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TRANSFORMATION OF THE MUNICIPAL SYSTEM

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ABSTRACT

Due to the lack of necessary competence, the European Union does not specify the targets of the municipal and public administrative jurisdiction. In addition, functional (urban) regions guaranteeing more flexible functioning are coming into prominence. This, however, does not mean that regional policy is not under adjustment constraints; however, it can formulate expectations with respect to the implementation of the required goals, which contributes to the adoption of mutual standards and practices. In Hungary, almost every settlement – even the smallest one – has a municipality of its own. Considering the member states of the European Union, our country is among those member states where the number of population per municipality is the lowest. This is why it is thought that financing problems of decentralized public administration levels – including the level of local governments – could be solved by the consolidation of certain municipalities. However, the viewpoint more essential than the economic consideration is that even the smallest municipalities play an important role in retaining localities and the population, and, on the other hand, European consolidations have not resulted in obvious effectiveness improvement or cost saving. Experience accumulated in the past twenty years since the beginning of the post-communist era has revealed that the local authority model does not meet modern challenges. The municipal system has not fulfilled expectations of effectiveness or those of power policy. The Hungarian state has remained centralized, although municipalities are autonomous entities under public law (Pálné Kovács, 2007).
Keywords: public administration, rescaling, municipalities, provisional arrangement, secondary level

PUBLIC SERVICE AS SPECIFIC SERVICE

Public service is a specific type of community services. When the concept is analyzed – especially the community feature – it is difficult to specify the activities to be included in the scope of these services. In this respect, different approaches are offered by economics, the science of public administration, the science law and positive law. This study briefly reviews the systems of the first two categories.

The most important public services are manifested as basic rights in the constitutions of states. Public services, which the government provides, finances and regulates, are qualified by the government as public services in a specific legal procedure.

Considering the establishment of duties and jurisdiction, the Hungarian regulation in force prescribes that it is only the law that can determine compulsory duties, and local referenda or the body of representatives (general assembly) can decide about the voluntary undertaking of further duties and jurisdiction. There is no hierarchy between local governments considering the movement of duty and

jurisdiction. Furthermore, compulsory duty and voluntary duties can be separated in case of municipal affairs. All these duties together are normally considered the compulsory service minimum (*Horváth*, 1993).

Primary and secondary services, which are implemented on different regional scale, are distinguished fundamentally. Primary services involve basic provision, whereas secondary services include special and specialized provisions. The distinction also appears in several acts of constitutional significance. For example, Act no. LXV of 1990 On Local Governments (Alg.) Article 8 Par. (4) prescribes health and social basic provisions among the compulsory duties of settlements. In Alg. Article 70 Par. (1) Subsection b), Alg. prescribes specialized social and health provisions among the compulsory duties of county municipalities which is the level of the fulfilment of regional duties.

In this study, basic services are those human and infrastructural services which are principally expected to be available - possibly on settlement level - as close to a settlement as possible. Secondary services (which mean the implementation of duties covering larger areas) can also guarantee the fundamental rights; however these require specialized knowledge and the size effectiveness of the services also indicates that they should be provided by a larger unit than a settlement.

The interpretation of the public service concept varies widely in different specialized literature references. Certain authors approach public services from the viewpoints and aspects of those who provide the services, and they relate the notion to the supply function of the government (including local governments as well). This approach is more common. Others define public services from the consumers' perspectives. They also deal with demand for public services and economic features of their consumer processes. Finally, there is another approach, which set up categories and definitions on the basis of distribution processes of public services. European Union documents discussing issues in connection with public services (for example, *Green Paper*, 2003; *Horizontal Evaluation*, 2004) emphasize that it is the right of member states to decide what they consider public service. According to these documents, prescribing obligation to have public services cannot entail defining the ways of fulfilling obligations, even though the tools used for this purpose should be proportional to the goals to be achieved.

Public services often have public good features or just some features known in economics. Public good is non-rival, non-excludable and non-refusable. Non-rivalry means that consumption of the good by one individual does not reduce the quantity and availability of the good for consumption by others. It is non-excludable when its consumers do not have to purchase it, but the government, in the name of consumers, buys these services from taxes and contributes to their production. Last, it is non-refusable if its consumption is the consumers' obligation or maybe their basic interest (*Valentiny,* 2008).

In terms of demand, the necessary but not sufficient criterion for public services is that they are fundamentally important and universal. A service can be defined as public service if the government is involved in its supply via one of the above-mentioned modes, and its distribution mechanism should have the features described in detail below.

Treatment as human rights can prevail both in services provided under market circumstances (for example: telecommunication, energy and water supply and traffic, etc.) and in services provided under non-market circumstances (for example: compulsory education, social security or other public duties representing national interests such as justice, public safety and recording in the register).[1] The concept of services of general interest (public service) appears in the frame of competition regulation of the Union.

In the past decades, it has changed significantly how public services are provided and what requirements they have to meet. Consumers are more resolute to practice their rights and more demanding with respect to quality, price development and choice between service providers (*Valentiny,* 2008).

COMMUNITY FEATURES OF PUBLIC SERVICES

The specialized literature typically deals with the community feature of public services. While definitions of the community feature of public services - usually in connection with sectoral and economic questions - are not normally challenged, economics and the science of public administration have developed independent terminologies – often quite conflicting ones - considering when a service can be regarded as public service. The different academic definitions are aimed at finding a coherent answer to the question within the system of their own academic field. However, the complexity of the question raised virtually makes it impossible to give a thorough, precise and coherent answer to it within a branch of social sciences. That is why economic and public administration elements of the public services concept should be examined and synthesized into a uniform – but complex – definition so that the community feature of public services can be understood (*Hoffman,* 2009).

The concept of public service was first defined in economics. The notion of public good was the basis of the economic approach. Economics divided public goods into private goods and public goods. Economics classifies those goods – commodities and services - as private goods which do not satisfy community needs, but can be realized in traditional, interpersonal and bilateral relationships.

The approach of the public administration science is that public goods are to satisfy community needs (*Stiglitz,* 2000). It distinguishes several groups within public goods. From an economic viewpoint, public goods are so-called pure public goods. In terms of pure public goods – besides they satisfy community claims - different economic actors cannot be excluded from consumption. Traditional governmental and public power activities (for example: national defense) belong to this category. Local pure public goods, for example, public parks, represent a relatively independent group within the scope of pure public goods. In this respect, people who do not live in the locality can be excluded from the service. Those goods which satisfy community needs but might be excluded from consumption are considered mixed public goods. Within mixed public goods there are goods that are distinguished because exclusion from services would require significantly high expenses and consequently, treating these goods as private goods would be

uneconomical. Those goods whose community provision has become evident during the development of the society, even though anybody can be excluded from the consumption of the goods – and the consumption of which the majority of the subjects were excluded from formerly (due to lack of fee payment) – are also distinguished. Within mixed public goods, the category of local (mixed) goods is also recognized. Those goods belong here which can be produced more effectively in the locality?

In this respect, public service can be regarded as an economic process which produces various public goods in order to satisfy community needs. However, the above approach to public service, in connection with the production of public goods to satisfy community needs, results in a situation where the content of the notion cannot be interpreted exclusively within the framework of the given academic field. It is principally the mixed public goods that weaken the theory and the definition of the notion. Since a pure economic distinction – i.e. whether consumption can be excluded or not due to the lack of fee payment - cannot be applied in every case. The economic approach considering mixed public goods can still prevail when the so-called "stowaway" effect can be excluded only with significant expenses. In this case, their treatment as public goods can be considered rational from an economic point of view as well. However, the economic approach cannot include the definition of the scope of mixed public goods which are specified by the society as community needs and thus belong to public goods even though subject not paying could be excluded from the consumption of the goods. In this case, the service is interpreted as public service because of non-economic aspects (*Hoffman* 2009).

With respect to the community feature of public service, the economic approach can be applied without problems only in case of pure public goods and exclusively by the application of the tools of economics. On the other hand, it is problematic in case of mixed public goods that make up the majority of public goods because at present specifying their scope is primarily a legal, political and social question so the purely economic model relies on legal and political concepts – principally second generation basic rights derived from constitutions - to define the notion of public service in case of mixed public goods. This problem was understood within economics; therefore, economics tried to justify the scope of mixed public goods with economic reasons. This effort became especially significant in the 1970s and 1980s when, after the failure of the Keynesian intervention paradigm, economics tried to specify where was the borderline between the state (public sphere) and the private sphere. In connection with the applied science, this raised the question when the governmental duty-provision was groundless and where it could be terminated primarily by privatization and the sale of governmental properties (*Stiglitz,* 2000).

Both the aspects of excludability from consumption and the manipulability of information were taken into account by theories of economics so that public goods and private goods could be distinguished in the new situation (*Doyal and Gough,* 1991). According to the above approach, manipulatable information means that the parties have information asymmetrically (*Akerlof,* 1970), and this asymmetry hinders

one of the parties from entering into a contract on the basis of real information (*Mulgan,* 1998). According to economic theories dealing with the question, the manipulability of information could be more appropriate to the definition of the character of service since a common feature of all public service is that consumers have very little information about the main features of the service (*De Lima,* 2005). Besides the manipulability of information, the economic aspect, i.e. how developing and profitable the above area can be considered from a market viewpoint, is also taken into account in the distinction of public goods and private goods. Analyses dealing with the question, however, involve a third element besides the above-mentioned two economic criteria, namely, whether the service is related to a basic right of the constitution. This approach reveals that the question cannot be answered with the methods of economics exclusively since specifying the scope of public services is largely a social and political question.

THE HUNGARIAN MUNICIPAL MODEL

At the beginning of the post-communist era no fundamental regional reform was completed in Hungary even though a competitive public administrative regional reform could have been implemented. Political actors at that time must have thought that the transformation of public administration, and within this, the close absolutization of the role of settlement municipalities would ensure a greater opportunity for governing parties to manage the transitions. In the new municipal system, the function of county municipalities became negligible whereas one of the largest transitions of the history of the Hungarian public administration was implemented: the focus of public administration was shifted from counties to settlements. In this situation, fragmented settlement municipalities could not function as counterbalance against the central power/administration. The implementation of the new public administration system has remained – practically - incomplete (*Németh,* 2009).

In the European Union – as it has been mentioned above – characteristics of the municipal systems differ considerably. This is presented from various aspects in specialized literature. A proper framework of analysis to describe different municipal models is provided by the four dimensional space which describes the important features of different systems in accordance with constitutional status, the establishment of duties and jurisdiction, the mode of service arrangement and financial architecture. This approach is effective because it is suitable for functioning as a conceptual frame of consistent proposals. The main features of the "Hungarian municipal model" developed in 1990 can be described as follows.

Considering the constitutional status, the municipal system was established as the forth branch of power with significantly larger independence than what its common in Europe. It is characterized by fundamental tools – local political elections, the right to impose local taxes, assets necessary for fulfilling duties -, the identical constitutional status of actors with different orders of magnitude, strong ownership rights and the strong restraint of the central power. In the new system, the municipal right belongs to the settlements, which is the reason why the system

adjusted to the settlement structure is fragmented. It should be noted that the Hungarian municipal system was not related to settlements before World War II.

In addition, due to the liberal regulation of settlement foundation, new "independent republics" have been established until recently. An important feature of the large degree of independence is that duties undertaken voluntarily are only limited by the fact that certain activities are forbidden by other acts (for example: foundation of credit institutions, operating law enforcement bodies, etc.). The constitutional situation is that these "republics" cannot be forced legally to cooperate in the fulfillment of compulsory duties prescribed in Acts. This feature of the model was the result of the political illusion accompanying political transformation whose concept was that the monopoly of the one-party system could be terminated this way. It was ironic that due to the reform of the council system, public administrative structures, which lacked "only" the political pluralism, were developed by the 1980s. A rather disintegrated system evolved in 1991 instead of municipal integration following European trends. This was reinforced by the system of property rights, which today hinders assets necessary for fulfilling a public duty from "moving together" with the duty (*Vigvári,* 2007).

The most important feature of the establishment of duties and jurisdiction was that the justified differentiation, which would have been obvious in case of settlements of different levels and sizes, failed. The Alg. did not exclude this; however, the passed jurisdiction act and, concerning the fulfillment of duties, the refusal of the institution of partnership coercion – not uncommon in international practice - mean serious imposition for the system. The specification of compulsory duties and jurisdiction has involved continuous changes from a legal viewpoint. The only fix point is the list in the Amendment to the Act XXV of 1996 On Debt Adjustment of Local Governments. A further feature is weakening the municipal secondary level (capital and county municipalities) and principally degrading it to the role of institution maintenance (according to *Gábor Zongor* classical evaluation: GAMESZ). Counties do not have any rights to impose taxes, so they and towns of county rank, the capital and its districts to a lesser degree, solve several problems with unnecessary parallelism. Unlike the legal and financial incentive approach to providing small settlements with public services, the cooperative service of the fulfillment of large-scale regional duties (county, towns with county rank, large towns and their agglomeration) is not incited at all (*Vigvári*, 2009).

In terms of service arrangement, the paradigm of new public administration (New Public Management) has been prevalent in the Hungarian municipal regulation from the beginning, as it has been mentioned above.

According to this, municipalities are responsible for ensuring services and not for "producing" them, consequently, there are strong grounds for the fulfillment of duties outside the budget. Typical examples of these are public utility companies belonging to the municipality, which work as companies subordinated to general corporate governance rules. Local governments operating public utilities as price authorities and owners simultaneously are not capable of managing and controlling them satisfactorily. The other mode of ensuring services outside the budget is outsourcing which can be implemented on the basis of a purely market or

partnership approach with the cooperation of the public and private sphere (public private partnership, ppp). In spite of the alternative service arrangement, the number of municipal budget bodies is still unproportionally high. This reveals that the fulfillment of duties cannot often meet the basic requirements of economies of scale.

THEORIES FOR THE TRANSFORMATION OF THE HUNGARIAN PUBLIC ADMINISTRATION SYSTEM

It is counties that represent the regional level within the legislative environment which is currently in force in the Hungarian Republic. There are two different approaches to counties within the research on the regional structure of the Hungarian public administration. According to the first approach (e.g. Bibó and Erdei), a county is too large for the implementation of a real political municipal system and people-friendly public administration (*Csizmadia,* 1979). According to the other one, a county is too small for fulfilling certain modern functions independently (*Hoffman,* 2009). The sytem, however, can be considered to conform to the EU, as it has been concluded by several authors (*Pálné Kovács*, 1999; *Verebélyi*, 2000).

Many – including the IDEA work team of the Ministry of Internal Affairs during the two previous parliamentary cycles - thought that size disadvantage could be ceased by establishing regional municipalities at the secondary level of public administration. Bill No T/240, which was aimed at establishing 7 regions with elected municipalities within the frames of development and strategic regions, was based principally on these expert and academic concepts. The bill, however, was rejected due to lack of qualified majority (*Hoffman,* 2009).

The Bibó-Erdei concept of town-county was published in 1947. According to this, 70-80 town-counties would have been established with municipal level. Above this, there would have been 7 administrative regions, which would have been only public administrative levels (*Belényi,* 1995).

Verebélyi (2000) suggested that 12-13 large counties should be established from the current 19 counties in several phases, with the insertion of partnerships and regional changes.

Besides the claim for the precise regulation of jurisdiction and authority, there are two entirely distinct professional approaches among the ideas concerning the vertical entirety of the system. According to the first one, a "three-actor" structure would be needed: settlement, micro-region/district and county. According to the other one, a four-element structure should be created: settlement, micro-region/district, county and region.

Hoffman's settlement- and micro-region-centred model belongs to the latest concepts. On the basis of the model, if the legislator chose the district model, a town with actual district centre functions should be in the centre of each micro-region. Now there are 120-180 such towns in Hungary. *Beluszky* (2000) estimates that 128 settlements with actual town functions can be found in Hungary. The author would not establish a municipal level for public services in the micro-regions, voluntary – but compulsory – associations would be entrusted to fulfill

them. In this case – in his opinion – counties are too small for regional coordination. He, however, points out that in case of certain secondary services, the region would be too far from the recipients of the services, so it would be reasonable to establish an intermediary and lower secondary level.

The micro-region system that follows the municipality alliance model conforms to the current county system, since it is aimed at filling the shortages of settlement basic services and does not affect the county sytem fundamentally or the current structure of secondary level public services (*Hoffman,* 2007).

CONCLUSION

Rescaling had two large waves in Europe. It affected the local governmental level fundamentally in the 1960s-70s. In several countries (Germany, the United Kingdom and Scandinavian countries) municipal areas with significantly larger jurisdiction were established due to the expected advantages of economies of scale and because of the optimization of public services arrangement. The stake of the transformation was whether municipalities were capable of adapting to new challenges whereby they could become appropriate for the acceptance of new further functions and resources or they would maintain their structures but would lose their functions in favour of other contract types of public and private law (e.g. deconcentrated authorities obtained significant positions against the municipal sector or a complicated system of associations was created for a possible solution to the differences between the optimal scale of services and size of public administrative units).

Within a relatively short time, by the end of the 80s, it emerged that it was difficult to reveal the effects of structural reforms on the effectiveness of municipal functioning (*Pálné Kovács,* 2010).

In the past decades, the application of such functional solutions (associations, finance constructions and jurisdiction differentiation), which are not uniform and seek more unique solutions, has been more prevalent (*Martins,* 1995).

The implementation of the domestic secondary level, that is, the current form of counties created by the post-communist era, was not preceded by surveys of economies of scale, establishment of jurisdiction or duty fulfillment. It does not have regional integration role either. Therefore, it cannot function as the basis of decentralization, which has been formulated by political actors several times and has never been implemented, or as the counterbalance of the central power.

Hungarian municipalities compete with each other and with municipalities in the European Union, for example, to obtain investments of the public and private sectors or significant EU resources. In this competitive situation, our position is not satisfactory because provisional arrangement does not seem to be effective.

