of health**, individuals make use of the ever expanding educational opportunities, and they are open to lifelong learning. **Knowledge** is attainable for each member of the nation, and ensures equal right to prosperity for everyone as well as access to individual talent and diligence for the society, serving the public well-being. Scientific research and corporate innovation are well honoured, being the foundation of our economic development.

**Institutions of the society promote stable and long lasting partnerships, protect the families, so children are raised by parents living in a happy relationship.** The economic and management culture as well as the organisation of higher education provide support for parents to be able to raise children beside working or taking part in higher education. The state supports families in this through an extensive network of childcare institutions and a reliable child support system. The legal system reinforces the rights and obligations of parents concerning raising children.

**Economy operates respecting the boundaries of ecology.** Sustainable development is a management method that emphasises the long term, value preserving utilisation of natural resources, enhancing prosperity without destroying diversity, complexity and ecosystem services. People respect nature and natural resources, local communities are aware of the opportunities created by the natural resources at their disposal and organise their production, energy utilisation and consumption based on this knowledge. Diverse economic relations connect the cities with the rural areas, first the neighbouring and then the more distant towns, and this strong, internal relationship network provides a solid foundation for Hungary's accession into the global economy.

Local ecological problems and challenges are tackled by local communities and authorities, meanwhile central government manages problems on a national scale. Economic, scientific and institutional innovation provides powerful tools for finding the right solutions.

Sustainable national resource management

- contributes to the long term competitiveness of the Hungarian nation. Every nation caters to the interests of future generations. If other nations are better in looking after future generations, then in that seemingly distant moment our economy will again become vulnerable to capital owners and technology developers of other countries, thereby reducing our opportunities to vindicate our national interests.
- provides a better life for present generations. A broader supply of material and non-material services and products becomes available, based on a better availability of resources. A higher level of human and social capital ensures the richness in the non-material aspects of well-being.
- renders the nation more resistant to regional or global, environmental or economic crises and enhances the efforts to build protections against them.

Due to the geographical and historical background of Hungary, establishing the conditions for sustainability is not only a domestic task, but it requires cooperation with cross-border Hungarians, as well as with the neighbouring countries.

### ***3.5. Elements of the national sustainability policy and the structure of the framework strategy***

The national sustainability policy is made up of the following elements:

- (1) The status – decrease or increase, deterioration or development – of the national resources must be continuously monitored and measured by quantitative and qualitative indicators.
- (2) Based on the continuously reviewed indicators, taking into account the ever developing scientific results, the condition of the resources must be assessed, in order to recognise which are in a critical state, which are expected to become critical,

and which resources to develop most intensively in order to achieve the greatest national well-being in the long term.

(3) Reasons (motives) must be identified that contribute to the depletion or expansion of certain resources. The goal must be to restrain the motives causing depletion and support the ones that enhance expansion.

(4) Goals must be enforced during governmental, regional and local decision making, related to the creation of long term policy strategy, legislation, budget planning or urban development planning.

(5) Institutions and procedures must be developed, which ensure that decision makers are aware of the aspects and information related to the sustainable use of national resources during various levels of community decision making and that these aspects are taken into account.

The first National Sustainable Development Strategy adopted by the government in 2007, was concentrated primarily on developing the sustainability priorities with regards to various policy areas. The second – current – Framework Strategy is built around the introduction of the state of our national resources, the identification of procedures rendering future generations "indebted", as well as the concept of the institutional system enhancing the appropriate maintenance of resources.

Improvement of the non-sustainable conditions with regards to national resources requires the management of the root causes and main motives of procedures and cause-effect relations. A symptomatic treatment – even though creating an easier situation in the present – is of no help in the long term, as problems are recreated.

According to the approach of the Framework Strategy **the goal of the sustainability transition is to ensure permanent public well-being.** The sustaining of resources in the **long term**, which is the basis for the possibility of a good life, **requires governance, legislation and management that can balance that with the short term interests.** **Sustainability policy must be centred around individuals and communities,** as opposed to the previous approach concentrating on policy areas.

## 4. TASKS DERIVED FROM THE INTERNATIONAL AND EUROPEAN UNION PROGRAMMES, LEGAL AND POLICY AREA REQUIREMENTS

### 4.1. *The role of sustainable development in international programmes and legal instruments*

The foundation of the programme and legal instruments of the international cooperation dealing with the environmental and socio-economic development aspects of sustainable development is the documents adopted at the 1972 UN conference and renewed and amended at the UN conferences of 1992 and 2002. These documents contain on the one hand the principles of international cooperation related to sustainable development – standards for every country – and on the other hand the itemized description of the direction and scope of necessary actions.

The more specific, internationally defined environmental requirements of sustainable development are contained in various environmental policy programmes and treaties. In addition to the global action plans adopted under the auspices of the United Nations Environment Programme, the pan-European cooperation programme of „Environment for Europe” is also of great importance for Hungary. These multilateral international treaties – bearing in mind the prevalence of the principle of sustainable development – set out the mutual commitment of the contracting parties towards the conservation and sustainable utilisation of environmental wealth and natural resources in their common interests, such as plant and animal species, coastal waters, etc. On the other hand, international treaties regulate environmentally damaging human activities having transboundary and global effects (emission control of ozone depleting substances, greenhouse gases and persistent organic pollutants, prevention and alleviation of the harmful effects of industrial accidents, etc.). Hungary is a contracting party to numerous such binding treaties on the global, pan-European and regional level.

Broader social issues related to sustainable development (combating poverty, health protection, etc.), as well as human rights, economic and trade problems are also the scope of several international programmes – defining specific goals and tasks in certain cases – with Hungary among the participating countries. Requirements of additional important international treaties related to certain economic sectors (energy management, international transport of dangerous goods, etc.) also need to be taken account.

#### ***4.2. Requirements of the European Union related to sustainable development***

In the European Union, the commitment of the community and the member states towards sustainable development is expressed in part through various levels of legal instruments and in part through comprehensive and sectoral strategies, as well as policy programmes. According to the Treaty of Lisbon – and the amended founding treaty on the European Union – sustainable development is the fundamental goal of the European Union, including global and international aspects as well. According to the Treaty: „The Union shall work for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment. It shall promote scientific and technological advance. It shall combat social exclusion and discrimination, and shall promote social justice and protection, equality between women and men, solidarity between generations and protection of the rights of the child. It shall promote economic, social and territorial cohesion, and solidarity among Member States. It shall respect its rich cultural and linguistic diversity, and shall ensure that Europe's cultural heritage is safeguarded and enhanced. (...) In its relations with the wider world, the Union shall uphold and promote its values and interests and contribute to the protection of its citizens. It shall contribute to peace, security, the sustainable development of the Earth, solidarity and mutual respect among peoples, free and fair trade, eradication of poverty and the protection of human rights, in particular the rights of the child...”

Detailed regulations binding for all member states about the fundamental rights and freedoms of EU citizens are contained in the Charter of Fundamental Rights, which came into effect at the same time as the Treaty of Lisbon. These regulations – related to social rights, environmental protection, and responsibility towards future generations – are of utmost significance with regards to the principles and concept of sustainable development.

The specification of principles and major tasks required by the member states is conceived in the Sustainable Development Strategy, adopted by the EU in 2001, renewed and amended in 2006. The interrelated social, environmental and economic objectives of the community strategy, the operative goals and tasks defined with regards to the most critical issues are applicable for the sustainable development strategy planning and execution of member states. A general requirement set out in the strategy is that „sustainable development must be integrated into policy making at every level”.

Programmes of various policy area strategies and measures, as well as the related community legal instruments define numerous specific goals, tasks and instruments, although to various extent and quality concerning the objectives, concept and principles of sustainable development. In addition to the environmental measures framework programme and the strategic documents about environmental issues (programmes concerning biodiversity, climate change, etc.), a long line of programmes – social,

developmental, economic sectoral, research – contain significant sustainable development related objectives and tasks for member states. Among these are documents defining strategic requirements with regards to common energy management, agriculture, aid policy and research development. The majority of these objectives and tasks are supported by a myriad of legal instruments, ensuring the accountability of member states. These provide legal foundation for sustainability and its requirements to be represented in the judicial practices of EU courts.

## 5. THE STATE OF OUR NATIONAL RESOURCES

Unfavourable processes are dominant related to all four of our national resources.\*

*Human resources* The population of Hungary is declining at an alarming pace. We are lagging behind the leading countries in terms of knowledge expansion for innovations required for economic development and sustainable economy. The health of the Hungarian population is also worse than would be expected based on our economic development, and worse than that of the neighbouring countries. Regional inequalities within Hungary are significant in this area as well, and the expansion of knowledge and the preservation of health are greatly hindered by poverty and social exclusion.

*Social resources* A highly ambiguous cultural environment has evolved within the Hungarian society related to sustainable development, containing both positive and negative elements. We respect work, performance, nature, and praise saving, personal responsibility and compliance with norms. Hedonism, excessive reliance on the state instead of risk taking, are considered to be negative. In the area of social cooperation, trust in people and institutions is weak compared to international levels, however „particular” trust vested in the family and the tighter personal environment is strong.

*Natural resources* In line with international trends, natural environment is continuously being confined to ever smaller areas in Hungary as well. Close to 90% of natural ecosystem-services of the area of Hungary have already been lost, and the elimination of natural areas for the purpose of constructions is proceeding at a great pace. Irrigated land is one of the most significant resources of Hungary, however its fertility is jeopardised by degradation processes (soil texture deterioration, salinisation, erosion, reduction of organic matter content, etc.). We have to tackle numerous air and water pollution related problems and the adverse consequences of climate change must also be reckoned with.

*Economic resources* Numerous elements of the Hungarian corporate culture are supportive of entrepreneurial activities and a trust building network of personal relations has evolved within the corporate economy. However, international

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The Appendix I. contains a detailed situation assessment.

exposure of the Hungarian economy and its dependence on foreign capital and resources is high, coupled with significant foreign indebtedness. Sustainable economic development is jeopardised by regulatory disparities as well. Public infrastructure is extremely rundown in certain areas, and corporate R&D and innovation activity, as well as employment rate is low compared to international levels. The welfare system (the institution of career financing), which is the biggest part of public expenditure, is unsustainable, bequeathing significant hidden (implicit) debt to future generations.

## 6. GOALS AND MEASURES OF THE SUSTAINABILITY TRANSITION

The **overall objective** of the national sustainability policy is to **ensure the conditions of adaptability** to the ever evolving social-human-economic-natural external environment and the **quality improvement of the cultural adaptation** required.

The **system of objectives** regarding the four fundamental national resources is as follows.

*Human resources* The objective is a society with stable population, of healthy individuals, possessing knowledge and skills required to tackle the challenges of current times, gradually reducing social exclusion.

*Demographics* Increasing the number of births and decreasing the mortality rate are desirable and feasible goals in the medium term, resulting in reduced population decline and in the long term in stabilised population numbers [C1.3]<sup>1</sup>. Since the ageing of the population [A1.1] is inevitable, the health protection of the elderly is of great importance [C1.11-12], so is to ensure their role in social cooperation [C1.5]. Emigration poses grave problems, therefore its prevention requires the adoption of competitive salaries in severely affected professions [C1.2]. The development of an immigration policy must be initiated [C1.4].

*Health* Regarding the reduction of the mortality rate, the goal is to catch up with the Central European regional average [C1.13], at the same time to reduce the number of the largely lifestyle based, chronic, non-infectious cases, which account for the majority of morbidity [C1.12], to curb forms of behaviour which pose a health risk [C1.11], as well as environmental risk factors [C3.6].

*Knowledge* The objective is the creation of an education-training-development system (and cultural institutions), which enhances values, moral standards, social quality, emotions, community attachment, ability for systematic approach, as well as ensures knowledge, skills and competences required on the labour market, the

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<sup>1</sup> Codes – here and onwards – refer to Table 1. of this Appendix (see pages 48-53)

evolvment of new forms of social learning and the need for lifelong learning [C1.6]. The institutional system aims to provide equal rights for access in order to reduce social inequalities. Knowledge transfer related to everyday life strategies (simple agricultural, horticultural and housekeeping) serving sustainable development, also has great significance [C1.10]. Quality education is facilitated by increasing the time spent with education [C1.7] and by reducing the selectivity of the educational system [C1.8]. An additional goal is to render knowledge [C1.9] and innovation [C4.5] the main source of socio-economic development and to increase the number of employable people [C4.6].

*Social cohesion – Integration of excluded groups* Poverty or social exclusion based on ethnicity are the greatest barriers to creating a healthy [C1.11-13] society [C2.1] based on solidarity [C1.14] and knowledge [C1.9].

*Social resources* The objective is the creation of a culture supportive of sustainability and the enhancement of positive values, norms and attitudes with regards to sustainable society [C2.2]. Since the environment of every society is continuously changing, we need to adapt to these changes while keeping our identity. Therefore we need to maintain knowledge related to the existence and cohesion of the community.

*Strengthening the infrastructure of trust* Taking measures against corruption and rent-seeking is inevitable, and so is ensuring the following norms, the creation of a stable regulatory system with regards to socio-economic relations, as well as the strengthening of the reliability of governance [C2.4].

*Social conditions of work* Content and joy related to working conditions must be increased, and stress must be reduced by developing organisational culture [C2.5]. With the help of programmes aimed at reducing social exclusion [C2.1] the number of people able to join the labour market may be increased, employment rate may be improved [C4.6].

*Enhancing family values* Relationship and marriage related values need to be supported (in child raising, civil organisations and the churches) [C1.1 and C2.3].

*Maintaining the heritage of the past, developing cultural services* It is necessary to strengthen social cohesion, to reproduce trust, to maintain operational community networks, to enhance values related to sustainability, to revive cultural traditions, to appreciate cultural diversity, to preserve intellectual, material and built heritage as well as to promote its values and sustainable use. [C2.6]

*Natural resources* Environmental carrying capacity must be applied as a barrier of the economy. [C3.1 and C3.2]

*Biodiversity, renewable natural resources* Conservation of the biodiversity – which is completely unique in Europe – of the landscape and natural resources, and prevention of the depletion of ecosystem-services [C3.5] are all imperative. Maintaining the fertility of the soil [C3.4], reducing the rate of building up of natural

areas, as well as utilisation of renewable resources based on sustainable yield [C3.5] are of great importance<sup>2</sup>.

*Reduction of environmental loads affecting humans* Emissions endangering human health and quality of life must be controlled and appropriately regulated. [C3.6]

*Non-renewable natural resources* Rational and frugal management of mineral resources and energy sources is required. [C3.3]

*Economic (physical) resources* It is essential to maintain the appropriate level of sovereignty in economic decisions. The goal is the selective development of physical capital, the replacement of depreciated community capital assets. The strengthening of entrepreneurs, the gradual increase of domestic capital investments and the reduction of their foreign exposure are of high priority. It is essential to establish a rational balance between the utilisation of localisation and international economic relations, and to enhance local economic relations (e.g. city and its rural areas). [C4.1-2]

*Development of entrepreneurial capital and innovation, expansion of employment* The objective is the improvement of the business environment necessary for the sustainable development of enterprises [C4.4], strengthening the infrastructure of trust [C4.3], the increase of the efficiency of innovation expenditure and the use of resources [C4.5], the promotion of technologies reducing environmental load. [C3.2-3]

*Budget policy* Reduction of public debt to a reasonable level and permanently prudent budget management are necessary. [C4.7]

*Career financing* High priority must be given to restoring generational balance and to reallocating and gradually rebalancing resources between generations for welfare purposes (e.g. child support and pension). [C4.8]

The table in the Appendix summarises the current state of our national resources, as well as the fundamental processes leading to this state, their consequences on the conditions of quality life, and the appropriate response measures. The concise, undetailed information of the table is amended by the list of key areas, where interventions have a good chance to lead to the mitigation or prevention of non-sustainable processes. Sustainable national resource management may be supported by multiple areas and measures, a narrower approach may be justified by the following:

- (1) The Hungarian nation is currently a very long way from a condition that could satisfy sustainability requirements, therefore the achievement of sustainable development may only be performed gradually, step by step, and the **current Framework Strategy is the first step of the sustainability transition.**

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<sup>2</sup> Sustainable yield is measured by the growth of biologically renewable natural resources attained over a certain period.

- (2) Consequently, **we are focusing on those areas, which support sustainability, and where it is most likely to have the causes leading to unsustainability mitigated, eliminated.**

In order to achieve the objectives, an active cooperation of individuals, small communities (families, religious and civil organisations), enterprises, government, local authorities and the Parliament is required. The tasks facing us are detailed in the subsequent parts of this chapter.

## ***6.1. Responsibility of the citizens and families***

### 6.1.1. Human resources

#### *I. Population*

T1.1 Preserving values related to partnerships and the family is essential to the continued existence of the Hungarian population, as these values are the ones that contribute primarily to having children and therefore to expanding our human resources. Additionally, families are the fundamental institutions of society, hence without **passing on values to following generations** a vital element of the social tissue could get lost.

#### *II. Knowledge*

T1.11 The strategy forms a recommendation for citizens and families to **commit themselves to lifelong learning**. In the age of rapidly changing technologies, continuous adaptation achieved by learning is crucial for maintaining and developing competitiveness in the labour market. The increased number of individuals with higher qualifications is not only advantageous for people with better education, but the qualification of available workforce is also one of the main aspects with regards to high value added investments in our global economy. The family is a ground for starting the learning process, and the family environment largely determines learning related attitudes. Therefore families must pass on the **learning related values**, such as good performance in school (community), respect of knowledge, expertise and awareness.

#### *III. Health*

T1.17 **Health-conscious attitude** is an individual choice based on socio-economic conditions, however it has a major impact on the sustainability of national resources. Deteriorating health conditions not only reduce the revenue generation ability of individuals, thereby destroying human capital (and thus economic and social resources), but they also increase the burdens of other individuals and organisations of the present and the future by increasing the expenditure of the public health care system. Consequently, through a health-conscious attitude, individuals may have a positive impact on the well-being of their own as well as of other members of society. Elements

of this are healthy diet, regular exercising, or participating in prevention programmes and screenings.

### 6.1.2. Social resources

(T1.1 See above)

T2.1 Citizens may contribute to the strengthening of social cohesion and the sustainability of Hungary's institutions primarily by taking **individual responsibility**. Assisting disadvantaged groups (volunteering) enhances the improvement of their situation without the increase of reallocation, and also establishes relations between individuals living in different environments, strengthening **social solidarity**. More extensive **volunteering** in other types of social institutions (e.g. clubs, associations) also enhances relations between members of society and strengthens community cohesion, which indirectly contributes to a greater awareness of the values of democratic decision making. Such activities may serve as an example to larger groups, but families provide the opportunities for these values to be passed on between generations.

T2.2 Social cohesion may be strengthened by increasing the significance of the work and property related income of the elderly (insofar as health condition allows for it). **Social integration of the elderly** may be considerably improved by their continued participation in the reproduction and conservation of resources, since it provides opportunities for more frequent liaising with other members of society. Relying on own resources in addition to pension may improve **cohesion between different age groups**, by strengthening respect towards older generations and enhancing solidarity between generations.

T2.3 Law-abiding behaviour means not only avoiding activities harming other members of society: **respect for consensus based legal institutions** is an indispensable element of social cohesion, as these are the common foundations and regulations which provide the guidelines for predictable functioning and strengthening of interactions between individuals and groups. If by reducing the number of legal violations, the image of the society and other individuals is improved in the minds of citizens, it could lead to the strengthening of the trust infrastructure.

### 6.1.3. Natural resources

T3.1 Even though with regards to the conservation of natural resources, actions on the community (state) level are of particular significance due to market failures, citizens can also make fundamental contributions to minimising environmental hazards. Taking **individual responsibility to reduce environmental damage and to limit the use of scarce resources** on a wider scale of society, has higher efficiency than measures based on community decision, but eventually enforced by the state. Consequently if individuals seek to improve their own well-being while respecting the conditions of environmental

sustainability, it will reduce related expenditure required on the community level. Such behavioural patterns may be acquired within the family itself as well.

#### 6.1.4. Economic resources

##### *I. Entrepreneurial capital, innovation, employment*

T4.2 **Corporate values** may also be primarily bequeathed within the families, where entrepreneurs have the opportunity to pass it over to the following generations. Conservation and development of entrepreneurial capital may thus be ensured, as well as that citizens of the future – even the non-entrepreneurs – consider businesses more and more as value creating members of society.

##### *II. Macroeconomic balance*

T2.2 **Increasing the significance of the work and property related income of the elderly** enhances not only the social capital (see above), but economic sustainability as well. The work and property related income of the elderly reduces the need for redistribution, as well as the production of implicit public debt. This has a positive impact on the budget balance, whereas lower burdens on younger generations and businesses have stimulating effect on employment and investments.

T4.1 Prudent and forward-looking management is a matter of individual assessment based on principles related to private property. Notwithstanding, **financial awareness** is an important value and should be more widespread, since the lack of it in the majority of the population may lead to widespread indebtedness and general economic imbalance or crisis. At the same time, **savings** contribute to economic development through the financial intermediary system. Therefore the Framework Strategy recommends to families to bequeath such values to future generations, in order to prevent Hungary – developing in a sustainable way – from becoming vulnerable to financial crises.

## **6.2. Our businesses promoting sustainability**

### 6.2.1. Human resources

#### *I. Population*

T1.2 Our businesses can actively contribute to the sustainability of the Hungarian population by providing for the ethos of **family-friendly workplace** as part of their corporate social responsibility. In addition to increasing the attractiveness of the particular workplace, it **encourages having children while working**, thus strengthening Hungarian human capital – favouring future enterprises as well.

#### *II. Knowledge*

T1.12 The **training of employees** is essential to maintaining the competitiveness of a business and at the same time increases the available human resources in Hungary. Employees need to be encouraged to participate in trainings by emphasising the importance of lifelong learning. It is particularly advantageous to the human capital stock of the individuals and the country to gain non-company-specific knowledge, since it enables individuals to acquire resources that can be utilised in different market conditions as well.

#### *III. Health*

T1.18 By **improving work conditions**, corporations contribute to preserving the health of employees. It is not only important with regards to jobs involving health risks, since work related stress is among the most significant factors damaging health and thus the country's human resources. Businesses can contribute to the improvement and long term sustainability of the country's human resources by **transforming work and organisational culture**.

#### *IV. Social cohesion*

T1.25 Corporate social responsibility must involve eliminating every form of discrimination in the workplace, as well as enabling the **employment of disadvantaged groups**.

### 6.2.2. Social resources

T2.3 By **law-abiding behaviour**, corporations, just like individuals, may contribute to the expansion of social resources, since it enhances society's trust towards them, reducing the transaction costs of everyday market processes. The latter means that consumers react with greater confidence to such market signals as prices or

advertisements, thus devoting less energy to scrutinising the reliability of the particular business.

T2.4 As enterprises are vital players of society, **improving the trust** towards them is an essential element of strengthening the trust infrastructure. Businesses can directly enhance this by liaising with other – not necessarily market (e.g. civil) – members of society, and by supporting social causes.

### 6.2.3. Natural resources

T3.2 Businesses may enhance the reduction of environmental damage by **supporting environmental organisations and activities**. The latter may include environmental campaigns, protection of endangered areas and species, or rehabilitation of damaged areas. These activities may contribute to increasing trust towards corporations. (see T2.4).

T3.3 During everyday activities, corporations may contribute to the conservation of natural resources by switching over to environment-friendly technologies and eventually by **reducing the consumption of natural inputs and pollution**. This may be achieved by improving resource efficiency, switching over to less polluting technologies and by minimising the damage caused by emissions. The first scenario (active control) means reducing the quantity of the pollutants and waste emitted, whereas the latter case (passive control) involves the neutralisation of harmful substances and processes created as a result of the activities (including appropriate waste management).

### 6.2.4. Economic resources

#### *I. Entrepreneurial capital, innovation, employment*

T4.3 Even though the sheer existence of businesses already contribute to value creation and the strengthening of economic capital, their independent responsibility taking may further improve the sustainability of domestic economic resources. **Giving preference to domestic suppliers** and primarily to **local production systems**, as well as **strengthening local and regional economic relations** may in the long term benefit people living in Hungary by providing them with a higher proportion of the added value of production.

