

EMPLOYMENT AND GREEN ECONOMY

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ABSTRACT

Hungary's accession to the EU was an important strategic decision in economic, political, and environmental, as well as in social respect. Exploiting the advantages of the accession is the biggest challenge nowadays. Our economy primarily relies on fossil fuels – crude oil, natural gas, coal, and their derivatives – which are not only used up rapidly but also pollute the environment and increase our dependence, thus hindering process. That is why we must pay increased attention to renewable energy resources, which are inexhaustible considering the human scale and they pollute the Earth to a smaller extent. It is also important in order to join the EU cohesion policy, whose main goal is to equalize the disparities between the regions, including the problem of rural employment. The competitiveness of the rural areas of Hungary depends on their economic growth and the implementation of sustainability. We need new complex rural and settlement strategies to stop the negative processes in the disadvantaged regions, which will result in a competitive agricultural structure and the possibility to employ the great numbers of low-qualified people living there. In Hungary, the ratio of the unemployed has increased since the regime change accelerating in the recent period – affected by the crisis – after a transitional period. The majority of the unemployed have low qualifications, which makes it difficult for them to find a job. On the other hand, the ratio of the land formerly involved in cultivation is relatively high. In my view, the solution to the problem is at hand. In most cases, unused land could be cultivated again, using the free capacity of the presently unemployed and mostly low-qualified population. In my opinion, one of the possibilities is planting energy forests and cultivating them afterwards.

Keywords: fossil minerals, dependency, unemployment, green economy, land utilization

INTRODUCTION

The discussion of food crisis has faded into the background-overshadowed by the global macroeconomic crisis and the financial crisis. The sharp rise in prices of basic foodstuffs created extreme difficulties for a large part of the world's population. The food crisis affected more people more severely than the macroeconomic issue because the populations most affected by sharply rising food prices spend larger shares of their income on food. The global food crisis produced an extraordinary human impact, larger and more adverse than the global financial crisis (*Table 1*). One indication of the severity is the remarkable amount of recent civil unrest and political instability in dozens of countries (Ethiopia, Egypt, Mexico, Thailand) because people were unable to afford basic nutrition.

Political responses were also extraordinary. Much of the world's system of trade in foodstuffs broke down temporarily as food exporting countries moved to limit

or even ban exports in attempts to provide some protection to their domestic consumers. The severe economic slump worldwide represents an extraordinary world downturn-the worst downturn since the great depression. All these issues have diverted the attention from the food crisis. The crisis led many people to write off the food and more broadly the commodity price crisis of 2008 as a widespread belief that the event was a speculative bubble-too many people traded commodities, driving commodity prices to unsustainable levels-and that concerns about ultimate supplies of food were misplaced (*Krugman, 2009*).

Many people are unaware of the speed with which we are consuming our natural resources. We are producing waste far faster than it can be recycled. It is important to compare the needs for public goods and services with arguments whether or not market failures are linked to the provision of services. Market failure is a crucially important justification for taking measures to protect our landscapes. Corrections in market failures may also be achieved through investments and the provision of payments to reward land managers who provide public goods and services (*European Commission, 2008*).

Table 1

Future Environmental Scenario to 2050

Use	2000	2010	2050	Difference	Difference	Difference
	Million km2	Million km2	Million km2	2000 to 2010	2010 to 2050	2000 to 2050
Natural areas	65.5	62.8	58.0	%	--8%	-11%
Bare natural areas	3.3	3.1	3.0	-6%	mi1%	-9%
Managed forests	4.2	4.4	7.0	5%	62%	70%
Extensive agriculture	5.0	4.5	3.0	-9%	-33%	-39%
Intensive agriculture	11.0	12.9	15.8	17%	23%	44%
Woody biofuels	0.1	0.1	0.5	35%	437%	626%
Cultivated grazing	19.1	20.3	20.8	6%	2%	9%
Artificial surfaces	0.2	0.2	0.2	0%	0%	0%
World Total	108.4	108.4	108.4	0%	0%	0%

Source: *Braat and Brink, 2008*

Nowadays, however, the whole world is seeking the possibilities of how to get out of the crisis; the whole world including countries that have dominant economic influences and open and sensitive countries as well, such as Hungary – with different possibilities in different political and economic environments. The crisis penetrated to Hungary like to most of the countries in the world – without having been prepared for it; and we see that the solutions to the problem (bioenergetics, environmental industry, research, education etc.) are mainly only predictions and there is no strategy at all (we have merely been talking about agricultural strategy for 20 years). Without definite aims and authoritative strategies we might become hopeless, futureless and losers (the North Star does not serve the purpose to reach itself either but to help orientation and show the right direction).