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GREEN (PUBLIC) PROCUREMENT IN PRACTICE - METHODS AND TOOLS FOR THE SUCCESSFUL IMPLEMENTATION

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ABSTRACT

Nowadays we hear more and more in the media about climate change, CO_2 emissions, environmental protection and sustainability. These expressions should be given a meaning and recommendations should be provided for authorities, companies, and individuals to take action. The topic of this article is green procurement, a tool that is to be used to reach sustainable consumption patterns, to further innovation, and to create a market to eco-technologies. Green procurement means that procurers take environmental issues into account when buying goods or services. The goal is to reduce the impact of procurement on the environment (CO_2 emissions, toxic material, amount of waste, etc.) and human health. Buying green is one of the most active and most demonstrative ways to protect the environment, and it is a tool that every individual, public authority, and private company can use to cooperate in tackling climate change. Procuring green and energy efficient products and learning how to decide whether a product is environmental friendly or not creates more awareness among people, helps giving the expression "sustainable consumption" a meaning, and shows the actions that can be done for it. In this article we will focus mainly on public authorities and private companies. The green procurement concept needs to be promoted and supported by a toolkit (with guidelines, ready-to-use criteria, and calculation tools for several product groups) that makes implementation easier. We would like to develop a consulting, educational, and auditing system that would be suitable for introducing green public procurement in Hungary effectively.
Keywords: green procurement, sustainable consumption, toolkit, public procurement

INTRODUCTION

The European Union spends 17% of its GDP on public procurement (*GPP Europe*, 2010). This financial power should definitely support environmental goals. For this reason the European Commission is committed to the implementation of green public procurement (GPP) in each Member State.

GPP means that contracting authorities and entities take environmental considerations into account when tendering products and services.

The aim of GPP is to reduce the impact of procurements on the environment and human health. The possible benefits of GPP are manifold. First of all with the implementation of GPP public authorities can set an example for both the commercial sector and households. It is also true that if public authorities take environmental issues seriously in their everyday practice it becomes easier for them to expect environmentally friendly acts from the public sector. GPP can also be a

tool for raising environmental awareness. Furthermore, ts. economic benefits are considerable. By including more and more environmental criteria in the call for tenders, contracting authorities can influence the market by raising the demand for environmentally friendly goods and services. That can increase competition and reduce prices in the field of environmental technologies. This aspect is commonly said to be the most important advantage, although influencing the market of "green" goods is rather a long term perspective. Another long term benefit of GPP is that it drives innovation.

The efficient use of GPP can lead to major changes at contracting authorities too. Administrations can use the occasion of implementing GPP for making internal procedures more efficient by reconsidering the general process of procurement. And the most important and commonly doubted benefit of green public procurement is that it often leads to savings. The competitiveness of green products is based on quality and innovation. For this reason the products and services that meet the criteria for greening are the ones that use the most recently released technologies, which often have advantages like energy saving. These products' whole life cycle costs are proven to be lower than average products'. In addition to these advantages, a political aspect can also be added: a visible focus on greening the procurement will likely result a positive judgment of the government in charge.

Private procurers like companies or citizens are not restricted by administrative requirements and of course the limitations on spending taxpayers' money are not valid for them. The regulations described in the next chapter don't affect them, but the criteria setting section and the other technical specifications are very useful. Nowadays it is becoming more and more important for companies in the competitive sector to stand out from the crowd. Thus it is worth taking action for environmental protection in connection with CSR or simply demonstrating environmental awareness. The products and services that meet the "green" criteria are usually top quality and represent the latest technical trends. This means that there is a major saving potential in their usage. Together, positive public judgment and the financial savings can result in a better position in the market, a competitive edge. Green procurement is an obvious tool, because it is one the most active and most demonstrative ways of environmental protection.

The concept of green procurement can be used in a wide range of product groups, but it should be admitted that some groups are more suitable for "greening" than the others. For example research, advertising, and auditing services rarely contain environmental aspects, but for furniture and IT there is a great possibility to make the industry greener.

In the Take-5 Study (*Bouwer et al.*, 2006), which was finished for the European Commission in May 2006, researchers reported on the current state of GPP in Europe. They highlighted seven Member States that use GPP very effectively. They are called the "green-7" (Austria, Denmark, Finland, Germany, Netherlands, Sweden, and the UK) Based on this study, a list of product groups was collected (*Table 1*).

Table 1

Product groups most suitable for "greening"

Product groups most suitable for "greening"	
Cleaning products and services	Construction works
Horticultural services	Construction products (including heating/cooling/lighting appliances)
Medical devices – pharmaceuticals	Furniture and other manufactured goods
(Electrical) machinery - communication equipment	Paper, printed matter, printing services
Energy	Transport and communication services
Sewage- and refuse-disposal services	Chemical products, rubber, plastic
Sanitation and environmental services	Food products and beverages, Restaurant services
Transport equipment	Architectural, construction, installation and related consultancy services
Office machinery (computers/monitors/printers/copiers)	

Source: *Bouwer M et al.*, 2006

Actions of the EU

Environmental protection is one of the key priorities of the European Union, so several actions have already been taken in connection with GPP. The table below shows the most important parts of the legal framework and policies (*Table 2*).

Table 2

Actions undertaken by the EU in connection with GPP

Year	Actions
2001	The European Commission accepted the usability of environmental criteria in public procurements (Helsinki bus case). Sixth Environmental Action Program European Sustainable Development Strategy (SDS)
2003	IPP Communication on Integrated Product Policy: encouragement for the Member States to develop their national GPP action plans by the end of 2006
2004	EU Directives on public procurement aiming to clarify, simplify and modernize existing European legislation on public procurement-bases of GPP 2004/18/CE 2004/17/CE
2006	Renewed EU Sustainable Development Strategy: the EU Member States decided to aim to achieve an average level of GPP equal to the current level of the best performing Member States by 2010.
2008	Action plan on sustainable production and consumption and sustainable industrial policy- the main point of the action plan is to improve the energy and environmental performance of products and encourage their uptake by consumers based on eco-design requirements and labeling schemes. (ie. Energy Labeling Directive, Energy Star Regulation, Ecolabel Regulation) This will be the base of harmonized public procurement: one level of the labeling classes will be set under which the public authorities would not be allowed to procure.

Source: selection from the EU GPP site

How to use GPP?

Implementation into the call for tenders

One of the biggest barriers to implementation of GPP is that people leading the procurement process often don't know what kind of environmental criteria they should set and where to insert it into the process. For this reason they sometimes opt to ignore the whole concept. This section will describe the 5 stages of a call for tender in which environmental criteria can be inserted. In each member state EU policies are to be integrated, so there might be minor differences in the procurement law, but basically the below described concepts are valid in each member state.

The first way is to describe *the subject of the procurement* as environmental friendly. For example a contracting authority can state that it would like to buy recycled paper, but they can't state that they would like to buy Blue Angel labeled paper, because that would be discriminative.

By defining *the technical specifications,* public authorities have the opportunity to include a wide range of environmental performance standards. This regards calls for tenders both above and below the threshold value. It is also possible at this stage to ask for environmentally friendly production methods. The production method criteria should be strongly linked to the subject of the contract and the life-cycle of the product should be taken into consideration. For example suppliers can be asked to deliver electricity that comes full or partly from renewable resources. Contracting authorities should also allow and encourage innovative solutions. For example instead of describing a complex heating system they could just set the temperature they would like to have in the building and with this they would encourage innovative and new technologies. In the specification part of the documentation, contracting authorities can use the specifications for eco-labels. Usually the criteria of the ISO Type I labels can be copied and pasted into the call for tender. The ISO 14024 Type I environmental labeling is "a voluntary, multiple-criteria based, third party program that awards a license that authorizes the use of environmental labels on products indicating overall environmental preferability of a product within a particular product category based on life cycle considerations". So it is legally correct to use the eco-label criteria, but public authorities can't require having the eco-label itself, because that would be discrimination against the products that don't have the label. As long as providers can prove their adherence to the criteria they should be accepted.

The selection criteria relates to the bidder and whether they have the necessary financial and technical competence for performing the contract. The exclusion grounds can only relate to the person of the bidder and not the performance. Where national law allows it (not in Germany), a purchasing officer could mention that companies will be excluded who have been convicted by a final judgment for non-compliance with environmental legislation when exercising their profession. The "selection criteria" part of the call for tender gives limited possibilities for setting environmental criteria, but, for example, the contracting authorities can ask from the bidders of certain work and service contracts to take several environmental management actions for the duration of the contract to prove their

ability to carry out the project. In that case companies that are EMAS or ISO14001 (more information on this in the next chapter) certified should be accepted, but other proofs should also be accepted to avoid discrimination. The above possibility to require an environmental management system (or actions) is not valid for supply contracts. Having an environmental management system might say something about the environmental performance of the company, but is does not necessarily describe the environmentally friendly characteristics of the product that is the original subject of the tender.

There are two possible ways of choosing *the award criteria*. The purchasing officer can either choose the bid with the lowest price or "the economically most advantageous offer". In the second case, a series of award criteria should be developed that include the price, environmental, and other criteria. For example a contracting authority could add extra points to a bidder that proved that 20% of the electricity that it supplied came from renewable sources. The weighting rate should be defined in the call for tender. According to European legislation, even positive discrimination toward bidders from a given region or country is strictly forbidden. And the last stage of the call for tender also allows some environmental criteria to be added. *The performance clauses* should not be connected with technical specifications or selection criteria and they have to be known by the bidders from the beginning of the process. A good example would be to ask the successful bidder to deliver the goods by rail and not by trucks or setting requirements in connection with packaging, waste management, or the education of colleagues.

GREEN PROCUREMENT TOOLKIT

In the next part we would like to show the main barriers mentioned in relevant literature and based on our experiences with local authorities and companies applying green procurement in Germany, we would like to present our methods to provide solutions for these problems. Our green procurement toolkit is specially designed for Hungary, and it is suitable for the use of public authorities and private companies as well (*Table 3*).

Table 3

Barriers of green procurement and recommended solutions

Barrier	Recommended Solution (toolkit)
Lack of technical knowledge	Performance criteria collection
Perception of financial burden	Calculation tool
Lack of management/political support/engagement	Awareness, training, motivation
Market barriers	Communication

The toolkit is meant to be easy-to-use and understand so that implementing green procurement does not result in a lot of extra paperwork and new tasks for procurement officers. The new practice needs careful implementation and user-

friendliness because the officers' commitment is crucial to the success of green procurement systems.

Lack of technical knowledge

We highlighted the possibilities for including environmental criteria above, but it is not exactly easy to set such criteria, especially because procurement officers are usually jurists, or at least not experts in the fields of technology and science. At times they have major difficulties developing procurement criteria. This problem can be solved by the strong cooperation of environmental experts and procurers. Thus, we are developing a so-called performance criteria collection that contains the technical specification of environmental friendly product alternatives for the following product groups:

Energy consuming products

- IT, household, vehicles…

Material consuming products

- Paper, textiles, detergents…

Services

- Cleaning, gardening, construction.

The product groups were chosen based on the most suitable products for "greening" and on the suspected needs of a public authority or a company. The criteria is based on ISO type I eco-labels and the EcoDesign Directives of the EU. Standards are useful in public procurement specifications as they are clear, non-discriminatory and developed on a consensus basis. For certain products and services, national eco-labeling criteria and the EU Flower were applied. These labels take into account the main environmental impact of products and services, are compatible with market principles, and allow products to be easily identified. The eco-label criteria are established on the basis of scientific information and through wide stakeholder consultation and be accessible to all interested parties.

Simplified and comprehensive procedure

The performance criteria for each product consists of four categories. These are: energy consumption, lifetime, noise emission, and "other" environmental criteria. The performance criteria collection has two basic versions. One of them is the simplified procedure and the other is the comprehensive procedure. The simplified procedure contains basic minimum criteria (inserted in the technical specification of the call for tenders), according to the EU EcoDesign Directives. These criteria must be fulfilled by the product or it gets excluded from the procurement process. The comprehensive procedure means that there are more criteria based on Eco-label criteria. These are more difficult to fulfill, and at this point the innovation driver function of green procurement starts working. The criteria are target criteria and points can be awarded for better performance (maximum for meeting all the requirements) *Table 4* is an example of a comprehensive criteria set for refrigerating devices.

Table 4

Example of a performance sheet in case of comprehensive procedure

1.	Product details	Minimum criteria	Target criteria
	Model: _____		
	Storage volume: Refrigerator _____ Liter		
	Freezer _____ Liter		
	Climate Class (N, SN, ST, T): _____		
2.	**Energy Consumption**		**50**
2.1	Annual energy consumption (based on standard tests): _____kWh		
	< 200 kWh/year		☐ 25
2.2	Energy efficiency		
	Energiaosztály A+ (EEI<42)	☐	
	Energiaosztály A++: (EEI < 30)		☐ 25
3.	**Durability**		**20**
3.1	Warranty period		
	2 years	☐	
	Longer than 2 years		☐ 5
3.2	Guarantee services (without surcharge)		
	2 years	☐	
	More than 2 years		☐ 10
3.3	Parts and service available		
	For at least 8 years	☐	
	For at least 12 years		☐ 5
4.	**Noise level**		**10**
	LWAd ≤ 40 dB(A)		☐ 10
5.	**Environmental criteria**		**20**
	Packaging made of at least 80 % recycled material		☐ 20
	All minimum criteria fulfilled?		
	Total score for target criteria		_____
	Maximum score		**100**

Source: Based on Buy Smart toolkit

It is up to the procurers to decide which category has greater importance for them, so they can set the maximum points of the award criteria of energy consumption, lifetime, noise emission, or other environmental criteria. These four maximum points should add up to 100, because this value is used in the evaluation process (to be described below).

Perception of financial burden

Higher initial investments and tight budgets are often are the first problems. It has been proven that GPP does not cause major cost increases for public authorities. This is proved by several studies, but the most recent ones are conducted by

McKinsey for Germany and PricewaterhouseCoopers for the "green7" countries. Both of them highlight the fact that, despite possibly higher procurement costs, products and services cost less for public authorities over their whole life-cycle.

The first study was conducted specially for Germany by the McKinsey& Company Inc. at the behest of the German Ministry of Environment. It concluded that in Germany the total value of public procurement is more that 50 billion Euro per year. This means that the public sector has a significant market share in most public-related business lines. In the area of constructions, rehabilitation, IT, hardware, electric equipment, and transportation the public authorities' market share is around 10%, but in the server market, for example, they have 20% and they cover 50% of the buses sold in Germany. Altogether the CO_2 emission (and CO_2 equivalents) of the public sector was around 42 megatons in 2006 and about the 30% of this could be avoided by 2020 with environmentally friendly products that are even now available, according to the McKinsey investigation.

The green house gas emission of the public sector, nearly 43 megatons, is enormous, but it is only 4% of all Germany's emissions. 23.5 megatons of CO_2 comes from the energy demand of public buildings; schools for example, emit 6.7 mt CO_2. The transportation sector causes 5.7 mt of CO_2 emissions, and out of this 3.1 mt are caused by short distance public transport. The rest comes from business trips, police, and public utility and waste companies. The electricity used by the pumps of water treatment generates 7.6 mt CO_2.

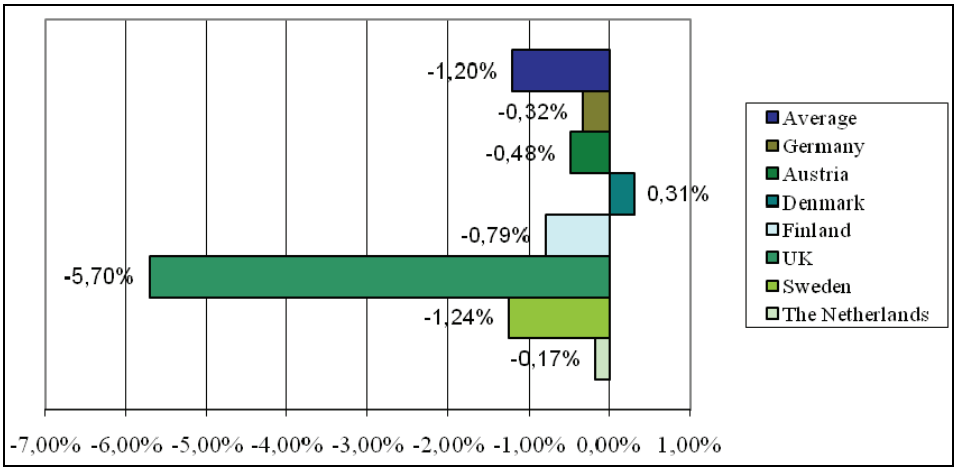
According to McKinsey about 30% (6.4 mt CO_2) of these emissions could be abolished without any specific prevention plans just by using the most modern technologies presently available in the market. McKinsey also states that a further 16% (5.7 mt CO_2) can be saved with the following policies. With construction and renovation about 3.7 mt CO_2 can be saved, which means that this area has the biggest saving potential. The study also calculated that a 120 Million Euro investment could reduce costs by 210 Million Euros by 2020 if the lifecycle of products were taken into consideration. This money should be invested in, for example, building renovation and hybrid buses, because the greatest savings can be achieved in the field of construction and transport.

From the analysis it is clearly visible that greening policies can cut CO_2 emissions significantly.

PricewaterhouseCoopers has carried out a study on a collection of statistical information on GPP in the EU and found that, contrary to common perception, GPP can also lead to decreases in costs for the purchasing organization rather than increases (*Figure 1*). When using a Life Cycle Costing (LCC) approach in calculating the financial impact of GPP, the outcome is that the average financial impact of GPP within the G7 countries is about -1% in 2006/2007. This means that, although the use of environmental criteria in procurement procedures can lead to higher direct purchasing costs, it can result in an average decrease of overall costs for public organizations of around 1%. The reason behind this is that higher purchasing prices of green goods are compensated by lower operating costs. The study also indicates that there are two main product groups leading to cost reductions through GPP: construction and transport.

Figure 1

The financial affects of GPP



Source: *The value of green study*, 2009

In 2009 the social and economic impact of the implementation of GPP was investigated in Hungary, and the study stated that GPP would not cause significant cost increases considering the life-cycle costs.

Calculation tool

To calculate the costs and to evaluate the tenders we developed a calculation tool that compares different products. The comparison is based on energy cost, maintenance costs, the cost of purchasing, and the scores (points) reached by the environmental target criteria.

By the evaluation process the relevant technical data of the product (e.g. annual energy consumption, size, useful lifetime), the purchasing price (including the additional costs, e.g. transfer), the annual maintenance costs, and the annual energy costs should be added into the calculation tool. The result will give a life-cycle cost for the useful lifetime of the product. In this case we do not define the life cycle of the product according to the classical "cradle to cradle" definition for practical reasons. At this point, the calculation tools are ready for energy consuming products only. In the case of these products the difference between the purchasing costs and the energy costs should be highlighted to promote energy saving products. For this reason, and because it is quite expensive to carry out a LCA for all product groups in this exceptional case, we consider the simplification of the life-cycle definition acceptable. This point of the calculation needs further development in the future.