#### *II. Macroeconomic balance*

T4.9 Rent seeking in brief means that instead of value creation, a certain socio-economic player is using resources and the contribution of the state to exclude other players from certain market opportunities. In case of **rent seeking** economic resources are not used in a value creating way and limited competition is disadvantageous for consumers also. Therefore the Framework Strategy's recommendation to businesses is to **avoid** such activities.

### ***6.3. Recommendations to our small communities, civil organisations and religious communities***

#### **6.3.1. Human resources**

##### *I. Population*

T1.3 The majority of our small communities, civil organisations, churches and religious communities are living by values related to the **strengthening of families**. According to the recommendations of the Framework Strategy these values should be followed and represented in public, since positive attitudes related to partnerships and the family may be strengthened in citizens identifying with organisations of a wide base.

##### *II. Knowledge*

T1.13 Increasing the efficiency of the institutional system producing knowledge is mainly the task of the state (see below), however it is also recommended to various non-profit organisations to maintain and even increase the aforementioned efficiency. The fundamental objective of such institutions is the **development** of the human capital that is expressed in **knowledge**.

##### *III. Health*

T1.19 Certain organisations, either as their sole activity or in addition to their other tasks, established the **improvement of the population's health condition** as their objective, which may be achieved through organising prevention programmes or screenings. Respecting the efforts made so far by these organisations, the Framework Strategy recommends that such activities be continued.

T1.20 A health-conscious lifestyle may be in many ways connected to the activities of social organisations with various areas of activity, such as nature preservation, sports or social issues (e.g. assisting children, elderly, disadvantaged groups). Therefore the Framework Strategy recommends the **representation of health-conscious behavioural patterns** during the course of the organisational activities.

##### *IV. Social cohesion*

T1.26 Civil organisations, churches and religious communities play an ever increasingly significant role in the **integration of socially excluded groups**, which represents one of the key areas of the sustainability transition.

### 6.3.2. Social resources

T2.5 Social organisations may contribute to strengthening the trust infrastructure by **enhancing the culture of integrity** and **combating corruption**. This activity may take up different forms, since in addition to anti-corruption communication campaigns, organisations may be able to exert civil control of governmental levels, as well as to inform the population.

T2.6 Churches and civil organisations, by their sheer existence contribute to the **strengthening** of social cohesion and **trust between people and groups**. By supporting and communicating the values of independence and individual responsibility, non-governmental organisations may also strengthen citizens' efforts for self-organisation, their commitment to their own interests and values, and thus the more efficient operation of Hungary's institutions.

### 6.3.3. Natural resources

T3.4 The objective of economic sustainability is reflected in the value system of numerous organisations. The importance of the **conservation of natural resources** is articulated not only by the churches, but it is also represented in the everyday activities of community developmental or agricultural nonprofit organisations.

T3.5 The main goal of many organisations is the conservation of natural resources of a wider sense, therefore the sheer existence of such organisations already contributes to the prevention of the degradation and depletion of these resources. The organisations have many ways to support this objective, such as **promoting the values of environmental sustainability** (e.g. campaigns, pilot projects), preparing recommendations for governmental players or taking steps to prevent the extinction of protected species. The Framework Strategy respects the efforts made so far by the organisations, therefore recommends that such activities be continued.

### 6.3.4. Economic resources

#### *I. Entrepreneurial capital, employment, innovation*

T4.4 Social organisations may contribute to the expansion of Hungary's economic resources by strengthening the trust towards entrepreneurs. Open **cooperation with businesses**, promotion of widely supported issues may enhance the social respect of entrepreneurs. Such cooperation may also enhance finance raising necessary for the operation of civil organisations.

## *II. Macroeconomic balance*

T4.10 Nonprofit organisations can contribute to the establishment of macroeconomic balance by **promoting financial awareness**. In addition to organisations dedicated exclusively to transferring knowledge related to this area, financial awareness may also be promoted by other organisations in the areas of education, training or social services.

### **6.4. Tasks of national and local governance**

The public institutional system ensuring the execution of measures should be based on the concept of „efficient state of the right size”. At the same time, fundamental structural changes are needed with regards to the cooperation between ministries and the central and regional administrative bodies, as current policy based planning and legislative practices may jeopardise the multi-policy objectives of sustainability. Executive measures must constitute to such a harmonised and inevitable planning and control system, which pave the way to sustainability. The next paragraphs evolve around the tasks of the central and local governmental bodies related to the conservation and development of our national resources.

#### 6.4.1. Human resources

##### *I. Population*

T1.4 Wage differences are so significant in many professions of the European Union, that a large number of Hungarian professionals decide to leave the country out of desperation due to the difficulty of earning a good living at home. Therefore governmental measures aimed at providing **competitive salaries** also enhance the preservation of human capital and the population. Such measures may be directly implemented by a wage increase in the public services professions hampered by emigration.

T1.5 Emigration also characterises those professions, where the work force are not necessarily public employees. In such cases providing **reductions in public contributions** may enhance a raise in the net wage of employees, thus increasing incentives to keep them in the country.

T1.6 **Measures supporting families and child raising** could be one of the main driving forces in the mitigation of population.

The government may help families to suffer less of the income loss associated with having children, and contribute to the utilisation of the human capital expressed in the professional knowledge of the parents, by **increasing the number of day cares** and thus allowing young mothers and fathers to participate in the labour market.

It is essential to establish a **stable and reliable family support system**, where the respect towards the role and responsibilities of parents is expressed through universal family support policies available for all the children. The implementation of this measure needs to take into account the balancing of the generational accounts. (T4.11 asset)

T1.7 Providing **support for companies based on human resources** is also a valuable asset for a successful sustainability transition. Tax relief or support for internal or outsourced trainings can generate an increase in the human capital of the employees. Corporate social responsibility (CSR) should be more focused on promoting family values and enhancing the balance between work and family. The government can contribute to this on the one hand by defining priorities and patterns related to sustainability, on the other hand by supporting corporate programmes of such cause.

T1.8 It is necessary to reinforce parental responsibilities, **long-term commitment** and rights at the same time, in order to promote having children.

T1.9 **Parents raising children must be protected in work related regulations as well.** This has a positive effect on mitigating population decline, as an appropriate regulatory environment can prevent people from having to choose between having children or a career.

T1.10 **Individual efforts for raising children** (number and qualification of children raised) **should be taken into account in pension related regulations**, in order to encourage people to have children. The implementation of this measure needs to take into account the balancing of the generational accounts. (T4.11 asset)

## *II. Knowledge*

T1.14 **Improving the efficiency of the institutional system** producing, disseminating and utilising **knowledge** enhances the accumulation of domestic human resources. The objective of increasing domestic human capital may be realised by establishing an education-training-development system (and cultural institutions), which promotes values, moral standards, emotions, community attachment, ability for systematic approach, as well as ensures knowledge, skills and competences required on the labour market, the evolvement of new forms of social learning and the need for lifelong learning.

In addition to increasing the time spent with education, the other important factor of improving the quality of education is the **reform of teacher training** and **improvement in the recognition of the teaching profession**.

The **role** of schools related to promoting **equal opportunity** should be strengthened, and the **highly selective nature** of our school system should be **alleviated**. Increasing the efficiency of acquiring knowledge may be possible by an integrating educational system promoting mutual acceptance, responsive to the various needs and skills of children and open towards families.

T1.15 **Supporting RDI activities** conducted by universities, research institutions, corporations and various collaborations also develops domestic human resources. This newly produced knowledge develops not only the human capital of the supported research staff, but indirectly the other national capitals as well, through increasing the economic competitiveness of domestic businesses.

T1.16 **Developing human resources** is possible not only in educational institutions, but **in other cultural institutions** – such as public collections and community culture centres – as well. These institutions, having the right financing, may launch programmes that can attract a large volume of the population. Participants can acquire new knowledge, familiarise themselves with the opportunities provided by the institutions and may develop their social relations. It is recommended to improve the cooperation of educational, training and cultural institutions, in order to develop the core competencies of the Hungarian population.

### *III. Health*

T1.19 Improving the health of the population provides towards the development of human resources, which may be assisted by the government through the launching of **public health and prevention programmes, screenings**, and through supporting activities which promote a healthy lifestyle.

T1.22 The most effective way of preserving health is **prevention and health development** conducted in various settings. It is made possible by disseminating knowledge related to healthy lifestyle, however, taking part in education is by itself a contributing factor to a healthier lifestyle (according to international research, globally and on average, each additional year spent in education decreases the mortality rate of women by 5-10%). Environment-friendly businesses may be established to support spare time activities enhancing health improvement.

T1.23 **Information, ban or taxation related to products posing health hazards** are helpful assets in improving the health of the population, since they erode the advantages such products may have in price competition and build up their disadvantages. This would not alter the fact that the consumption of such products is the responsibility of the individuals, but asymmetric information and harmful effects related to the products may be reduced by these measures.

T1.24 **Modernisation of the health care system** is of particular significance to the government, in order to be more efficient in managing the ever changing and growing need for care, due to demographic ageing. This contributes to increasing the years spent in health and at the same time to the sustainability of the care system. It has become obvious by now, that demographic ageing induced growth and changes in the need for health care and at the same time limited funding sources are contradicting conditions, which can only be resolved by the establishment of restructured health care systems able to adopt flexibly to future needs, which is the only solution to ensure the financial sustainability of the system.

#### *IV. Social cohesion*

T1.27 In order to reduce **child poverty**, it is essential to intervene at the earliest possible age, so the age group of 0-3 years and their parents must be provided with the access to medical, care, developmental and social services, and parental competencies need to be enhanced. Therefore a stronger collaboration of local services is required. Providing nursery school access for disadvantaged children from the age of 3 and later on access to quality, integrated education is essential for creating a strong foundation for a successful school career and for the mitigation of dropping out.

T1.28 **Paying special attention to disadvantaged social groups** – especially the Roma – **and regions, as well as to combating poverty** is important for the government not only from the aspect of human resource development, but also to enhance social integration. The population of excluded regions have little chance of breaking out of extreme poverty due to the lack of basic infrastructure, whereas the lack of work aggravates segregation in all areas of social life (e.g. value system, culture). Extreme poverty also undermines the faith in the prevalence of social justice. Well planned, complex programmes related to education and training, health care, economic development and housing aimed at these regions also serve the purpose of social cohesion.

T1.29 Programmes aimed at **job creation** and **mitigating social exclusion** (such as improvement of public services) enable the increase of the pool of citizens available for employment. In addition to strengthening social cohesion, it also increases human capital and decreases the number of dependents, thus expanding economic capital.

#### 6.4.2. Social resources

T2.6 Although independence is part of the value system of the Hungarian society to some degree, the demand for state presence is significant. In case of certain tasks that can be completed more efficiently by individuals or small communities, facilitation of sustainability requires the reduction of state responsibility and the **application of the principle of subsidiarity**. It is necessary to promote attitudes, motivations, personal responsibility related to independent decision making. Albeit the transformation of individual and social values is a slow process, the government can facilitate it by the public promotions of such values and by supporting initiatives aiming to communicate them (e.g. self-help). Governmental measures should support personal responsibility in the areas where decentralised market cooperation between individuals and their groups are not efficient. It means that in areas where certain goods are provided and redistributed by the state, maintaining individual awareness is necessary. Promoting individual responsibility also enhances the awareness of citizens about the consequences of decisions related to goods redistributed at the community level on their own life and on the society.

T2.7 The creation and operation of **social organisations** (churches, civil organisations) is a significant goal by itself, since these organisations provide opportunities for people to

exchange values, to maintain social relations – not only within the community of the organisation but outside of it as well. **Ensuring the regulatory environment** and the **support** for such organisations is an important governmental task. These small communities may also provide efficient control for community decision makers, as it is easier for them to represent widely accepted values thanks to their concentrated resources.

T2.8 **Supporting educational institutions, civil organisations and churches in their activities of communicating family values** may also serve as a catalyst for social sustainability. While stressing the importance of family values, their significant role related to sustainability should also be articulated in public development and education institutions. One helpful tool could be the amendment of school curricula with the subject of sustainability. Supporting organisations communicating the values related to partnerships and families contributes to social sustainability in two ways: by shaping views and by reinforcing civil initiatives and social cooperation.

T2.9 Social sustainability is served by **enhancing the culture of integrity** and by the government **combating corruption**. Corruption jeopardises the sustainability of social institutions by undermining the trust vested in them. The presence of corruption is also reflected in the values of the people, since tolerating it goes hand in hand with a reduction in the significance attached to the role of such values as work and persistence related to success, even though these values are fundamental to sustainable society. Supporting and funding activities promoting various values related to sustainability and social cohesion is an important asset of the government for the purpose of social capital development and the establishment of the trust infrastructure.

T2.10 Cultural public institutions are important grounds for the development of social resources. Communities operating in public collections, public educational institutions and libraries significantly contribute to the reproduction of trust and the enhancement of social cohesion by acquiring knowledge through lifelong learning, by frequent cooperation and creative sessions, and by acquiring cohesive values, interests and experiences. This underpins the need for a **network of community centres, museums and libraries**, where the majority of Hungary's community relations can be maintained and operated in favourable conditions and at a low cost.

T2.11 Enhancing the transfer of cultural traditions and values within the **educational** institutions strengthens social cohesion and sustainability. Participants of basic education may feel that they are part of the national community and a cooperative member of the society, irrespective of their background. The **transfer of values** while maintaining and developing the common values enables future generations to establish an institutional background based on social consent.

T2.12 Strengthening the **cultural relations between Hungarians living in the Carpathian basin** permits the transfer of such values that enhance social cohesion and the commitment to sustainable society and human resources.

T2.13 According to paragraph (1) of article Q) of the Fundamental Law of Hungary, „In order to create and maintain peace and security, and to achieve the sustainable development of humanity, Hungary shall strive for cooperation with every nation and country of the world.”, which means that **one of the priorities of our foreign policy** is to maintain the sustainability of our country, our region and our world, and thus the **active cooperation with other actors in processes enhancing sustainability**.

T2.14 The Hungarian government can contribute to social sustainability during legislation by **ensuring private property and the freedom of contracting**. These are the foundations needed in order to make responsible resource management a general and transferable value and at the same time they contribute to strengthening trustworthiness within social relations.

T2.15 In order to enforce the values related to sustainability in the governance of Hungary, the knowledge of the acting participants needs to be broadened. **Training of government and public administration staff** (ministries, authorities, local administration bodies) must be started without delay, based on the training syllabus related to sustainability. **Sustainability training** for the managers of educational and developmental institutions and for **teachers** and educational assistants must also be ensured.

#### 6.4.3. Natural resources<sup>3</sup>

T3.6 Education primarily aims to provide individuals with information that enable them to preserve the state of natural resources in a broader sense (see T3.1). Public education needs to enhance the **transfer of sustainability related knowledge** and the **ability of systematic thinking**. These are included in the National Curriculum: required knowledge is to be disseminated to students during primary and secondary education in various subjects. The National Rural and Energy Strategies place a great emphasis on the environmental education work of public education institutions and on building awareness about sustainability in higher and adult education. Professional knowledge related to sustainability can be disseminated to teachers through trainings that can be financed from EU sources as well. In higher education it is also necessary to disseminate up-to-date scientific knowledge and to familiarise students with aspects related to sustainability and environmental protection.

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<sup>3</sup> Instruments recommended for the government related to environmental sustainability are in accordance with the Green Economy Development Programme of the New Széchenyi Plan. The sub-programmes of the Green Energy priority aim to make environmental investments eligible for support in various areas (eg. agro-energy, environmental industry, green transportation), and they also list regulatory instruments enhancing green energy utilisation. Tenders for organising communication campaigns, and the plan to incorporate environmental awareness into school syllabi are included in the Green education, employment and awareness priority's sub-programme called Supporting activities enhancing green awareness. The Green RDI sub-programme is also part of the same priority and aims to ensure domestic and EU funding for research, development and innovation activities, and defines the topics that may be eligible for support in the area of energy technology.

Human thinking is fundamentally shaped by upbringing and the surrounding cultural environment. If we live in an environment, where nature is loved and respected, resources are managed rationally, we are constantly made aware of the significance of these, and our children receive knowledge and experience related to nature continuously according to their age, then our decisions – concerning either work or lifestyle – will automatically and instinctively always take into account the aspects of sustainability and environmental awareness. Generally children and adults alike receive these impulses in a project like way, separate from everyday life, which significantly reduces their effectiveness. It would be desirable to build a system of currently running programmes, which enables environmental awareness and sustainable lifestyle to be included into everyday life as natural components. Thereby the emergence of a new programme would not be considered a rarity, but as part of everyday life. Consequently, coordination of programmes aimed at sustainable lifestyle education should be improved, establishment of methodology centres and communities open to the topic, should be supported.

T3.7 Switching over to and utilising renewable resources induces extra costs for economic actors presently. Since due to the depletion of non-renewable resources these costs must inevitably be incurred by the economic players, it is legitimate to **support** such **investments** that aim to **substitute non-renewable resources more efficiently**.

T3.8 Supporting „blue economy” also has great priority among the instruments of the government. „Blue economy” means RDI related to environmental technologies based on a principle similar to the functioning of ecosystems and their application in economic activities. These technologies are mimicking the physical solutions and systems that were developed in nature by evolution (e.g. nanotubes, live filters, self-cleaning systems, etc.). **The government may enhance the development of the „blue economy” by supporting among others pilot projects, research and development, innovation, basic and applied research activities at universities, as well as initiatives aimed at the creation of local, ecological production and consumption systems.** Green energy production has priority among activities eligible for funding. This means the increase of the proportion of biomass, geothermal, hydro, solar and wind energy, agricultural by-products, as well as agro-fuels and biogas within energy use, which can be achieved by supporting investments into such technologies and consumption. Materials previously considered as waste may be used for longer in the economy thanks to the **development of closed material cycles and recycling** (thus reducing the amount of disposable waste). **Ecological, landscape preserving farming** is based on the application of traditional biological and mechanical methods that fit into the environmental processes, avoiding the use of substances and technologies hazardous to human health and to the environment. Farming methods of the ecological agriculture play an important role in the maintenance and conservation of biodiversity and cultural landscape.

T3.9 **Activities related to raising the environmental awareness** of the society and the economic players also serve as catalysts for sustainability. These activities are undertaken by educational and training institutions, as well as civil organisations, but the central and local governments may also enhance sustainability awareness. **Targeted funding for non-governmental organisations** may be directed at (co-)financing campaigns carried out via various communication channels, which may contribute to the dissemination of „green awareness”, as well as to the strengthening of civil organisations.

T3.10 **Green economy reforms** involve instruments, which enable the reduction of the waste of resources and environmental pollution, and the appropriate pricing of material utilisation, via regulatory, taxation and funding systems (e.g. product tax, elimination of funding for activities involving the waste of energy and resources, tax relief for the utilisation of renewable energy sources).

(a) The amount of work related taxes and contributions should gradually be reduced, while ensuring the long term maintenance of the appropriate tax income level, and taxes associated with the unsustainable use of natural resources should be increased.

(b) The entire system of funding must be revised, the sustainability performance of fundings from the central budget, separate state funds or EU community sources must be reviewed.

(c) The system of „green” public procurement should be developed, in order to enhance the protection of natural resources.

(d) Energy related fundings (for renewable energy sources, energy saving, energy-efficiency improvement, and the feed-in tariffs of electrical energy), as well as the entire excise and value added tax system of energy sources must be reviewed, including their performance related to sustainability. The involvement of utility companies into the execution of energy-efficiency plans and projects must also be examined. Energy certification of buildings (energy label) needs to be improved and the system of sustainability certification of buildings should be developed.

T3.11 **Normative, restricting requirements, or even a complete ban on resource use** should be introduced for resources in a critical state, and non-compliance should result in legal consequences.

T3.12 During the **development of the institution of environmental impact assessment**, a method for measuring the impact on ecological systems and ecosystem-services in case of investments and developments inducing significant land use must be devised. If the developments inevitably result in the degradation of certain ecosystem-services, the overall conservation of the condition of the ecosystem must be ensured (e.g. by compensational measures). In the case of investments and developments associated with significant material and energy demand, as well as land use, the method of the most favourable cost-benefit ratio planning must be devised (taking into account social, environmental, ecological externalities). Following the establishment of this method, it should be introduced into environmental permitting. Additionally, the carbon footprint and the complex climate change risk assessment methods should also be introduced on project level.

T3.13 **Aspects of sustainability should be reflected in Hungary’s other strategically important local and policy planning documents**, as well as **in sectoral regulations**. In order to reinforce the approach, it is necessary to develop the system of monitoring, reporting and evaluation related to the execution of the plans.

T3.14 A **review of environmental regulations** is also required as well as the deregulation or simplification of unnecessarily complicated and overly bureaucratic

regulations. Thereby it is possible to reduce the environmental protection related burdens of social and economic actors, as well as the costs of control, and the rate of compliance may increase. Directives related to best available techniques (BAT guidelines) should also be revised based on their role in supporting the efforts related to transportation distance optimisation, land use minimisation and prudent resource management.

T3.15 The relationship between climate change and sustainability is of a circular nature, since climate change affects the conditions of sustainable development, whereas various development paths have different impacts on the future of the climate. The overall objective of the Framework Strategy is to ensure the conditions of adaptability, and the purpose of adaptation is to **increase the resistance (resilience) of natural/social/economic systems against the effects of climate change in the future**. It has become obvious by now that actions aiming to reduce emissions („avoiding the unmanageable”) need to go hand in hand with preparations for expected impacts („managing the unavoidable”). Whereas the goal of emission reduction is primarily the protection of nature against the harmful effects of society, adaptation protects society and ecosystem-services against the impact of climate change and against the resulting socio-economic effects.

#### 6.4.4. Economic resources

##### *I. Entrepreneurial capital, innovation, employment*

T4.5 Domestic entrepreneurial capital may be strengthened by corporate environmental development measures. These involve the support of the development of such infrastructure that **helps start-up businesses in gaining strength** (e.g. incubators). An additional important task is the **reduction of administrative costs placing a heavy burden on small and medium-sized businesses** due to the complicated and ever changing regulations. The development of the entrepreneurial environment must therefore necessarily involve the improvement of the regulatory environment.

T4.6 The implementation of **instruments enhancing local economic relations** can contribute to the development of the domestic entrepreneurial capital. This on the one hand facilitates the clustering and networking of domestic SME-s, which reduce the transaction costs of businesses through the implementation of an integrated production system. On the other hand, supporting the cooperation of SME-s by consolidating the supply chains of domestic businesses (clusters) helps foreign owned corporations to be better accommodated into the Hungarian economy. Supporting the creation of supply chains relying on local facilities strengthens capital deprived domestic business capacities and helps to mitigate environmental damages associated with the transportation of imported goods.

T4.7 **Supporting corporate social responsibility** helps businesses in improving their public image. This enhances the strengthening of the trust infrastructure and the reduction of the transaction costs associated with the cooperation of businesses.

T4.8 By **supporting corporate RDI** the government can contribute not only to environmental sustainability, but also to the development of domestic small and medium-sized enterprises. This increases the competitiveness of domestic businesses, which has a positive effect on the other national capitals as well. Supporting trainings organised by the enterprises also enhances their competitiveness, and at the same time increases the human capital of employees. Employee trainings that best suit the eligibility criteria for funding are the ones, which are non-company specific, since these enable best the renewal of human resources more independently from changing market conditions. Currently incentives are not motivating enough for companies to hold such trainings.

## *II. Macroeconomic balance*

T4.11 The **reform of career financing** and the **balancing of generational accounts** is an intervention directed primarily at economic sustainability, however, it has indirect influence on social and human resources as well. In order to maintain the transparency of the balancing of generational accounts, career financing calculations should be performed regularly and results should be compounded into a database continuously. Decisions about the balancing of generational accounts are equivalent to seizing to favour the older generations to children, thereby increasing motivations for having children.

T4.12 The balancing of generational accounts needs to be supplemented by measures aimed at **preserving the social integration of the elderly**. This involves among others increasing the significance of the work and property related income of the elderly. The government may facilitate this through programmes aimed at encouraging the elderly to participate in employment or entrepreneurial activities, which also prevents the great amount of professional knowledge accumulated by them during their lives to be lost when they retire.