Today we have already learned that the processes applied previously cannot be carried on successfully either in the world or in Hungary. Within industry, agriculture and services novel and yet unknown tendencies and developments might mean the solution to the problems. Based on the recent research carried on in the last few years our attention at Károly Róbert College has been drawn towards our environment, sustainability and agriculture. According to our judgment, one of the possible ways of getting out of the crisis is to utilize our natural resources and to accomplish a sustainable economy (Magda, 1998).

Beside the rational utilization of the natural resources and the application of renewable energy resources we have to be more effective in the field of human resource development than we are at present. On the basis of our judgment and recent experience the production and economy can obtain new and confirmative support through the relation system of research – innovation – corporate development, which help priorities to be properly defined and to have satisfactorily skilled labor force available for the works to be done. All of these require a new way of thinking, new educational policy and new future prospects (Bozsik, 2004).

After 1990 lot of changes has happened in Hungary which in many cases were connected with the world economy, but we can find Hungarian specialties also. In the last 10 years we joined to the EU which has changed our social and economic circumstances (Gergeby, 2010). Analyzing our natural and economic resources we will have to mention the arable land, water capacity, and labor force. In the last years the utilization of the arable land has changed to a great extent. We can see huge decrease in the agricultural area – I will show it later -, and at the same time our energy dependency has increased to over than 70% nowadays, and if we consider only the crude oil and natural gas production they are more than 85%. The last drop was the economic crisis which started from the USA and moved all over the World.

DISCUSSION

Analyzing the background the first fact that must be mentioned is the changes of the agricultural land utilization. After 1990 the Hungarian agricultural production decreased step by step and nowadays the ratio from the GDP is less than 3% which was near 10 at the beginning of 1990s. If we want to find the reasons of the decreasing we will have to see the changes of the agricultural land area (Table 2).

Table 2

Land area of Hungary by land use categories

Year	Arable land	Garden	Orchard	Vineyard	Grassland	Agricultural area
1986	4,704.8	338.6	99.0	147.4	1,233.7	6,523.6
2000	4,499.8	101.6	95.4	105.9	1,051.2	5,853.9
2010	4,501.6	96.1	93.7	82.8	762.6	5,536.8
1986/2010	95.7	28.4%	94.6%	56.2%	61.8%	84.9%

On the basis of the table we can see the highest reduction in gardens, but the quantity was not so high than it was in the grassland. In my opinion this reduction is connected with the decreasing number of the animals. Summarizing the table nowadays we use nearly 1 million hectare less agricultural land than we did in the past. It means we have got free capacities which we will have to use in the future.

We have to think about the utilization, because our energy dependency has increased in the last twenty years. In industrial activities we used and today we also use mostly fossil minerals to generate electricity. Our consumption will be hire and hire, but our stocks from these resources are limited. When we look the figures, we can see this (Table 3)

Table 3

**Hungarian crude oil, natural gas production and import
between 1980 and 2009**

	1980	1988	1994	1999	2009
Crude oil production (mt)	2.031	1.947	1.334	1.243	0.827
Natural gas production (mm3)	6.142	6.272	5.564	3.293	3.241
Crude oil import (mt)	8.336	7.262	5.821	5.933	6.974
Natural gas import (mm3)	4.045	5.371	5.063	8.704	11.72

Source: *Mineral raw material wealth of Hungary* 2010

In 1980 our crude oil production was 2.031mt in contrast with the oil import (8.336mt). It means that the import was 4 times bigger than the production. It was not so good, but the situation in 2009 was even worse than in 1980, because the import was more than 8 times bigger than the production and the price of this resource has also increased. Therefore our dependency has doubled in the last 30 years.