In the simplified procedure, the ranking of products is based on life-cycle costs. The best economic offer is the product that's life cycle cost is the lowest.

In the comprehensive procedure, additional data should be added to the above-mentioned calculation tool. These are the points achieved by the target criteria and

the weighting share of life-cycle costs and environmental criteria. European legislation recommends that the maximum weighting share of environmental criteria should be 45%, so that cost effectiveness is still dominant while spending public money. If the calculation tool is used by a private company it is possible to give different shares depending on the preferences in their purchasing policy (*Table 5*).

The combination of the scores for LCC and environmental criteria results in a "best economic offer" row of the calculation tool (*Table 6*).

Table 5

Example of LCC calculation

	Offer 1		**Offer 2**	
Manufacturer	Samsung		Indesit	
Model	RL23THCSW1		BAAAN13V	
Technical specifications				
Number of appliances to be purchased [number]	*1*	n	1	n
Storage volume of the refrigerator/refrigerator compartment [liter]	*164*	l	*217*	l
Storage volume of the freezer/freezer compartment [liter]	*63*	l	*113*	l
Storage volume of the other compartments (if present) [liter]	*0*	l	*0*	l
Energy Consumption (based on standard test results) [kWh/year]	*233.0*	kWh/year	*200.0*	kWh/year
Appliance useful lifetime, for LCC analysis [year]	*10*	year	10	year
Discount rate [%]	*10*	%	10	%
Purchasing Prices (according to the offer)				
Purchasing price per appliance [Ft/appl.]	*74500*	Ft/appl.	*85000*	Ft/appl.
Installation price per appliance including accessories [Ft/appl.]	*0.00*	Ft/appl.	*0.00*	Ft/appl.
Transport [Ft/appl.]	*3000*	Ft/appl.	*3000*	Ft/appl.
Total purchasing price per appliance [Ft/appl.]	77500	Ft/appl.	88000	Ft/appl.
Total purchasing price for all appliances [Ft]	77 500	Ft	88 000	Ft
Appliance annual maintenance costs				
Hourly fee for the maintenance [Ft/hour]	*200000*	Ft	2000.00	Ft
Workload for maintenance per appliance [min/appl. year]	*15*	min/appl. year	*15*	min/appl. year
Annual maintenance and standard services cost per appliance [Ft/appl.]	500.00	Ft/appl. year	500.00	Ft/appl. year
Total maintenance cost of appliances per year	500.00	Ft	500.00	Ft
Energy cost per year				
Energy price [Ft/kWh]	*50.00*	Ft/kWh	50.00	Ft/kWh
Energy consumption per year per appliance [KWh/year]	233.00	kWh/year	200.00	kWh/year
Total energy cost per appliance per year [Ft/year]	11 650.00	Ft/year	10 000.00	Ft/year
Annual operational costs				
Annual operational cost per appliance [Ft/appl.year]	12 150.00	Ft/appl. year	10 500.00	Ft/appl. year
Total annual operational costs [Ft/year]	12 150.00	Ft/year	10 500.00	Ft/year
Total annual operational cost per liter of net volume [Ft/liter year]	53.524	Ft/liter year	31.818	Ft/liter year
Life Cycle Cost calculation (LCC)				
Economic period considered [years]	10,0	year	10,0	year
LCC per appliance [Ft]	152 156	Ft	152 517	Ft
LCC per liter of net volume [Ft/l]	670	Ft/liter	462	Ft/liter
LCC for all appliances [Ft]	152 156	Ft	152 517	Ft

Source: based on Buy Smart toolkit

Table 6

Example of the best economic offer calculation

	Offer 1		**Offer 2**	
Manufacturer	Samsung		Indesit	
Model of refrigerating appliance	RL23THCSW1		BAAAN13V	
Evaluation of the Performance Sheet				
Compliance to mandatory minimum criteria [No=0, Yes=1] When complying to mandatory criteria and no target criteria requested [Yes = 2]	*1*		*1*	
Total score of the target criteria on energy consumption (max 50)	*25*	n	*50*	n
Total score of the target criteria on durability (max 35)	*20*	n	*15*	n
Total score of the target criteria on noise (max 10)	*10*	n	*10*	n
Total score of the target criteria on environmental performance (max 5)	*20*	n	*20*	n
Total score of the optional target criteria	75	n	95	n
Weighting share of the target environmental criteria	*45.0*	%	45.0	%
Total score of the target criteria	34	n	43	n
Life Cycle Cost				
Appliance useful lifetime, for LCC analysis (year)	10	y	10	y
Discount rate for LCC assessment (%)	10	%	10	%
Life Cycle Cost (Ft)	152 156.49	Ft	152 51795	Ft
Guarantee services without surcharge (if foreseen) (years)	*3*	y	*2*	y
Annual operational and maintenance costs per appliance (Ft/appl.)	12 150	Ft/appl.	10 500	Ft/appl.
LCC for the lifetime, considering the period of guarantee services without surcharge (Ft)	121 941	Ft	134 294	Ft
Weighting share of the LCC (see Notes)	55.0	%	55.0	%
Best economic offer considering the Life Cycle Cost	2		***1***	

To sum up, the possibly higher purchasing costs are compensated by the lower operating costs, but still some benefits of sustainable procurement cannot be expressed in monetary terms.

Despite the above-mentioned financial savings, political commitment is necessary to defend long-term and non-financial benefits.

Lack of management/political support

Senior public sector officials often have low awareness of the importance of GPP and sustainability issues. Without a strong strategic focus and an organizational

policy that promotes GPP (with time and money), the integration level of environmental aspects will remain low. Not even a high level of commitment to national targets is always a guarantee of success. Often there is a low level of understanding of the concept that creates an *'implementation gap'* or conflict between policy and practice. Even a high level commitment via policies and targets can become weaker by the time it reaches the purchasing officials. At this stage, sustainability issues are often forgotten and "best value" is easily translated into lowest price. The "best value" approach is not an alternative to an environmentally sustainable procurement but one element of comprehensive procedure.

Sometimes personal barriers can cause problems too. Employees' lack of awareness of environmental problems and their protests against new solutions call for self-assessment within the organization and for changes in attitude.

To avoid the above-mentioned problems, training materials should be developed for procurers that help raise awareness and engagement of all colleagues within the organization. In addition, training would provide an opportunity to transform the toolkit usage into a competence of the procurers and develop it into an everyday routine.

A follow-up of the works done by the procurers in a half-year period should be reviewed with an information-collecting and consultation session. Yearly audits are also recommended to keep the concept going and help further development.

The final point of green procurement is communication. Green procurement relies on innovative standards, so it can be difficult to find suppliers able to provide the necessary products or services. Market research and the widespread communication of the intentions and about implementation of green procurement are indispensable. Communicating needs far in advance can help suppliers prepare products that meet the criteria. Good communication is crucial to achieve all the benefits of green procurement: to set an example, to influence the market by raising the demand for environmental friendly goods and services, to increase the competition, and to reduce prices in the field of environmental technology.

CONCLUSION

According to an EU directive, all Member States should have developed a National GPP Action Plan by 2006. Only Bulgaria, Estonia, Greece, Ireland, Romania, and Hungary still do not have an action plan.

Our aim is to remove this failure and to help Hungarian public authorities and companies implement green procurement and begin a more sustainable operation. Our toolkit was developed based on the analysis of European practices and experiences with GPP in Germany. We tried to address all possible obstacles and took Hungary's specific conditions into account.

Our intention is to test the described green procurement toolkit by Hungarian public authorities and companies and further develop the system according to the needs and preferences of everyday procurement practice. A next study should report on the first results of the implementation by 'early bird' participants.

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OPPORTUNITIES AND POTENTIAL OF TRANSPORTATION ON THE DANUBE

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ABSTRACT

The fundamental trends of transportation of goods are negative concerning the two important mass transport technologies, the rail and inland navigation in the EU. This phenomenon is problematic even from the view of competitiveness and ecology if we just consider the facts that these modes of transport are cheaper than road transport and cause less pollution or other negative externalities. For the improvement of this unfavorable position, these two technologies need a drastic change in the level of service and business models, particularly in the used infrastructure. One of the most fundamental issues within transportation is the question of navigation on the Danube, where Hungary is also a stakeholder. In this paper I try to find the most important factors of this issue and try to identify the fundamental principles of a new Danube shipping strategy in Central-Europe. This analysis is first of all based on the statistical data on transportation networks.
Keywords: transport, rail, inland waterways, Danube, inland navigation

INTRODUCTION

Basic trends of goods transport in the EU

Because of the huge growth in consumption and the process of globalization, the role of global transportation systems becomes more and more important all over the world and also in Europe. The transportation sector is one of the most important parts of the global economic system. Due to the improvements in logistics and the related IT services, there is a well-organized global economic network today. This global transport system is precise, fast, calculable and stable. Meanwhile there has been other significant change in the role of different transportation technologies. The most stable and reliable technology is air transportation with the most expensive prices and lowest share from the overall transportation. Due to the well-developed road network and the termination of inside EU border system, the best deal on the transportation market today is road transport. This technology is fast, predictable, and also very flexible with better prices compared to air transport. Within the European Union the short sea shipping has also an important role. From the 50s and also in the last 20 years, there is a negative trend and a smaller share in the use of rail transport and inland waterways (as we can see in the *Table 1*).

Table 1

Modal split in the EU, goods transport (1995-2007, %)

Year	Road	Rail	Inland waterways	Pipelines	Sea	Air
1995	42.1	12.6	4.0	3.8	37.5	0.1
2000	43.0	11.4	3.8	3.6	38.1	0.1
2001	43.1	10.7	3.7	3.7	38.8	0.1
2002	43.8	10.5	3.6	3.5	38.6	0.1
2003	43.7	10.5	3.3	3.5	38.8	0.1
2004	44.	10.6	3.5	3.4	37.9	0.1
2005	44.9	10.3	3.5	3.4	37.9	0.1
2006	45.0	10.7	3.4	3.3	37.6	0.1
2007	45.6	10.7	3.3	3.0	37.3	0.1

Source: *European Union*, 2009

As we can see, in the EU the share of the two most important mass transportation types are low with the rail sector having 10.7% and the inland waterways having only 3.3% in the total goods transport. The share of these two transport modes shows a descending trend between 1995 and 2007. Meanwhile the road transport sector has a nearly 50% share of the total transportation industry in the EU. It is considered to be a typical and natural trend characteristic to developed western countries. But if we consider the data from the USA, which is the nearest comparison for the EU, we can find a very different situation (*Table 2*).

Table 2

Modal split in the USA, goods transport, 1995-2006, %

Year	Road	Rail	Inland waterways	Pipelines
1995	31.2%	39.7%	11.0%	20.5%
2000	32.4%	42.1%	9.8%	15.7%
2001	32.5%	42.8%	9.3%	15.4%
2002	32.9%	42.4%	9.2%	15.5%
2003	33.4%	42.4%	8.6%	15.6%
2004	32.8%	43.1%	8.7%	15.4%
2005	32.6%	43.8%	8.2%	15.3%
2006	31.8%	45.6%	8.2%	14.4%

Source: *European Union*, 2009

The modal split in the USA is very different compared to the European one. Although in the USA there is no see shipping and air traffic data in this statistic, but the relation between the output of road, rail and the inland waterways is very differentiated compared to the EU data. Other important findings is the rising trend of the rail sector share in the analyzed period, and the absolute levels of road

and rail transportation shares, where rail technology has a leading role. So we can see, that the situation in the EU is not a typical situation compared to other well-developed countries or regions.

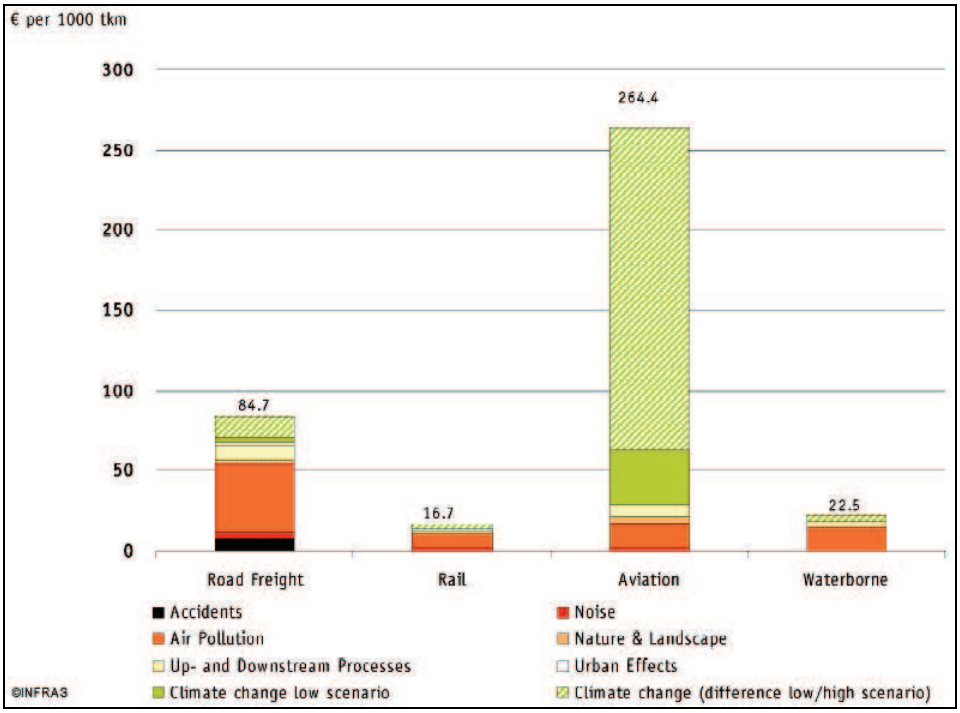
The importance of modal split

The importance of the above mentioned trends is not necessarily obvious at first sight. The changes in the roles of each technology are a natural process considering the development of economic systems. However there are some dimensions – primarily the use of ecological resources – according to which it is a very important question which transportation technology has the biggest role. Research findings from the last decades show significant difference on the environmental impact of different transportation modes. There are also differences in the consideration of the extent and features of land use and the cost and characteristics of infrastructure needed. The use of ecological resources appears in the direct costs, since the level of energy needed for transportation is related to the extent of pollution and costs.

Choosing between the inland modes of goods transportation it is important to consider the external impacts of the decision made because the level of the environmental impact of each technology is significantly different (*Figure 1*).

Figure 1

Differences of transport technologies in external costs



Source: *IWW*, 2009

One of the characteristics of this issue is that besides data points there are excessively complicated model calculations. Due to this the scattering between results is high. In this study we do not intend to deal with the details of this problem. The data above are from a current study made by an institute (*IWW*, 2009) engaged in this issue long since.

The data show that external costs per TKM significantly differ according to transportation technologies. The external costs of shipping are one and a half times, while costs of road transportation are fifth times bigger compared to railway data as base. According to the model the most extreme external costs are caused by air transport, which are ten times bigger than the values of railway transport.

Environmental policy is considered to be a significant topic on the EU level, and also on the level of member states. According to this view, in transportation policy it represents consistently the conception of railway development. At present this conception does not seem to be successful, since in most member states the share of railway in goods transport stagnates or decreases.

DRIVERS OF CHOICE

In this analysis it is important to emphasize the similarities between railway and shipping technology. Basic characteristics and the most relevant problems are similar in the cases if the two transportation modes, so the reasons of weak competitive position of road transport can be characterized. The most important aspects of decisions made by those who buy transportation services can be identified along a few factors. According to these aspects differences are significant between individual and mass transport. In the last few decades in the transportation of goods it is of big importance that goods and products arrive at the right place precisely in the right time. The decrease in transportation periods and the increase of the flexibility of time management is a general tendency. In Europe in all of the above mentioned aspects road transportation is much stronger than railway except prices, which are almost the only strength of mass transport. It is also worth considering the question of commodity groups since in the case of certain goods road transport is not effective (goods with high density and big volumes of mass products, for example coal). In this case switching road transportation modes is not possible. Differences in Europe can be seen from *Table 3*.

It can be seen that railway transport and inland shipping are not competitive in Europe. The problems are complex: some of them are basic, technology driven others are due to bad management. The price of mass transport is usually better than at other transport modes, but there is a lack of active, innovative, competitive attitude. Due to this there is no proper level of high quality service in this field. Though there are partial break out points, but we have to face with dealing with relevant problems even on the short run. There would be a great need of serious innovative progress and the overcoming of the present technical barriers.

Table 3

Comparison of individual and mass transport, from consumer view

	Road and Air	Rail and Inland navigation
Speed	Fastest modes of transport	Badly organized transport – with significant competing time advantages
Costs	High price levels; good price value rate of services	Low expenses, low price value rate
Type of goods	Any type of goods with a few exceptions	Effective mode in the case of a few goods
Size of package	Any type of goods except a few with extreme sizes	It can handle just a few technology (e.g. container)
Safety	High level	Badly managed risks
Timelines	Reliable, well-planned	Influenced by many external factors
Additional services	Widely available, innovative technologies	Just a few services
Flexibility	Flexible in time and space	Not flexible in time and space

Relevant transport technologies in Hungary

The geographic location of Hungary has relevant consequences considering European transportation trends from the Hungarian point of view:

1. The country does not have an exit to the sea, thus sea transport and sea shipping is not a direct mode of transport.
2. Due to the country's central position and Helsinki corridors, there is a great potential of transport and transit traffic.
3. The country is located along the borders of two regions (East and West), which have different transportation potentials, thus handling transit goods can have economic potential above average.

The field is divided in two cases of transport technologies. Air and road transport play a proportionate role to economic and technical development In the last 20 years the main part of necessary motorway network has been completed, thus road traffic infrastructure is equal or similar to the important transport directions compared to the developed European countries. The share of air transport is lower in the total market, but also in this mode it fits with the expected potential.