T4.13 The balancing of generational accounts and long term budget balance should also be taken into account during the development of a **rule-based pension system**. This needs to **ensure the long term balance of incoming contributions and outgoing pension payments**.

T4.14 Trust is not only important with regards to the relations and cooperation of social and economic actors. It is the predictability of economic policy among others that builds trust in economic actors towards the government and this enables them to engage in long term planning. **Predictable economic policy** is therefore a pledge of the sustainability of economic capital, without which the success of other instruments becomes questionable as well. Consequently economic policy needs to be developed in such a way that it results in a low real interest rate in order not to hinder sustainability investments. Additionally, economic policy must take into consideration the importance of a **currency of a stable value**, since it enables the appropriate pricing of resources and public goods in order to make them sustainable. The pricing of some natural goods directly not utilised in the economy enables a more efficient protection against overexploitation, but lack of a stable currency (or of the appropriate indexing of resource prices) may result in the reduction of natural capitals in relative terms.

T4.15 During budget planning, the government has a strong responsibility with regards to the sustainability of domestic economic capital. As **for maximum indebtedness, the constitutional limit should be applied** in order to prevent current expenditures to paralyse future economic actors. It is possible to make such spending decisions which do not jeopardise budget balance and do not increase public debt during the yearly budget planning, however, they create a commitment which might upset the balance in the long term. Deferring certain spending, or tying them to some conditions, only keeps the balance in the short term, in the long term however, it may even lead to the increase of tax burdens, if the interest after the deferred spending is higher than the discount rate. Therefore, during budget planning it is the government's responsibility to determine what level of burden it will place on future generations by having to pay the debt. The **government is also has to consider** during budget planning **the financing of the tasks of local authorities**. If the costs of the mandatory tasks exceed the financing ability of the local authorities, that also leads to increasing debt. Transferring tasks that cannot be financed by the central government without providing additional funding paralyse the operation of the local authority system already in the medium term.

T4.16 The government may expand domestic economic resources by launching various **programmes and campaigns with the purpose of increasing the financial awareness of the population**. It has been proven in the past years that disregarding risks and the inappropriate communication activity of the banking sector towards citizens leads to such indebtedness that may jeopardise the economic sustainability of the country. Government supported informative and awareness raising campaigns can enable the population capable of savings to realise that limiting consumption and **increasing savings** are fundamental conditions of sustainability, as part of long term planning.

T4.17 It should be emphasised that although by providing funding for various developments, the government can contribute to the increase of different national capitals, businesses need to sacrifice some resources in order to compete for such fundings. Efforts to acquire public sources results in the non-productive use of the resources by the economic actors, similar to rent seeking. Such support may only have a positive effect on development, if they serve the solution of some market failure – such as the lack of capital of the domestic SME-s. In every other case it is merely redistribution, inflicting significant deadweight loss. Therefore during the development of the support system the government has the responsibility to **minimise costs associated with rent seeking**, by focusing the funding to justified users based on the policy objectives (such as a wide range of SME-s), and by reducing the administrative costs associated with competing for the funding.

### *III. Regional aspects*

T.4.18 The country is made up of regions of highly different social, economic and environmental characteristics. The new National Regional Development Concept (OTK) must contain developmental goals specific to the different regions and settlement networks. **Sustainability** has not only a national scope, but its **requirements must be fulfilled on the regional level as well**. Consequently it is important to initiate the development of sustainability framework strategies on the county and district level, and to

determine their owners, scope and schedule. Sustainable regional system assessments must also be started on the county and district level.

Sustainability principals related to spatial use mean among others the application of the following aspects:

1. Spatial use serving the protection of resources
2. Spatial organisation ensuring value and access
3. Spatial organisation developing efficient, sustainable regional systems and regional approach
4. Spatial organisation reducing travel, transportation and energy transport needs and ensuring their sustainable supply.

The Framework Strategy suggests the following **regional policy recommendations**:

- (1) Regional policy planning should include the topic of regional sustainability, especially the restoring of the sustainability of domestic regions in a critical sustainability state (e.g. Balaton, Agglomeration of Budapest), and enhance the integration of development, regional development and spatial planning.
- (2) Regulations and guidelines should be formulated in order to facilitate the preparation of regional sustainable development strategies, and of strategic environmental assessments in case of the regional and settlement plans.
- (3) An initial analysis should be prepared and its results used for the development of an action plan for the sustainable development of the settlement area of the Hungarian population in the Carpathian basin.
- (4) It is necessary to draw up the scope of the Framework Strategy regional programmes. This framework system – based on the goals and measures of the Framework Strategy, taking into account the various natural, geographical, landscape and socio-economic conditions – should be incorporated into the regional policy planning.
- (5) Based on the objectives of the Framework Strategy – considering the growing population of the cities – the Government should develop a unified urban policy based on the principles of sustainability and on the concept of „Liveable, sustainable city”.

## **7. INSTITUTIONS OF SUSTAINABILITY**

The interests of our successors may be represented by the following three types of possible institutional solutions:

- personalisation of future generations;
- implementation of constitutional and other institutional constraints;
- incorporation of automatic control mechanisms.

In the first case, since children and the **unborn** do not participate in decision making that is affecting them as well, the mentioned institutional solutions introduce such actor(s) into the political processes, who are mandated to **represent** them specifically.

The other form of the representation of future generations is the **implementation of constitutional or other legal constraints**. Constraints incorporated into the fundamental law are present in numerous countries or at least have surfaced as recommendations. In some countries, the constitution declares the right of future generations to a healthy, liveable environment. In other cases the fundamental law contains provisions about the financial stability, such as maximum public debt, some kind of spending constraint, annual budget deficit limit or the requirement of a balanced budget.

The third type of solution is the **algorithmic regulation**, or in other words **automatic governance**. It means that in certain issues the government or the legislation is not making decisions based on certain cases, but defines a formula, which then determines what actions should be taken. If the algorithm contains feedback elements based on long term balance, automatic governance may be applied as a protection for future generations.

The Framework Strategy recommends the following elements as part of the sustainable institutional system (marking the already existing solutions).

### ***7.1. Social public dialogue and debate, publicity***

The first step in the sustainability transition is the regular representation of the topic with regards to political decisions, on local, regional and national levels as well. In democratic systems the representatives in key positions are acting based on the mandate they received from their electors, however, the majority of the electorate has no knowledge about conditions, processes and problems related to sustainability.

Organisations with sustainability mandate, science representatives, civil organisations created around the topic of sustainability, may be the ones to initiate the incorporation of the sustainability topic into discussions and debates evolving around up-to-date issues.

The public media could be the mediator of such dialogues based on the public service code, whereas the commercial and civil press due to the interesting nature of the topic.

A fundamental prerequisite of the dialogue is that part of the preparation of a significant sustainability related decision a sustainability impact assessment is carried out (see later), whose results are made available for the public.

The dialogue is facilitated by making the key sustainability indicators public year by year. The assessment of the condition, present successes and failures of the Hungarian nation may become more detailed if indicators of economic prosperity (GDP, unemployment, inflation, foreign trade balance, forint exchange rate, etc.) and the condition of the nation's resources are also considered.

## ***7.2. Social dialogue with the economic actors***

The functioning of businesses, economic organisations has numerous impacts on a nation's long term successfulness and enhances sustainability. Some habits, management practices may have a positive effect on population processes, knowledge accumulation, health condition, natural and economic resources. Many of these favourable effects are unfortunately not extortable by central legal or normative instruments.

Economic actors have also realized the local and global challenges related to sustainability, many companies have developed their own sustainability policy or are committed to the practice of corporate social responsibility (CSR).

As a result of the dialogue between the government, local authorities, civil organisations, economic interest groups, managers and entrepreneurs such common objectives, comprehensive agreements may emerge, which constitute a significant step forward towards building and strengthening a sustainable society.

The economic sector may cooperate with regards to the human and social resources of the nation:

- disseminating family-friendly employment practices in order to not prevent employees from having children due to the aspects of career aspirations and valuable work performance;
- establishment of work and organisational culture that enables the mitigation of work related stress, enhancement of the trust infrastructure;
- supporting lifelong learning and trainings on the company side.

Voluntary agreements also play an important role in the prudent use of natural resources, but in this area it is the state which has more opportunities for the centralised protection of resources (e.g. appropriate amount of tax levied on resource use, direct production or product related regulations).

## ***7.3. Preliminary analysis of decisions***

### ***7.3.1. Impact assessment***

During the preparation of government and local authority decisions, the long term, national resources related impacts must be examined conducting a more thorough, exhaustive and profound professional assessment than current practices. The most obvious solution is to take paragraph 17. of the Act CXXX. of 2010. on legislation, and consistently interpret its provisions that the obligation of impact assessment also pertains to the examination of the effects related to national resources („sustainability assessment”).

The depth and complexity of the impact assessment process (and consequently its costs) should match the extent and significance of the possible long term effects of the decision.

### 7.3.2. Consultative bodies

Preliminary analysis of decisions is less formalised than the impact assessment process, it is a standardised way of providing opinions by various permanent bodies.

The institution where discussions about the general implications of recommendations on national resources take place is the National Council for Sustainable Development. Additional regional or local sustainability councils may also be established, following the model of the NCSD.

The creation of County Councils for Sustainability and Natural Resources is also recommended. It is advisable to establish bodies with strong powers and with authority for decision-preparation and recommendations at the NUTS-3 level, which, among others:

- make recommendations for allocation priorities of financing sources at county level,
- may make legislation recommendations (legislative proposals) towards public authorities,
- deliver opinion of investments placing a significant burden on the natural resources of the region (as part of the permitting process).
- Members may be the regional:
  - elected representatives of energy and water management, agriculture and forestry professionals,
  - elected representatives of civil organisations,
  - nominated representatives of public administration bodies.

County Councils for Sustainability and Natural Resources may function autonomously or incorporated into the organisation of county government offices.

Multilateral councils already existing, founded by law, may also play a role in the sustainability transition. These bodies have a thorough knowledge about their policy area, and may ensure horizontal integration on a national level. The National Council on the Environment conducts analyses about the effects related to natural resources. The National Architectural Council may step up in the issue of protecting the architectural heritage. The Fiscal Council and the National Economic and Social Council may have specific authorisations with regards to the sustainability of economic resources. The National Health Council may be responsible for issues related to human resources.

Placing coordination activities in one single location would be an efficient solution with regards to control tasks related to economic sustainability (with the exception of the constitutional court procedures). This would enhance the creation of an institution which is well known and familiar to the public and which could represent and communicate the

need for long term economic constraints. In this issue the State Audit Office and the Fiscal Council would act by their own authority.

The commissioner for fundamental rights and his deputy responsible for future generations may play a significant role in providing opinions about draft legislation.

#### ***7.4. Local, small regional decisions delivered via the deliberative process***

In cases when decisions on current issues with long term impacts are not affecting many stakeholders, and they are able to engage in direct negotiations with each other at low transaction costs, the decision may be based on the practical knowledge raised as arguments during consultations. There is a great probability, that there will be individuals among the participants arguing impersonating future generations. Local authorities or regional associations may regularly nominate or ask a person during decision making negotiations who should represent long term impacts as his/her basic function. Such open decision making processes, substantively involving local communities may enhance the trust in relations, and the values supporting sustainability. Good examples of this should be made known on the national level, to provide a model for other local or small regional communities.

A district delegate on sustainability may be the person to represent the long term effects of small regional community decisions.

#### ***7.5. Constitutional regulations***

The Parliament has included some provisions protecting national resources in the Fundamental Law. According to our constitutional regulations, non-compliance with these requirements may result in the appropriate institutions taking restraining actions.

Organisations of the institutional (subsequent) protection:

In general:

- Constitutional Court – every issue concerning the fundamental law
- Commissioner for fundamental rights

Institutions enforcing regulations related to natural resources:

- Deputy of the Commissioner for fundamental rights, responsible for future generations

Institutions controlling the observation of barriers set for economic resources:

- Fiscal Council and State Audit Office acting by their own authority
- Hungarian National Bank - implicit public debt

## 7.6. *Instruments of automatic governance*

Automatic (rule-based) governance is a frequently applied procedure, like pension indexing. The government is not making a year by year decision about the extent of the pension raise, as political competition would force a higher raise than what would be sustainable. Instead the extent of the yearly pension raise is based on a statutory formula, which in the past few years was a half-wage-half-price, the so called Swiss index in Hungary, whereas lately it is based on the (almost clean) price index.

During the formulation of pension regulations, the appropriate instrument, rule (formula) to control implicit public debt may be developed based on professional and social negotiations.

During the preparation of policy strategies and other measures, consideration should be given to which additional areas could emerge as grounds for rule-based solutions related to the protection of national resources.

## 8. MEASURING SUSTAINABILITY

Measuring sustainability requires indicators which inform us about the quantity-quality changes in important aspects related to our future well-being. Currently we do not possess indicators that lack any methodological or substantive flaw and can measure all four national resources. Therefore the **Framework Strategy invites the government, the Central Statistical Office and the science centres to develop this set of indicators**. The Framework Strategy recommends the use of multiple indicators, which capture the main aspects of well-being, effectively compliment each other's information content, and when combined, provide a realistic snapshot about the state of the nation. Complex (composite) indicators should be avoided, basic indicators appropriately presenting the sustainability related characteristics of the given resource should be preferred.

According to the above, Table 1. of the Appendix – in column „I” – lists only a few illustrative indicators as examples.\*

In order to enhance social awareness related to sustainability, **key indicators of national resources must receive widespread publicity every year in an accessible and interpretable manner for the general public**. The value and changes of these indicators applied together with the other regularly used indexes characterising current conditions of the society and the economy (gross national income, average real income, income inequality, inflation, unemployment rate, forint exchange rate, foreign trade balance, average size and public utility coverage of households, etc.) provide a realistic picture of the nation's state and development.

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\* The Appendix I. contains a detailed preliminary assessment of indicators (see pages 94-106)

*Table 1. Schematic overview of the state of the national resources, their determining aspects and possible response measures*

Resource	Current state (Condition)	Driving forces	Problem (Burden)	Consequence [without intervention]	Objective (Response)	Measurement tool of reaching the objective (Indicators)	Task/Responsibility (Instrument)	Actor/Responsible
E	A	H	P	K	C	I	T	F
<b>E1.1 Population (Human resources, part 1.)</b>	A1.1 Ageing of the population A1.2 Population decline	H1.1 Reduction of the stability and endurance of partnerships; H1.2 Postponing parenthood; H1.3 High alternative cost of raising children (difficulty of working and raising children at the same time); H1.4 Reduction of child benefits within career financing H1.5 Desperation due to the difficulty of earning a good living at home; H1.6 Significant wage difference on EU level in certain professions	P1.1 Less children are born P1.2 Growing emigration of the active working-age youth	K1.1 Without immigration, the need for employees cannot be met in the future (immigration may cause cultural, social problems); K1.2 Growing burden of pension contribution on the working-age population or the value of pensions decreasing; K1.3 Indebtedness of the country may increase; K1.4 Economic development may slow down	C1.1 Supporting values related to partnerships and family (education, institutions) C1.2 Competitive salaries in professions severely affected by emigration C1.3 Mitigation of population decline C1.4 Adopting an immigration policy C1.5 Ensuring the role of the elderly in social cooperation	<i>Sustainability indicators should be developed and then continuously applied during the implementation of the Framework Strategy. Below are some examples for possible indicators:</i>  Total fertility rate	T1.1 Passing on values related to partnerships and family	F1 Family and individual
							T1.2 Strengthening the ethos of family-friendly workplace as part of corporate social responsibility	F2 Businesses
							T1.3 Public representation of values related to partnerships and family, launching campaigns to strengthen these values	F3 Small communities, civil organisations and religious communities
							T1.4 Competitive salaries in professions affected by emigration T1.5 Employment support for those in professions severely affected by emigration T1.6 Measures supporting the compatibility of working and raising children (e.g. setting up nurseries) T1.7 Supporting corporate programmes serving the compatibility of work and family T1.8 Supporting strong parental rights, responsibilities, commitment T1.9 Protection of those raising children in work related regulations T1.10 Individual efforts for raising children (number and qualification of children raised) should be taken into account in pension related regulations. T4.13 Connecting the two opposite direction flows of career financing (from the active to the elderly and to the children) on the individual and national level, gradual restoration of the generational balance	F4 Central and local governance
<b>E1.2 Knowledge (Human resources part 2.)</b>	A1.3 Knowledge, skills and competences lacking practical	H1.7 Time spent in education; H1.8 Quality of training and	P1.3 Development of skills and competences lagging behind	K1.5 Fewer innovation; K1.6 Lack of quality	C1.6 Quality education; C1.7 Increasing time spent in education;	PISA-results  Adult	T1.11 Commitment to lifelong learning; emphasising the importance of school and	F1 Family and individual

	applicability A1.4 Frequent segregation, significant inequality in access to educational institutions, lack of social inclusion programmes A1.5 Teaching profession not attractive, reducing number of capable applicants for pedagogical training	education; H1.9 Selectivity of the educational system	opportunities P1.4 Increasing regional inequalities of human capital (emigration of those seeking better quality education)	workforce (structural unemployment); K1.7 Slow down of economic development; K1.8 Cultural decline	C1.8 Reducing the selectivity of the educational system C1.9 Better utilisation of knowledge in the economy and the society C1.10 Representation of the values and practices related to sustainability in the whole range of lifelong learning	participation in lifelong learning  Research, development and innovation spending	<u>learning during upbringing</u> T1.12 Supporting lifelong learning through employee trainings T1.13 Efficient operation of non-public schools T1.14 Increasing the efficiency of knowledge-producing institutions for the transfer of work related knowledge, skills and competences. Improving the quality of teacher training T1.15 Supporting RDI activities conducted by universities, research institutions and their collaborations – Supporting civil-business-scientific cooperations T1.16 Supporting learning programmes launched by cultural institutions	F2 Businesses  F3 Small communities, civil organisations and religious communities  F4 Central and local governance
<b>E1.3 Health (Human resources part 3.)</b>	A1.2 Population decline; A1.6 Reduction in the time spent at work	H1.10 Problems with health behaviour (smoking, excessive alcohol consumption, unhealthy diet, lack of exercising); H1.11 Excessively stressful work environment; H1.12 Living environment loaded with environmental hazards	P1.5 Premature mortality – high mortality rate; P1.6 More frequent and more severe illnesses	K1.9 Slow down of economic development; K1.10 Increase of health care (budget) spending	C1.11 Creation of health conscious behavioural patterns C1.12 Reducing chronic, non-infectious morbidity C1.13 Catching up to the Central-European regional average regarding the reduction of mortality	Life expectancy at birth  Index representing health conscious behaviour/ health damaging lifestyle	T1.17 Health conscious behaviour and its transfer to future generations T1.18 Reduction of work related stress and adjustment of working conditions – appropriate establishment of work and organisational culture T1.19 Launching prevention programmes, screenings T1.20 Representation of health conscious behavioural patterns T1.21 Launching and supporting prevention programmes, screenings T1.22 Supporting programmes representing health conscious behavioural patterns (e.g. via the educational system) T1.23 Providing information about, banning or taxation of products posing health hazards T1.24 Modernisation of the health care system	F1. Family and individual  F2 Businesses  F3 Small communities, civil organisations and religious communities  F4 Central and local governance
<b>E1.4 Poverty, exclusion – social cohesion (Human resources part 4.)</b>	A1.7 Excluded social groups and regions	H1.13 Permanent exclusion, poverty	P1.4 Increasing regional inequalities of human capital	K1.4. Economic development may slow down; K1.6 Lack of quality workforce (structural unemployment);	C1.8 Reducing the selectivity of the educational system; C1.14 Social solidarity; C2.1 Realignment of social structure;	Indicator for poverty, social exclusion	T1.25 Employment of the members of disadvantaged groups, non-discrimination T1.26 Participation in the integration of excluded groups	F2 Businesses  F3 Small communities, civil organisations and

					C4.6 Increasing employment			religious communities F4 Central and local governance
							T1.27 Reduction of child poverty; T1.28 Launching of special, complex programmes in excluded regions T1.29 Increasing the pool of citizens available for employment by programmes aimed at mitigating social exclusion	
<b>E2 Social resources</b>	A2.1 Erosion of social norms; A2.2 Priority of consumption to saving; A2.3 Low job satisfaction; A2.4 High degree of distrust towards each other and the institutions; A2.5 Low participation rate in resource protecting actions	H2.1 Approach, values, attitudes, religiousness of individuals; H2.2 Structure and quality of social institutions; H2.3 Vitality of the civil sector; H2.4 Number and quality of value representing cultural institutions.	P2.1 Low operational efficiency of institutions; P2.2 Changing of individual values	K2.1 Slow down of economic development; K2.2 High degree of corruption and rent seeking; K2.3 Great need for redistribution K2.4 Non-sustainable consumption	C2.1 Realignment of social structure; C2.2 Communication of good examples to the public; C2.3 Supporting organisations (civil, professional, religious) following behavioural patterns favourable to sustainability C2.4 Strengthening of the trust infrastructure C2.5 Increasing satisfaction and content related to work conditions C2.6 Preservation of the heritage of the past, strengthening of identity	Index pertaining to the sustainability value system  Trust index  Civil society activity index  Money use hedonism index	T1.1. Passing on values related to partnerships and the family T2.1 Individual responsibility in social institutions and for disadvantaged groups (e.g. volunteering), representation of social responsibility patterns T2.2 increasing the significance of the work and property related income of the elderly, insofar as health condition allows for it T2.3 Law-abiding behaviour	F1 Family and individual
							T2.3 Law-abiding behaviour T2.4 Strengthening the trust between social and economic actors	F2 Businesses
							T2.5 Combating corruption T2.6 Supporting independence and individual responsibility (instead of relying on the state)	F3 Small communities, civil organisations and religious communities
							T2.6 Supporting independence and individual responsibility (instead of relying on the state); T2.7 Supporting social organisations to enhance the self-organisation of civil society; T2.8 Supporting the activities of educational institutions, civil organisations, churches representing family values; T2.9 Combating corruption; T2.10 Increasing the funding of cultural public institutions; T2.11 Strengthening the role of the educational institution system in developing identity, values and local attachment; T2.12 Supporting programmes and cultural institutions mediating between Hungarians on the two sides of the border; T2.13 Active foreign policy work in international processes	F4 Central and local governance

							supporting sustainable development; T2.14 Ensuring private property and the freedom of contracting; T2.15 Sustainability training of government officials, public servants, and employees of educational institutions (educators, teacher, managers)	
<b>E3 Natural resources</b>	A3.1 Overexploitation of natural resources: reduction of quantity, degradation of quality	H3.1 Size of the economic activity; H3.2 Quality of applied technologies (material and energy intensity); H3.3 Consumption patterns and environmental values; H3.4 Increase in mobility needs; H3.5 Increase of built-up areas, overplanning of infrastructural developments (lock-in effect);	P3.1 Exploitation of resources on the input side; P3.2 Emission of pollution and waste on the output side	K3.1 Degradation of the quality of human life (illnesses, disturbances of the quality of life; environmental desolation); K3.2 Reduction of biodiversity; K3.3 Reduction of the resistance capability of ecological systems, irreversible ecological processes, depletion of ecosystem-services; K3.4 Degradation of inputs used in economic processes, and of certain production methods	C3.1 Reinforcing utilisation constraints for natural resources; C3.2 Reinforcing production technology constraints or product standards; C3.3 Appropriate pricing of the use of natural resources; C3.4 Supporting environment-friendly technologies and land use methods C3.5 Prevention of the degradation of biodiversity, soil fertility and ecosystem-services C3.6 Reduction of the environmental load affecting humans	Natural capital index (NCI)	T3.1 Environment-conscious behaviour, individual responsibility for the reduction of certain environmental hazards, and for the limited use of scarce resources; representation of environment-conscious behavioural patterns for the following generations	F1 Family and individuals
						Domestic material use	T3.2 Supporting the reduction of environmental hazards T3.3 Switching over to environment-friendly technologies	F2 Businesses
						Domestic primary energy consumption	T3.4 Incorporation of the goal of environmental sustainability into the value system of organisations T3.5 Campaigns aimed at increasing environmental awareness; activities aimed at the prevention and mitigation of environmental damage; recommendations for governmental bodies	F3 Small communities, civil organisations and religious communities
						Proportion of built-up areas compared to the area of the country	T3.6 Enhancement of the knowledge transfer related to environmental sustainability in public education – teaching sustainable lifestyle T3.7 Supporting the production and use of renewable energy sources (e.g. biomass consumption of small enterprises) T3.8 Blue economy – supporting corporate research and development, innovation and university basic and applied research in the areas of waste management, wastewater treatment and renewable energy sources, supporting ecological production and consumption systems	F4 Central and local governance
						Proportion of ecological farming areas in agriculture		
						Quantity of greenhouse gases emitted		
						Soil functions		
						Utilisation of groundwater reserves		
						Urban environmental quality		