The situation is similar considering natural gas, but 30 years ago the Hungarian production (6.142) was bigger than the import (4.045mt). After 30 years our gas import is 3.6 times bigger than our production, so the situation has changed completely. That is exactly what I referred to earlier when I pointed our energy dependency. In that situation we will have to find resources which help us to decrease our defenselessness. Lord Stern calculated that governments should spend at least 20% of their stimulus on green measures to achieve emission targets (*Stern*, 2006).

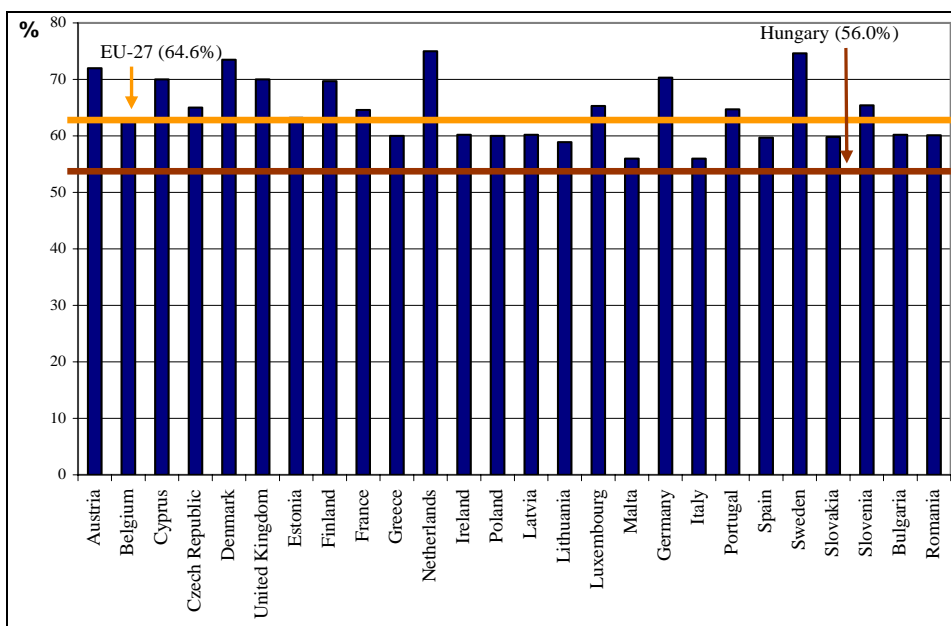
After these facts I have to mention the world crisis which started in 2008 in the USA and appeared all over the world. I will focus on the effects of the crisis on the labor market (*Galgóczy-Németh*, 2009). When the crisis was suddenly appeared many people lost their workplaces, and increased the ratio of the unemployment all over the world. It was not different in our country. Analyzing the labor market we perceived changes, eg.:

- fell in employment
- increase of the unemployment
- changes in inactivity
- differences by qualifications, ages and gender
- sectoral differences.

The specifics must be presented because in my opinion they will help us find the solution for our problems. I have already mentioned that the crisis was perceptible in all countries which we can see in *Figure 1*.

Figure 1

Employment rate of the population aged 15-64, 3rd Quarter 2010



Source: *Statistical reflections, HCSO 5/2011* 13 April 2011

In 2010, the decrease in the number of employed people stopped, but restoring the level of employment before the beginning of the crisis will take probably longer. According to the data of figure 1 the average employment rate was 64.4% in the EU, when the Hungarian was only 56.0% which was one of the lowest in the EU member states. On the other hand we can find some country eg. Austria, Denmark, Netherlands, Germany, Sweden where this index was above 70%. The target in the EU is 70%, but it will be very difficult to reach it for every countries. In my opinion that is the greatest problem in our country nowadays and we will have to solve this in the near future if we do not want to drop behind.