Railway transport and inland shipping are lagging behind. In the case of railway, network infrastructure for freight transport is well established since it is no big difference if the maximum permitted speed of the lines is 100 km/hour or 160 km/hrs. There are network elements, directions, where the capacity is scarce, but even more problem that there are deficiencies in the technical condition of the railway network. This discredits not only the competitiveness of certain routes, but causes general problems related to reliability. In the case of using railway lines in bad condition, malfunctions happen more often, so the risk that an ordinary

transport does not arrive in time, is relatively high. Besides the conditions of the network, there are other factors in this field. There are many deficiencies in the field of complementary infrastructure, as well.

In the case of shipping the situation is worse considering infrastructure. There are problems with the shipping routes, transport infrastructure and services. Infrastructure in ports is not completed, there are a small number of ports, and the levels of their services are low. The importance of shipping in the Hungarian economic system is insignificant; the performance of shipping does not meet with the given possibilities.

So rail and inland water transport is lagging behind technologies providing unique services. The level of services does not meet with the criteria of demand, infrastructure is not completely build, operating service providers are not capable of offer services to customers with goods which can not be transported on the road because of the attributes of the goods (*Fleischer*, 2011).

VISIONS OF TRANSPORT NETWORKS AND THE ROLE OF THE DANUBE

According to the above mentioned, the vision of an ideal logistic network in Europe is where in the main corridors there is a modern transportation system integrating railway and inland shipping solutions. At the starting and endpoints (with a 100-150 km radius) road transport would be prevalent. Air transport would be applied only in the cases of urgent, unique, high quality required and classic postal services. In this case the share of transport technologies with lower environmental load could be increased but at the same time it would not negatively affect the European competitiveness and standard of living. In fact, through indirect impacts there would be a positive effect in the case of both factors. According to this vision, the main European corridors would have bigger and more important role than they have now. The Danube is one of the most important transit waterways in Europe. At the moment the Danube is an isolated element in the transport system, the share of intermodal transport is very low within shipping (*Table 4*).

Table 4

Distribution of inland navigation by origin and target, 2009

Source/Origin	Distribution
Port, landing	55.5%
Road traffic	32.0%
Rail traffic	11.3%
Other ship	1.2%

Source: *Hungarian Port Statistics*, 2010

This means that the importance of shipping on the Danube could increase on the long run. For Hungary it would mean that a larger share of transport, so Hungarian export, import and transit traffic crossing through the country, would be on the Danube.

The Danube can play a decisive role in three trading areas:

- In the Central-European Region the Danube can connect the main regional centers on a low price (at the moment this is a non existent, or too small market).
- It can provide services completing railway transport to the direction of the Rhone and the Black Sea.

The Danube as transport infrastructure

Based on the above mentioned, the Danube can be considered a transport infrastructure with specific and unique natural capabilities. From logistic point of view in the case of routes the problems are the bottlenecks, the changeable physical features and their uncertainty factors. The main feature of the Danube that water level fluctuates, during the year big changes can be observed in the water level. This problem is important in the case of shallow, where the water is not deep so the low level of water makes shipping problematic. Because of this, in the case of low water level, ships can run with less freight, less utilization, which increases unit costs.

According to most of the Hungarian shipping professionals the solution is to terminate drastically the problem which would be achieved by building dams. Thus the water level could be increased and regulated, so problems with shallows would nearly disappear. However dams do not give a proper solution for the problems of shipping industry, because this kind of investments does not improve significantly the situation. The great uncertainty of planning on the river does not improve with investing in a dam. Building dams along the river is such a long period of time, in which case we should rationally think about temporary solutions. (If these solutions were realized this would improve the current situation as well.)

The other way of solving the problem, which is considered to be feasible, is the improvement of the river capacity with building on the water. In this case there are physical intervention in the riverbed, so with dredging the shallows we can reduce the problems. In this case physical interventions are done in the riverbed, and by dredging shallows and dams we can reduce problems. By reducing the occurrence of shallows and dams would naturally improve conditions, but it does not solve the problems by itself. The present solutions tend to mean that the EU expects and requires the reduction of dams and at the same time we could terminate or reduce shallows in the Danube by big water building investments.

However this is problematic from two aspects. On one side it is costly, on the other side it hold significant risks as it reduces the ecological services provided by the Danube. Both factors show that the extent of interventions should be reduced as low as it is possible.

In the last few years professional debates on this issue happened primarily between environmentalists and water and shipping professionals. The first groups is against interventions and try to call attention to the need and of ships which are developed based on Danube needs instead of reshaping the Danube according to

the needs of ships travel on the Rhone. Current model data, made as background research for the Hungarian-Slovak debate, could be used in general with further changes as well. The first attempt was the study of Regional Centre for Energy and Policy Research (*REKK,* 2010) where besides new results model analysis show that big ships can be more effective even in the case of lower saturation and lower water level. Thus this debate is misleading and unnecessary.

The potential flow of wares

The most important potential in Danube navigation is the development of the transport of new types of goods, especially the container-traffic. This option is technically realistic today, but it has a big disadvantage considering competitiveness. If a change in the circumstances happened, the performance of the Danube transport system could achieve a significant growth.

One potential base of this process is the switch from road and rail to navigation in transport. The other main type of opportunities is the formation of new transport directions. Within this potential there are also two options. First there is a potential development in trade inside of Central-Europe. Other possibility is a change in the dominant routes in the Far Eastern traffic: from the ports of North-Europe to the Black Sea.

The typical route today is Rotterdam, or other North-Sea ports via Suez, Gibraltar, and then to Hungary on road. An alternative way is the Black Sea via Bosporus and Konstanza to Hungary, which is significantly shorter, but not so well organized, like the longer way. Because of the bad condition of the road and rail infrastructure of East-Europe, this potential flow of wares is a real opportunity for the inland navigation. But there is also a lack of infrastructure in the host part of the network in Hungary.

There is some alternative data resource in this issue, but there are also problems and conflicts in the comparison of data from different sources (*Table 5*). This data conflicts are problematic, but there is no hard inconsistency inside of one data source. So we use only the Eurostat data in the next part.

Table 5

Differences between the Eurostat and Port data, 2009

Data source:	Rotterdam port	Eurostat	Relative differences
Traffic in Rotterdam, million tons	387.0	346.7	11.6%
Traffic in Amsterdam, million tones	86.7	73.5	18.0%
Traffic in Konstanza, million tons	42.0	29.2	43.9%

Source: *EUROSTAT,* 2011, *Port of Rotterdam*, 2011

Trade between the Danube states

In the trading system formed after 1990, the extent of flow of goods between countries has dropped, meanwhile Eastern-Western relationships have

strengthened. We can assume that trade between countries along the Danube will have more importance on the middle term as organic economic relations will drop (*Table 6*).

Table 6

Road and rail traffic routes with possible Danube affections, 2009

Origin:	**Road**	**Rail**	**Sum**	**Relative scale** (Hungarian inland navigation=100%)
	To the Balkan. Thousand tones			
Belgium	682.0	124.0	806.0	10.4%
Czech Republic	1364.0	1285.0	2649.0	34.2%
Germany	6219.0	1396.0	7615.0	98.3%
Hungary	1881.0	1158.0	3039.0	39.2%
Netherland	994.0	4.0	998.0	12.9%
Austria	3616.0	2073.0	5689.0	73.5%
Sum	14756.0	6040.0	20796.0	268.5%
	To the Central and West-Europe. Thousand tones			
Hungary	8809.0	4835.0	13644.0	8809000
Bulgaria	623.0	101.0	724.0	623000
Romania	3096.0	624.0	3720.0	3096000
Croatia	262.0	749.0	1011.0	262000
Serbia	157.0	420.0	577.0	157000
Sum	12947.0	6729.0	19676.0	12947000

Source: Based on *EUROSTAT*, 2011 statistics

The overall flow of goods between countries on rail and road situated along the Danube surpass the total extent of cargo crossing the Hungarian part of the river. According to this we can assume that the growth of this segment would have a significant positive impact on shipping on the Danube.

Trade with the Far-East

In the case of Europe export-import to the Far East is realized primarily on the sea, this gives the main part of total trade. The route goes to the North Sea with the above-presented detour. The main part of cargo is transported from Western Europe to the other parts of the continent. With proper conditions export and import from the Far East would be much shorter and cost effective to transport on the Black Sea and on the Danube. Based on *Table 7* the biggest part of cargo from the Far East arrives in countries, which are in touch with the Danube-Rhone-Main water route.

Table 7

The share of Far-East-traffic in the European ports, 2009

Origin:	**Traffic** (Million tons)	**Relative scale** (Traffic between far-east and Europe=100%)	**Relative scale** (Traffic of ports in the category=100%)
Danube-Main-Rhine sea ports	100.0	53.0%	11.7%
Adriatic and Mediterranean sea	18.4	9.8%	3.9%
West-Europe ports	59.7	31.6%	3.0%
North-Europe ports	8.0	4.3%	1.8%
Other ports	2.5	1.3%	1.6%
Sum	188.7	100.0%	4.8%

Source: Based on *EUROSTAT*, 2011 statistics

Table 8 shows that cargo arriving in the ports is mainly part of the sea trade in these countries. Road and railway as substitutes of inland shipping are potentials in relevant geographic locations. In the case of most regions sea route is possible, and it dominates the transport performance, in Central-Europe where the lack of sea connection is typical, this level is only 45.2%. Today rail (14.6%) and road (35.7%) give primarily the rest, while inland shipping gives only 0.2%. There can be a shift between these three areas, which can mean an expansion opportunity for Danube shipping.

Table 8

The share of Far East traffic in the European ports, 2009

Type	**Central Europe**	**Germany and Poland**	**Baltic countries**	**Mediter-ranean countries**	**North-Europe**	**Other countries**
Sea	45.3	94.9	95.9	97.6	96.2	86.2
Rail	14.6	0.4	0.1	0.3	0.1	0.3
Road	35.7	1.6	2.6	0.7	2.7	3.8
Inland waterway	0.2	0.2	0.0	0.0	0.0	0.8
Other	4.2	2.9	1.4	1.4	1.0	8.9
Sum	100.0	100.0	100.0	100.0	100.0	100.0

Source: Based on *EUROSTAT*, 2011 statistics

There can be identified potential expansion fields, where the Danube could mean a reasonable alternative. Obviously transport on the Danube is already present in some of these cases (mostly in the trade activity of countries situated along the

Danube). So the potential is present also today on the Danube. We should see that there is a great potential in the development of Danube shipping not he middle term. If logistics along the Danube became more competitive, there would be a significant growth in the share of inland shipping.

CONDITIONS OF DEVELOPMENT IN THE DANUBE NAVIGATION

According to current logistic trends it is obvious that the reason for the bad market position of shipping is not the significant increase of unit costs caused by the not proper utilization of ships in those periods where there are shallows on the Danube. The prices of the sector would remain competitive even in those cases (*REKK*, 2010). The problem is that service providers are not capable of providing reliable performance on the Danube. On the one hand it is natural in shipping, at the same time this problem gets bigger without a proper information system and background during long periods and it extremely hinders the use of ships. There is no up to date information and nor forecasts on the presence of shallows. As we do not know the exact size of shallows, we presume them to be bigger and this cause bigger loss than necessary. It could not be planned well (*Gerencsér*, 2009).

It is also a problem that water logistics is a rather isolated issue, since this segment is not integrated in the logistic networks properly. A water trip which end in a logistic center used also by the customer worth much more for the customer than a transfer to a close but isolated port where there are further costs and management requirements for the further transportation of goods.

It could cause significant improvement if there were coordination in transport management concerning rail and water routes since the two technologies are similar in many aspects. They could complete each other if communication and cooperation is regular and well managed between them. However at the moment each segment operates isolated from each other.

Port infrastructure and economic business environment

Infrastructure should serve the good approach and availability of ports and logistic centers. Those port or centers, which cannot be easily reached, will never become intermodal logistic center. Building infrastructure leading to ports is a common task. Hungary is not interested in building new ports, but creating better managed and equipped ports.

Compared to road transport water transport completes that. In an ideal situation water transport on the Danube means transport on long distances, with the use of road transport at the final stations (except those special cases where the source or location of utilization has a direct port connection). Its distance ideally is less than 200 km, but in this case as well transport on the Danube could be relevant in most part of the country.

Economic links of ports

Successful port activity could not be isolated: the intensity of cooperation between logistic centers operating in ports or the economic network of actors present in the

surroundings or within road radius is very determinative for both sides. If these conditions could be realized, port logistic functions are built in port actors' mind, through port services economic performance could grow, and it creates jobs.

Complementing services have particularly great importance considering transit traffic: it is not obvious that shipping transit crossing Hungary cause relevant income in the country because of the size of Hungary and the Hungarian part of the Danube. There is a great need of more ports providing high quality and competitive services and the use of opportunities where high value added services can be provided.

We need to build new nodes in the network harmonized with development of transport systems. In case we need to terminate or relocate those centers, which are not at the right place from this point of view.

CONCLUSIONS: PRINCIPLES OF THE DANUBE TRANSPORT STRATEGY

The most important criteria for the Danube strategy are the completeness: the solutions must be generic for the whole length of the river, and we must improve the conditions of shipping, with only the needed minimal, unavoidable ecological intervention. The five principles of a well-working and competitive river transport system:

- Automatic river-information system on the whole length of the Danube, with water level forecast model system for shipload planning.
- Developing shipping infrastructure with the minimal necessary corrections of the river basin and cost-benefit analysis for the selection of intervention projects.
- Necessary corrections in the legal and economic regulation.
- Developing the terminal logistic system, with network of three-way intermodal logistic centers (rail, road and waterway).
- Developing transport assets, build and rebuild ships, with specific Danube-focus.

With these five principles the transport network on the Danube can provide a more competitive level of service. However it means also lighter building activity on the river basin, with less ecological costs, of course. The cost-benefit analysis gives a chance to find the optimal level of intervention. This instrument is simple and well known, but partly new in the water engineering, especially on the east sector of the Danube.

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OPPORTUNITIES OF SOYA PROCESSING AND PRODUCTION DEVELOPMENTS – COULD HELP THE COOPERATION WITH SERBIA?

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ABSTRACT

We compared the current soybean processing results in two cross-border region. The comparison is based on natural endowments, similar cultural and historical heritage and the different economic conditions, prevailing practice - experience means a rich variety, which include the economies operate and develop. First we made deep interviews from the marketing analysis tools, to reveal the professionals opinions and recommendations. SWOT-analysis was performed on soybean production and processing advantages, disadvantages, opportunities and risks. In the South Transdanubian region (Hungary) the soybean fields size are smaller and most of the produced crop achieved in relationship between production and processing integration of the Bóly Inc. Is no less important the obtained experience, the created culture, in the decision-making mechanism of the private farms. Can be very useful the reorganization in agriculture privatization and knowledge of structure change, which occurred in different ways and different in terms of results. The acquired knowledge, after appropriate adaptation gain application in practice. Taking into account the status of Vojvodina within Serbia and Serbia (EU) candidate country status expected to 2012th year and that the Vojvodina Region would open a Representation office in Brussels, there is a real chance of cooperation between the two regions. This situation allows the unrestricted movement of goods. Short time is not enough to change the approach, even not for professionals working in the sector. Changes may occur only, if born a marketing strategy, developed with patient and reasonable design work, in order to develop the soybean verticum.
Keywords: soybean, soy production, soy products, soybean processing, cooperation

INTRODUCTION

This Communication is an integral part of NATIONAL RURAL STRATEGY 2020 - Plant protein program. It also matches the Environment, Public Health and Food Safety, and the position and proposals of the EU Commission, which focus on the growing raising importance of soybeans. The Hungarian official position is that essential is the greater domestic production of protein sources and thereby replace the questionable human health acting, foreign protein sources and food additives (mainly Gm soy).

For this purpose is necessary re-thinking the already applied protein program and create new opportunities for R&D (*National Rural Strategy 2020*, 2011). Our aim therefore was to explore the possibilities of research and development in order to promote the soybean production and processing in Hungary, furthermore perform

the necessary preliminary studies based on the example of neighborhood Serbia as well as the operation's potential.

MATERIALS AND METHODS

During the research we performed data analysis taking into account the different economic environment (state aid scheme), economic variables and technology parameters. For this purpose peer-depth interviews were conducted with Petar Sekulich Prof. Dr., who is the chief of the Plant Production and Kitchen Gardening Institute and professor on the Agricultural University in Novi Sad, with Jegor Miladinovich Dr., who is soybean breeder, scientific adviser and the head of the department of the Soybean in the Plant Production and Kitchen Gardening Institute in Becej. Also commented as specialist Ilona Estelecki, who is a technologist, specialist, deals with the use of soy product in bakery in Sojaportein Co.

Interviews were also made with Ágnes Schmidt who is trading assistant in AGP Hungary Ltd. in Pécs, with Sándor Lakatos in Kaposvár, who is a South-Transdanubian regional agent in ISV Co.

We made economic calculations what based on the obtained data and created soybean SWOT analysis.

THE PRESENT AND FUTURE OF THE HUNGARIAN SOYBEAN CULTIVATION AND PROCESSING

Today, the annual average of soybean area are 30 000 hectares, with 2.3-2.6 tons /hectare average yield and 70 000-78 000 tons annual production level (AKI, 2011) sufficient to cover the domestic demand 10%.

In the production especially in the South-Transdanubian Region is a leader, (*Figure 1*) where the climatic and soil conditions ensure the successful soybean production and the yield did not away form our southern neighbor's yield. 400 000 tons was the soybean production in 2010 in Serbia, of which 210 000 tons the Sojaportein Co. (Becej), 85 000 tons the Dijamant Oil Factory (Zrenjanin) bought up. Average yield of soybean was more than 2.7 tons per hectare (*Curovich*, 2010).

In our country the most quantity of produced soybean used as full- fat soy for domestic animal breeding, the country the remaining portion exported in full fat form to Austria and Bosnia and Herzegovina. However, we imported annually about 673-846 thousand tons of soybean meal, mainly from Brazil / Argentina, through the West European, Rijeka and Black Sea ports to satisfy the domestic protein feed needs (*Sebők*, 2009).