							<p>T3.9 Representation of the values of environmental sustainability</p> <p>T3.10 Green economy reforms: appropriate pricing of energy and material use through regulatory, taxation and support systems</p> <p>T3.11 Implementation of normative, restrictive provisions for resources in a critical state, or even the complete ban of resource use.</p> <p>T3.12 Creation of the theoretical foundations of environmental impact assessments, development of the necessary methodologies</p> <p>T3.13 Environmental sustainability aspects must be included in Hungary's strategically significant local and policy planning documents, as well as in sectoral regulations</p> <p>T3.14 Review of environmental regulations, deregulation of simplification of unnecessarily complicated and overly bureaucratic regulations</p> <p>T3.15 Increasing resistance capability against climate change</p>	
<b>E4.1 Entrepreneurial capital, innovation, employment (Economic capital part 1.)</b>	<p>A4.1 Low level of trust between economic actors</p> <p>A4.2 Opening of the GDP/GNI gap: growing foreign investment income</p> <p>A4.3 Only modest increase of capital</p> <p>A4.4 Low RDI expenditure (GERD and BERD) compared to the GDP</p>	<p>H4.1 Low average technological level of domestic businesses</p> <p>H4.2 Regulations favouring foreign investment to domestic owners</p> <p>H4.3 Low level of trust between economic actors, predominance of personal relations</p>	<p>P4.1 Lack of cooperation between businesses</p> <p>P4.2 Negative image of entrepreneurs in the public and the media</p> <p>P4.3 Economic relations based on dominance</p> <p>P4.4 Institutional system unfavourable for entrepreneurial activities</p> <p>P4.5 Low RDI activity</p>	<p>K4.1 Economy becomes more exposed to non-domestic owners;</p> <p>K4.2 Less instruments available to tackle a crisis</p> <p>K4.3 Reducing competitiveness of high value added sectors</p>	<p>C4.1 Balance of localisation and international cooperation: Creation of conditions favouring entrepreneurial activities – at the same time withdrawal of extra benefits for foreign investors;</p> <p>C4.2 Strengthening of local economic relations (e.g. city and its rural areas)</p>	<p>Employment rate</p>	<p>T4.1 Representation of the values of financial awareness, prudent and forward looking management</p>	F1 Family and individual
						<p>Research, development and innovation spending</p>	<p>T4.2 Passing on entrepreneurial values</p>	F2 Businesses
						<p>Entrepreneurial capital index</p>	<p>T4.3 Preference to local production systems, strengthening of local, regional economic relations</p>	F3 Small communities, civil organisations and religious communities
						<p>GDP/GNI margin</p>	<p>T4.4 Enhance the social respect of entrepreneurs</p>	

			of domestic businesses P4.6 Great territorial inequality in R&D activity P4.7 Great proportion of RDI at foreign owned enterprises		C4.3 Strengthening of the trust infrastructure in the economy C4.4 Reduction of burdens on businesses C4.5 Increase of the innovation expenditure C4.6 Increase of employment		T4.5 Creation of a business environment favouring entrepreneurial activities T 4.6 Enhancing local economic relations, local supply chains T4.7 Supporting corporate social responsibility T4.8 Ensuring the production of knowledge, supporting research, development, innovation in the business sector	F4 Central and local governance
<b>E4.2 Macroeconomic balance (Economic capital part 2.)</b>	A4.5 Primary budget deficit; A4.6 Relation of growth and real interest rate A4.7 Deficit of the generational accounts; A4.8 Pension system generating a high implicit debt A4.9 Inappropriate financing of local authorities	H4.4 Primary budget deficit; H4.5 Relation of growth and real interest rate H4.6 Demographic deficit – ageing of the population; H4.7 Interest representation deficit – among generations having career financing surplus, the elderly have voting rights, children not H4.8 Heritage of the socialist planned economy, depletion of economic capital; H4.9 Low willingness to save, priority of consumption to savings; H4.10 Multiple dependency situation of the Hungarian economy	P4.8 The budget is formulated around short-term interests, shifting the burden of financing current spending onto the future P4.9 The central and local government budgets are forced to borrow	K4.4 The central and local government budgets become unsustainable K4.5 Shifting the burden of career financing onto future generations; K4.6 Slow down of economic development	C4.7 Creation of a prudent budget management C4.8 Gradual restoration of the generational balance	Savings / investment ratio	T2.2 Increasing the significance of the work and property related income of the elderly T4.1 Representation of the values of financial awareness, prudent and forward looking management	F1 Family and individual
						Public debt index	T4.9 Prevention of rent seeking behaviour	F2 Businesses
						Generational imbalance	T4.10 Enhancing the financial awareness of the population T4.9 Reduction of rent seeking	F3 Small communities, civil organisations and religious communities
						Indicator of the quality of economic governance	T4.11 Connecting the two opposite direction flows of career financing (from the active to the elderly and to the children) on the individual and national level, gradual restoration of the generational balance; T4.12 Stimulating the activities of the elderly T4.13 Creation of a rule-based (automatic) pension system T4.14 Implementing an economic policy resulting in low real interest rate T4.15 Enforcing constitutional constraints in budget management and reconciling the tasks and funding of local authorities T4.16 Representation of financial awareness towards the population T4.17 Reduction of the promotion of rent seeking and other non value-creating activities T4.18 Development of regional sustainability strategies	F4 Central and local governance

## APPENDIX I

## 9. STATE OF OUR NATIONAL RESOURCES

### 9.1. *Human resources*

#### 9.1.1. Demography, family<sup>4</sup>

The Hungarian demographic situation has been characterised by unfavourable indicators, negative trends for a longer period of time. **The decline in population over the last almost thirty years results mainly from the very low birth rate and a mortality rate which is extremely high in European comparison.** A new phenomenon is the emigration of part of the working-age population.

Special attention should be paid to the situation of the **Roma population**. Due to their growing proportion within the society and ever younger age structure, the significance of them becoming potential workforce is growing, therefore their social integration in a much more effective way than previous practices is of crucial significance with regards to the creation of sustainable society. Unless we can achieve this, the establishment of sustainable society in Hungary may become impossible.

The *willingness to childbearing* has been decreasing in every European country since the 1970s and currently the **reproduction of the population is not guaranteed**. Therefore Hungary is not the only one having to face declining fertility, but whereas numerous Western-European and some Central-Eastern-European countries have experienced growing fertility rates in the past few years, Hungary is one of the few where no increase has taken place. **Hungary's fertility rate was 1.33 in 2009 and 1.26 in 2010. The number of live births fell by 28% between 1990 and 2010, and it exceeded 100,000 the last time in 1997.** The decrease took place despite the fact that the number of women aged 15-49 in fertile age was increasing all the time until 2001.

The relatively low European fertility rate is partially due to **postponing childbearing**. Nowadays, Hungarian women start having children at the average age of 29.8 (2010), which is an increase of more than 5 years compared to the childbearing practices of 1970s-1980s. The postponement of the average age bears the possibility to make up for the lag in childbearing in older ages, but according to the data, the chances of this are ever decreasing. It can be predicted, that part of the planned births will eventually not be realised, part of the desired children will never be born.

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<sup>4</sup>. This sub-chapter is based on the following background study prepared for the National Council for Sustainable Development: Spéder Zs. (editor), 2011. The source of the data in the sub-chapter may be traced back to this study. In certain cases the data has been updated based on information from the Central Statistical Office.

The unfavourably low fertility indicators are associated with the changes related to the pluralisation of partnerships in the past decades. The change can be briefly characterised by the **falling number of marriages** and the **spreading of cohabitations without marriage**. The number of marriages shrank by 47% over 20 years, and based on current ratios only 40% of women will get married, while 60% of them will spend their lives as *de iure* single. Parallel with the falling number of marriages, more and more couples choose a looser form of cohabitation, avoiding long-lasting commitment, called partnership. However, there is a greater chance for partnerships to be broken than for marriages. The number of children born in partnerships is lagging far behind the fertility of married couples.

The rapid rise in the number of extra-marital births is also primarily related to the spreading of partnerships. The proportion of single-parent families is growing due to the unstableness of non-marital cohabitations. This situation is not only detrimental to child development, to the psychological and financial status and the labour market chances of the single-parent, but it also requires a great deal of social and financial contribution from society.

In spite of the negative changes in marriage related behaviours, the social image of the institution of marriage is still positive. Four-fifths of the population still considers marriage a viable institution, the best, most appropriate form of cohabitation for a man and a woman. The spreading of partnerships, however, has changed the previous disapproving attitude of society towards extra-marital cohabitations and accepting attitudes have outweighed reservations.

The reduced willingness to marriage, the growing proportion of marriages ending in divorce, the spreading of partnerships, have negative effects on demographic indicators, as well as on the values, functioning and future of the society.

Concerning the area of *values related to family life* it is for a fact that Hungarian are very family-centred, however, also part of this approach is that the population is supportive of marriage, cohabitation and divorce as well. With regards to sustainable development, it is important to note, that the number of children considered ideal in Hungary falls very close to the critical value of 2, whereas **within younger generations, the ideal number of children is already below 2**. As for child raising principles, they have been relatively stable in the past nearly 30 years in Hungarian families: medium to high emphasis is placed on work ethics, whereas creativity related features (fantasy, managerial skills) are towards the end of the list.

Due to the negative effects of the low fertility rate on age structure, population ageing, pension- and health care spending, labour market, and eventually economic growth, European governments have been forced to considerably increase *public support for families*. Hungary spends 3.3% of the GDP on family support, much more than the OECD average (2.4%). This ratio places Hungary number five in the list of countries, behind France, United Kingdom, Denmark and Iceland, whereas with regards to fertility indicators, Hungary is two or three places away from the last position. This contradiction draws the attention to the **defects of the Hungarian family support system**, to the **structural weaknesses**, not corresponding to the real needs. The Hungarian support

systems provides the mother, the parents with the possibility to raise children under 3 at home, however, due to the lack of space at child institutions, this possibility becomes a must in many cases and mothers are unable to return to the labour market earlier, even if they have the intention and the opportunity to. Currently, potential parents are frequently faced with the situation, that they have to choose between having children and staying at home for years, or – if they cannot afford this – they postpone parenthood, or resign from it completely. However, experience shows that those countries have a higher fertility rate, where female employment rate is greater, and where women have the possibility to return to the labour market and reconcile child raising with work activities (part-time jobs, network of nurseries).

As a consequence to low fertility rate and rising life expectancy *demographic ageing of the population* – increase of the proportion of the elderly – can be observed in Hungary and in the majority of the European countries.

The proportion of the population aged 65 and older was 13.2% in 1990, whereas in 2010 already 16.6% belonged to this age group. **According to population estimates, by the year 2050, the proportion of the elderly will be 29.4%, which is an extremely dynamic – 12.8 percentage-point – growth over a period of 40 years.** The increased proportion of the older age groups within the population is to a large extent due to the rising proportion of the group 80 years of age and older. This is due mainly to prolonged life expectancy. According to forecasts, this tendency is expected to continue in the future and the growth rate will be the highest within the oldest age groups.

The most important social challenge posed by demographic ageing is the sustainability of the pension system, to ensure that the financial status of the elderly reflects the previous results of their career in the labour market, in the meantime guaranteeing a minimum level of welfare for a wide range of sectors of society, and ensuring access for the elderly to health, social and other services they require.

Domestic *employment rate* is one of the lowest in Europe, currently **only** approximately **3.8 million people are working in Hungary**. Since the second part of the 1990s a slight increase can be observed. The increase is due mainly to the dynamic rise in the labour market participation of the older age groups. In 1997, 27% of men aged 55-64 were employed, while in 2010, already 39.6% of them. Among women, employment rate was 10.3 and 30.1% in the same years, which represents a threefold increase. These results are due mainly to the raise in retirement age and the more restrictive conditions of early retirement.

In European comparison – taking into account the number of immigrants and their proportion per a thousand inhabitants – Hungary does not constitute a significant migrational destination country for *migrants*.

The strong influx in the years around the regime change stabilised at a lower level by the middle of the 1990s, then just before the turn of the millennium it started rising again, but it did not reach the levels of the early years. Following the EU accession in 2004, and then

as a result of the regulatory changes in 2007, a new increase could be observed in the number of immigrants.

A well-known characteristic of the Hungarian immigration is that it is largely made up of Hungarian nationality citizens of the neighbouring countries (which raises numerous ethnic policy issues as well). In the past few years, however, this tendency started to fade, and the ratio of the immigrants from neighbouring countries reduced to 30%, down from 50% just after the millennium.

As for emigration, its analysis was largely neglected in the past decade. Studying the mirror statistics of various destination countries clearly indicates, that while according to official Hungarian data, in the last two decades only a few hundred Hungarians per year emigrated permanently and a few thousand temporarily, the **total number of Hungarian citizens appearing as immigrants in the statistics of various European countries exceeded 35,000 in 2007 and 39,000 in 2008.** (While the number of newborns was 90,000 in 2010.) We have no possession of exact information related to the socio-demographic composition of the emigrants, nor about the motives and planned duration of their migration.

The future outcome of Hungary's participation in the migrational competition is of key importance. The question is – similarly to the majority of European countries – what type of needs will arise related to immigration due to the ageing of the domestic population: will there be a demand for foreign workforce in the domestic labour market, in which areas and for whom, and how attractive will Hungary be for immigrants? It is inevitable to analyse how people without any Hungarian roots, but still wish to choose Hungary as their new home, can assimilate into the Hungarian society.

Concerning emigration, it is essential to analyse to what extent emigration may be expected in the future, and which qualifications and professions will be most affected. Will the large scale outflow continue in certain professions and consequently will there be a greater demand for workforce in certain segments of the labour market?

**A key issue of sustainable social, economic development is influencing and positively modifying unfavourable demographic processes and trends.** Increasing the number of births, reducing mortality and consequently mitigating population decline may be a desirable and attainable goal in the medium term. Putting a complete end to population decline is not unrealistic in the long term, but ageing of the population should be taken into account in the long term as well.

#### 9.1.2. Knowledge<sup>5</sup>

The **extremely low ratio of the working-age population in the labour market and the large differences in employment ratios according to gender, age group and especially educational level,** is a permanent critical problem of the Hungarian society

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<sup>5</sup> This sub-chapter is based on the following background study prepared for the National Council for Sustainable Development: Csapó B. – Nikolov M. – Molnár Gy., 2011. The source of the data in the sub-chapter may be traced back to this study.

and economy. The most important factor of the critical employment situation is the very low labour market participation of those, whose highest qualification is the elementary one. Skills, core competences and convertible professional knowledge necessary in the labour market of the 21. century requires public education graduates to leave the school system with a wide ranging basic knowledge and to be able to continuously renew and update their knowledge.

In Hungary, the expected time of schooling at the age of 5 is 17.8 years (in Finland, the leading country of knowledge production, this value is 20.3 years, the average of the EU-27 is 17.2 years). Thus, currently the number of years spent in school in Hungary is slightly higher than the European average, but lags behind the Finish value by 2.5 years. Therefore increasing the number of years spent in school constitutes a helpful reserve with regards to the Hungarian development – of course while guaranteeing the appropriate educational quality.

Prolonging the time spent with education is not merely a quantity issue. There are considerable differences between students in dozens of schooling related variables. The pace of maturity, among others, may vary, thus developmental differences may be significant in a certain point of time. There are considerable differences in the students' family backgrounds, in the kind of support families can provide to their children. Summarising all these aspects, we can conclude, that the educability of children differs largely, and by the extension of schooling, the ever less educable children should be enabled to reach higher qualifications, who previously were prone to early dropping out. The only natural solution is that children with less educability need longer time to reach the same qualification level than their more receptive counterparts. In brief, differences in educability may be converted to differences in schooling time. Education is an organically developing system, therefore it is difficult and irrational to seek enormous changes. Gradual proceeding is important with regards to extension as well. The system can cope with continuous, small changes of a few percent by year, but rapid changes may cause disturbances. Smart planning may make good use of other irregularities, such as those stemming from demographic causes. Hungary has such opportunity for the extension of education in the decade of 2010. The demographic „low tide” – accompanied by necessary school closures – has passed through the elementary schools and reached the secondary education. Currently the capacity of secondary educational institutions is not fully utilised. This is the situation that should be used to make secondary qualification general.

Concerning schooling tendencies, the domestic situation is similar to that of the developed and of the EU countries. The proportion of those with upper secondary qualification within the 25–64 age group seemed to stabilise around 42-47% between 1997 and 2008 in the OECD and 19 countries of the EU, and increased only slightly. During the same period in Hungary, this value was already higher, around 50% and further increase was observed. Regarding tertiary qualification, it is a different situation in the countries surveyed and in Hungary. In the OECD and EU countries, the ratio of those with tertiary qualification in the 25–64 age group was just over 20% in the beginning of the examined period, and rose to over 25% by the end of the period. In Hungary, in the second part of the 1990s, the proportion of adults with tertiary qualification slightly exceeded 10%, by the end of the first decade of the new millennium this value still did not reach 20%. Thus in Hungary, the ratio of those with tertiary qualification rose significantly in the last ten years, but compared to the average of the OECD and EU countries, it is still lagging behind to the same degree. By 2020, the European Union aims to increase the proportion of those with a diploma in the 30-34 age

group from 31 to 40%. Hungary's commitment regarding this indicator is to increase the ratio of those with a diploma to 30.3%.

**Trends in educational attainment: 25-64 year-old population, Hungary, OECD and EU19 average, 1997–2007 (%)**

Country/Level	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<b>Hungary</b>												
Below upper secondary	37	37	33	31	30	29	26	25	24	22	21	20
Upper secondary	51	50	54	55	56	57	59	59	59	60	61	61
Tertiary education	12	13	14	14	14	14	15	17	17	18	18	19
<b>OECD average</b>												
Below upper secondary	36	37	37	36	35	34	33	32	31	30	30	29
Upper secondary	43	42	42	42	43	44	44	44	44	44	43	44
Tertiary education	21	21	21	22	23	23	24	26	26	27	28	28
<b>EU19 average</b>												
Below upper secondary	36	38	37	37	35	34	33	31	30	29	29	28
Upper secondary	46	44	44	44	45	46	46	46	46	47	47	47
Tertiary education	18	19	19	19	20	21	21	23	24	24	25	25

Source: OECD (2010) *Education at a Glance 2010*, Table A1.4.

**In spite of the improving educational level of the population, a sizable group of low educational level is continuously reproduced.** Most endangered in this respect are the students dropping out of vocational schools. Causes of early dropping out are very complex, and paired with regional disadvantages, may pose extremely grave problems. The reduction of the proportion of the early drop-outs is one of the most important goals supporting the educational successes of the most disadvantaged students based on socio-cultural and economic aspects. According to the plans, improving the quality, attraction and labour-market relevance of professional training, as well as through the implemented scholarship system, the retaining capability of the school may be increased. Vocational training built on elementary qualification may enhance the entrance of young people into the labour market. At the same time, it should be ensured that employees out of vocational schools possess the general intelligence and the appropriate competences needed to keep up with the ever changing technologies, to continuously participate in trainings and in the lifelong learning process, which are the prerequisites to gain a firm foothold in the world of employment. The target set by the European Union with regards to early dropping out is 10% by 2020, and Hungary also aiming for the same.

There is a tight correlation between our low employment data and the quality of our educational system. Those with only elementary or vocational qualification have a much smaller chance to get hired for jobs requiring reading-writing and other skills based on

them, than their Central- or Western-European counterparts with the same qualification. Labour market demand is selective based primarily on school qualification, so it prefers the more qualified individuals. Qualification and labour market opportunities are more determining in Hungary than in other parts of the world. In the 25–64 age group the employment of those with elementary qualification lags behind the EU average by 16 percentage points. This handicap is reducing the higher the qualification, seven percentage points in the case of secondary and five among those with tertiary qualification.

According to the OECD's Adult Literacy Survey, the assessment of the literacy of the generation of 40 years of age and younger, but already out of school indicates, that in Hungary, 70% of the population has very weak prose literacy, while the average of the Western-European countries is 45%. One quarter-fifth of the Hungarian youth does not learn to read and write at a level that will be needed during their subsequent education or employment.

Hungary has been taking part in the most important international testing programmes since the beginning of the 1970s, therefore an enormous data collection is at our disposal to present the performance of the Hungarian public education in international and historical context. The majority of the data is available from the areas of reading-literacy, mathematics and natural sciences, primarily as part of the FISS, SISS, TIMSS, PIRLS and PISA survey results. These assessments show a quite diverse picture of the performance of the Hungarian public education: in the TIMSS and PIRLS surveys students traditionally show a good performance, while in the PISA testing they achieve much weaker results, but still in line with or slightly below the OECD average.

According to international surveys, differences are greater within a certain educational system, between schools and within a school between certain students, than between the averages of educational systems. Currently the Hungarian school system is unable to cope effectively with differences at the individual level. **Strong selection begins already at the time of entering and the differences are continuously increasing the higher level the student proceeds.** Based on family background, performance differences between students stop increasing above the 6<sup>th</sup> grade, but segregation based on family background increases the entire time. As a result of this, the current school system is not only unable to reduce differences present at the beginning, but it even aggravates them. **If providing every citizen with the opportunity to live a complete life is an important objective for a nation, then this can be achieved much more efficiently with the help of the school system, than later on by complex and costly redistributing systems. A selective school system however – as previously demonstrated related to natural science knowledge – incapable of increasing the ratio of students performing at an outstanding level in international comparison, thus it cannot fulfil the function of producing the elite either.**

Those European educational systems are more successful and efficient, which do not direct students of various backgrounds too early to different institutions. Regarding the PISA tests, there is hardly any good performing country which has selective educational system. Interaction between students in heterogeneous groups is more wide ranging, which enhances social cohesion. With regards to learning motivation, which significantly

influences the educational results, much favourable mechanisms are present in heterogeneous groups than in homogeneous ones.

In the PISA mathematics survey of 2003, selection of Hungarian students based on economic-social variables was the strongest; and according to the scientific knowledge results of the PISA survey of 2006, Hungary [70.4] is not only number one in this area, but it stands out by far from the other participants, leading the list of selectivity, much ahead even of Germany [59.9] at the second place. We are unable to create the appropriate amount of natural scientific research skills and jobs that would directly ensure scientific innovation, and we are incapable of providing everybody with the opportunity to attain the knowledge and skills required for permanent employment.

According to the PISA surveys of 2009, Hungarian performance in the areas of mathematical and natural scientific skills has not changed considerably. Results in literacy have improved slightly in the first decade of the 2000s, and the fact that the worst performers showed the greatest improvement is also a positive development. No change has been registered, however, with regards to the influence of school differences and family background on student achievements. Although the proportion of those with a weak reading performance decreased significantly between 2006 and 2009 in Hungary, we are still below the EU and our reference value (with regards to reading the reference value for 2020 is 15%, the EU average in 2009 was 20%, Hungary had 17.6%), which raises the need for further measures, including for certain the development of the students of the worst performing schools and institutions.

In the OECD's PISA survey of 2009, the proportion of students achieving the highest performance level (level 6.) in natural science was 0.3% of students in Hungary. Finland (3.3%), which belongs among the best, supersedes Hungary's result eleven fold. This means, that although Finland's population is half of Hungary's, five times more highly qualified students graduate from the country's schools, who represent a useful pool for scientific research jobs. Polish and Czech students, who demonstrated outstanding performance, surpass Hungarians by 2-4 times, and our considerable lag in the region is especially a warning sign.