The average unemployment rate was 9.3% in the EU at the end of 2010. The Hungarian figure was 10.9%, but in the beginning of the following year it was over than 11%, so the annual average was hardly lower than the peak of 12.1% in 1993. The increasing unemployment along with the stagnating employment can be attributed to the following factors:

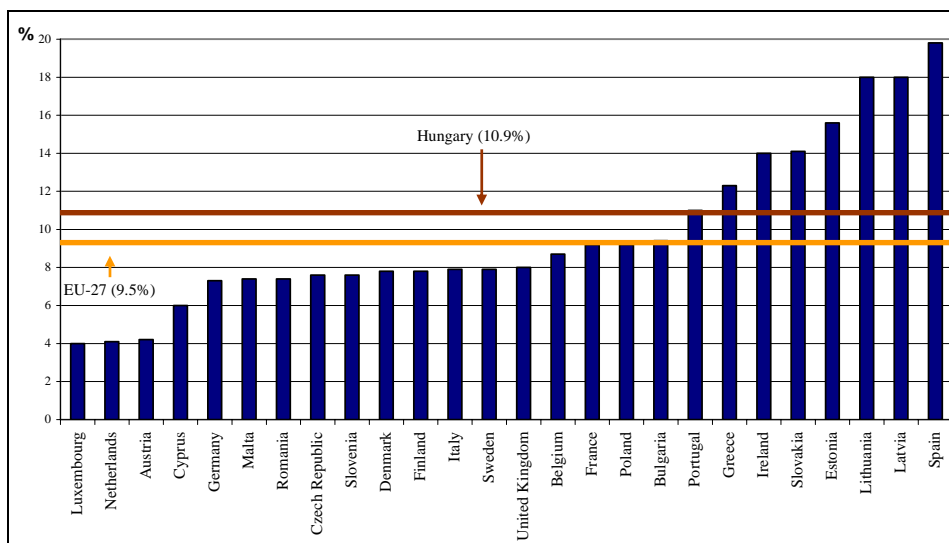
- The gradual rise in retirement age increases labor force supply.
- The modification of the unemployment provision system requires a more active presence in the labor market also from people who were considered inactive earlier.

- Fewer and fewer people losing their job are provided for by the social and social insurance system, so they become long-term jobseekers.

In *Figure 2* we can see that the highest ratio was in Spain, where the economic situation is very bad nowadays – nearly double than in Hungary. In countries where the economy is based on stable basis the unemployment rate was not as high as in countries where it is not.

Figure 2

Unemployment rate of the population aged 15-64, 3rd Quarter 2010



Source: *Statistical reflections, HCSO 5/2011 13 April 2011*

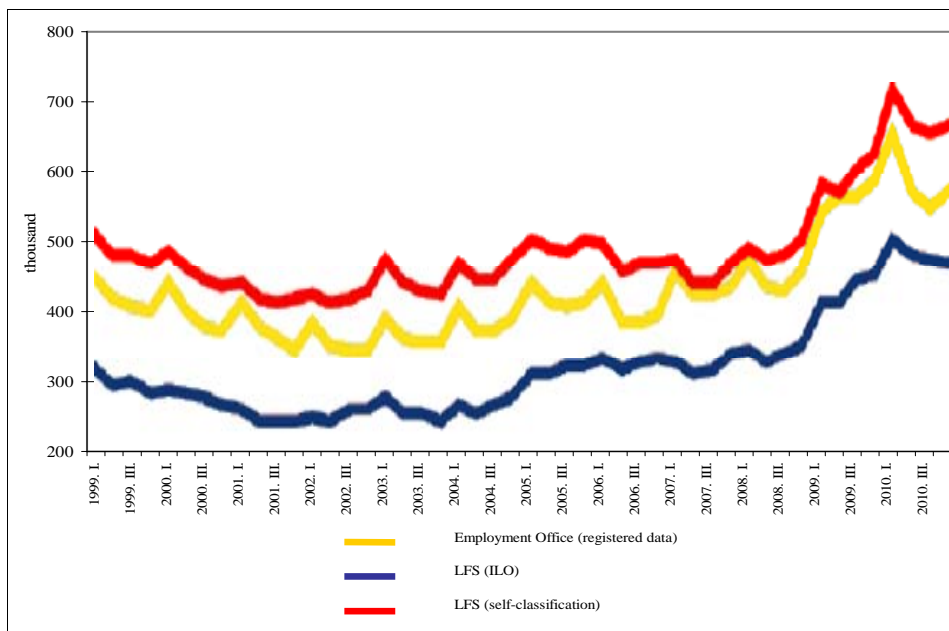
I analyzed the differences between the registered jobseekers and the unemployed people between 1999 and 2010 (*Figure 3*). During the examined period the number of unemployed was the lowest according to Labor Force Survey while the highest was among those who consider themselves unemployed. The latter one is more real, so we will have to solve the problem of nearly 700 thousand unemployed in the near future if we do not want bigger problems than we have nowadays.