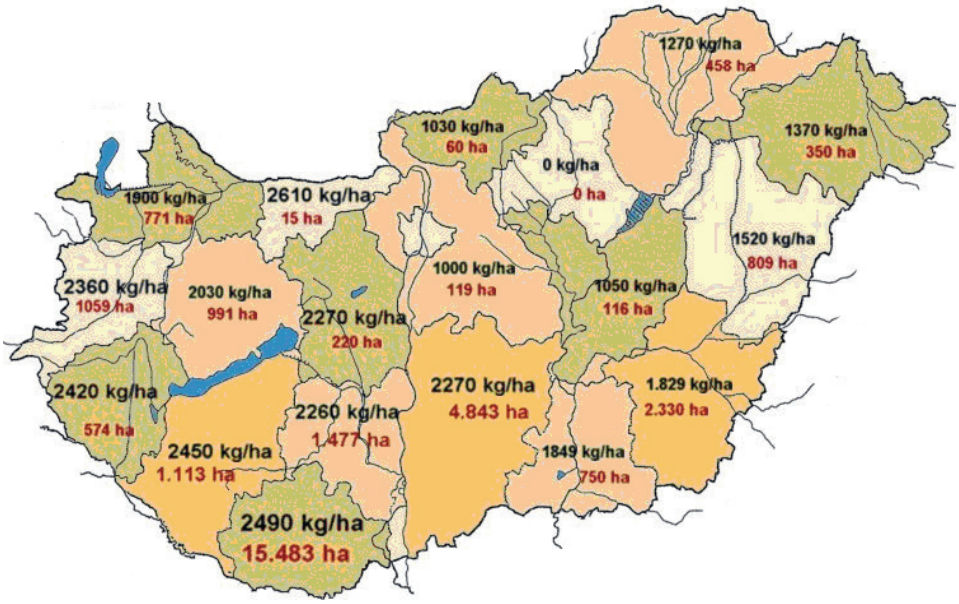
The import volume of soybean could push back, under the former potential, with increasing the domestic soybean production and processing.

Figure 2 certifies that it is possible to increase soybean production area according to the previous years the level of 1988-1989, when the Bóly Combinat had the Sojaprotein Co. Becej process the significant portion of the produced soybean.

Testing with new species show that the yields per hectare may reach 4 to 4.5 tons in South- Transdanubian Region (*Elitmag Ltd.*, 2010).

Figure 1

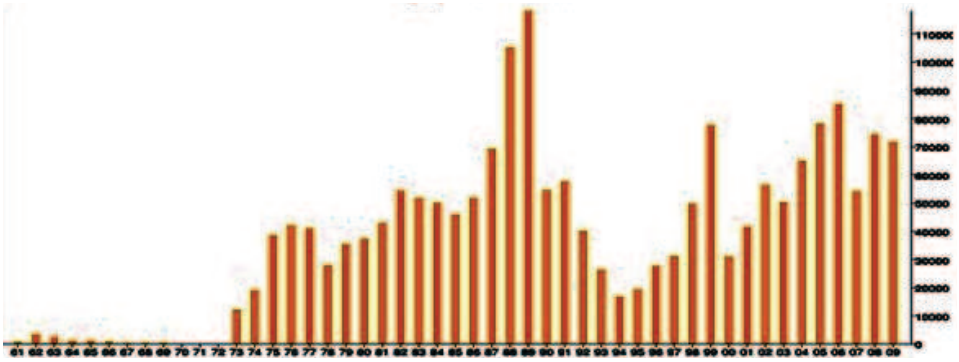
The average of the soy production and harvested arable land development in each country, 2009



Source: *Blue Seed Ltd.*, 2011

Figure 2

Production quantity of soybeans in Hungary between 1961 and 2009

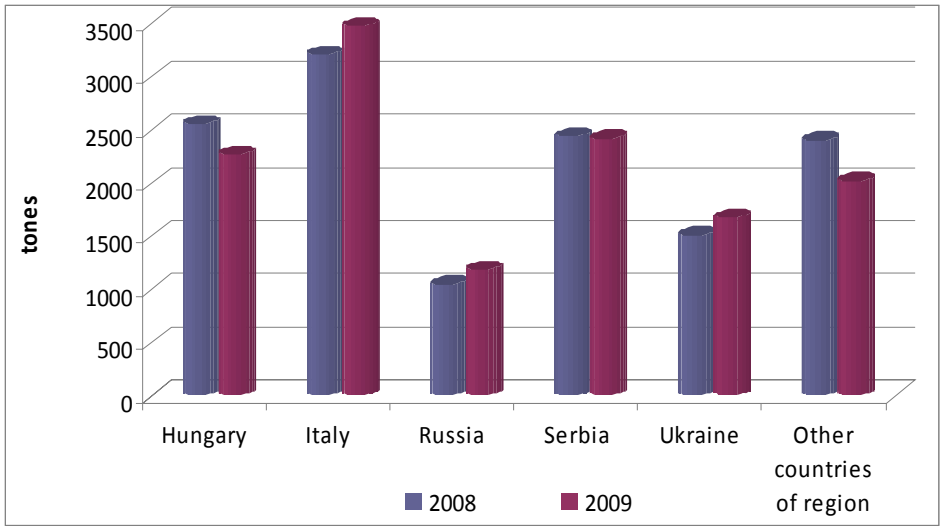


Source: *FAOSTAT database,* 2011

The domestic everage yield data comparison with other European countries is also confirmed the possibility of the rational increasing the production area (*Figure 3*).

Figure 3

Average yield trend 2008-2009



Source: *Blue Seed Ltd.*, 2011

Figure 3 shows that after the very high results in Italy, the Hungarian farmers are able to produce higher average yield, but at least do not lag behind other countries. From the Southern- Transdanubian Region producers should be highlighted the Margitta-Sziget Ltd. in South-Baranya, who make farming on 3700 hectares on alluvial soil and of which ca. on 1230 hectares are grown soybean. The company next to the production performs seed producing too.

The other dominant company is the Bóly Co., which is under the Bonafarm Group. The Bóly Co. farms nearly on 20 000 hectares in the Danube and Drava triangle. Integration of the soybean production activities with the assistance of previous partners gave to the Bóly Agrochemical Ltd. in spring 2008. They also have experimental and research department in Bóly.

The third dominant company is the AGP Hungary Ltd. in Pécs. The company was established in 1995 with American majority ownership. Their main profile is manufacturing and marketing premixes, concentrates, as well as importing soybean meal for feedstuff and protected protein (*Horvát*, 2010).

THE SERBIAN SOYBEAN PRODUCTION AND PROCESSING

Serbia followed on the direction both of the world's oil plant production and bio-fuels and the production of food oils growth based on the government program.

Soybean as a high protein product is an important element in the economic and pet feeding and forms the basis for the livestock development in meat and milk production. Serbia counts as one of the largest soybean processor in Europe, considering the capacity, it is between the first five. Soybean producers and traders in Russian Federation, Ukraine, Romania, Bulgaria and Hungary influence the oil seed market in the region, which have an impact in Serbia and it influences soybean pricing, which can affect the production decisions.

The general trend of the cultivated area is increasing. The soybean yield is diverse depending on the frequency of drought years. Soybean production shows a continuous growth in the last ten years (300 000-400 000 tonnes/hectar), 2001-2007 the cultivated area 130 000- 160 000 hectar with 1.20- 2.80 tonnes/hectar yield and annualy near 29 000-75 000 oil production. About 2/3 of the production areas are in the hands of family farms and although specifically in smaller area, but several larger company gladly insert this plant into the crop rotation (*Table 1*).

Table 1

Distribution average of oil plants production by type of company (2008-2011)

	Company		**Family farm**	
	piece	thousand hectar	piece	thousand hectar
Soybean production	220	45	26000	108

Source: *Ministry of Agriculture Serbia*, 2011

Throughout the country pay great attention to the selection of appropriate seed varieties and hybrids, as well as fertilizers and pesticides recommended quantity. The oil seed producers generally respected these recommendations with regard to the yield and quality to reach the European level. The soybean seed processing is in the context of the University of Agriculture in Novi Sad. Domestic soybean hybrids may appear primarily in the variety of types and these, in accordance with the law can not be genetically modified. The State's measures level in relation to GM soy is variable from year to year. There is no consistency of GM soy cultivation in connection with illegal appearance.

In 2008 intensive measures have been taken, unlike in 2007 when almost nothing has been done to control the GM soybean cultivation areas. However in 2009/2010 year the known GM soybean fields were destroyed and against the farmers started criminal proceedings. The exemplary developed production capacity combined with a well-organized processing. There are nine oil and protein crop processing factories in Serbia and all of them organize the oil and protein crop production as an integrator. These factories organized in business company, called "Industrial Crops" Management Community in Novi Sad. The processors operate alternately in oil seed processing, which means that their technology is suitable to process canola, sunflower and soybean in batch mode and seven of these factories have the ability to process soybean near sunflower and canola during the year, while two oil factories may process only soybeans. *Table 2* shows the factories collective processing capacity.

Table 2

Processing capacity of factories

Product	Thousand tonnes
Sunflower	2.483
Soybean	2.216
Canola	953

Source: *Serbian Agricultural Inspectorate*, 2011

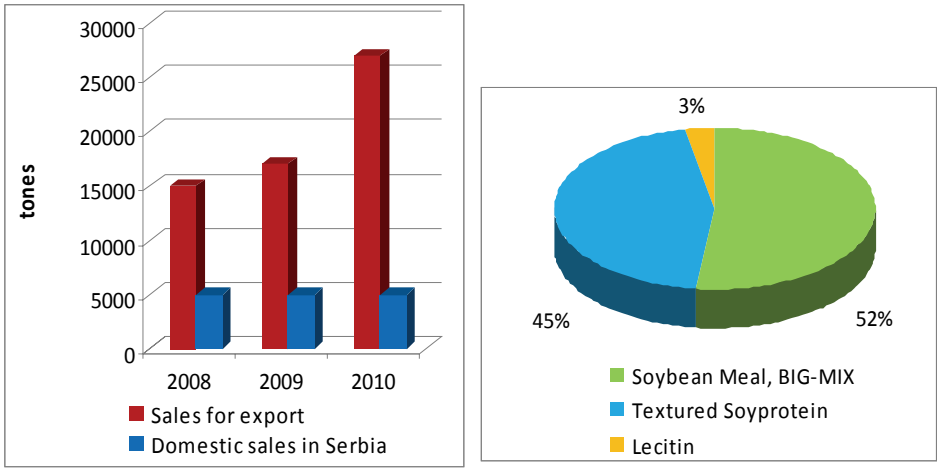
Refers to the oversized capacity that in Serbia the soybean acreage varies between 145 000-155 000 hectares with 380 000 tons of soybean goods volume. The average utilization of installed processing capacity was only between 25-33% in recent years.

MARKET OF SOYBEAN PRODUCTS

In Serbia undoubtedly the soybean expected the most important export product among the oil seeds. Based on the available data, the soybean oil export was 32 014 tons in 2007, with 27 537 395 USD, which is 1.63% of share of the exports of agricultural products. In the same year, from the oil crop family the soybean meal was imported in the largest item, in 33 303 tons and in 12 473 632 USD value, what is 1.12% share of the import of agricultural products (*Serbian Ministry of Agriculture and Commerce*, 2011). According to the data of Sojaprotein Ltd. (Becej), the soy food consumption (soy flour, semolina, blends, textured foods, lecithin) was ca. 5000 tons/ year in Serbia's domestic market in the years 2008-2010 (*Figure 4*). In the same time period, the export sales from 2008 year 15 000 tons increased to 17 000 tons in 2009 and in 2010 exceeded 27 000 tons.

Figure 4

High-level processing soy products sales 2008-2010

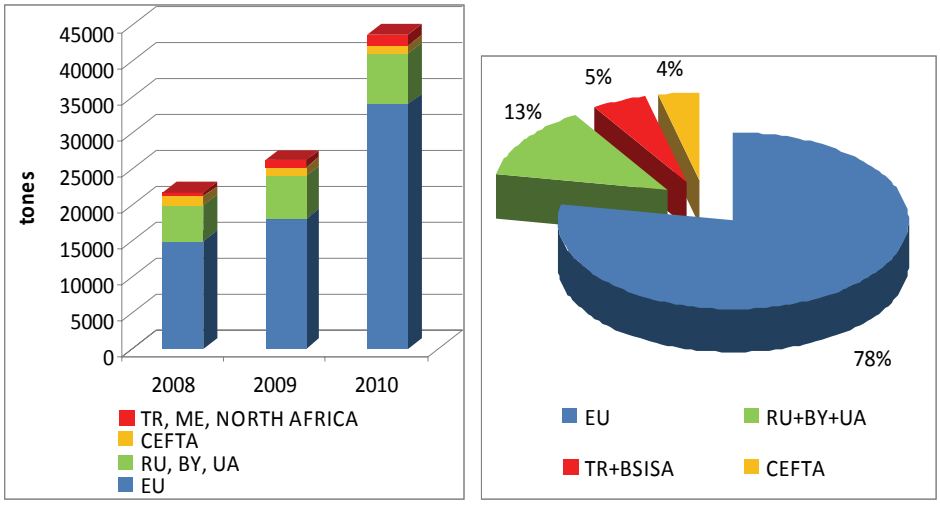


Source: Based on data from *Sojaprotein Ltd.*, 2011

Furthermore we can read on the *Figure 4*. that the flour- semolina and blends proportion was 52% - 45% - 3%, based on the textured product sand lecithin quantity. The next examined factor was the export sales development, during which firstly the customers (*Figure 5*), then by categories are presented the results (*Figure 6*).

Figure 5

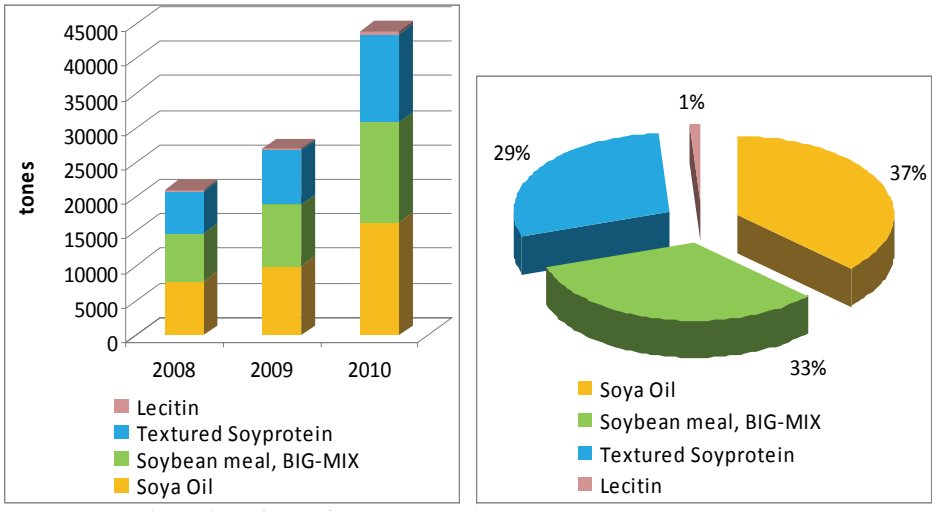
Export sales in regional distribution share 2008-2010



Source: Based on data from *Sojaprotein Ltd.*, 2011

Figure 6

Export sales 2008-2010, high-level processing soy products sales



Source: Based on data from *Sojaprotein Ltd.*, 2011

The 78% of export reached in EU countries in 2010, 13% found in the Russian Federation, Ukraine, Belarus and 5% in Turkey, Near- and Middle-Easth sales and 4% of volume in former Yugoslav Republic. By type of product is worth more attention paid to the examination for three years (*Figure 6*).

Based on *Figure 6* results the soybean oil clearly counts as a successful products, which export from 5000 tons increased to 20 000 tons during two years and took the lead from textured products. In soybean oil export the most important partner is the EU including Slovenia.

COOPERATION OR COMPETITION?

The protein crop production is strategically important for Hungary. If the country not able to produce their protein needs (or a sustainable part of it), could become dependent for the current market conditions. The protein shortage of livestock means a not acceptable risk, which is largely threat the optimal satisfaction of feed requirement. Also passes a serious threat that the soybean production area declined after business privatization. Major research and development needs and opportunities were remain on new varieties breeding with sufficiently large and more secure yield. However on the positive side, that from farmers there is an interest in the cultivation of soybeans, there are available expertise and professional experience. This is confirmed by the soy round table for the priority partners, what was held first time on 1st of March 2011 by Baki Agro Centre, as which one main message was: „There is no replacement protein crop for the soy, nutrition point of view can not be replaced" (*Baliko*, 2011).

We prepared the SWOT analysis of soybean (*Table 3*), based on the examination of the soybean production and specificities of the market in the two countries, which is essential to drawing up a strategy.

The long term profitability of soybean verticum based on staff estimates principles can be stated that the cross-border relationship of soybean cultivation and processing is justified, because non- GMO soybean for feed and food products are competitive. But it is important not to start with the same equity and operational integration thinking, but rather along the identity of interest. Indicates on the incomplete marketing strategy and on inadequate processing that in Hungary the soybean processed in full-fat product. Case of a higher level of processing could be avoid that a GMO- free soybean primarily intends for animal feeding, where the domestic soybean quality is not appreciates. The processing for human food should enhancing the Hungarian soybean production value, should increase the production profitability, because it should appear successfully on the shelves of supermarkets, opposite of the consumed soybean products for meat and bakery products from foreign markets. Based on the carried research, the soybean verticum area is suitable to describe the product line successive economic process. This means that the soybean production based on the local features, in the region independently operated, but complementary actors- operates a sustainable manufacturing industry and marketable processes with involving companies- create soy products.

Table 3

SWOT analysis of soybean

STRENGTHS	WEAKNESSES
- Appropriate crop conditions, favorable natural conditions; - Known and acquired production technology; - Regions rising demand for soy protein; - Strict rules against the cultivation of GM soy; - Market demand; - World-class infrastructure in soybean processing.	- There is little available land; - 2.3 t / ha yield in soybean production is not profitable; - Cultivation of soybean varieties for food production is not the most appropriate amino acid composition; - Logistical disadvantages; - Weather heavily influencing role.
OPPORTUNITIES	**THREATS**
- Break into new markets, new market segments; - In addition to the import of products is complementary (complementary to or / substitutes) product introduction; - Regions soy vertical integration; - The introduction of new soy foods; - Soy cheap transportation by water and connecting it to the border regions.	- Cheap (South America) GMO soybeans and soybean meal; - Significant barriers to entry to the market; - The bank financing risks; - Considerable rivalry.