The quality of education largely determines the society's innovation potential and the possibilities for scientific research. Requirements of scientific research careers are best met by students with outstanding performance in certain fields of study. Therefore, with regards to contributing to the country's scientific potential, not only the average performance of the students of each country and the amount of weak performers are important factors, but also the ratio of those with really outstanding performance.

The next issue regarding the possibilities of innovation and scientific research serving economic development, is how to utilise the available highly qualified youth, and whether they can be provided with research positions in sufficient number.

According to the OECD's PISA survey of 2009 – which takes into consideration not only the outstanding performances in the field of natural sciences, but the good ones as well – 0.3% of students in Hungary reached level 6., and 5.1% level 5., which is altogether 5.4%. (The same data in Finland is 3.3%+15.4%=18.7%.) Out of 1000 employees, the number of those working in the field of research was 4 in Hungary (while in Finland over 17).

Comparing these data, we can observe that in **Hungary, a smaller ratio of skilled students will become researchers directly serving technological development**, than in Finland, the leader in knowledge capital expansion. Results of the international surveys demonstrate that there is a very strong correlation between the proportion of highly qualified youth and the number of those employed in the research field. Among countries with developed economies, there are only four (Czech Republic, Italy, Turkey and Mexico), that employ a smaller proportion of researchers than Hungary. The ratio of people working in the field of research in Hungary should be increased by 25-30%, in order to reach the average utilisation of the potential in the knowledge of the youth, generated by our current education.

**In Hungary, although the quality of the natural science education is generally in line with the OECD average, the proportion of students with high or outstanding performance, who have the potential to be part of the pool for researcher education, is among the lowest. The ratio of those employed in the research field is even lower.** Therefore, education is suffering from such problems, which significantly degrade the competitiveness of the Hungarian economy and in the long term may jeopardise sustainable development.

**In Hungary, the ratio of those speaking a foreign language and at the same time open to learn other ones is relatively low, while the proportion of those not speaking any foreign language and not even willing to learn is high.** According to international statistics, with regards to the number of hours dedicated to foreign language teaching in public education, Hungary has one of the highest values (on average 10 academic years provided per language), however, the efficiency loss is also significant. Research has found the main reason for this to be that the interlocking of the elementary and secondary level is problematic, meaning that the language skills acquired in elementary school are not appropriately utilised<sup>6</sup>. At the same time, the spreading of bilingual secondary schools and language preparatory classes contributed to the decrease in the tendency of younger generations lagging behind in international comparisons of language skills.

In Hungary, similar to foreign language skills, **economic and financial knowledge also falls below even the mediocre general intelligence.** We are not in a favourable position in international comparisons in the fields of digital literacy and the dynamically growing, but relatively expensive internet access. The digital literacy level of those aged 9-16 falls below the international average<sup>7</sup>.

In the area of *knowledge related values*, we can observe, that although social acknowledgement of good performance is relatively high in Hungary, the society is still suspicious of employment related promotions and getting rich. According to Hungarian public surveys compared to Europeans, hard work is one of the least regarded aspects in connection with social advancement.

Typical traits of Hungarians are the openness to science and scientific literacy, but these positive values are paired with the over mystification of science. In international comparisons, Hungarians tend to respect and praise science. More than 60% of the

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<sup>6</sup> Vágó-Simon-Vass (2011)

<sup>7</sup> Vágó-Simon-Vass, *I.m.*

population believe that benefits of science are greater than its drawbacks. This places Hungary to the third highest position in Europe. There is also an outstanding amount of people (80%), who think that science has made the life of humans significantly easier. (Such respect around science may also represent a certain blindfoldedness related to the scope of science.)

With regards to the *interrelatedness of science, research and sustainable development*, the Hungarian Academy of Sciences and the National Office for Research and Technology launched numerous agricultural and environmental programmes in the second half of the first decade of the 2000s, several of which resulted in significant agricultural and environmental innovations. From the same time, environment oriented innovation started to develop, however, closing the innovation chain is still pending. Environment-oriented researches are not widely represented in services, technologies and products. Programmes and institutions aiming to generalise cleaner production methods have strengthened. The number of reference documents supporting the application of Best Available Technologies is increasing, new databases have been developed of the pollutant-emission and transportation registries.

Overall, the application of R&D and innovation results is a moderate, but strengthening positive driving force. According to experience, one of the main driving forces of agricultural and environmental innovations is the necessity to comply with legal requirements. Other barriers of implementing innovations are the administrative burdens and the complex and time consuming authorisation procedures. By reassessing the legal environment, administrative barriers may be mitigated.

### 9.1.3. Health<sup>8</sup>

According to the widely accepted, holistic definition of human health, recommended by the World Health Organisation (WHO), it is the state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. The highest attainable standard of physical and mental health is a basic human right. It determines an individual's life, quality of life, just as the revenue generation capability of society, therefore the significance of efficient health education, health development is ever growing in developed societies.

A fundamental experience of every person is that the best attainable health condition of individuals and their communities is a basic need, which is a fundamental condition for individual existence, self-fulfilment and happiness, as well as for the viability, effectiveness, and eventually survival, sustainability of human communities, like the family and other associations established for serving various agendas, representing values, protecting interests. Natural sciences, mostly biomedicine and modern evidence based medicine, as well as social sciences, such as anthropology and sociology are supporting this experience by facts.

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<sup>8</sup> This sub-chapter is based on – among others - the following background study prepared for the National Council for Sustainable Development: Spéder Zs. (szerk.), 2011. The source of the data in the sub-chapter may be traced back to this study.

While at an individual level it is ever easier to determine the external and internal factors that led to a certain health deterioration, at the population level it is more difficult to define the role and significance of certain factors. According to international research results, preventable, premature deaths are generally induced mostly (40-50%) by lifestyle (health behaviour and way of living), to a medium degree (20-30%) by genetics and environment, and only to a small degree (ca. 10%) by the quality of the health care systems. By studying death cases we can conclude that morbidity also shows similar ratios.

The health of a population is influenced by a system of interactions of the cultural, economic, political, health care, physical and social environment.

At the local level (the spheres of everyday life), health is guaranteed by the personal feeling of everyday freedom, the living, work and natural environment, partner relations and support, material situation, values and knowledge, as well as the availability of the health care system services.

An individual forms his/her behaviour at various spheres by following community patterns. The most dangerous lifestyle threatening risk behaviours are smoking, imbalanced diet and exercise (energy balance) habits, the quality and quantity of alcohol consumption, and other addictions. With regards to lifestyle, in addition to biological, organic and age conditions, it is also essential to have partner relations (support community), self-knowledge, self-esteem, ability to cope with problems and individual stress management skills.

In Hungary, *health*-related indicators reveal **poor physical and mental conditions related to human resources** that may be **caused primarily by the prevailing health damaging habits**, statistics of which also draw an unfavourable picture.

In addition to the low number of births, the decline in the Hungarian population is mainly owing to the **high rate** of premature (between the ages of 0-64) **mortality**, which despite of the favourable tendencies of the past few years is **still too high**. The unfavourable mortality rate is not only apparent compared to Western-European countries, but we are also lagging behind Central-Eastern-European countries of similar historical traditions. The improvement of the past one and a half decade is by far not satisfactory.

The standardised mortality rate of the male population in Hungary is 77% higher than in Austria, 30% higher than in the Czech Republic and 12% higher than in Poland. The excess mortality is due mainly to cardiovascular related deaths.

The cardiovascular mortality of Hungarian men is 114% higher than their Austrian counterparts, exceeds by 27% of the Czech and by 19% of the Polish value. The standardised ratio of the mortality caused by gastrointestinal disorders is 224% higher than in Austria, 110% higher than in the Czech Republic and 90% higher than in Poland. The diseases that belong in this group are related mainly to the excessive and low quality alcohol consumption. With regards to cancer mortality, the source of the excess mortality of Hungarian males can be clearly defined. These deaths are owing mainly to high alcohol consumption in combination with smoking.

The level and characteristics of female mortality is similar to that of the male ones in many aspects, but our lag is slightly smaller.

As for female cancer mortality, the picture is very similar to the one seen in connection with males. In case of all cancer related deaths strongly connected to alcohol consumption and smoking, Hungarian mortality is significantly higher than the Austrian, Czech or Polish one. The standardised number of breast cancer related deaths that may be reduced by screening is 20–26% higher in Hungary than in neighbouring countries.

The majority of morbidity is represented by the chronic non-infectious diseases. A **considerable part of the disease burden** caused by these illnesses is **owing to lifestyle factors** (smoking, excessive alcohol consumption, unfavourable diet habits, physical inactivity, deterioration of mental health). The determining factors in the background of unfavourable lifestyle are of psycho-social origin.

**In Hungary, the adverse health situation is coupled with a high degree of health risk behaviour.** The population of Hungary – similarly to the population of new members of the European Union – deem their health condition to be much worse than the average. According to available data, the degree of alcohol consumption is significantly influenced by economic development (less alcohol is consumed in less developed countries), but independently from this, alcohol consumption also shows „national characteristics”. The cumulative effect of all these factors is that our country is among the top ten in the list of countries with the most alcohol consumption. The proportion of people smoking, and mainly the ratio of the women, is also high among the European countries. Addictions posing health risk are popular among the youth as well: the differences between boys and girls have been reducing in the case of both smoking and excessive alcohol consumption. Our statistical data is still inadequate about the consequences of drug addiction spreading among young adults, but in longer terms, it will certainly contribute to the deterioration of the physical, mental and spiritual state, and even to the emergence of antisocial behavioural patterns.

An additional factor posing health risks is the **excessive nutrient intake** and **sedentary lifestyle**. According to the European Health Interview Survey of the Hungarian Central Statistical Office, half (49.7%) of the adult population does not perform vigorous (regular, age- and abilities-based) physical activities at all, one third (33.4%) does not even perform moderate physical activities and one fifth (21%) of them does not even walk for at least ten minutes a day. According to the results, the weight of more than half (53.7%) of the population over 15 years of age is higher than the normal and every fifth adult is even obese. According to the data on self-completion questionnaires, the proportion of obese or overweight women is lower.

The unfavourable trends associated with the indicators of **mental health** traditionally pose a unique problem among the Hungarian population. The prevalence of both depleted mental functionality and depression/anxiety is high among men and women below the age of 65. This value is even higher among those aged 65 and older (except for the prevalence of depression/anxiety among men aged 65 and older). Although Hungary has been showing a decreasing trend of **suicide** related deaths, its relative risk is still more than twice higher than the average of the EU-15 countries.

The differences listed clearly **indicate the grave quality of life, lifestyle and health behaviour related problems affecting the Hungarian society**. An improvement in the mortality level would require significant lifestyle changes. Decreasing years of life lost through screenings and curing could also play an important role in mitigating the female and male mortality.

**Environmental factors** are well known to pose **severe health risks** as well, below 18 years of age one sixth of the entire disease burden is caused by the unhealthy environment. As for environmental exposure, concerning the affected settlements and the number of inhabitants, one of the most important tasks is the improvement of the quality of the drinking water (the number of settlements where drinking water is substandard due to arsenic, boron or fluoride is 365, the number of affected inhabitants is nearly 900,000). It is essential to reduce the chemical contamination of the air, especially the concentration of airborne dust, in both cities and small settlements, where „fuel poverty” increases the dust load during the heating season. Airborne dust pollution induces 358710 disability-adjusted years of life lost for our population, corrected for. Just by observing limits (daily, yearly), a measurable health gain could be achieved, and in this respect, long term air quality improvement is much more effective.

According to estimates, one fifth of the Hungarian population suffers from **allergy and asthma**, the endemic diseases of the 21. century. High biological air pollution plays a big role in its development, primarily the very high ragweed pollen concentration, the load of which affects nearly half of our population for 25-45 days per year. This high load of ragweed pollen is contributing to 40-70% of allergy patients being sensitive to ragweed.

The **environmental health impact of climate change** is quite substantial, particularly the effect of high temperature and the heat waves. The extreme heat wave of 2007. claimed more than 1000 lives nationwide, which corresponds to 2.5-4 weeks of life lost based on the entire population. 600-900 excess deaths per year occurred between 2008-2011 owing to this.

In 2010, a difference of 4.3 years among men and 2.2 years among women appears in life expectancy at birth based on whether they live in the western or eastern part of Hungary, which implies severe regional disparities, the polarisation of the living conditions of the Hungarian society. **Social differences in health conditions are more apparent in Hungary, than income disparities** and the studies of the past decade suggest the augmentation of inequalities, despite the announced health- and social policy efforts. Targeted researches have documented the particularly unfavourable health conditions and lifestyle of the population of disadvantaged small regions and socially excluded groups – the Roma, poor, unemployed, single elderly, etc. Significant environmental health deficiencies are present in settlement colonies, accommodating nearly 2% of the population, with a public utility coverage much lower than the national average. According to international studies, the health and lifestyle of school-aged children is unsatisfactory compared to developed countries.

#### 9.1.4. Poverty

Poverty is a phenomenon, a life condition, inhibiting social adaptation, participation in social division of labour, and utilisation of innate capabilities and talent of people. Elaboration on the topic in the chapter dedicated to human resources is justified based on poverty's strong interrelation with education, demographic features and health conditions. In common knowledge, poverty is equal to income deprivation. Relevant studies have drawn up a more detailed picture, which shows, that in the past years the most important contributing factors of exclusion and poverty risk in Hungary were qualification, employment, number of children and settlement slope (size and position of the living area in the spatial structure).

The word poverty also harbours such connotations, that may be derogatory; expressions as emotional poverty, cultural poverty, etc. touch upon such areas, which pose the risk of belittling the aspirations for satisfying basic human needs, and where the lack of precise definitions make the establishment of diagnoses and therapies more difficult. We hardly have any information about fuel poverty, social capital, informal education and access to public services, even though these factors bear fundamental importance with regards to social adaptation.

The **national poverty rate** in Hungary (people living on less than 60% of the median equivalent income) was **12.4% in 2009**. In the preceding ten years, the rate was fluctuating between 10% and 15.9%, showing a slightly increasing trend. (In 2000 and 2001 it was 11%, in 2008 and 2009 12.4%). This indicator is better than that of the EU-15 countries, poverty rate in Hungary is 4 percentage points lower. Considering however, that in the EU there are significant differences by countries regarding average income, in absolute terms our situation is not more favourable, since the Hungarian average income level is considerably lower than in the majority of the member states.

It is a warning signal, that there are an **ever growing number of children among the poor**: every fifth poor person is less than 17 years old. Generally as age advances, poverty rate falls: nowadays in Hungary, poverty has a child's face, not an old person's. Families of three or more children and single-parent households are especially exposed to the risk of poverty, whereas the chances of retired people for poverty are below the national average (4%).

**Fuel poverty**, a relatively new notion in Hungary, is also important to introduce. According to international literature, a person is considered to be in fuel poverty if he/she needs to spend more than 10% of his/her income on fuel. In domestic conditions this approach cannot be used, since this condition applies to the majority of the society. Studies and analyses of fuel poverty indicate the complexity of the matter, the problems Hungary has to face due to it, and the disparities between world market prices and domestic income levels.

## 9.2. *Social resources*<sup>9</sup>

A nation's long term sustainability is guaranteed not only by economic or natural resources, but by social capital as well: such institutions, values and cognitive models must exist, which can guide individual and community decisions in a direction that is in accordance with the objectives of long term sustainability. Values passed on during socialisation and fixed deep in the individual's personality are the slowest – and take the longest - to change among social resources. The first step in the situation assessment is therefore the analysis of the value system of Hungarian: which elements are in accordance with sustainability and which are conflicting. Following important values might be hindered by cultural-social obstacles. Therefore, the next issue to analyse is how well are Hungarian able to effectively follow their values during the course of their lives and what factors hamper them. Among these factors, personal, informal relations must also be taken into account as much as formal ones, such as institutions, regulatory systems related to the state.

The most important general values and attitudes favourable to sustainability are the following: (1) diligence and appreciation of work; (2) preferring financial prudence over consumption; (3) environmental awareness: respecting nature and cultural heritage; (4) individual responsibility and risk taking; and (5) trust and willingness to cooperate.

### 9.2.1. Diligence and work

According to the results of the European Social Survey (ESS), one of the most comprehensive European value surveys – based on the Schwartz-value test – it is typical of Central-Eastern-Europe and thus Hungary, that **people assign relatively great importance to socially acknowledged performance**. (Luksander–Mike–Csite, 2011a). Furthermore, considering **work as the most important activity** is more typical of the Hungarian population, than of the American for example. In Hungary, the rate of those considering work more important than free time is one of the highest in Europe (66%), while in the neighbouring Visegrád countries this ratio is at least 5-10 percentage points lower. It is also worth noting, that ca. two-thirds of the Hungarian population believes that attaching less importance to work in their lives would rather be a bad thing.

This **highly favourable value system however is very difficult to follow currently**. In Hungary, compared to international trends, the population is fairly dissatisfied with its working conditions (40% of the survey participants), while the time spent on earning money is outstanding, compared to European data. The Hungarian organisation culture is characterised by high expectations and low autonomy. This type of atmosphere results in rising dissatisfaction and stress attached to the workplace. The inflexibility of the labour

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<sup>9</sup> This sub-chapter is based primarily on the following background study prepared for the National Council for Sustainable Development: Keller T. – Tóth I.Gy., 2011. The source of the data in the sub-chapter may be traced back to this study. Other sources will be noted in addition.

market is part of the reasons escalating work related dissatisfaction, and will be explained in more details in connection with economic resources.

### 9.2.2. Preferring financial prudence over consumption

According to the aforementioned European value survey (ESS) Hungarians, compared to other European nations, highly appreciate the joys and thrills of life, but at the same time, material wealth is not of paramount importance for them. Other surveys (European Values Study) observed, that Hungarians consider being financially prudent relatively important (as a child raising principle). Therefore, **Hungarians are showing strongly hedonistic characteristics at the level of declared values, nevertheless it does not translate into materialism, nor into short term thinking necessarily.** We possess only partial information about how closely these values are really followed in everyday life. The savings ratio of Hungarian households in the period of 2000-2005 (Bethlendi, 2007) was more favourable than in most countries of the region, moreover, than in some significantly richer Western-European countries. Following a temporary setback due to macroeconomic factors, the ratio will rise over 7% again, according to OECD forecasts. (OECD, 2011). Exaggerated consumer approach may be well demonstrated by the popularity of such new, symbolic consumer products as the mobile phone. Its penetration is not outstanding among Hungarians (77% in 2003, whereas in Slovakia 68%, in the Czech Republic 95%, and the average of the EU-25 countries was 80% – European Commission, 2005).

One of the gravest economic problems the nation is facing currently is the **indebtedness caused by foreign currency loans.** Although its precise causes are disputed, it appears that the main cause of the crisis was primarily not individual irresponsibility, not a value system based on short-sightedness and disregarding the future. **Main contributing factors were the financial inexperience of the population, governmental macroeconomic policy raising the cost of forint loans, deficiencies of the regulations and of banking ethics.** Hereby we have listed the social institutions, which in general may have a key role in supporting responsible consumption and saving decisions.

Consumption and saving habits of certain social groups may of course differ considerably from the average. Based on consumer segmentation in Hungary, only a small group of people may be considered elite consumers and a quite wide range of people do not consume anything else other than what is needed for their physical existence. Lifestyle-based consumption is more typical of the middle part of the social hierarchy. Financial hedonism is not a typical feature of the richest consumer groups in Hungary. Thanks to their high income, they are less affected by indebtedness associated with borrowing. Their consumer appetite is significantly bigger than that of certain relatively low income groups. This may be interpreted positively, since if lower income groups start to consume more, that might motivate them to break out of their situation. On the other hand, it could create problems, if poorer groups become more indebted due to excessive consumption, thereby aggravating their disadvantaged situation.

### 9.2.3. Environmental awareness

Hungarian **public opinion is very supportive of environmental protection, however, the participation rate in environmental protection related activities is low even in international comparison.** Environmental awareness aspects (e.g. ecolabels) have relatively low significance in Hungary, compared to other countries. Hungary has one of the lowest ratios of those who attach „great importance” to ecolabels (26%) when going shopping. However, we cannot jump to the conclusion based on the data that Hungarian shoppers are completely ignorant of environment-conscious approaches. In absolute terms (based on percentage distribution), in Hungary, as in every other country, consumers pay more attention to the ecolabel than the brand.

Environmental consciousness also involves the knowledge and the respect of the built environment. In this aspect Hungary is also lagging behind the international average.

### 9.2.4. Individual responsibility and risk taking

Appreciation of work and saving indicates that Hungarians are no stranger to responsibility taking. With regards to their opinions about independence as a general value, Hungarians are on the border of Eastern- and Western-Europe (according to the previously quotes ESS survey). However, the materialisation of independence is severely hampered, according to Hungarians: belief in controlling one's own fate is weak (but not extremely weak), in European comparison.

The situation is much less favourable in the area of risk taking, similarly to other Eastern-European nations, **Hungarians value safety to a great extent**, in their own lives, as well as with regards to the whole society (Keller, 2008). Even more so, Hungarians **do not appreciate challenges, and fear exciting adventures, changes.** In accordance with this, analysing welfare and public policy values, it is evident, that **demand for redistribution is high** in Hungary in European comparison. This means that the population is very supportive of the aspiration of the state to reduce income inequalities. The supporters of increased public funding in the areas of health care, family support, pension and social care outweigh those who are in favour of the private sector taking an active part.

### 9.2.5. Trust and willingness to cooperate

Maintaining and developing resources presumes cooperation and cooperation presumes trust. In the area of social cooperation, evidence shows, that **in Hungary, trust vested in people and in institutions is both low in international comparison, on the other hand, „particular” trust in the family and close personal environment is high.** The latter is an extremely important resource of the society that must be preserved. Value creating and preserving cooperation is seriously hampered by a great deal of distrust present in the society outside of the tight personal sphere. Hungarians are distrustful

towards each other, political organisations, public institutions and businesses. We are not only distrustful, but also think bad things about those we do not know. Research shows that in Eastern-Europe rich people are generally treated with suspicion, and their getting rich is regarded as a result of external circumstances (relations, advantageous starting position), rather than personal capabilities (talent, hard work).

**With regards to trust vested in institutions, a significant reduction occurred in the first years of the new millennium.** Lack of social cooperation is apparent in tolerating corruption and in the low level of public and political participation. Results of a survey in 2009 show that Hungarians have the greatest distrust towards politicians, bankers, rich people and journalists (Tárki, 2009). These results confirm that Hungarians are distrustful towards richness, and in general, towards material and other types of successes. Along with the low trust in people, the trust vested in institutions is also scant. On a scale of 0-10 only the Hungarian Academy of Sciences reaches the middle of the scale with a score of 5. Hungarians are rather distrustful towards most institutions.

An important form of social cooperation is law-abiding behaviour. The results of empirical studies are ambiguous. According to some, Hungarians are leading in general compliance related to regulations and they are also virtuous in the area of economic morale; nevertheless, they quickly give up the desired law-abiding behaviour if it conflicts with their private interest (Keller, 2010). According to other studies, Hungarians are significantly lagging behind other Visegrád countries in law-abiding attitudes related to the state (tax evasion) (Tárki, 2009). It is important to clarify what factors influence the opinions about non-compliance. The exact causality analysis is difficult to conduct in this topic. Research results have proved that non-compliance is more typical of those countries, where a large percentage of people think that social advancement is not so much enhanced by knowledge, but rather favourable family position. Thus there is a **unique ambiguity in relation to law-abiding: at the level of declared values Hungarians are characterised by strong moral commitment, which may be an important resource; at the level of actions however, it is not so apparent, law-breaking behaviour seems quite widespread around us, and considered „inevitable”.** Thus, the existing moral limits are not applied in practice.