The third thing is the ratio of the inactive segment of the population. In 2010, 37.1% of the population aged 15-64 was inactive in Hungary. The average rate was nearly 10% less in the EU. The number and the proportion of inactive people, along with the increase in the number of unemployed, decreased compared to the previous year.

The decrease concentrated in the categories of pensioners (-32 thousand) and of „other inactive” (-18 thousand) who are not students and not receive any personal provision. Even so, the largest group of inactive is composed of pensioners with proportion of 39%, followed by the group of full time students with 32%. The number of the so-called other inactive is invariably significant (nearly 360 thousand) as well.

Figure 3

Number of registered jobseekers and of unemployed people according to the Labor Force Survey, 1999-2010 (quarterly averages)



Source: *Statistical reflections*, HCSO 5/2011 13 April 2011

Having analyzed the distribution of the unemployed people by gender and age I was surprised to find that the biggest segment – approximately 260 thousand– is composed of people between 25-44 years of age (*Table 4*). It is both bad and good at the same time. It is bad because in this age group more people would have to work, and it would be good in the future because they will be potential workers for a long time in different sectors of the economy.

Table 4

Number of unemployed people between 2006-2010 by gender and age (thousand)

Year	15-24		25-44		44-64		65-74		Total
	W	M	W	M	W	M	W	M	
2006	28.8	35.3	81.4	89.0	41.9	40.1	0.1	0.2	316.8
2007	25.1	32.5	83.6	87.1	39.0	44.4	0.0	0.2	311.9
2008	27.1	33.9	81.1	94.7	46.4	45.6	0.3	0.1	329.2
2009	31.3	47.9	99.4	126.2	56.1	59.4	0.3	0.1	420.7
2010	32.5	46.7	112.5	146.5	65.1	71.2	0.0	0.2	474.8

In what follows I will illustrate the differences by gender and qualification. In general the ratio of unemployment amongst the less qualified employees was higher than amongst the well qualified people. That was the situation in the past and it also holds true nowadays. After the first few months of the crises we could see an increase in the number of the unemployed.

The increase was higher in the industrial sector – mostly qualified workers – than in the agricultural sector where we had witnessed this process earlier. According to *Table 5* we can see that the number of the unemployed is more than 300 thousand in the first two categories, and we can see the lowest number who has college or university degrees.

Table 5

Number of unemployed people between 2006-2010 by gender and qualification (thousand)

Year	Elementary School, or less		Trade School		Grammar School		College, University		Total	
	W	M	W	M	W	M	W	M		
2006	47.9	54.9	41.9	65.9	39.4	32.9	13.0	10.9	152.2	164.6
2007	46.0	57.3	39.3	63.8	46.9	33.3	15.5	9.8	147.7	164.2
2008	49.9	61.3	37.6	68.6	51.6	34.6	15.8	9.8	154.9	174.3
2009	60.1	73.0	48.9	93.4	56.7	51.1	21.4	16.1	187.1	233.6
2010	64.1	79.6	51.1	106.2	71.5	57.0	23.6	21.6	210.3	264.5

How shall we find the way out?

This is a very simple question, but the answer is very difficult and complex. Thinking about the problem of land utilization, energy dependency and the labor force where can we find the solution: in the industry, in the agriculture or in the service sector? When we look at *Table 6* we can see huge decreases in the agricultural and industrial employment also, and an increase only in the service sector.

Table 6

Number and ratio of the employed people by economic sectors (15-64 years)

Specify	Number (thousand)			Ratio (%)		
	1990	2000	2009	1990	2000	2009
Agriculture	697.2	251.9	173.5	15.4	6.6	4.6
Industry	1,711.0	1,299.7	1,174.4	37.9	33.9	31.3
Services	2,107.9	2,280.4	2,403.4	46.7	59.5	64.1
Total	4,516.1	3,832.0	3,751.3	100.0	100.0	100.0

In 1990 the employment rate was higher – by approximately 700 thousand people – than in 2009, but the number of the population did not decrease so high in the

same period. So we have free capacities in the different sectors which we will have to utilize in the future. What would be the solutions?