CONCLUSIONS AND RECOMMENDATIONS

The future of marketing research should answer how the regional soybean attitude for its competitors in order to avoid the results of bad losses because of their presence. Needed new ideas and quality technology. The mapping of current soybean market situation in South- Transdanubian region must be part of the ambitious, practical market research and using that made marketing strategy as a result of which we may get essential, safety and revennes information for developing the domestic soybean verticum. However it is important to point out that not enough to keep an eye on the competitors, several vertical integration may be present in the market competition.

In the future the soy products market may be as follows:

1. The regulations and laws are changing the market structure
2. The buyers (feed manufacturers, food companies) will start back on the value chain and integrate, will quickly assume as competitors opposite of the emperors in the market.
3. The farmers (soybean producers) will begin to integrate, build up their own processing capacity and climb up in the market as competitors.

Comparing to the two border regions, on the largest area and in most complex level of processing is Backa in Vojvodina.

A possible cooperation would justify the decisions subject, level and time effects, which the following tasks are required: do economic analysis to underlying operation decisions; forecast the short- and long-term opportunities according to the temporal effect survey of interests according to decision levels; recurring options analysis based on the combined dependencies of options.

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THE ROLE OF PORT CLUSTERS IN THEORY AND PRACTICE

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ABSTRACT

This essay focuses on the advantages of creating and operating port clusters, highlighting the success aspects of competitive ports and port clusters in theory and through international examples, as well. The issue of port clusters can be considered part of the theoretical and practical approach to the development of transportation, logistic services, and shipping. The first part of the study defines what clusters in general and port clusters, specifically, mean. It identifies the advantages and success factors of clusters in general. It then gives a detailed picture of the port cluster model identifying the typical activities and actors of port clusters; the success factors of the performance of port clusters. The second part presents the operation of port clusters through international examples. It presents the examples of Valencia Port and the Port of Rotterdam and summarizes the key success factors of competitively preforming clusters. The study touches the question of inland ports in Hungary and the theoretical possibility of Hungarian port clusters.
Keywords: clusters, logistics, port clusters, port authorit

INTRODUCTION

In recent years an important type of business cooperation, the so-called "clusters", came to the focus of interest at both the national and international level. According to *Porter* (2000), regional clusters are "*geographically proximate group of interconnected companies, associated institutions linked by commonalities and complementarities*". Recent research has shown that regional clusters of interlinked industries, organizations, and institutions act as a fertile ground for innovation, entrepreneurship and the upgrade of competitive advantage among firms (*Porter*, 2003a; *Porter*, 2001). The cluster view emphasizes that clusters promote innovation and regional competitiveness in a particular region; the economic results of regions hosting clusters proved to exceed those of regions without clusters.

This study focuses on a special type of cluster that operates in seaports, the so-called "*port clusters*". Competitive ports operate in a cluster environment where an intensive flow of information and know-how fosters increasing innovation and efficiency in the cluster. This issue is relevant to Hungary since it is located in a very advantageous geographical position with great logistics potential. The improvement of Hungarian logistic services and transportation options and the potential of Hungarian ports are questions of national importance.

This study does not to deal with the situation of the Hungarian shipping industry but rather tries to give a detailed picture of the port cluster model, identifying the typical activities, actors, and success factors of performance in port clusters. The second part presents the operation of port clusters through

international examples. It presents the examples of Valencia Port and the Port of Rotterdam. Finally, the study summarizes the key success factors of competitively preforming clusters.

Certain dimensions of the cluster model could serve as development solutions for the Hungarian logistic development strategy and in the question of Hungarian ports on the Danube. This topic is worth close examination and could have extensive effects on Hungary in the future.

DEFINITION AND SUCCESS FACTORS OF PORT CLUSTERS

The concept of clusters mentioned above applies to port clusters as well. It needs to be mentioned that this study focuses on seaport clusters, which are, in some dimensions (structure, number of actors, traffic, etc.) different than river ports.

Definition

Haezendonck (2001) is the first scholar who uses the term "port cluster". She defines a port cluster as '*the set of interdependent firms engaged in port related activities, located within the same port region and possibly with similar strategies leading to competitive advantage and characterized by a joint competitive position vis-á-vis the environment external to the cluster*'(*Haezendonck*, 2001).

Advantages of clusters

We can identify generally what advantages the cluster model carries or how clusters can influence competition apart from the question of which industry the cluster operates in. These advantages are also realized in port clusters.

The cluster view emphasizes that clusters promote innovation and regional competitiveness in a particular region; the economic results of cluster-based regions are proved to exceed the results of non-cluster-oriented ones. Silicon Valley in the US is an archetypical example of a region that breeds strong clusters in many high-tech domains. Due to clusters, many European regions have developed competitive advantages in specialized activities such as financial services (London), petrochemicals (Antwerp), flowers (Holland), biopharma (the Danish-Swedish border region), or the automotive industry (Germany). Successful clusters have also significantly increased their global reach, attracting people, technology and investments, serving global markets, and connecting with other regional clusters that provide complementary activities in global value chains. Clusters and regional specialization are empirically associated with higher levels of innovation and prosperity (*EC*, 2009).

According to *Porter* (1998), clusters influence competition in three ways: (i) *clusters increase productivity/efficiency; (ii) clusters stimulate and enable innovations; (iii) clusters facilitate commercialization and new business formation.* It creates an area in which information and know-how flows more freely among members, where the capacity for innovation is high, and where it attracts and "produces" a pool of skilled labour. According to *Porter*, competitiveness of companies is determined only partly by internal capabilities. In his famous Diamond Model, external factors also play an important role: related and supporting industries can produce inputs that are

important for innovation and internationalization. The close connection of suppliers, manufacturers, and retailers that makes specialized information available for the participants enables them to respond to any change in customer need quickly with the needed innovation (*Porter*, 1998).

Other advantages of clusters can be summarized along the following dimensions: there is a better access to (i) *specialized labor, competent people and innovative ideas*; (ii) *specialized suppliers and demanding customers*; (iii) *venture capital and competent investors*.

It has to be outlined that one of the main success factors of clusters is the adequate level of *trust* between cluster member companies and other actors in the cluster. If there is a cooperative behavior *between members* and there is *an intensive flow of information and know how* between cluster member companies and actors, doing business between cluster members – contracting, monitoring etc. – has lower transaction costs (*Dyer and Singh*, 1998). More trust leads to more knowledge spillover, since firms are more inclined to share knowledge. The level of trust in a cluster is influenced by the importance of *reputation effects* in a cluster. If reputation effects are strong, abusing trust has negative effects and therefore a culture of trust is sustained.

Typical activities and actors of port clusters

De Langen[1] (2004) examines three seaport clusters (Rotterdam Port in the Netherlands, Durban Port in South Africa and Lower Mississippi in the USA), revealing that seaports are usually organized in port cluster forms. In these port clusters he finds that there are a significant number of actors and institutions that are interconnected in a way to the core specialization: the arrival of ships and cargo in the ports. The arrival of ships and goods attracts related economic activities. For this reason ports can be drivers of agglomeration in cities (*De Langen*, 2004 cites *Fujita et al.*, 1999).

Based on his case studies, a bunch of typical port cluster activities can be identified such as *cargo handling operations, logistics activities, manufacturing, and trading activities*. The most complete measure for the performance of clusters is the *value added* generated in the cluster. The value added generated in the cluster is the sum of the value added generated by the members of the population. The value added consists mainly of labor expenses, depreciation, and profit before tax (*De Langen*, 2004). It is argued that the value added and work force are generated mainly through interconnected activities such as logistics, manufacturing, processing, or trade that are concentrated in seaports and in primary port activities (such as cargo handling).

The permanent actors of port clusters are port authorities, service providers, producers, and any companies related to port activities. Municipalities, public and regional organizations, other authorities, banks, educational and research institutions, or financial organizations can be members of port clusters. According to *De Langen* (2004) a *port region* can be identified. In the three ports studied, port activities are shared among many municipalities and concentrated not only in port cities. Many times in port cities fewer port activities are found than in cities close to the actual ports.

[1] Peter De Langen is a Dutch professor with present reaearch position at Erasmus University Rotterdam. His PhD thesis was on the 'Performance of Seaport Clusters' and published a number of articles on this issue.

Factors determining success and performance in port clusters

The attractiveness and competitiveness of ports are determined by many factors. In this chapter I will identify these factors through the example of the Rotterdam Port, one of Europe's largest ports.

The Port of Rotterdam in the Netherlands is one of the world's largest ports, and by far the largest in Europe. Because of many competitiveness factors such as the huge size of the port, the very advantageous geographic location, the massive amount of goods going in and out of the port, and the surrounding competitive business infrastructure, many transport and logistics companies from all over the world choose to locate in Rotterdam. It is in the heart of Western Europe, from where most of the European continent can be easily reached.

From this example it is clear that the main competitiveness factors are the *geographic location, size, and infrastructure* of ports. The advantageous geographic position makes it possible to reach the port easily from any location with cargo in many different modes of transport and then to transport it to any other location. The size of the port determines the economy of scale. The more companies, suppliers, specialized workforce, universities or other institutional actors are present in the port, the more competitive the port will be in attracting new companies, ships, and actors. The effective infrastructure is also a decisive factor for the area to be competitive. Effective infrastructure means that it is easy for shipping and logistics companies to shift between different modes of transport according to needs and cost-effectiveness. The Port of Rotterdam offers inter-modality between sea-going vessels, inland vessels, pipelines, rail, and road. This infrastructure facilitates the process of getting the freight from the port into the European hinterland (*EMCC*, 2008).

Above attractiveness, *favorable conditions, and legalization framework* of a given country are also important factors. The Netherlands offers flexible labor market legislation, beneficial tax regulations for highly skilled workers and companies, and straightforward visa requirements that make it possible to import labor from abroad. There is broad access to services and business partners. Being located in the Port of Rotterdam makes it easier to engage in networks with other companies, consumers, suppliers, and supporting sectors such as the oil and energy industries (*EMCC*, 2008).

Van Klink's (1995)[2] work on agglomeration in seaports identifies factors that influence the attractiveness of ports: *logistics know-how, costs of land, labor climate (training and work attitude), and efficiency of road network.*

Haezendonck (2001)[3] analyzes the performance of a port cluster with an adapted version of Porter's diamond framework. 14 factors have been identified that influence the competitiveness of seaports, including *internal competition*, *internal cooperation, client relationships in the cluster, the presence of related and supporting industries, and the behavior of (different levels of) the government.*

In his study *De Lange* (2004a) identified four variables of port cluster performance. According to Rotterdam Port experts, the most important factor is *cluster structure* (number of firms, internal competition, heterogeneity of firms quality

[2] Referred by *De Langen* (2004b)

[3] Referred by *De Langen* (2004b)

of location) and general economic climate. The other two factors – cluster governance and national and international policies are deemed to be less important.

According to European research studies on clusters, a *professional cluster manager* and a *supporting management organization* are indispensable for successful clusters. Cluster management organizations have many competencies and tasks (*Cluster Initiative Greenbook*, 2003). Their main role is to collect and transfer information between members, promote business cooperation, facilitate and support innovation projects, improve business environment, improve human resources, and broaden the cluster.

INTERNATIONAL PORT CLUSTERS

In this chapter two big European leading ports will be presented, the Port of Rotterdam and Valenciaport. Both ports are considered to be among the best ports in Europe. Through these examples those factors will be identified that guarantee a port's competitive performance.

Valenciaport[4]

In 2004 the Global Institute of Logistics[5] (GIL) launched a research project to investigate the global value chain. The institute wanted a reliable benchmark to measure container terminal efficiency and port performance. This was essential to improve port/terminal-led best practice and relationship management. In 2006 the research identified the Valenciaport port cluster, represented by the Port Authority of Valencia, as a port cluster at an exceptional level of maturity with stakeholders truly engaged in the collaborative process. The Institute's criteria for best-in-class designates, among other points, that the cluster demonstrates the spirit of collaboration, strikes the right note between public and private partnership, and has developed a model that is transferable.

The Port Authority of Valencia, commercially known as Valenciaport, runs and administrates three state-owned ports along 80 km of Spain's eastern Mediterranean coastline.

Success factors of Valenciaport

Research has identified those factors that led to the success and competitiveness of Valenciaport. These are the *exceptional level of maturity of partnership with stakeholders, the engagement of port related actors in the value chain, education and training within the cluster, the role of Fundación Valenciaport in the dissemination of best practices, the guarantee of high quality level of port services, and the infrastructure and complex ICT solutions that the port offers.*

The Port of Rotterdam

The Port of Rotterdam in the Netherlands is the largest port in Europe, with transport and logistics companies from all over the world choosing to locate in

[4] This chapter is based on the Seaport Cluster Research Programme 2007-2011 edited by *Gil* (2009).

[5] The New York based GIL is a multi-stakeholder, cross-industry, not for profit organization, concerned with the development and proiferation of best practice in the global supply chain. (GIL website)

Rotterdam because of the huge size of the port, the massive amount of goods going in and out of the port, the surrounding infrastructure and its location in the heart of western Europe. The port is also linked to more than 1.000 other ports worldwide. Some 58.000 people are employed in the harbor in all areas of the transport and logistics sector. From Rotterdam, companies have easy access to no less than 450 million consumers in Belgium, France, Germany, Hungary, Italy, the Netherlands, Poland, Scandinavia, and the UK.

There are several favorable conditions offered by the country such as flexible labor market legislation, beneficial tax regulations for highly skilled workers and companies, and straightforward visa requirements, which make it possible to import labor from abroad. Being located in the Port of Rotterdam makes it easier to engage in networks with other companies, consumers, suppliers and supporting sectors such as the oil and energy industries (*EMCC*, 2008*)*.

The Port of Rotterdam itself is part of an even larger cluster of huge seaports located nearby in Antwerp in Belgium, Le Havre in France, and Amsterdam in the Netherlands, and it is not far from Bremerhaven and Hamburg in Germany. All of these ports are located at the end of the industrial export transport pipeline from central Europe to the rest of the world, and also facilitate the import of goods to European industries and consumers. A substantial part of world trade passes through these ports and the Port of Rotterdam is the largest of them (*EMCC*, 2008).

Economic structure of the cluster

In 2002, some 3.550 companies were located in the cluster of the Port of Rotterdam, and 87% of these enterprises were categorized as being involved in cargo handling, transport, and logistics. The huge size of the Port of Rotterdam cluster also means that it attracts numerous companies whose primary activity is not transport and logistics but some other business that connects well with the transport and logistics sector. Hence, the Port of Rotterdam also hosts a cluster of energy companies and chemical companies that now account for more than 50% of the revenue of the port (*EMCC,* 2008). The Port of Rotterdam hosts a diverse set of companies and numerous multinational corporations that have chosen to locate their headquarters in Rotterdam (*de Langen*, 2004). Moreover, the area has a number of leading companies spurring economic activities for other enterprises in the cluster.

Apart from various educational facilities such as the Netherlands Maritime University Rotterdam, Maasvlakte Maritime Training Centre, and the Shipping and Transport College, the port also has numerous other institutions working in its interests.

Success factors of Rotterdam Port Cluster

The case of the Rotterdam port cluster shows what the key success factors of ports are, as has already been argued above. The factors determining success and competitiveness are the *size* and *geographic location*, the effective *business environment* and *infrastructure* of the port*,* the number of companies operating in the port, the presence of interconnected companies, related and supporting industries, the effective cluster governance, and the favorable conditions and legalization framework of a given country. One of the many advantages of operating in the port is being part of a port business network composed of universities, training institutions, skilled laborers, suppliers, and other companies.

Enterprises are mostly engaged in relations with their customers or suppliers, or to some extent also with research institutions and suppliers of labor. Hence, the role of the cluster's institutions, such as Erasmus University, mostly has an indirect impact of monitoring the cluster and gathering knowledge. The port provides a beneficial business climate with a good supply of skilled labor, utilities, infrastructure, moderate taxes, and transparent environmental legislation[6] (*EMCC*, 2008).

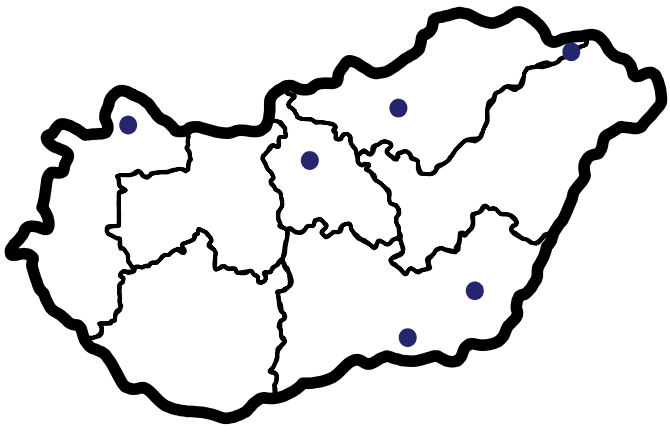
In many companies, primarily in multinationals, employees are the main source of know-how, and hence it is vital for the companies to capture the experience of their personnel. In order to utilize this staff knowledge, the management emphasizes that it should be systematically organized, for instance by using ICT. Info-communication technology increases company performance by making the relationship between sellers and buyers even stronger. For example, clients can follow all ships in real time on a map and access detailed information on a certain ship and its operations. Messages can be given directly to captains by email. With ICT technologies activities and operations on ships can be controlled while much of the physical work becomes automatic (*EMCC*, 2008).

Port Clusters in Hungary

There are six officially registered logistic clusters in Hungary (*Figure 1*): The North Hungarian Logistic Service Cluster (centered in Miskolc); the South Plain Transportation Development Cluster (centered in Szeged), the Záhony Area Logistic Cluster (centered in Záhony), the Logistic and Trasportation Cluster (centered in Budapest) and the Sopron Region Logistic Cluster (*Pole Program Office website*). There is only one logistic cluster, the Záhony Cluster, a cross-border cooperation with 12 founding companies, with the scope to become a competitive inland port (*The Záhony Logistic Cluster website*).

Figure 1

Logistic clusters in Hungary



[6] *Nijdam*, 2007 reffered by *EMCC* (2008)

This study does not focus on the situation and development options of the Hungarian shipping and port industry. In Hungary we cannot talk about many big and important companies operating in Hungarian ports nor about port business networks composed of suppliers, buyers, special labor force, or port specialized institutions. Thus, we cannot talk about Hungarian port clusters at all.