Community service and political-public activities are important parts of social cooperations. These are good areas for the manifestation of trust vested in people, and community service also indicates how strongly a country believes that they are able to guide their own fate and to what extent. **Based on indicators measuring community and political activities, Hungary is continuously towards the end of the list.**

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In summary, **both positive and negative sustainability related elements are present in the value system of the population.** Positive elements are that we respect work, performance and nature, we consider saving, personal responsibility and law-abidance important in many aspects, and we are typically not aspiring material wealth just for the sake of it. Hedonistic approach, rejection of risk taking and challenges and excessive reliance on the state instead, as well as distrustfulness and suspicion outside of the

personal sphere are considered to be negative. **It causes a serious problem, that following positive values is often deflated, hindered in everyday life.** We are dissatisfied with our working conditions, we do not feel that real performance and law-abidance are the key to success. **Civil and governmental institutions that could strengthen positive values and limit or change the negative values are missing.**

**Public and private institutions representing the nation's cultural heritage play an important role in strengthening positive values and subduing negative attitudes.**

The values we respect, the way we see our relations with others, with nature and the environment, are essentially cultural issues. With regards to sustainable development, cultural institutions and civil organisations contribute to ensuring social well-being. By delivering high quality public service and by activities serving public benefit and interest, cultural institutions are enhancing science, education and lifelong learning. They aspire to ensure access to cultural values and knowledge for the poor, excluded, disadvantaged social groups through various services (broad access, introduction of collections), thus reducing social inequalities. These institutions provide current generations the opportunity to explore cultural values (as social capital) and to pass them on to future generations, by conserving, protecting, introducing, creatively renewing and serving cultural values. Learning, knowledge expansion at the original, authentic sight of built heritage is also of great importance. Historical aspects, characteristics, architectural features, etc. of built heritage draw parallels between the built heritage of other countries, regions, territories, and the built heritage destinations may become the scenes or supplements of tangible and intangible heritage, cultural traditions, that together make cultural heritage valuable.

As a result of the twists and turns of our Central-European history, a considerable number of Hungarians reside in our neighbouring countries as well, constituting a unique and significant resource. The exploitation of Hungarian-Hungarian relations contributes to the strengthening of social capital and they are also the resources of our economic development. **Certain transborder cultural and value patterns may have a fertilising effect on people living on the other side of the border.** A good example is that the demographic indicators of the Transylvanian-Szekler Hungarian population are somewhat more favourable than that of Hungary. The built heritage of Hungarian relevance and its research, restoration, introduction through cooperation, and the education of the related knowledge may also be important linking points.

### ***9.3. Natural resources<sup>10</sup>***

Hungary's natural features and resources are very diverse and unique. The Pannon region is a unique bioregional unit, so called Pannonicum, which is acknowledged by the European Union as independent biogeographical region, which significantly contributes

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<sup>10</sup> This sub-chapter is based on the following background study prepared for the National Council for Sustainable Development: Pálvölgyi T. (editor), 2011. The source of the data in the sub-chapter may be traced back to this study.

to the natural capital of the European community. Approximately 20-25% of the species are endangered and nearly half of Europe's protected species live in the Carpathian basin. According to this, the majority of our natural treasures are protected natural areas, Natura 2000 sites, areas belonging to the scope of various international conventions, as well as the nature conservation areas belonging to the National Ecological Network. The diversity of habitats and species may be well demonstrated by the fact that 21% of the country's areas are a Natura 2000 site, which is rather a high rate among EU states.

Considering our soils, we are in a unique situation – the size of arable land per capita is one of the biggest among European countries. Our underground water reserves - except groundwater - are considered one of our most significant natural resources both in quantity and in quality. Our forests, timber yields are continuously growing and are of good quality, however, effects of climate change and other circumstances (droughts, acid rain, diseases, forest fires, pests, timber thefts, etc.) jeopardise favourable conditions for forestry and wildlife management.

On the other hand, our stocks of raw materials and energy sources are quite low, compared to demands, and the availability of renewing and renewable energy sources shows a diverse picture (however, Hungary has outstanding geothermal potentials even in international comparisons), and their utilisation results from time to time in spill over effects and raises sustainability issues. Global challenges and the responses in reaction to them clearly shed a light on the vulnerability of the services provided by natural resources.

### 9.3.1. Atmospheric environment

With regards to *atmospheric environment*, a number of interrelated trends may be identified, with long term, but opposite direction effects.

Since the beginning of 1990s, a permanent and significant reduction is observable in the emission of air pollutants inducing atmospheric acidity (sulphur dioxide, nitrogen oxides, carbon-monoxide, ammonia). As a result of industrial restructuring, international environmental protection agreements and the related EU-compliant emission requirements, sulphur dioxide emissions fell to one tenth of their previous value in the past 20 years, ammonium and carbon-monoxide emissions were reduced by about 50%. At the same time, the emission of nitrogen oxides has not changed considerably in the past few years; this is owing to the offsetting processes of reduced industrial emissions and increased transportation related emissions. In case of air pollutants causing air acidity, the increase of industrial production is not associated with a similar rate of increase in environmental load, on the contrary, a clear „separation” can be observed. We can conclude, that for the years of the 2000s **emissions causing atmospheric acidity are not jeopardising factors for sustainability transition**. Similar favourable conclusions may be drawn with regards to benzene, heavy metal (arsenic, cadmium, nickel, lead) pollution.

**Due to the considerable reduction of industry related pollution, the air quality of settlements is mostly determined by transportation and residential heating.** One of

the most hazardous aspects of this is PM10 emission (as well as PM2.5 emission, starting to receive regulatory attention). Particles of less than 10 micrometer in diameter, called fine particles, directly affect the life support function of the atmospheric environment as natural resource. These particles can penetrate the deepest parts of the lungs, causing respiratory problems and deterioration in the condition of cardiovascular patients. Biomass utilisation has dramatically increased in industries and through the use of small combustion installations by the population and various services, which adversely affected PM10 emissions. The PM10 emission related to the fuel use of transportation has been fluctuating in the past few years: growing in favourable economic environment, then stagnating due to the economic crisis and the associated fuel price increase, then reducing (transportation related fuel use grew by 0.4% in 2009, compared to 2008, and fell by 9.4% in 2010, compared to 2009.) As for international trends, unfavourable conditions have been observed related to the surface ozone concentration.

### 9.3.2. The state of our water reserves

In terms of hydrology and water management, Hungary is a record holder in many areas. It is positioned in the lowest part of one of the most enclosed basins on Earth, and **our downstream exposure is significant**. Based on the amount of water influx into the country, Hungary is characterised by water scarcity and water surplus at the same time. The utilisation of our underground water reserves (the renewing-refilling part of it) is high in certain areas of the country (e.g. around 70% in Alföld), which calls for caution, since these reserves may be reduced by even half due to climate change. Another feature is the uneven distribution of water reserves, as well as that in many areas the natural quality of underground water reserves does not comply with the regulations related to drinking water quality.

95% of our surface waters originate outside the country, per capita surface water is 11,000 m<sup>3</sup>/person/year, one of the highest in Europe. At the same time, the contribution of inland runoff (600 m<sup>3</sup>/person/year) is one of the lowest on the continent. An additional problem is that access is very difficult, as it is associated with the beds of the big rivers. The areal and time distribution of our reserves is very extreme. Low-lying areas with no runoff are large; more than 21,000 km<sup>2</sup> are affected by flood risk (23% of the country's total area is floodplain). Flood defence embankments cut off backwaters on the protected side from the main river. In the Tisza-valley for example, the lack of regular flooding has changed the groundwater balance in the old floodplains, which resulted in a complete transformation of the soils and the landscape. At most rivers coastal vegetation and plough lands are missing, settlements often stretch up to the river banks. All this have an adverse impact on the ecological state of the water reserves. In addition, the altered land use and growing climate extremities have made it clear that traditional flood protection methods do not provide sufficient security. Due to geographical features, **Hungary has the greatest flood hazard in Europe**. Although 96% of the floodwater of our big rivers is created outside of the country, unfortunately they exert their unfavourable effects on Hungarian plains. Flood protection was successful in the 20th century, as well as in the previous years, despite the fact that only 60% of the embankments are compliant with security and stability requirements. It has become obvious by now that gradually raising

the embankments does not constitute a long term solution, we need to switch from protection to prevention. A new strategy is needed especially in the Tisza-valley, the area with the highest flood risk.

On the plains, there is both a risk of inland water and of drought, the latter affecting the Alföld and the Tisza area the most. A quarter of the country's area is a low-lying plain area, without natural drainage. Close to 10-15% of the almost 5 million hectares of plough land cultivated regularly is often covered by inland water each year. According to data compiled during multiple years, nearly 130 thousand hectares are covered by inland water for 2-4 months each year. One of the weak points of regional water management is disregarding local features, the lack of harmony between water reserves, extremities, agriculture, land use and landscape ecology. Inland water remaining for shorter or longer time in the local pits of our low-lying plain areas is an important feature of the landscape, along with the associated water habitats. Groundwater level is falling due to inland water drainage lacking ecological considerations, water habitats are reducing and drought vulnerability is increasing. An effective and nature-friendly form of drought protection is keeping the inland water in the area: it results in land use less prone to drought, improves water balance and the micro climate, reduces irrigation needs, and at the same time may increase reserves available for irrigation.

Water withdrawals, discharges and diversions may change natural features and runoff conditions of surface water bodies to such extent that it hampers the functioning of the ecosystem and the attainment of a good ecological condition.

Our underground water reserves are of outstanding significance in European comparison, 95% of the drinking water supply is covered by underground water and our thermal water potential is excellent. Although in the years after the beginning of the new millennium, underground water production stabilised nationwide, large scale non-authorized water withdrawal is a general problem (where water quality cannot be guaranteed according to the requirements of drinking water regulations). This unsustainable solution not only causes serious quantity problems, but poses pollution hazard for medium-depth aquifers.

Large scale, tendency-like sinking in the groundwater level cannot be observed currently, but there are areas, where drier weather, drainage canals, land use and water withdrawals resulted in substantial sinking. Another significant problem is that in lowland areas (e.g. Duna-Tisza Közi Homokhátság and Nyírség) inappropriate water management has drained groundwater, considerably influencing the water balance of the region. As a result of this, **water habitats of wetlands have practically vanished or their area has significantly shrunk**. The western boundary of the steppe-lands is in Hungary: groundwaters play a significant role in the functioning of the valuable and in many aspects unique ecosystem of the Alföld.

The most common water quality problem affecting both our surface- and groundwaters is the excess presence of organic materials, nitrogen and phosphorus. Nearly 50% of water courses and one third of still waters cannot be classified as being in a good condition with regards to organic matter and various nutrients. The natural quality of most aquifers does not comply with drinking water regulations: this problem affects the drinking water

supply of hundreds of settlements. Approximately two thirds of the water produced by public utility water suppliers originates from vulnerable drinking water source.

15% of the underground water bodies received low ratings due to pollutants hazardous to water sources in excess of water quality related limits. Owing to the contamination, **only 8% of water courses and 17% of still waters achieve a good ecological condition defined by the EU's Water Framework Directive (WFD)**. The quality of our water reserves is largely dependent on cross-border effects. Water quality problems related to hazardous materials are primarily caused by rivers entering from Ukraine and Romania, and the heavy-metal contamination of the rivers Tisza, Szamos, Kraszna, Túr and Körösök.

25% of the underground water bodies are hazardous due to nitrate contamination. The main pollutant (regarding spatial proportions) is agricultural nitrogen use. Another important, but less known problem is that the condition of numerous still waters, backwaters, artificial ponds and gravel pits utilised mainly for recreational purposes is worse than that of our big lakes (Balaton, Tisza, Fertő, Velencei), moreover these are not even listed among nutrient-sensitive areas that would guarantee greater protection.

Finally, it is important to stress the – uncertainty-laden, but significant – relationship between the good ecological state of waters and climate change. According to domestic research (there are contradicting new results as well) one of the important estimated consequences of the expected climate change is that less water will be available, especially for irrigation, but in some places even drinking water supplies may be jeopardised. (Owing to the climate change, all in all a substantial reduction is expected in the usable supplies, and due to the increased water demand in dry summer periods, water scarcity is likely to become typical for the entire Alföld region.) Floods at the end of winter and during spring may arrive earlier and with higher peaks due to more intense melting. The water exchange of lakes will be transformed, their surfaces are expected to shrink, their salinity to increase. The shrinking of small waters makes water courses more vulnerable to contaminant load. The change will affect water reserves, water demand (especially of agriculture), the management of floods, inland waters and droughts, water supply and waste water treatment. The integrated approach to climate change and water management is well-founded – taking sustainability into account as much as possible – among others in the areas of water replacement, use of hydropower, irrigation, improvement of drinking water quality, flood- and inland water protection, as well as drought protection.

### 9.3.3. The state of our soils

As a fundamental and determining environmental element of *continental ecosystems*, the soil is subjected to heavy and ever increasing use by human activities, what can lead to the harming of soil functions and the degradation of soils. One of the biggest risks is that soil degradation processes occur hidden from human eyes, below ground surface, and their adverse effects are often manifested separately in space and time. The soil - although it may be capable of renewal to a certain extent - is not an in exhaustible resource, at the same time it has a linking, mediating role as well with other vital natural systems (hydrosphere, atmosphere, biosphere), therefore requires special attention. **80-85% of the**

**country's territory is covered by soils suitable for agriculture, therefore arable land is of outstanding significance among our resources.** Thanks to the favourable natural conditions in Hungary, the proportion of quality land is good, the range of high-yielding lands is considerable. However, an important risk factor is that looking at a longer period of time, the **ratio of arable areas is continuously falling**, owing primarily to the expansion of settlements and infrastructure, and its quality has deteriorated due to agricultural practices and land use disregarding natural conditions. In Hungary, 3-5 thousand hectares of arable land is withdrawn from agricultural cultivation each year, due to the implementation of various investment projects. In these areas, humic topsoil – developed over hundreds of years – is removed, therefore soil will not be able to fulfil its biomass producing function anymore.

**Our arable lands are jeopardised by degradation processes, inhibiting their functionality and decreasing their fertility.** Such processes are acidification, salinisation, water and wind induced erosion, decline of organic matter, compaction, deterioration of soil structure and decreasing volume of topsoil. One of the most significant soil degradation processes in Hungary is water erosion, which adversely affects nearly two thirds of our agricultural land in hilly and mountainous areas. In eroded areas soil productivity is reduced due to organic matter and nutrients being carried away, thus erosion plays a crucial role in the organic matter decline of soils. The extent of areas affected by wind erosion risk is also large, nearly 1.4 million hectares. Additional attention should be paid to the physical degradation of our soils, especially compaction, which is probably the most difficult agricultural degradation process to protect against. Owing to the climate change, water supply for our soils is expected to drop in some parts of the country, which induces a further decline in their productivity. Overexploitation of soils, as well as the withdrawal of arable land from cultivation further escalates the atmospheric concentration of greenhouse gases, due to the reduced carbon-sequestration capability of soils.

#### 9.3.4. The state of our forests

In accordance with international efforts, it has become a practice in *forest* utilisation in Hungary as well, to switch from an attitude favouring timber production to putting the focus on the soil, environmental, nature conservation and socio-cultural functions of forests, at the same time keeping the significance of timber as environment-friendly raw material and energy resource. Multifunctional and sustainable forestry was developed by the 20. century, the role of which is to supply a wide variety of forest products (e.g. timber) and services (e.g. soil conservation, protection of drinking water sources, cleaning of the air, etc.), in a manner that the long-term yields of these products and services are not jeopardised. As a result of reassessing, reconsidering the role of forests, their primary function has been modified in large areas, meaning which forest product or service has production or protection priority in a certain area: the proportion of forests used for productive functions decreased, and the ratio of those of protective functions increased. In Hungary, utilisation conditions are determined by the state for all forests during the course of district forestry planning, keeping sustainability aspects in mind. It is the National Forest Programme, which provides protection for the forest, as an ecological

living space and fundamental social, economic value, and it also aims to enhance the efficiency of forestry methods.

The ratio of forest cover is 20.7% in Hungary, which makes it the second biggest cultivation sector after arable lands. The **ratio of forest lands grew from 11.8% to 20.6% between 1920 and 2009**. While the forest areas of the Earth are reduced each year by an amount equivalent to the area of Greece, thanks to afforestation, the forest land of Hungary has increased by more than 100,000 hectares in the past 10 years. The National Afforestation Programme prescribes the planting of an additional 660,000 hectares of new forests over the next 50 years, by which the forest cover could increase to 27% (the EU's forest cover is 40%).

The health condition of our forest areas may be considered good, based on the generally accepted European indicator of leaf loss and on additional data of forest protection monitoring. Based on leaf loss, Hungary is positioned in the middle of the list of European countries, leaf loss hasn't changed much over the past 10 years. The health condition of the tree population of mainly deciduous, often mixed, durable species is stable.

In case of forests, an increased risk is associated with the non-mixed monoculture part of the tree population, especially if the species are not native. **In Hungary, the proportion of native tree species is 57%**, which is favourable in European comparison, but it, should still be increased. As for forest area distribution, in 2011, primary and semi-natural forests covered a considerable area, a total of 495,193 hectares, and secondary forests covered 529,320 hectares. With regards to nature conservation categories, specially protected forests cover a total of 72,040 hectares, whereas protected forests 379,641 hectares.

Lowland and mountain forests covering nearly one fifth of the country's area form a significant part of our natural heritage. Forests play a crucial role not only with regards to protected or specially protected species, but also in safeguarding general biological diversity, which is clearly demonstrated by a large number of species associated with our forests.

Therefore, forest protection efforts should not only concern certain specially protected species, but they should be aimed at safeguarding the entire ecological system. In order to preserve biological diversity, the **focus should be on conserving and enforcing natural forest dynamics**, as well as those natural processes, which enabled the creation of such a complex community.

Climate change may especially be a great challenge for trees with long life cycles and forests. According to forecasts, climate change may induce significant shifts in the expansion of certain forest types, which numerous natural processes may not be able to keep up with. Large scale forest devastation, reduction of the stability of forest ecosystems and the shrinking of forest areas may be expected, therefore the assessment of the possible effects of climate change and the development of forestry measures is utterly important.

### 9.3.5. Water habitats

Hungary's surface waters are quite diverse even in international terms, almost each main water type may be found in our country, which enables the diversity of *water habitats* and large scale biodiversity. The area of this type of habitat has been greatly reduced by nowadays, and the deterioration of their state in many areas places them among most endangered ecological systems, due to being especially vulnerable to various impacts.

In Hungary there are 28 wetland areas of international importance, included in the Ramsar Convention, covering a total of 235,430 hectares. Almost all of this area belongs to nature conservation or Natura 2000. Since the nature conservation law came into effect, all springs (based on water flow 2479 springs out of a total 5015 meet the *ex lege* protection criteria), bogs (64,971 ha), sinkholes (459) and salt lakes (20,365 ha) are qualified *ex lege* protected natural area among water habitats.

The gravest danger to the state of water habitats are posed by restricting the longitudinal movement of aquatic organisms, river regulation, alluvion shortage and channel deepening on the Hungarian part caused by interventions on the upper part or domestic channel material extraction, flood control facilities, inland water protection activities, drought, changes and fluctuations in water flow patterns, as well as different types of pollution. An additional risk is the emergence and spreading of invasive species. Associated with the domestic effects of climate change, water scarcity may cause the biggest problem in the majority of protected areas. Inappropriate management practices related to periodic water surpluses also result in the reduction of biodiversity of water habitats.

### 9.3.6. Grasslands

*Grasslands* form an organic part of the Hungarian landscape, which are made up mainly of perennial grass crops, overgrown with permanent plant communities. In Hungary there is also a tendency of increased demand for non-agricultural grasslands. The shrinking of grasslands is especially unfavourable with regards to nature conservation, since these grassy areas provide home for numerous rare and protected species. Currently grasslands in Hungary occupy 767.7 thousand hectares (ca. 8.25%) of the 9303.4 hectares of total arable land, and its ratio has been decreasing since 2008. The causes of the reduction and the factors still jeopardising grasslands are: sprawl and spreading of settlements involving urbanisation, expansion of industrial areas, land use of road constructions and the increase of forest areas. The drastic decline in grazing livestock is closely related to the reduction of grassland areas. However, not only intense farming, but abandoning arable land as well poses risks of harming biodiversity (e.g. settling of invasive species).

### 9.3.7. Biodiversity

According to surveys about the *naturalness of habitats*, 17% of Hungary's territory is covered by vegetation originating from natural vegetation.

2% of this vegetation heritage may be considered natural, 27% semi-natural, 50% medium degraded, 21% severely degraded. In summary, **only 0.6% of the country's area is covered by natural vegetation** and an additional 5.6% by semi-natural vegetation.

A list of habitats that should be conserved, requiring special attention, is – without being complete – as follows: sand and loess steppe oak woodlands, tussock sedge communities, extensive orchards, closed lowland oak woodlands, water-fringing and fen tall herb communities, wooded pastures, vegetation of loess cliffs, rich fens and Molinia meadows, Cynosurion grasslands and Nardus swards, swamp woodlands, xero-mesophilous grasslands and salt steppe oak woodlands.

Factors endangering biodiversity are the reduction and fragmentation of habitats, climate change, spreading of invasive species, changes in land use, nutrient load. Effects of human activities often reduce considerably the capability of ecosystems to adapt to the changed circumstances.

**Hungary's vegetation-based natural capital index is 9.9%, which indicates, that we have already lost 90% of the natural ecosystem-services** (or use it for different purposes). Moreover, the species-abundance-based natural capital index is even lower, only 3.2%.

Conservation of nature should not be focused solely on protected areas, but the preservation of landscape heritage in a wider sense should also play a part in it. No significant improvement can be registered with regards to the conservation of non-protected areas. The main factors endangering non-protected areas are unfavourable agricultural structure, and the lack of support for activities contributing to the sustainment of traditional landscape structure and landscape character.

### 9.3.8. Built-up areas

A typical indicator of risks affecting wildlife and their built environment is the *increase in built-up areas*. **The size of permanently built-up areas has been continuously increasing since 2000, in 2006 6.4% of the country's territory was built-up.** The urban/rural ratio in Hungary rose from 64% to 67% between 2001-2007; including infrastructure development as well as the increase in biologically inactive built-up areas.

The increase of settlement areas was extremely high - nearly 200,000 hectares - in the first decade of the new millennium, meaning that the **share of settlement areas** within the country's territory **grew from 4.9% to 7.1%**. The accelerated agglomeration of the settlements around our big cities leads in many cases to the shift of the focus of the environmental load/use. The growing number and performance of logistics centres and industrial parks induced considerable land use, in addition to increased transportation

needs. The change in land use between 2000 and 2008 was characterised by the reduction of agricultural areas, especially grasslands, which was owing mainly to the sprawl of settlements (urbanisation), industry, mining and infrastructure (road construction), as well as to the increase of forest areas. The expansion of linear infrastructure (intense highway construction) resulted in the fragmentation of habitats. The growing built-up and permanent coverage of free surfaces aggravate the country's vulnerability to climatic impacts, by restricting the material- and energy cycle functions of soils. Although in the last few decades several scientific research results gave guidance for the establishment of land use adequate to natural features, they were often disregarded due to other interests (e.g. placement of industrial and commercial facilities on the most fertile soils, crop structure based on current purchase prices). Conceiving a proper land use structure for areas with changing ecological conditions, as well as the management of adverse environmental effects (droughts related to climate change and/or other factors – e.g. Duna-Tisza-Közi Homokhátság, Szigetköz, etc.) create a unique, different type of problem.

#### ***9.4. Economic resources***

This chapter is more heterogeneous than the previous ones, and treat the notion of physical (economic) capital different - in a wider sense - than classic interpretations. The reason for this is that by the strengthening of the mixed economy, through its increased role and redistribution, the state has become a significant player in the battle for savings and capital allocation opportunities – issues of the budget, public debt and welfare redistribution cannot be neglected if we wish to analyse the state of the nation's physical capital.