Our country is really lucky because it has enough arable land and water capacity. Without these two resources it would be impossible to produce anything. The third factor would be the not well qualified unemployment people. So our task in the future is to find types of utilization possibilities which use all of these resources and help us to decrease our energy dependency. I believe we have already started something, but not in the most effective way.

If we want success in the near future we will have to combine these factors. I am going to show one possibility in the *Picture 1*, *Picture 2* and *Picture 3*.

Picture 1

Energy forest



Picture 2

Intensive horticulture



Picture 3

Renewable energy utilization



In the first picture we can see harvest in the energy forest, in the second one intensive horticultural technology, and in the third one a renewable power station. How is it

connected with my topic? Earlier I wrote about our problems and possibilities. According to these pictures we can understand the process. If the country has free – uncultivated – land one way for using it is by planting energy forest. We can employ for this work the unemployed who have not so high qualification to work in a high tech, or other industries. On the other hand we can decrease our energy dependency, because we would not have to use so many fossil minerals – crude oil, natural gas, coal. The other useful way for the utilization would be the intensive horticulture where we can also use those resources which I have already mentioned.

CONCLUSION

Summarizing my opinion generally, the current global economic crisis may well become the longest in three generations. If trust in finance and economy does not return rapidly, economic reform, socio-economic growth and political stability will suffer. While some confidence in the financial system will return in due course, a new financial architecture is required to strengthen the global economy and increase economic and financial fairness. In this connection, it is critical that the needs for global food and environmental security are taken into account.

Population growth creates a rapidly growing demand for crop products. Growing energy demand and climate change will also influence food production; agriculture will contribute to emissions into the environment and also suffer or benefit from changing climates, depending on climatic zones. Additional challenges are increasing market volatility resulting from yield and end stock fluctuations and consumer sensitivity to food quality, safety, and price. The challenges are aggravated by global irresponsibility related to food security, water and environmental sustainability-and energy security. The exploitation of our entire ecosystem and the depletion of natural resources carry a price that must be paid today to compensate future generations for the losses they will face in the future.

Energy prices have seen a decline (in constant dollars) over the past 200 years. The latest fossil energy price hikes have not even brought us back to the price levels of some 30 years ago. The tragic reality is that political zeal led governments to keep fossil energy prices as low as possible, thus frustrating most attempts to increase energy productivity. Energy price elasticity is very much a long-term affair, and return on infrastructure investments crucial to the creation of an energy-efficient society requires time. Much debate surrounds the potential contribution of agriculture to renewable energies. Unfortunately, existing technologies produce energies that may be renewable, but most are not green.

The effects of the previous things are being felt in Hungary, so we have to change it. In the Hungarian economy primarily relies on fossil fuels – crude oil, natural gas, coal, and their derivatives – which are not only used up rapidly but also pollute the environment and increase our dependency thus hinders process. That is why we must pay increased attention to renewable energy resources, which are inexhaustible considering the human scale and they pollute the Earth to a smaller extent.

The difficulty for researchers lies in the fact that there are certain barriers to the utilization of these resources, and it holds true especially for Hungary. One factor

of the leap forward is in connection with financing since despite the fact that successive governments have been continuously proclaiming and stressing the opportunities, an adequate system of subsidization that is available for the majority of society has not been created. Witnessing the problems of the 12 newly acceded countries the European Union should take tangible steps rather than simply determining its expectations. The EU should name and assign resources that could form the basis of implementation.

I believe another vitally important task would be to tell how the lower quality agricultural areas could be utilized. The existing subsidy system encourages the utilization of the better-than-average areas for such purposes while the less valuable areas remain unused. It is absolutely unacceptable since it affects some 600 thousand hectares in Hungary (200 thousand hectares if it is arable land below 17 Golden Crowns; and 400 thousand hectares if it is good quality pasture). As these areas require high volume of investment and are prone to unfavorable weather conditions, they are less suitable for agricultural use but are appropriate for growing energy plants perfectly. Taking all this into account it is expedient to consider the necessity of the structural modifications in agriculture so that it could adjust to new situations, offering possibilities to utilize less valuable areas, thus contributing to increased employment and to enhance the population retention ability of rural areas.

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