Considering the focus of national economic development policy, Hungary should not focus on building international and inland ports, but rather on building ports engaged in the logistic value chain. At those locations where the flow of cargo is uneven or seasonal, creating smaller port infrastructure is more effective than big investments in ports. Economic development policy and investments have to focus rather on those locations where there is a constant need of port services. There is no need to have more ports along the Hungarian part of the Danube. Hungary has to focus on to develop better managed and equipped ports, offering effective business environment and infrastructure (*Logisztikai körkép*, 2010).

Certain elements of the port cluster model can be potentially helpful in developing Hungarian ports and port activities. This can only be achieved on the long run with conscious and committed national economic development strategies and with the involvement of the private sector, trade unions, and other specialized organizations.

CONCLUSIONS

International examples show that port actors such as port authorities, service providers, producer or any company from supporting or related industries, municipalities, public and regional organizations, other authorities, banks, educational and research institutions, and financing organizations, are organized in port clusters. This study focused on the importance of clusters, especially port clusters, identified the factors determining successful port performance, and tried to give insight of why this topic is worth thinking about from the Hungarian point of view. Both the theoretical approach and the cases of two internationally competitive clusters were shown: Valenciaport in Spain and the Port of Rotterdam. In the case of Valenciaport we could see the success factors: the exceptional level of maturity of partnership with stakeholders, the engagement of port-related actors in the value chain, education and training within the cluster, the role of Fundación Valenciaport in the dissemination of best practices, the guarantee of high quality level of port services, and the infrastructure and complex ICT solutions the port offers.

In the case of Rotterdam Port, many success factors were identified as well, such as the *size* and *geographic location*, the effective *business environment* and *infrastructure* of the port, the number of companies operating in the port, the presence of interconnected companies, related and supporting industries, the effective cluster governance, and the favorable conditions and legalization framework of a the host country.

Other success factors of ports were identified in the work of many researchers: logistics know-how, costs of land, labor climate (training and work attitude), and efficiency of road network. In the case of Rotterdam Port *cluster structure* (number of firms, internal competition, heterogeneity of firms, quality of location) and general economic climate were important.

There is a great potential in Hungarian logistic capacity, but a competitive strategy and vision is needed as to how to improve logistic services or inland ports. Inland ports on the Danube at the moment do not play a significant role in logistic strategy and logistic thinking. In Hungary we cannot talk about many big and important companies operating in Hungarian ports, nor about port business networks composed of suppliers, buyers, special labor force or port specialized institutions. We cannot talk about Hungarian port clusters at all. In Hungary successful and effective cooperation between companies and other institutions, or clustering in general are hindered by many factors independently from industrial focus. It is worth investigating the possibilities for improving the competitiveness of the Hungarian logistic industry. An integral part of this issue could be the development of ports, not by focusing on building new ones on the Danube, but by improving better managed and equipped ports and offering an effective business environment and infrastructure. Certain elements of the port cluster model can be considered useful for developing Hungarian ports and port activities. This can only be achieved by a long term commitment to national economic development strategies and the involvement of the private sector, trade unions, and other specialized organizations.

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THE IMPORTANCE OF COMMUNITY MARKETING PROGRAMS ABOUT REDUCING SALT

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ABSTRACT

Today the actual salt consumption in Europe is far more than 8-12 grams/person/day. The salt intake recommendation by WHO is 5g per day. According to the results of the National Food Consumption Study (2009, Hungary) the average sodium intake is 6.0g per day (15.0g per day salt). The quantity is so large not only because of food preparation but also because of food choice, as 75% of salt intake comes from food products, 10% from the original salt content of foods, and 15% from salting. Recognizing this, some leading countries (GB, Finland) have organized national programmes for the reduction of salt consumption in collaboration with the food industry, food producers, and retailers. The aim of food conversion and community marketing programmes is to raise public awareness. One of the goals for the industry is the gradual reduction (by 20-25%) of the quantity of salt in foods. By replacing high salt-content food we can also reduce the sodium intake from processed food. To some extent, regular table salt (sodium chloride) can be replaced with other mineral salts that do not contain sodium- or potassium-chloride. Most countries aim to reduce salt (sodium) intake with national initiatives. The results suggest that this is a time-consuming process; however, even a modest reduction can significantly reduce the incidence of cardiovascular diseases, thus improving public health. In Hungary we have a heart-healthy program, contributing to a balanced diet with a number of products with logo awarded through a strict set of criteria.

Keywords: salt intake, salt reduction, community marketing, processed food, heart disease

INTRODUCTION

Salt is the only mineral-originated flavour substance that is used not only for flavouring foods but also to conserve them. The popularity of salt is due to the fact that a small amount of it can improve and heighten the taste of spicy foods; at the same time, excessive use can mask the specific flavour of herbs. Table salt (NaCl) is about 40% sodium and 60% chloride, so 1g sodium is in every 2.5g salt.

According to the recommendations of the World Health Organization (WHO) adults are not to consume in excess of 5g salt per day. Yet the actual salt consumption in Europe today is far more than 8-12g/person/day. In our country the use of salt in everyday cooking exceeds the recommended amount. In the 3rd National Dietary Study (*OLEF*, 2003) the average sodium intake of women was 5.6g/day, the average intake of men was 7.3g/day. This was equal to 14.0-18.3g of salt intake.

This quantity is so large not only because of food preparation (kitchen technology) but also because of food choice, as 75% of salt intake comes from food products, 10% from the original salt content of foods, and 15% from salting. In our diet industrially processed food and restaurant food are play a major role, both of which use a lot of salt. Thus, the food industry must play an important role in any effort at reducing salt intake. Recognizing this, some leading countries (Britain, Finland) have organized national programmes in collaboration with the food industry for the reduction of salt. A number of food producers and retailers have also joined the "high salt consumption by product reformulation", which includes awareness campaigns and labelling initiatives (*EUFIC*, 2010).

SODIUM CONTENT OF FOODS AND ITS EFFECTS ON HEALTH

How to reduce the salt content of foods?

To preserve the taste and other quality characteristics of products, including food safety while reducing salt-content is a technological challenge for the industry. One effective approach is to reduce gradually the amount of salt in food products. A drastic drop in saltiness in foods we are accustomed to would be jarring and we would reject it. But if the salt content were reduced in small steps we might not necessarily notice the difference and gradually get used to a less salty flavour. Even with 20-25% sodium reduction is still possible that we would not taste the difference. Gradual sodium reduction might be the most effective method, if all manufacturers agree on a joint strategy that could be implemented at the same time.

To a certain extent salt (sodium-chloride) can be replaced by other mineral salts that do not contain sodium- or potassium-chloride. However, other mineral salts do not have the same intensity as salt and might have a bitter or metallic aftertaste. One way to solve the problem would be to mask the bitterness of the compounds by using compensating herbs, spices, and flavourings to enhance the taste of the food (e.g. lemon grass, parsley, tarragon, garlic, onion, lemon juice, fresh herbs). With a gradual reduction of salt and replacing some salt in high salt-content foods, we can reduce sodium intake from processed food.

The effects of sodium intake on health

High sodium intake is the most worrisome component of high salt consumption and represents a definite health risk. It can lead to hypertension, cardiovascular diseases, stroke, kidney disease, renal osteodistrophy, asthma, and the formation of peptic ulcers. The relationship between sodium consumption and blood pressure increases with age (*Feng and Graham*, 2010).

With the non-pharmacological treatment of hypertension by the proposed reduced intake of sodium, blood pressure decreases by 2-8 mmHg. By reducing sodium-intake to recommended levels we can achieve a reduction in mortality by coronary heart disease (ischemic heart disease) of 16% and of mortality by stroke of 22%. According to the resolution and recommendation of the Hungarian Society of Hypertension, the key factor in the treatment of hypertension is the application of non-pharmacological methods (achievement of ideal body weight, reduction of sodium intake, regular physical activity, the application of the principles of a Mediterranean diet, moderation in

alcohol consumption) in the development of appropriate lifestyle both with elevated-normal range blood pressure patients (130-139/80-89mmHg) and in patients who requiring medication therapy (*MHT-SZIB*, 2009).

According to István Barna MD, the general secretary of the Hungarian Society of Hypertension, patients may hope for the following improvements from the lifestyle therapy: "weight loss results in 5-10mmHg, decreasing sodium intake results in 2-8mmHg, healthy diet results in 8-10mmHg, regular physical activity results is 4-10mmHg, and decreased alcohol consumption results in 2-10mmHg reduction in blood pressure" (*Barna*, 2009). In this way reduced sodium content diet can decrease the development of hypertension by 10-14%.

There is a demonstrated relationship between the rate of salt intake and blood pressure in both sexes and all ages. This relationship can be detected in people with normal blood pressure and also in those with hypertension (*Feng and Graham*, 2010). According to a recent study from Zagreb, healthy salt-intake (5g/day/person) can be achieved if we change the patient's eating habits. However, for the implementation of a healthy diet, fresh fruits and vegetables have to be available in sufficient quantity as do a variety of other foods with lower sodium content. This imposes a great responsibility on the food industry (*Pavić et al.*, 2010).

The cost-effective aspects of managing hypertension

A meta-analysis by Oxford (*MacMahon et al.*, 1990) clearly demonstrates that higher blood pressure is directly proportional to increased morbidity and mortality in hypertensive patients. However, people with slightly elevated blood pressure represent the main problem in the terms of social burden because they are the most numerous (*Matos*, 1997). According to this analysis, in terms of cost-effectiveness it would be just as cheap to reduce the blood pressure of the whole population with a few mmHg (e.g. with low salt-content diets) as to prescribe effective medicines to any actual hypertensive patients (*Rose*, 1992). Within the costs of the treatment of hypertension the biggest proportion is the cost of medicines; different products have significantly different prices, making it difficult to calculate in advance the cost of the treatment. However, the total cost of treatment may be smaller in the end, if more expensive, more efficient medicine is prescribed. According to a study (*Skaer et al.*, 1993), despite the higher cost of medicines, the application of modern therapy over a year cost 185 USD less than conventional medicine. The patient's cooperation is decisive both in terms of costs and effectiveness. Modern and easy-to-use medicines are the fundamental tools in therapy for hypertension because they increase patients' compliance.

Information and labelling

The aim of food conversion and salt reduction programs is to raise public awareness of the need to eliminate the potentially harmful effects of excessive sodium-intake and to make recommendations about how to achieve a low-sodium diet.

Although in the European Union nutrition labelling is voluntary (except if nutrition content or health claims are made by the manufacturer of the food) there are some exceptions in national regulations. In Finland for example, the label must

present the salt content of foods that are produced using large amounts of salt such as meat products, breads, or canned food.

PROGRAMMES FOR SALT REDUCTION – ARE THEY EFFECTIVE?

Most countries try to reduce salt (sodium) intake with national initiatives, which are relatively new. The impact of these programs on salt-intake is often not clear yet. However, in Finland, where the salt reduction program has been working since 1975, adult Finns have been achieved a positive effect in relation to average salt-intake (9.3g/day instead of 12g/day for men and 6.8g/day instead of 12g/day for women). Another example is the United Kingdom, where the salt reduction programme was introduced in 2003. In that year the average salt-intake was 9.5g/day, while in 2008 it was 8.6g/day.

These results suggest that reduction of salt intake is a slow process. Nevertheless, according to estimations, even the modest reduction of salt-intake will significantly reduce the occurrence of cardiovascular diseases, improving public health.

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WONDERFUL AREA OF HUNGARY: COUNTY NÓGRÁD

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ABSTRACT

The share of rural tourism, tourism in Europe is still insignificant, but there the interest is increasing. More people realize that after overwork everyday a metropolis or the beach are not necessarily suitable for recreation, because there are contaminated and crowded. If we look at the other side, difficult to make a decision the villages, which start to organize, that enhance the profitability of rural tourism. Tourism as a source of income has some contradiction; one of these is the seasonality. The earning potential run to few months, this fact is so stimulates, therefore the host men meet the real and putative needs of guests. A few-day event to move large masses, make known the name of the town with this has a positive impact on attendance at the rest of the year, too. The nearly fifty towns, where Palóc people lives, located at the foot of the North Hungarian Mountains. The popularity of the still living traditions encourages the residents to preservation and care of tradition. We see countless examples of this in Nógrád County, these are among others, Hollókő, Kazár, Bánk, Mihálygerge. Strengthening the tourism may boost the economy of the county, as seen in other regions, subregions, and counties of the country. The support of local governments and entrepreneurs is essential. Nógrád, although the country's second smallest county in size, yet is full of amazing natural formations, historic monuments, and attractive events for visitors. We intended to demonstrate the positives and negatives of rural tourism. We used the example of Nógrád County.
Keywords: rural tourism, festival, Nógrád County

INTRODUCTION

After the Regime people have more possibility for leisure, there were more demands for travel. The reason for this was including visa facilitation. It helped the current trends, such as increase in leisure time and discretionary income, demographic changes, and the search for authenticity, etc.

Recently, the infolded crisis had an impact on service sector, and on tourism, too (traffic loss, revenue loss, job loss). Thereafter we observed a long term regeneration process, which is predicted to continue. It would be, that more and more people admit to the fact, that the key to development of the high quality tourism to build.

The share of rural tourism, tourism in Europe is still insignificant, but there is no question that the interest is increasing. More and more people realize that after everyday overwork a metropolis or the beach are not necessarily suitable for

recreation, because there are contaminated and crowded. Nowadays, the natural and cultural values of villages are more popular. Many people looking for romance and rarity of an idealized countryside, others are attracted by the beauty of the landscape and silence, and clean air, too. In Hungary was organized form of recreation before the transition, this kind of recreation disappeared, thereafter many families had no other option only the rural tourism.

If we look at the other side, difficult to make a decision the villages, which start to organize, that enhance the profitability of rural tourism. Tourism as a source of income has some contradiction; one of these is the seasonality. The earning potential run to few months, this fact is so stimulates, therefore the host men meet the real and putative needs of guests. The pizzerias, tennis courts, pensions harm to the landscape, cultural attractions, and unique. A few-day event to move large masses, make known the name of the town with this has a positive impact on attendance at the rest of the year, too. Appearances of large masses are a serious burden on the village (pollution, noise, crime).

Festivals

In the last few years, number of festivals organized directly to tourists grew exponentially in the international market (*GSZT*, 2010). Studies appointed that the more of the average neat income of the household, the higher rate it occurs that they choose a journey where a festival could be held (*Sulyok*, 2010). But what kind of outing could we call a festival? There have been born so many phrasings and viewpoints.

"Every series of events—cultural, art, gastronomic, sports or other, that is organized around one or more themes, set up regularly, in one or more locations, having an announced program—that's aim to offer an accentuated high-standard, transmitting and expanding values, quality at the same time entertaining, spare-time public experience for its audience." (Hungarian Festival League) (*Smidt*, 2009).

Festivals could be categorized according to numerous factors. By the period of festivals, we can speak about one and more days-long, a week long or a month-duration as well. We could differentiate local, regional, national or international festivals according to their zone of attraction.

Frequency of organization is also an important criteria: there are one-off outings and periodic as well. Significance of the latter's is that periodic programs have serious brand-erector effects, even a one-time thing (jubilee) can be set up consciously as later as a hallmark event, being a starting point of series of events with similar thematic.

By the Hungarian Festival League, festivals are categorized by genres:

- Artistic festivals (music, theatre, dance, literature, graphic art and handicrafts, movie, video, photo, multimedia, folklore, circus, other), pure amateur artistic and "lineage competitions" (reader of poetry, cholar, shot, firemen's orchestra and others).
- Gastronomic festivals (food, drink, crops, gastronomic tradition-promoting).
- Other, not artistic festivals (landscape or natural value-specific, traditional, historical field-specific programs, castle games, feast-related, ecclesiastical or profane traditions, carnival, marry-making, fiesta, nature, environmental protection, promotions related to a brand).

In the course of thematic grouping, the international scientific literature treats festivals as collective concept and grand programs completed with festivals. The latter consisting the next categories: carnivals, artistic festivals (dance, theatre), religious festivals, circus, sport events, mega-events (Olympic games, cultural Olympics and related festivals), cultural grand programs (for example: European Capital of Culture) (*Sulyok and Sziva*, 2009).

According to European tendency, growing role of festivals can be found on the next fields:

- mediation of culture,
- intensifying national identity,
- in the development of regions and settlements,
- in the rising of tourism.

Significance of festivals is running through three threads:

- artistic: training of audience, expansion of offer, saving values,
- social: community-building, reaching disadvantaged, presentation and maintenance of local spiritual and built-up heredity, intensifying tolerance, teaching to environmental-consciousness,
- economical: tax incomes, employment (artists, collaborators, suppliers, etc.), expansion of settlements, tourist value-enlargement, creating image.

Festivals are varicoloured and diverse; all together with local public events, there are several thousands of programs, series of events like these annually. In 2010, the number of festivals in Hungary attracting bigger audience was 300-400. In this period, the number of audience of registered festivals reached 4.8 million people. Total cost of registered festivals almost reached 8 billion HUF (*Elekes et al.*, 2010).

Smaller local festivals

Festivals often serve the reinforcement of local culture and habits and also give options for publics for enhancing their cultural identity besides these, help and promote local artists in getting ahead; in addition opportunities are created for a short term, high level artistic creative work. Primarily gastronomic and folklore festivals are characteristic in smaller towns and in villages.

Till music festivals could be described often as "global" events (for example merely internationally admitted performers), gastronomic festivals could help in presenting and selling local products.

Nógrád County

Almost one and a half hundred settlement lived by Palócs mainly by the foot of the North Hungarian Mountain Range, the sharp and rangy mountains of Cserhát, Mátra, Bükk; can be found in the territory of Borsod, Heves and Nógrád, primarily.

Nógrád consisted of 131 settlements in the beginning of 2008, six of them were city (Salgótarján has a right of a county). This is the smallest county of Hungary, with a territory of 2546 km^2 and the population is 210.2 thousands, the 2.1% of the whole country. Population density is 83 persons/km^2, that is smaller than the country average (108 persons/km^2). In 2010, the population was 204,917 people,

this will be probably decrease with 2000 people during 2011. Regarding the population of Salgótarján, the second smallest county town, as well as there can be found only 10 more towns as Rétság in the country (*Szalainé*, 2009).

It is a favourable destination, besides touring options there are a list of historical memories in calm environment waiting for tourist who want to relax, hunters, fishermen, lovers of special wines and admirers of water and winter sports. The prehistoric findings of Ipolytarnóca have international fame, the hive rocks in the Southern edge of Bükk and also the Plateau of Bükk. In these mountains there are mammals, birds and plants that have an increased protection.