##### **9.4.1. Entrepreneurial capital**

*Entrepreneurial capital* is a **historical, institutional, cultural environment, where new enterprises are born and which** – ideally - **enhances the creation of new enterprises** (Audretsch, 2009). This type of environment may be called some kind of entrepreneurial infrastructure, influenced by such additional factors as the social acceptance of businesses, individual willingness for risk taking or the activities of banks and corporations. The presence of entrepreneurial capital exerts influence on the development of a certain territorial unit (country, region), thus should be considered a significant factor from the perspective of economic (and social) sustainability.

The value system of the Hungarian society is supportive of the emergence of trustworthy enterprises, Hungarians respect hard work, diligence, and assess people by their performances. Despite appreciating diligent and trustworthy behaviour, they believe that prominence and success is not attainable by these traits. (Tóth, 2009). Partially this is the reason why - even though normative values connected to trustworthy enterprises are existing - the population's view of enterprises is extremely ambiguous. According to a

Gallup research of 2007, among the countries surveyed, the social status of entrepreneurs compared to managers and public officials is considered to be the lowest in Hungary. As per another research, part of the successful entrepreneurs became rich by transactions reprehensible, „suspicious” by public opinion, like privatisation (Szerb-Kocsis-Kisantal, 2008). Four quarters of respondents believe that in Hungary it is impossible to get rich in an honest way, and three quarters of them believe, that to achieve something in life, some rules need to be broken (Tóth, 2009). Therefore in Hungary, **businesses have to make ends meet in a less supportive environment, and the lack of social acceptance is a critical, weak element of entrepreneurial capital.**

We know little about the value system of entrepreneurs themselves. According to a research made in 2011, the value system of small entrepreneurs is more characterised by responsibility and the disapproval of law-breaking behaviour against the state (tax evasion, bribe) than that of other parts of the population (Luksander-Mike-Csite, 2011a). This seems to show that **real values of the entrepreneurs are more positive than considered by public opinion.**

This is reinforced by a study about the broader value system of entrepreneurs (Luksander-Mike-Csite, 2011b), whose results claim that Hungarian entrepreneurs share the „classic entrepreneurial” values of their Western-European counterparts, like appreciating independence and creativity and accepting rational risk taking. On the other hand, Hungarian entrepreneurs are different from the Western ones in not considering community values less important than the rest of the population: they do not attach less value to fostering traditions and complying with regulations, moreover, they attach more importance to goodwill, than the rest of the population. According to another survey, the managers and operators of enterprises are characterised by certain generally accepted objectives, such as professional quality, prosperity of their families, as well as stable conditions for their employees (Csite and Major, 2010). Based on this, entrepreneurs value the three segments of their operating environment to the same degree: business partners, family, colleagues.

The greatest difference between the value systems of Hungarian and Western-European entrepreneurs is that Hungarians are not seeking new challenges, exciting, adventurous initiatives. This indicates moderation, timidness. **The fear of change and the unknown indicates the lack of trust in small entrepreneurs and is manifested in the low rate of business cooperations as well** (Balás et al, 2008). Another reason for this is that contracts are frequently based on dominance, and their enforcement is often uncertain due to the improper functioning of public and market institutions (Csite and Major, 2010). The latter is clearly indicated by the low trust in the entire society towards formal institutions (legislation, political governance, public administration, judicial system). The most important elements of the entrepreneurial infrastructure and even the greatest resources of the Hungarian entrepreneurial economy currently are the long term personal business relations based on fundamental trust (Balás et al, 2010).

Based on the above, it is obvious that, **several elements of the Hungarian entrepreneurial culture are supportive of entrepreneurial activities.** Among these are the value system of entrepreneurs supporting independence, creativity, rational risk taking and not ignorant towards the community, as well as the trust building, entrepreneurial-economy-wide network of personal relations that emerged over the last two decades. **The biggest obstacles of the development of entrepreneurial capital are the adverse**

**stereotypes of public view about entrepreneurs and the weaknesses of, and the distrust towards the legal and governmental institutional system supporting the value-creating cooperation of businesses.**

#### 9.4.2. The utilisation and development of human resources in the entrepreneurial economy

**Enterprises play one of the key roles in the area of employment, since they are the greater part of the demand side of the labour market.** Increased employment rates are not only one of the criteria of economic sustainability. The value of human resources is determined by the ability to work, while performing work also has an influence on the human resources of people. It has been proven that the longer the period without performing work, the smaller the chances of returning to the labour market, which indicates that lack of work goes hand in hand with the erosion of the associated human capital (Scarpetti–Sonnet–Manfredi, 2010). Working conditions influence the health of people, as well as the nature of the knowledge gained during work. The employment situation and the work environment have great impact on social resources. Individuals left without work must face the risk of social exclusion, since unemployment does not only result in income reduction, but in the erosion of their social relations as well. For people employed in 8-hour shifts, the majority of their social interactions happen at the workplace. Relationships, conflicts created there have significant influence on the individual's image about society and their relation to it, as well as on their values and on the knowledge and values passed on to the next generations.

In Hungary there are five target groups vulnerable regarding the labour market, these are the under qualified, the disabled, aged 50 or over, first time job seekers, and women with small children. Among them, the under qualified are the most vulnerable, since under qualification increases the risk of inactivity within all other groups. Several regulatory factors have an adverse effect on the job demand of these groups. Inflexible regulations include relatively high contribution burden on employment, high minimum wage, as well as administrative burdens related to employment (e.g. workforce recruitment and lay-off).

According to the data of the surveys prepared by the Ministry for National Economy and its predecessors, SMEs considered high tax and contribution burdens the greatest obstacles between 1997 and 2009. In 2009, the lack of orders and the unpredictability of regulations were added to the list. According to the survey of Deloitte (2010), Hungarian administrative burdens are extremely high in international comparison. Six of the twenty most costly administrative obligations are related to employment, and make up more than 20% of the sum of the twenty obligations.

Consequently, **enterprises** - and especially small and medium-sized businesses, which play an important part in employment – **must face considerable obstacles if they wish to fulfil their employment expansion function.** It is even more so in the case of target groups vulnerable to labour market factors. **It is a task of particular importance with regards to demographic reasons to enhance the labour market participation of mothers with small children, the retired and the age groups prior to retirement.**

### 9.4.3. The role of economic innovation in sustainability

Knowledge and knowledge induced technological innovation have become the main sources of economic development and capital accumulation in modern societies. If we break up the increase of economic output into factors, we can conclude that the expansion of the utilised production inputs only explains a small proportion of the total increase. The majority of the increase is owing to the expansion of the exploitable economic knowledge and the development of the technology and production management (Balatoni–Tóth G., 2011).

We may define **knowledge** as a set of instructions related to the use of inputs and the output of the product. The change of instructions is what increases the usefulness of the product resulting from the use of inputs, and in the 20. century this **became the fundamental source of economic growth**. In this case, technological advancement is natural resource-saving, meaning that for the production of one unit of output, less and less input is needed. The developed world is characterised by the reduction of specific material consumption, or non-renewable resource used per one unit of GDP. Nevertheless, due to the aggravation of environmental challenges and the large scale, rapid degradation of natural resources, all this is not sufficient anymore. **There is a need for a new phase of innovation, which allows the growth of economic resources without increasing the adverse effects on natural resources, as well as the respect of nature and the ecological limits put up by natural processes** (called „absolute decoupling” in ecological literature).

Research and development enables the production of smaller, more efficient assets which are more economical to operate. These processes may be summarised by allowing for the application of more knowledge which reduces the amount of material and energy used. **Our material and energy sources are finite, our innovation capabilities are more unlimited: therefore economic development must be based on the latter.**

When taking stock of human resources, educational and research institutions come to mind as main institutional sources of innovation, however, **enterprises of the private sector also play a significant role in determining the innovation potential of a country**. The kind of innovation mentioned above is of fundamental interest to entrepreneurs, since it means investments, which enable the use of less material and energy input, while still having the same amount of output, or better quality product or service, by increasing the efficiency of the production.

According to the OECD's scientific, technological and industrial table of results of 2011 (OECD, 2011), Hungary is lagging behind the OECD average with respect to most indicators. This picture is also in line with the OECD's innovation policy country report about Hungary (OECD, 2009), indicating that the **R&D and innovation activities of Hungarian businesses is lagging behind the European average, especially that of the domestic SMEs**, while this group of businesses play an important role in several more innovative OECD economies.

**Despite the fact that the high-tech industries have a significant weight within the Hungarian economy, the R&D spending of businesses (*Business Expenditure on Research and Development, BERD*) is overall low as a share of GDP, and approximately two thirds of it even belonged to foreign owned companies in 2005.**

70% of the BERD was made up of the expenditures of large companies, mainly focused on the chemical industry. Although according to the publication, 35-40% of the total BERD belonged to 5-6 large companies, in the past few years micro, small and medium-sized enterprises had an increasing part in it as well. Just as in the case of gross domestic R&D activities (*Gross Expenditure on Research and Development, GERD*), its distribution among domestic regions is uneven and is limited rather to the most developed regions. The Central-Hungary region is still disproportionately large, even dominant, since more than 70% of the BERD is used in this region.

With regards to the size of innovation expenditure broader than R&D, Hungary got placed in the bottom third of the list of surveyed countries. The gap between big companies and SMEs is considerable in this respect as well, since between 2002 and 2004 52% of the former and 16.9% of the latter were innovative. Among the 24 OECD member states surveyed, the proportion of those carrying out in-house product innovation in the two categories was the lowest in the case of Hungarian companies, and the results were similar with regards to procedure innovation as well (OECD, 2009). We can conclude that in the Hungarian innovation system R&D plays a much less important role than in Western-European countries: 40-50% of the innovative Hungarian businesses did not carry out any R&D activities (Halpern and Muraközy, 2010).

**Nevertheless, innovation creates obvious advantages for Hungarian businesses, as the ones taking part in it can attain a higher labour- and total factor productivity, than their similar size counterparts in the same sector, and this productivity advantage is larger than in the case of Western-European companies. Additionally, innovative companies have a much better chance for export in greater value and to more markets, than the non-innovative ones.**

#### 9.4.4. Public debt, budgetary discipline<sup>11</sup>

Public debt allows for the rescheduling of funding required to finance public spending from the time of incurring the costs until the repayment of the debt. The question is in what circumstances may we consider debt rescheduling (and the necessary tax collection) acceptable. If future tax payers do not have their interests represented when the borrowing decision is made, then current tax payers are too prone to strongly support the indebtedness of the state. That way they shift the burdens of financing expenditures to the following generation. Public borrowing is only acceptable under very strict conditions, primarily depending on what the greater financial margin for manoeuvre, gained by debt rescheduling, is used for. The starting point should be that the yields of the spending financed from the debt should exceed the cost of borrowing.

We must emphasise that borrowing, taking debt by itself is not necessarily harmful or unreasonable. If the socio-economic advantages of an investment are substantial, then it

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<sup>11</sup> This sub-chapter is based on the following background study prepared for the National Council for Sustainable Development: Balatoni A. – Tóth G.Cs., 2011. The source of the data in the sub-chapter may be traced back to this study.

should be realised as soon as possible, and not wait until there is sufficient funding from ordinary incomes. A public expenditure (investment) realised at a given time may provide significant benefits for future tax payers as well. In such cases it is acceptable that through the debt, those contribute also to the financing of current spending by debt rescheduling, who will only become beneficiaries of public spending at a later time.

Debt accumulation, however, reduces the room for manoeuvre for following governments, since public debt repayment obligations reduce the opportunities for public spending on welfare measures. Government debt accumulation also exerts large influence on the economy, both in short and in long term.

In the short term, an important impact is the increase in the demand for output. In the long term, due to the deterioration of the general government balance, meaning the reduction of public savings, private savings may increase, domestic investments and investments abroad may fall. As a result of the falling investments, capital stock decreases and therefore output falls. Average gross wage and income levels decrease. The foreign capital stock of home residents decreases or the domestic capital stock of foreign residents increases. The general government balance and the foreign trade balance may also deteriorate.

Although the most important consequence of debt accumulation in the short term is the increase of the aggregate demand, and in the long term the decrease of the capital stock, it can have several other effects on the economy. In countries, which accumulated a great amount of debt, interest rates are usually high, and there are great expectations towards monetary authorities to compensate this with loose monetary policy. This can result in lower real interest rates in the short term, but in the long term it will not decrease, on the other hand, inflation and nominal interest rates will rise. An additional important aspect of debt accumulation is the deadweight loss of the tax surplus needed for the financing of the debt repayment. Another consequence of debt accumulation may be the postponement of political measures. If the financing of the various expenditure items does not require funding source on the income side, then governments tend to spend more than what would be desirable.

**During the change of regime, Hungarian public debt was 66.2% as a share of GDP. Between 1990 and 1995 the debt rose by more than 20 percentage points. From 1995, public debt was continuously falling for six years, and reached its minimum in 2001, at 52.2%. Gross public debt was continuously increasing from 2002 and reached 80.2% by the end of 2010.**

Between 1999 and 2010, the country's public debt increased by 18.3 percentage points as a share of GDP. By studying the 12 years together, we can conclude, that 80% of the increase can be traced back to budget management, to the primary budget balance. Despite the crisis, economic growth was able to compensate almost entirely the effect of the real interest rate, thus during the 12 years, the contribution of the difference between the real interest rate and the real growth rate to the debt increase was only 3 percentage points. In total, the effect of the exchange rate variations other items was also not significant, they offset each other almost completely.

Following the itemised review of the factors affecting debt, three periods are revealed with highly different characteristics. Between 1999 and 2001, public debt as a share of GDP dropped from 62.0% to 52.2%. Nearly half of this is owing to the improvement of the primary balance, and the other half to the real growth rate increasing in excess of the real interest rate. Between 2002 and 2006, public debt rose at a robust rate, by 13.3 percentage points and reached 65.5% as a share of

GDP by the end of the period. The main role in this is that of the expansive public finances, with the primary budget balance itself contributing to the country's indebtedness by 19.3 percentage points, while the relation of the real growth and the real interest rate could only compensate that increase by a 2.1 percentage point drop. Between 2007 and 2010 debt was increasing at a rate similar to the previous period, and reached 80.2% as a share of GDP by the end of 2010. However, the causes of the indebtedness differ considerably: the current balance of public finances did not contribute to the increase of the debt at all. Instead, it was the modified relation of the real growth rate and the real interest rate, which raised the debt by 10 percentage points, which is largely owing to the dramatic drop in growth, especially to the significant recession of 2009. The financing crisis induced weakening of the exchange rate also took its fair share from the indebtedness, and converting unused loans borrowed from international financial organisations into foreign exchange reserves was also an important factor.

Public debt (and the economic policy behind it) is considered sustainable if it can be proved by facts from the past that in response to the increase of public debt the current position of public finances are improved, and it prevents further indebtedness; unsustainability means that budget policy is unresponsive to the trends of the debt rate.

For Hungarian economic policy, **the mere stabilisation of public debt as a share of GDP can no longer be a sufficient sustainability objective.** On the one hand it is dictated by our obligations towards the European Union (60% limit), and on the other hand there is the considerable budget burden made up of the yearly interest payments, reaching nearly 10% of the tax revenues.

Public finance related provisions in Hungary's new Fundamental Law – 50% debt limit as a share of GDP, and continuous reduction obligation until reaching this level – may enhance efficiently the development of a sustainable public debt management.

#### 9.4.5. Problems of lifecycle financing<sup>12</sup>

We usually speak of welfare state (or more simply of social expenditure) in the terms of poverty and inequality, whereas it could also be considered the system of resource-allocation between generations. Its task is the reallocation of resources, from a cross-sectional view from the working age population to children and the elderly, from a career point of view from an active stage of life to the inactive ones.

The reallocation of resources between generations is necessary because the phase of production and the phase of consumption do not overlap. The inactive age groups are also consuming, but production is only performed by the working age groups.<sup>13</sup> The difference between consumption and income is the life cycle deficit. Lifecycle deficit is financed by every society by the reallocation of resources between generations, using a wide variety of institutional instruments; one of them is the modern welfare system. The state's engagement in this area has several positive effects, thanks to the wider possibilities

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<sup>12</sup> This sub-chapter is based on the following background study prepared for the National Council for Sustainable Development: Gál R.I., 2011. The source of the data in the sub-chapter may be traced back to this study.

<sup>13</sup> Naturally there are exceptions: the inactive elderly often perform socially beneficial activities as well – nevertheless, the basic relationship remains valid.

of risk sharing, however, it also had adverse effects due to its faulty design. For example ignoring the fact during operating this system, that the state is just one of the players, not the only one, may exert serious consequences. The modern welfare system is suffering from „household-blindness”: it disregards on the service side that the majority of the contributions are in kind, through the child raising efforts of families. The other typical problem is that we are solely focused on the cross-sectional balance, relevant in a particular moment. We do not realise that current problems are the result of faulty decisions in the past, and do not know what kind of negative consequences those policies that seem successful today may have in the long term. **A poorly designed lifecycle financing system by the order of its magnitude can slow down economic growth for decades, and can contribute to the decrease of savings, labour market activity and birth rate.** A policy based on new theoretical and empirical results may mend these problems, may stimulate employment, savings and parenthood, and may enhance the outlook of a long term economic growth. A well-functioning resource-allocation system is able to elevate a nation, but a poor one will set it back.

In the lifecycle financing system, four symptoms may show a balance upset: the elderly staying without care; or the opposite, the elderly becoming unjustified significant beneficiaries of the system; the working age population does not have enough children or do not spend sufficiently on them; or the opposite, they have too many children resulting in overpopulation.

In 2009, the Hungarian public welfare system had a spending of 32% of the net national income (NNI), of which healthcare public spending was 6, educational was 5, and social – mainly pension related – public spending was 21 percentage points. 65% of the total public expenditure was spent on welfare purposes. **Therefore, the welfare system is the biggest item of the public expenditure.**

Looking at three out of the four main chapters of the Hungarian public welfare system (family support, public education, pensions) – and disregarding the partially accessible data of health expenditures – starting in 1950, for a quarter of a century, a continuous trend may be observed. The proportion of pensions grew from 43% in 1953 to 135% in 1987 compared to the other two public expenditure chapters. In 1950, the country spent 2% of the GDP on pensions, 2.6% on education and 0.8% on family support. Until 1961, the education budget exceeded that of the pensions. Starting in 1975, however, with the exception of one year, it was already the pension chapter which always exceeded the total of the other two chapters of human capital investment.

Two of the sustainability indicators of the lifecycle-financing welfare system are the absolute and the relative generational imbalance. **Absolute imbalance is the difference between the accounts of the newborn and the future generations, which was 6.1 million forints per capita in 2001.** That is how much more future generations have to pay for public services due to the accumulating deficit in the current system, compared to the obligations of current newborns, supposing that the deficit can only be covered by the excess tax payments of the unborn. Relative imbalance shows, how many times bigger are the accounts of future generations compared to the youngest members of the current generation: the newborn. This ratio was 2.5 for the year 2001. (The Hungarian

generational accounting project covering the entire welfare system was discontinued in 2004, the latest calculation is from 2001.)

Another sustainability indicator is based on the National Transfer Accounts (NTA). Unlike generational accounting, which focuses solely on taxes and allowances in cash and in kind, NTA takes into account the entire national income and enables the calculation of the sustainability of current consumption age-profiles, not of public expenditures. It creates a data background, thanks to which we can estimate the degree of old age consumption, based on current levels of saving and childbearing (saving in human capital), and what degree of saving is required in order to maintain current levels of consumption.

#### 9.4.6. The changing of the capital stock and the international exposure of the Hungarian economy

The statistical registration of national wealth is currently still incomplete. In order to create a sustainability policy it is required to record the changes and processes related to national wealth. Economic growth is influenced by such stocks and flows – family barter, human capital, social redistributions, public and community property (e.g. infrastructure, natural resources) – which are not, or only partially recorded by ordinary economic statistics (e.g. national accounts). Due to the lack of detailed knowledge about the above, we are not able to judge the real magnitude of the economy, the requirements and possibilities of its development, the weight of the burdens, the strength of the country, and its total and real wealth.

According to domestic estimates, the greatest domestic wealth belongs to the households (they own more than half of the national capital). Corporations own approximately a quarter and the state less than one tenth of the national wealth.

**The increase of capital stock was rather modest in the past one and a half decade.** In the period between 1995–2007 it grew by 1.15% per year on the national economy level. The most dynamic growth of net capital stock was observed at the enterprises, but even there it did not exceed 1.8% per year, while the slowest growth rate was registered in the public finances sector, it barely reached 0.6% on a yearly average. The capital stock of households increased by 0.8% per year.

Foreign owners have a growing share in corporations, significantly increasing since the change of regime. The investments of foreigners seemed important in a situation where socialist planned economy depleted the majority of the domestic capital, or its reserves for development had been exhausted. With regards to the corporate sector, **foreign capital owns half of the means of production**, thereby producing close to half of the total value added with a quarter of the employees. The profitability of foreign enterprises is also significantly higher than that of the domestic ones, and their share of exports is also greater than that of their domestic counterparts.

Consequently the gap between produced and usable income grew ever bigger (GDP-GNI gap), at the expense of the latter. Extensive tax benefits are also more typical of foreign owned businesses. The amount of tax benefits was more than 800 billion forints in 2007.

Contrary to previous expectations the emergence of foreign capital did not bring about the development of domestic-owned small and medium-sized enterprises, as their continuously strengthening suppliers. The most dynamically growing mechanical engineering industry was heavily relying on imports from the very beginning, and even in later years did not expand significantly its domestic-owned supplier base. Therefore it did not encourage other sectors to expand and modernise production and of local resources relied only on the workforce.

The international exposure of the Hungarian economy is characterised by the dominance of foreign investors, **reliance on international trade** and export-dependence. Consequently, domestic economic development is influenced more than average by events in our export markets. A slow-down there induces significant setback in our processes. Reliance on external economic relations raises the significance of the international competitiveness of the Hungarian economy. It is not surprising, that according to the Index of Economic Freedom established by the *Heritage Foundation*, Hungary is on the 12. place among the countries of the world with regards to freedom of trade (among the ten aspects examined, this is where we were rated best), we are number 26. in the area of freedom of investments, while regarding general economic freedom we are placed only at 51. – our cumulative indicator is better than the world average and it is in line with the average of our neighbouring countries.

The outstanding degree of freedom in the areas of trade and the domestic investments of foreigners, however, does not go hand in hand with a similarly high degree of competitiveness. In the yearly competitiveness ranking of the *World Economic Forum*, Hungary took 52. place in 2010-2011., mainly due to our poor performance in domestic market features.

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## 10. MEASURING SUSTAINABILITY

Measuring sustainability requires indicators which inform us about the quantity-quality changes in important aspects related to our future well-being. Currently we do not possess indicators that lack any methodological or substantive flaw and can measure all four national resources. Therefore the **Framework Strategy invites the government, the Central Statistical Office and the science centres to develop this set of indicators.** The Framework Strategy recommends the **use of multiple indicators, which capture the main aspects of well-being, effectively compliment each other's information content, and when combined, provide a realistic snapshot about the state of the nation.** Complex (composite) indicators should be avoided, basic indicators appropriately presenting the sustainability related characteristics of the given resource should be preferred.

According to the above, **this chapter lists only a few illustrative indicators as examples.**

In order to enhance social awareness related to sustainability, **key indicators of national resources must receive widespread publicity every year in an accessible and interpretable manner for the general public.** The value and changes of these indicators applied together with the other regularly used indexes characterising current conditions of the society and the economy (gross national income, average real income, income inequality, inflation, unemployment rate, forint exchange rate, foreign trade balance, average size and public utility coverage of households, etc.) provide a realistic picture of the nation's state and development.

Environmental aspect of sustainability should be monitored separately, which requires a carefully chosen set of physical indicators. Current well-being, standard of living may be measured by indicators related to income and consumption, such indicators are well known and frequently used. However, it is impossible to draw a correct picture about the state of the nation based only on *flow* indicators: we need information related to wealth as well. A household, which finances its current consumption at the expense of its previously acquired wealth, increases its current well-being, but at the expense of its future well-being. Consequences of such behaviour may be examined through the balance of the given economic unit. The balance needs to be prepared taking into account every detail about receivables (wealth) and burdens. Measuring the resources (wealth) is the focal point of measuring sustainability. What we pass on to the future, may necessarily be expressed in capital – economic, natural, human and social capital.

*Eurostat*, the statistical organisation of the European Union, is continuously developing the indicators of sustainable development, based on the set of indicators adopted by the European Commission in February, 2005. Consequently, based on *Eurostat's* methodology, the Central Statistical Office of Hungary is also regularly publishing indicators, which are enhanced to better represent Hungarian features, entitled

„Indicators of sustainable development in Hungary”. The edition published in 2011 contains 149 indicators.

The Framework Strategy is suggesting the future use of fewer „key indicators”. The reason for this is that although in-depth indicators are especially useful at the level of scientific research and the government's sectoral policies, action plans and programmes, on the other hand though, for general framework purposes, a smaller set of indicators is needed, which are more transparent as a whole and in a context.

The other reason for suggesting indicators different to a certain extent from the *Eurostat-KSH* system stems from the different approach of interpreting sustainability strictly from the point of view of the state and significance of our national resources.

The current Framework Strategy does not make any recommendations on a new indicator replacing the gross domestic product (GDP) index with one that could be used exclusively from now on in socio-economic debates. The reason for this is the still unresolved methodological problem, that the calculation of indices representing the changes of national capitals as well (*Index of Sustainable Economic Welfare, Genuine Progress Index*) is extremely cumbersome. It is also doubtful theoretically, whether it is possible to create one single indicator aggregating all short and long term factors of a quality life.

## ***10.1. Human resources indicators***

### Demographic indicators and indices of the population's health conditions

#### **I1. Total fertility rate**

*Definition:* hypothetical number of children a fertile woman (aged 15-49) would be able to bear during her life, if the birth rate according to the given year would be constant during her whole life. This shows the completed fertility of a hypothetical generation, which is calculated based on the aggregation of female age-specific fertility ratios of the given year.

*Current value:* Hungary's fertility rate was 1.33 in 2009 and 1.26 – historical low – in 2010.

*Critical value:* In order to maintain the population in the medium term, the ratio needs to reach 2.1, only then can the replacement of two parents, premature deaths and non-fertile individuals be ensured in the population. Below the value of 1.3, a rapid decline of the population is likely, and its entire extinction, assimilation may also occur within a reasonable period of time.

## 12. Life expectancy at birth

*Definition:* Indicator showing living conditions, living environment, based on mortality data. Indicates how many years on average a newborn can expect to live in the conditions of the given year.

*Current value:* 74.38 years (2010). A slightly improving trend is showing, the value was 69 years in 1990, 72 years in 2000 and 74 years in 2007. In comparison with our direct neighbours, the data of the same years respectively in Austria: 76 – 79 – 80 years (6-7 years more), in Slovakia: 71 -73 -75 years (1-2 years more), in Romania: 70 – 71 – 73 years (similar). Although generally women tend to live longer than men, this difference is greater (9 years) in Hungary than in the other three neighbours (6-7 years). In broader international comparison, we can conclude, that life expectancy at birth in Hungary is lower than in countries with similar gross national product. Another important aspect is that in Hungary, compared to the western part of the country, life expectancy at birth is approximately 2-4 years less in the eastern part.

*Critical value:* Interpreting the indicator in itself is cumbersome. It gives relevant information however, when compared to similar values of other countries, regarding temporal or spatial distribution aspects. If the lifespan of Hungarians is not shorter than the regional average or than that of the countries with similar national income, and it shows improvement over time and an equalising tendency within the regions of the country, that may be interpreted as sustainable state.

## 13. Index describing health-conscious behaviour/health-damaging lifestyle

*To be developed:* An indicator is needed, which enable international comparison, and well describes the level of lifestyle related habits having the most influence on health conditions (excessive alcohol consumption, smoking, improper diet, etc.). Such indicators may be the risk factor indices published by the World Health Organisation (WHO) (blood sugar, blood pressure, cholesterol, physical inactivity, overweight).<sup>14</sup>

*Methodological problems:* Composite indicators may be able to describe a state or change typical to one area with one single value, but their development is sensitive to the weighting and normalisation of the contributing factors. The question is whether one of the basic indicators (where the aforementioned problems do not exist of course) is sufficiently robust to describe the processes. We emphasise our belief, that composite indicators should generally be avoided.

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It is also important to find an **indicator which can precisely describe the state of poverty and social exclusion.**

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<sup>14</sup> see: <http://apps.who.int/ghodata/>

#### **I4. PISA-results**

*Definition:* The methodology developed by the OECD and used internationally, may be applied in practice to assess the level of human knowledge in the areas of literacy, mathematics and natural sciences (*Programme for International Student Assessment*). PISA is a monitoring type survey series, assessing the performance of 15-year-old students. The survey is carried out every three years, under the authority of the OECD member states. Test results are normalised, the average of the OECD countries in the first survey was 500 points, in the last one of 2009, the average result of literacy was 493, of mathematics 496, of natural sciences 501. Thus, the value of the indicator shows how well Hungary performed in this special international comparison in view of the international average.

*Current value:* literacy: 494 points; mathematics: 490 points; natural sciences: 503 points (2009)

The values of South-Korea and Finland, the best performing countries on international level, according to the order of subjects above: 539 – 546 – 538 (South-Korea) and 536 – 541 – 554 (Finland)

*Critical value:* The minimum objective is to stay at the average of the OECD. In case, however, we wish to substantially develop our national resources and aspire to catch up with the economic average of the EU countries, the requirement is a knowledge level higher than the OECD average.

#### **I5. Adult participation in lifelong learning**

*Definition:* Percentage ratio of the population aged 25–64, who participated in education and training prior to the survey (for an appropriately chosen length of time).

*Current value:* In Hungary 3.1% in 2009, in the EU-27 (on average) 9.3%.

*Critical value:* The reference value related to the European average performance is reaching 15% by 2020 (According to the reference value of the „Education and training 2020” EU strategy).

##### **Additional indicators that might be used:**

- Level of knowledge acquired during post-secondary studies (vocational training, tertiary education)
- Foreign language skills
- Computer skills
- Ratio of drop-outs

## ***10.2. Social resources indicators***

### **I6. Sustainability value system index**

*To be developed:* This indicator would describe the state of values and cultural factors important with regards to sustainable society. The index should be chosen from factors already used in surveys, social studies, such as:

- Belief in the ability to control one's own fate
- Respect of others
- Work motivations
- Responsibility taking
- Risk taking

### **I7. Trust index**

*Definition:* The index is created as a result of a population survey. During the interview, subjects are questioned about the trustworthiness of people with various features (occupation, age, poor/rich), as well as about trust towards institutions.

*Current value:* trust towards other people on average 49.8% (Tárki, 2009); trust towards institutions from 2.3 to 6.2 points on a scale of 0-10 (Tárki, 2009).

*Critical value:* The ideal scenario would be to move up from the bottom of the European list and to continuously improve the value.

### **I8. Civil society activity index**

*To be developed:* The multidimensional indicator to be developed would show the prevalence and strength of the „intermediate institutions” of civil society, which would indicate what proportion of the adult population in Hungary is participating voluntarily in the activities of nonprofit organisations and with what intensity. Activities to be considered during the development of the indicator: ratio of charitable donors, ratio of volunteer workers, ratio of regular participants at religious services. The establishment of the indicator's current value may be based the results of representative population surveys.

### **I9. Money use hedonism index**

*Definition:* It is important to know from a strategical point of view, which consumer groups can be characterised by overspending and which by saving. Money use hedonism index developed to measure money spending attitudes, shows appetite for spending if at high level and prudence if at low level.

*Current value:* Based on the data used during the research of Tárki-GfK, we can conclude, that there are some average income consumer groups (hedonistic youth, urban lower

middle-class), whose probability of spending is relatively greater compared to their income (at the expense of saving). It is also worth noting, that in the group with the most unfavourable material conditions, there is tendency to spend more money compared to the available income, at the same time, in the two groups with the highest income the tendency to save is relatively higher than the disposable income.

*Remark:* As the index was developed for different purposes, its applicability regarding sustainable consumption still requires further research and improvement.

### ***10.3. Natural resources indicators***

#### **I10. Natural capital index (NCI)**

*Definition:* Describes the deviation of a complex landscape of various habitats from its original natural state, using numeric data. The greater the extent and the more natural the state of the habitat, the higher the NCI value. The indicator estimates how much is left by proportion of the natural flora originally inhabiting the landscape and uses the rates of natural vegetation coverage and naturalness to achieve the value for the „relative presence” of wildlife. The indicator is based on the MÉTA-database prepared under the authority of the Institute of Ecology and Botany of the Hungarian Academy of Sciences between 2003 and 2008. However, the NCI may not only be used based on the MÉTA-database, but with any habitat-mapping data using similar habitat-categories and naturalness indices, such as the National Biodiversity Monitoring System, functioning since 2000 and remapping 3% of the country's territory every 10 years.

*Current value:* Hungary's vegetation-based linear natural capital index is 9.9%, which indicates that 90.1% of the natural ecosystem-services have already been lost (or used for different purposes). According to the other possible index, focusing on the presence of rare species using exponential weighting, Hungary's natural capital index is even lower: 3.2%.

*Limitation:* Due to the linear, additive type of calculation method, the NCI is not suitable for handling outlying local values, it does not reveal the uniqueness of individual habitats and their other - from the nature conservation point of view – important, non-linear features neither (e.g. presence of rare species, cultural history and landscape values, regeneration ability, etc.). The NCI is not or only partially able to describe the degree of large scale naturalness of a landscape (landscape structure, pattern and diversity of habitats), and landscape-ecology conditions.

#### **I11. Domestic material consumption**

*Definition:* The Total Material Requirement (TMR) index provides information about the total material input need of a nation's economy, including domestic used and unused material flows, imported material volume and the so called indirect material flows, which

are related to the production of import materials, but created on the territory of another country (in our case the exporter). The expression „ecological backpack” is used to describe this material left outside the nation's territory. The precise calculation of the TMR index is made very difficult mostly by the indirect flows. The most frequently used material consumption indicator is therefore the Direct Material Consumption (DMC) index, which takes into account all material amounts used within the national economy, but excludes indirect flows.

*Current value:* The value of the DMC was 109.7 million tons in 2007. Between 2000 and 2005, the value of the DMC was constantly increasing (its peak value was 165.9 million tons in 2005), then during 2006-2007 it decreased significantly in two steps (138.3 million tons in 2006).

*Critical value:* With our current knowledge, we are unable to tell what DMC value would guarantee the sustainability of the Hungarian economy, since it is not only dependent on the aggregate value, but on its composition as well. However, the trend-like change of the DMC value is a signal: a stable decline of the DMC could mean the right direction towards sustainability.

*Limitation:* The accessibility of the necessary information, the reliability and availability of the statistical data may be very inconstant. The TMR for example is the most suitable index for describing primary resource utilisation, but its statistical reliability is the worst. Statistical information necessary for the calculation of the DMC is available, but the statistics do not contain any data about the size of hidden or dissipative flows.

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The **domestic energy consumption** index is just as important as the one for domestic material consumption. The ideal index and its critical value may be established based on the National Energy Strategy.

## **I12. Ratio of built-up areas as a share of the country's total area**

*Definition:* According to the definition of *Eurostat*, a built-up area consists of living space, industrial areas, mines, quarries, as well as economic, public, infrastructural and recreational areas.

*Current value:* Since 1990, the size of permanently built-up areas has been continuously growing. Its value in 2006 was 14.5% higher than in 1990.

*Critical value:* The pace of build-up must be reduced. In the case of ecologically valuable areas, strict restrictions are necessary.

## **I13. The proportion of ecological farming areas in agriculture**

*Definition:* The indicator of ecological farming shows the ratio of areas involved in ecological farming as a share of total agricultural land.

*Current value:* In Hungary, the size of the areas involved in ecological farming was continuously increasing in the period surveyed, except for the last two years. The ratio of 2.5% in 2007 places Hungary in the bottom third of the list of EU countries.

*Critical value:* Considering that the Carpathian basin is one of the most biologically diverse region of the European Union and that agriculture has a significant impact on the state of the natural environment, the objective must be to move up to the first part of the list of EU countries.

#### **I14. The quantity of greenhouse gases emitted**

*Definition:* It shows the total emitted amount of the six greenhouse gases (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFC, PFC, SF<sub>6</sub>) weighted based on the proportion of their contribution to global warming, in units of weight, as CO<sub>2</sub>-equivalent aggregate.

*Current value:* 67.7 million tons (2010) – the second lowest value, considering the entire period of the GHG-inventory (1985-2010). Taking into account the amount of the carbon dioxide absorbed by our forests, our (net) emission falls to 64.2 million tons of CO<sub>2</sub>-equivalent. The 6-7 tons of emission per person is considered relatively low in Europe (EU average: 9 tons / person). By signing the Kyoto Protocol, Hungary committed to a reduction of 6% compared to the base year. Our current emission is 40.7% lower than the average emission level in 1985-87. The significant reduction is mainly a consequence of the change of regime: already by 1992 emission fell by 30% due to the setback in energy, industrial and agricultural production. In the following 14 years (1992-2005) the country's GHG emission was relatively stable, then between 2005 and 2010 emission decreased again significantly, by 14.9%. The world economic crisis of 2008-2009 had a considerable effect on the performance of the Hungarian economy, and fundamentally determined the domestic GHG trends. Between 2008 and 2009 our emission decreased by 8.7%.

*Critical value:* In international climate protection policy, the emission level associated with a 2-degree-Celsius average temperature increase is the critical limit. For the purpose of this the global GHG-emission must be cut in half by 2050 compared to 1990, on a global scale. For Hungary, the corresponding emission limit is set in international agreements and in European Union legislation.

#### **I15. Soil functions**

*To be developed:* An appropriate indicator must be created of the factors restricting soil fertility. Several indicators representing the fertility of the soils are known (e.g. agro-ecological potential, biomass production capability, biological activity, nutrient-content, ecological services capability, etc.), however, the sustainable use of soils may not only be jeopardised by the overexploitation of fertility, but also by e.g. a cultivation system leading to water erosion.

## **I16. Groundwater utilisation**

*To be developed:* A suitable indicator must be established, which shows the distance from the sustainable level regarding the utilisation of groundwater reserves. The European Environment Agency is collecting data about groundwater bodies (size, pollution, water withdrawal), and the indicator may be created based on these.<sup>15</sup>

## **I17. Urban environmental quality**

*To be developed:* Such indicators are needed, which monitor the harmful effects substantially impacting the health of settlement inhabitants (certain air pollutants, drinking water quality, noise). One measuring possibility is the indicator called „Total environment attributable deaths per 100'000 capita”<sup>16</sup>, developed by the World Health Organisation (WHO).

### ***10.4. Economic resources indicators***

## **I18. Employment rate**

*Definition:* Employment rate is the ratio of employees as a share of the total population (or of certain age groups, typically aged 15-64).

*Current value:* The Hungarian employment rate of the population aged 15–64 is one of the lowest in Europe (55.4%), in 2010, a yearly average of only 3.782 million people were employed in Hungary. In European comparison, based on the data of the 3<sup>rd</sup> quarter of 2010, Hungary was lagging behind the EU average by 8.6 percentage points and behind the EU15 member states by almost 10 percentage points.

## **I19. Research and development expenditures**

*Definition:* R&D expenditure expressed as a percentage of GDP. The most popular indicator for the measurement and international comparison of R&D activities shows the total sum of costs and investments, as a share of GDP, associated with a systematic creative work aimed at the expansion of knowledge and the application of the new knowledge.

*Current value:* 1.14% (2010)

*Critical value:* The Lisbon and then the EU 2020 strategies of the European Union consider a 3% target level as ideal starting from 2020. Hungary's commitment set out in the National Reform Programme is 1.8%. In countries achieving significant economic development, the proportion of R&D expenditure is even higher than the strategic target of the EU 2020.

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<sup>15</sup> See: <http://www.eea.europa.eu/data-and-maps/data/waterbase-groundwater-7>

<sup>16</sup> See: <http://apps.who.int/ghodata>

## **I20. Entrepreneurial capital index**

*To be developed:* This indicator can show the state of values, norms and institutions supporting entrepreneurial activities. The following indices, among others, belong in this topic:

- The view of the population about success being a result of personal diligence and hard work.
- Social prestige and positive image of the entrepreneurial role.
- Consistency of personal goals and values of entrepreneurs with sustainability.
- The strength of trust in the business relations of entrepreneurs.
- Participation of entrepreneurs in professional and value-based entrepreneurial organisations.

## **I21. GDP/GNI gap**

*Definition:* Shows the difference between produced and disposable income, income removed from domestic consumption, paid to foreign capital owners. It is evident from statistical data that the added value production of foreign capital grew at a much bigger rate than the contribution of the domestic economic players. Its value is expressed as  $(\text{GDP}-\text{GNI})/\text{GDP}$  in percent.

*Current value:* It has been continuously increasing since 1995, and by 2007, the gap already exceeded 7%. The GNI indicator showed a difference of 8% on average in the period examined (1995-2009) from the GDP, which indicates how high the proportion of foreign capital is in the GDP.

*Critical value:* Currently we do not possess information about what value of the GDP/GNI gap would mean a non-sustainable capital structure based on the nationality of the owners. The dynamic increase of the gap, however, proves that some processes are going in the wrong direction.

## **I22. Savings/investment ratio**

*Definition:* The gross saving rate of households shows what percent of their available income is accumulated in financial instruments of capital goods, for the purpose of meeting their future needs. The remaining portion of the available income is spent on consumption, in other words on the current needs of the given period.

With the help of the savings rate we can define the available economic resources, which can enhance production, natural, human and social capital, thereby improving the well-being of future generations.

*Current value:* In Hungary between 1999 and 2008 the gross saving rate of households fell – amidst some fluctuations – from 14.9% to 8.3%. In the 27 member states of the EU, the average savings rate did not change significantly in the same period, it stayed around 11-12%, then in 2009, it rose considerably as a consequence of the economic crisis.

### **I23. Public debt index**

*Definition:* It measures the country's gross public debt compared to the volume of the gross national product.

The consolidated gross debt of the governmental sector is one of the criteria set out in the Maastricht Treaty, and it is a requirement to be met prior to joining the euro zone. According to this, the ratio of gross government debt must not exceed 60% of the GDP, or should be at least sufficiently decreasing and approaching the target value at a satisfactory pace: this is a prerequisite of the long term sustainability of public finances.

*Current value:* 80.6% (2010) In Hungary, in the second half of the 1990s, public debt was gradually, but significantly decreasing and reached its minimum in 2001. Ever since then it has been constantly increasing.

*Critical value:* According to the new Fundamental Law, the public debt cannot exceed 50% of the GDP, and it must be continuously decreasing until reaching the target.

### **I24. Generational imbalance**

*Definition:* The sustainability indicators of the lifecycle financing welfare system are the absolute and the relative generational imbalance.

Absolute imbalance is the difference between the accounts of the newborn and the future generations, showing how much more future generations have to pay for public services due to the accumulating deficit in the current system, compared to the obligations of current newborns, supposing that the deficit can only be covered by the excess tax payments of the unborn. Relative imbalance shows, how many times bigger are the accounts of future generations compared to the youngest members of the current generation: the newborn.

*Current value:* The indicator was last updated based on the data of 2001. Then the absolute imbalance was 6.1 million forint per capita. The index of the relative imbalance was 2.5.

*Ideal value:* In a society which operates on the basis of long term sustainability, the theoretical optimum value of absolute imbalance is 0 Ft/capita. The ideal value of relative imbalance is 1. A growing difference from the ideal value is considered critical and approaching the ideal value is considered sustainable.

#### **Alternative/supplemental indices of the Generational imbalance indicator:**

##### **Implicit pension debt (IPD)**

*Definition:* The first definition is accrued-to-date liabilities (IPD1): represents the current value of pensions to be paid in the future, on the basis of accrued pension rights. The query aims to investigate how much closing the pension system today would cost, assuming that no more

contributions are paid in the future, therefore no more pension rights are created. The European Commission requires the publication of this indicator starting from 2014.

The second definition is closed-system liabilities (IPD2): implicit debt created in a closed system without new entrants. It represents the difference (in present value) between the pension of all people with accrued rights and the total of present and future contributions. The background should be envisaged in a way that pension schemes continue their existence until the last contributor dies, while no new entrants are allowed.

Finally the third definition is open-system liabilities (IPD3): implicit debt created in an open system, which, in addition to IPD2, includes the present value of net contributions of future workers.

*Current value:* At its peak in 1994, IPD2 was close to 78 thousand billion forints at present prices, nearly 3.7 times the GDP that time. In 1997, IPD2 fell to approximately one third of its previous value, to 120% of the GDP, or 27.5 thousand billion forints at present prices. IPD2 stayed at a low level for four years, then following a rapid increase, exceeded 220% of the GDP again in 2005, which is 60 thousand billion forints at 2009 prices, and stayed around this level until the correction in 2009.

A necessity induced simplifying assumption of the calculation is that it disregards early retirements. It uses the age limit valid at the given time, which is now 55 for women and was raised from 60 to 62 for men. Due to the lack of data pertaining to average accumulated service time broken down by year and gender, it was not possible to take cohort-specific early retirements into account. Therefore, the model calculates with a retirement age of 62, despite the fact that the average effective age limit is still below 60 years of age. Consequently, the value of IPD2 is considerably underestimated in the published calculations.

*Calculation:* Starting in 2014, the calculation of implicit pension debt will be incorporated into the regular statistical data publishing system. In Hungary, it will be the responsibility of the National Bank to carry out the calculations.

The accepted calculation standard, however, has serious limitations, which assumes a methodological reassessment. First, in contrast to the calculation above, the Commission standard will only take IPD1 into account, which is based on a fiction, that the pension system can be closed from one day to the next, and only the rights accrued-to-date must be paid for. Furthermore, the official standard is limited to the pension system, and will not contain the implicit debt hidden in health care and elderly care. Finally, implicit savings will be missing from the calculation. In reality, looking at two countries, one of them having a higher implicit pension debt does not necessarily mean that future financing of the pension system will be more cumbersome in that country. If country *A* has bigger implicit savings, kept in human capital, because the population is having more children and the government is spending a bigger amount and more efficiently on their health and education, then it can afford a higher implicit pension debt (meaning: higher pensions in the long term), than in country *B*, where implicit debt may be lower, but implicit savings are missing. Therefore, the calculation of implicit debt can be and should be complimented with the quantification of implicit savings.

### **Savings deficit**

*Definition:* The generational imbalance detailed above is the indicator of the sustainability of government income and expenditure. Based on the National Transfer Accounts (NTA) and on the analogy of the above, not only government income and expenditure can be calculated, but the long term balance or imbalance of employment income and consumption (both community and household) as well. The produced indicator quantifies what degree of savings

is needed amidst changing demographic conditions, in order to avoid the current level of old-age consumption, and the large scale old-age poverty due to demographic rearrangement.

*Current value:* The Hungarian National Transfer Accounts were completed by 2005; they are currently being updated. Savings deficit has not been calculated based on Hungarian NTA data yet. However, such calculations are already available for several European countries, such as France, Spain, Italy and the United Kingdom.

*Ideal value:* The savings rate necessary to maintain the consumption level ideally does not exceed the current savings rate. In case it does, then a savings deficit is created, which can be compensated by the increase in willingness to save. In the opposite case, the indicator assumes the reduction of old-age consumption, and the increase in poverty among the elderly.

## **I25. The quality of economic governance**

*To be developed:* Currently there is no such indicator. It is worth considering, whether a complex index can be created based on international surveys published every year (WEF *Global Competitiveness Report*, IMD *World Competitiveness Report*, The World Bank *Doing Business*, The Heritage Foundation *Index of Economic Freedom*), as well as on the indicators of domestic researches related to the development of domestic enterprises and the national economy. This indicator could provide information about how much the utilisation of available resources is hindered by bureaucratic and administrative obstacles. The index most similar to the one that should be developed is the IMD *World Competitiveness Report* „Government Efficiency” indicator, based on which Hungary took 52. place among the countries examined in 2011. In case the development of a composite index poses methodological problems (the general goal is to avoid such indices), then it is worth assessing, which basic indicator would be sensitive enough to measure the general standard of economic governance.

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