On the operational territories of National Parks, there are 11 landscape protected district and 17 environmental district that are under nationwide protection. In 1995, the European Council donated European Diploma to the territory of the prehistoric findings of Ipolytarnóca.

Palóc people

It is very important to mention Palóc population in this topic. The Hungarian peasants understood as Palóc people who live in the Mátra, in the Nógrád Basin and Ipoly Valley north from Bükk. The common features of folklore, the extended family system and the settlement structure that reflects it that remained during the first half of the 20th century, the Roman Catholic religion and also the dialect that uses two types of "a" sound connects mostly the inhabitants of "Palóc Land" (Highlands). By the ethnographic collections outcropped a very rich and strong folklore in this area. The world of myths, the customs connected to the nuptials and to the high days are extremely rich. The gastronomy of the ethnical group said to be unique within the county as well (*Selmeczi*, 2008). Food made from a variety of pulp and flour had/ has a major rule in the nutrition of Palóc people. One of the favourite dishes is baked pulp also known as 'görhe' or 'male'. In the theme of traditions we have to mention the settlement, Hollókő. The present state of the village was established after the fire in 1909, thatch was replaced by burned clay but the ancient architectural forms were preserved. Later a porch was built with a balustrade made of board. In most places the torches, that are called "hambitus", climbed with grapes. In 1987 the village was added to the World Heritage Committee of the UNESCO (*UNESCO*, 1987). The small community that lives here wears the folk costumes and keeps alive the forgotten popular customs. The do it within the confines of different events such as Easter, when they await the tourists with "sprinkling", egg painting and other traditional activities.

Festivals of Nógrád

There are many festivals in Nógrád, primarily link to gastronomy, but at least associated with the appearance of traditional foods and drinks.

Such events among others the:

- Louis Armstrong International Jazz Festival
- Nógrád International Folklore and Gastronomy Festival
- Gödör Festival
- Tóparty Festival

- Palacsinta (Pancake) Festival
- World Heritage Day
- Dió (Walnut) Festival
- ÉTER Festival 2011
- Somoskői Vár Festival/Castle Festival of Somoskő
- Szent István napi várjáték/Castle Tournaments of Saint Steven's Day
- Szüreti Fesztivál(ok)/Vintage Festival(s)
- Kőleves Fesztivál/Stone soup Festival
- Salgótarjáni Bányarém Fesztivál/Snag Festival of Salgótarján
- Málna Fesztivál/Raspberry Festival

"Recall the tails of our childhood! Prepare the famous and magical soup of the stone from the cave that hide the fabulous treasures of Kis-kő and of the some secret flavouring." The appeal in this year says this about the *Kőleves (stone soup) Festival* that held in Szilaspogony in the last 5 years (*Kőleves*, 2011). The gastronomic event inspired by the folk tale won the "Most popular program in the County" category in 2007. The major step in the cooking competition: Kőleves (Stone soup) can be made from anything, the only compulsory rule at the beginning of the cooking is to plunge the volcanic stone from the Kis-Kő Mountain, the soup is named after it, the to the cold water of the soup.

In 1996 at the open-air stage of Rárós the 1st Nógrád Folklore Festival opened, since that it is hit the road in every year and visits the cities and villages of Nógrád County. In 2000, the festival crossed the state border as a herald of the common Europe and found friendly welcome in Nagykürtös, Losonc, Fülek, Ragyolc, Vidina and also in Divény. Since then the event has the right to wear the name Nógrád International Folklore Festival, that presented the folklore culture of Hungarians and Slovaks in more and more settlements—Szügy, Mihálygerge, Pásztó, Palotás, Egyházasgerge, Salgótarján, Hollókő, Bánk, Balassagyarmat, Szécsény, Somoskő, Kazár, Ipolytarnóc—in both sides of the Ipoly up to now. Ten years is not a long time, but enough to built a tradition of an event which has achieved appreciation in Hungary and also abroad (*Nógrád*, 2011). In 2011 the event widened with a gastronomic day and got the name *Nógrád International Folklore and Gastronomic Festival.*

Today the event is held in ten locations within the confines of Hungary-Slovakia Cross-Border Cooperation Programme 2007-2013, with Ukrainian, Georgian, Slovak, Italian, Serbian, Romanian, German and Polish participants and visitors.

The programme supports the common development of Hungarian-Slovak border region, and also the integration of the Hungarian-Slovak border region in economic, humane, environmental and transport aspects. The cross-border programmes that according to the INTERREG IIIA program materialised by the Structural Fundamentals resource (*Hungary-Slovakia*, 2007).

DISCUSSION

The potentials of the tourism in the region of Nógrád are immature. The sought of them was stagnant and had little interest. It has less popularity than the major

targets of tourism, such as Budapest and its surroundings and the Balaton Uplands, etc. By contrast, in the terms of tourism it has all the potentials to build a folklore filled, traditional holiday possibility.

Considering the socio-cultural effects of the festivals they play an important role in the development of the local communities, because compare them with other forms of culture they are socially more inclusive. Furthermore, the organizers and the population consider the festivals as a tool of utterance of diversity and identity. It is worth to mention that festivals have a positive impact in terms of renewal this may include the democratization of culture, the celebration of differences, revitalization and strengthening of the community and also the improvement of the quality of life. Festivals are usually temporary, fleeting and elusive experiences, if they are not repeated they are unable to maintain cultural continuity. Therefore, it is ideal that they are organized annually. Also a problem that festivals become more and more international and they loose their roots and relationship with the given location. The smaller community festival are characterized with that they are more attractive for the local population than the mega-programmes. However, generally they fail to attract tourists, and less likely that they are commercially viable in long-terms, unless they receive a comprehensive local support. Another problem may be the loss of authenticity, giving up the artistic integrity or the depreciation of culture. Many authors talk about the fundamental differences between community-orientated and tourist-orientated events, and raise questions about the sustainability of the latter one.

CONCLUSION

Festival tourism may have outstanding benefits in Nógrád County connecting it with the village tourism, but the tourist destinations have to avoid the oversupply of these programmes. Such a little space, like the area with the Palóc inhabitants definitely worth to stage unique, traditional based festivals to emphasis the exclusivity.

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WILL A "EUROPEAN MONETARY FUND" BE CAPABLE OF MAINTAINING THE STABILITY OF THE EUROZONE?

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ABSTRACT

The debt crisis and the escalation of Greece's fiscal problems in 2010 forced European leaders to set up new institutions to rescue ailing eurozone countries. The European Commission endorsed a German proposal for establishing an International Monetary Fund-style rescue fund, the European Monetary Fund (EMF). As a result the European Financial Stability Facility (EFSF) created in May 2010 is to be transformed into a permanent rescue fund, the European Stability Mechanism (ESM) from 2013 on. Although these steps seem to have been necessary to deal with sovereign debt, several questions emerge concerning efficacy, feasibility, and moral hazard. There is strong opposition to the permanent rescue fund mainly among economists of the Northern European countries who argue that certain (Greece and some Southern European) countries' irresponsible spending and the profligacy of their governments have resulted in the government debt crisis. According to them these countries deserve strict punishment because their insolvency is due to their own mistakes, and financial assistance would be just adding fuel to the flames. This analysis lacks understanding or ignores the fact that the problem lies much deeper: in the fundamental problems of a monetary union. These problems and all their implications will hold until the European Monetary Union (EMU) has been transformed into a political union. The long-term stability of the eurozone, however, depends a lot on the attitude of the members, which would derive intrinsically from the nature of the union after transition. It is not the severity of the punishment that really matters.
Keywords: debt crisis, European Monetary Fund, European Stability Mechanism, European Financial Stability Facility, moral hazard

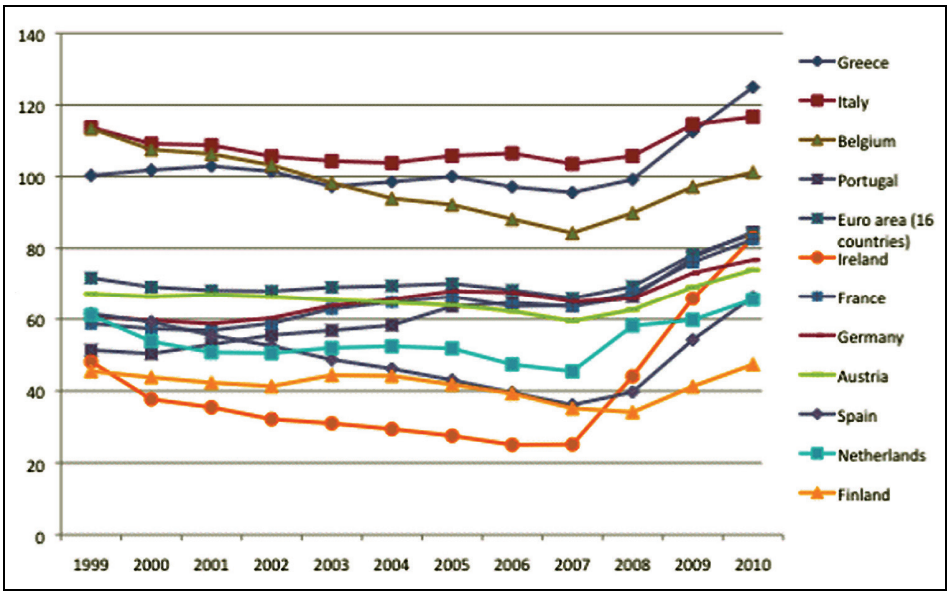
INTRODUCTION

Financial crises are followed by an increase in government debt (*Fuceri and Zdzienicka*, 2010). Europe was totally unprepared for the public debt crisis after experiencing consumption booms fueled by excessive credit. Greece, with a public debt of around 120% of GDP and government budget deficit of nearly 13% of GDP in 2010, was the weakest link in the chain (*Figure 1*). European leaders were forced to come forward with a rescue idea since an European instrument for assistance seemed to be indispensable. As a result the European Financial Stability Facility (EFSF) has been transformed into a permanent rescue fund, the European Stability Mechanism (ESM), even though it meant changing the EU Treaty. The new independent inter-governmental organization, also called as the European Monetary Fund (EMF), is to start its operation in June 2013. Although these steps seem to have been necessary to deal with sovereign debt, several questions emerge

concerning efficacy, feasibility, and moral hazard. Efficacy means whether an EMF would be able to deal with crises effectively.

Figure 1

General government consolidated gross debt



Source: *De Grauwe*, 2010

The question of feasibility is how the new institution could be financed and how it could work. Moral hazard stems from mutualization of risks that could lead to less fiscal discipline. These issues are worth addressing more thoroughly. This paper examines the pros and cons and attempts to view their different aspects. The EMF is planned to work under the concept of "enhanced cooperation" established in the EU Treaty. This paper aims to examine whether enhanced cooperation and a financing mechanism in which the main contributors are countries in breach of the Maastricht criteria can eliminate the moral hazard. It is obvious that sovereign default should be dealt with immediately. The euro area's inability to help states at default risk has raised the need for a eurozone emergency funding mechanism. Examining the possibility of the long-run stability of the eurozone, however, requires deep analysis of the nature of the monetary union and highlighting the properties wherein its vulnerability lies.

DISCIPLINE FAILURES AND MORAL HAZARD WITHIN THE EUROZONE

The sources of discipline failures within the European Monetary Union are members failing to maintain control of their finances. Yet sovereign default is not allowed. To handle these issues *Gros and Mayer* (2010) proposed to establish a permanent rescue

fund, the European Monetary Fund (EMF), which would be, similar to the International Monetary Fund (IMF), designed to conduct economic surveillance of the members besides monitoring and funding assistance programmes. As a measure of last resort the EMF would be capable of organizing an orderly default. Instead of preventing failure, as was necessary in the recent financial crisis, failure is to be made possible, which would lead to restoring market discipline. This assumes a system firm enough to cope with the impact of the failure of one member state. Mutualisation of risks by setting up funds creates moral hazard. There is strong opposition against the permanent rescue fund mainly among economists of Northern European Countries who argue that irresponsible spending and government profligacy of certain members are to blame for their difficulties (*Plenum der Ökonomen*, 2011). Their insolvency, such economists say, is due to their own misbehavior. A fund providing financial assistance would just encourage them to remain that way, in other words, it would create *moral hazard*.

Limiting Moral Hazard through Financing Mechanisms

According to *Gros and Mayer* (2010), moral hazard can not be eliminated but can be limited through a proper financing mechanism for the EMF. The basic principle of this is that the main contributors to the Fund should be countries breaching the Maastricht criteria, which would give them an incentive to keep their finances in order. The contribution rate is calculated on the basis of the stock of "excess debt", meaning that the contributor should pay annually one percent of the difference between the actual level of public debt and the Maastricht criterion limit of 60% of GDP. Thus, in a state with a debt equal to 120% of GDP, this would equal 0.60% of its GDP. For excessive debt the calculation is the same, one percent annually of the difference between the actual level and the criterion level of 3%. In a country with an excessive deficit of 12%, this accounts for 0.09% of its GDP. The total contribution for a given country would be 0.69% of GDP. The contributions should be based on the above parameters since they reflect impending insolvency and liquidity risk better than market indicators of default risks, which would be reduced by the existence of an EMF. The Fund should be authorized to borrow in the financial markets with full and joint backing of the member states until it reached a certain threshold. Member states with strong public finances would not have to contribute since their backing the EMF gains significance in case a crisis breaks out.

Limiting Moral Hazard through Conditionality

The other way of limiting moral hazard is conditionality. *Gros and Mayer* (2010) argue that with the EMF in operation a crisis would be much less likely to arise owing to the conditionality which is to ensure that countries introduce tailor-made fiscal adjustment programmes and that their situation is monitored as a condition of calling on funds or drawing on the guarantee of the EMF above the amount they have deposited in the past (with interest).

Enforcement Mechanism

According to the design of the EMF, its enforcement mechanism will ensure countries act according to their commitments. Sanctions are strict and can cut off new funding or structural funds for a country or even cut it off from the eurozone

money market. Not implementing a previously agreed programme would incur considerable costs. An EU member state refusing to accept the decisions of the EMF can leave the EU and the EMU (*ECB*, 2009). Finally, a country can also be thrown out according to Article 7 of the Treaty of Lisbon.

MANAGING ORDERLY DEFAULT

Through the new Fund an orderly default of a member country that fails to comply with the conditions of an adjustment programme would be possible. In order to minimize default disruptions it was crucial to create mechanisms according to which the EMF could offer holders of debt of the defaulting country an exchange against new bonds issued by the Fund. The EMF could tie its guarantees to the 60%-of-GDP Maastricht limit on debt. The mechanism would be similar to the procedure existing in the USA for bankrupt companies that qualify for restructuring (*Gros and Mayer*, 2011).

THE VULNERABILITY OF A MONETARY UNION

Liquidity crisis caused by financial markets

For the members of a monetary union, joining does not only mean giving up their independent monetary policy (interest rate or exchange rate) instruments. According to *De Grauwe* (2011), it also means issuing debt in a currency over which they have no control. Thus they can be forced into default by financial markets. It throws light on the difference between the nature of sovereign debt in member and non-member countries, which makes monetary union member countries vulnerable. Assume investors were to fear that a non-member country were defaulting; they would get rid of the country's government bonds causing the interest rate go up. Then they would sell the *currency* they got for their bonds in on the foreign exchange market. The exchange rate of this currency would drop until demand increased. The outcome would be that this currency would be bottled up in the particular country's money market to be invested in its assets, leaving the country's money stock (liquidity) unchanged. As a last resort, the National Bank of the country would be forced to buy up government bonds ensuring enough liquidity for the government to fund its debt. The same situation in a member country would end in a completely different outcome. After selling the bonds of the member country, investors in their fear of the country's default would be sure to decide to invest the acquired *euros* somewhere else, which means that the money supply of the particular country would decrease. Its government could not find the funds to roll over its debt at reasonable interest rates, so a liquidity crisis would ensue. The national bank of the country could not be forced to buy government debt and the government does not control the ECB, which could provide the liquidity. To sum it up, fiscal markets have enough power to force any member state into default. *Emerging economies* are familiar with this situation: when they borrow in a foreign currency they may experience a liquidity crisis caused by a sudden stop of capital inflows.

Solvency crises imposed by financial markets

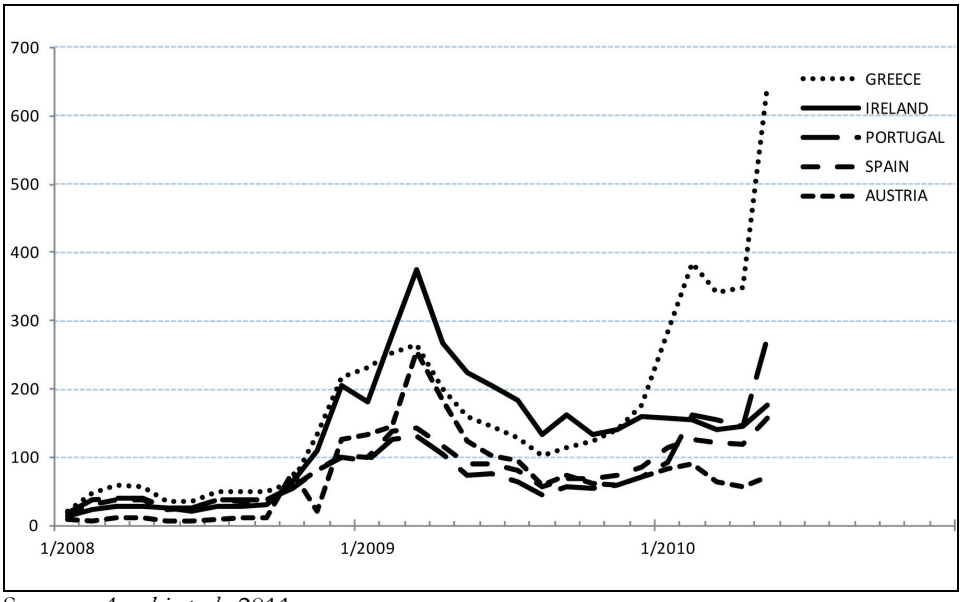
In the example mentioned above, the sale of a non-member states' currencies in the foreign exchange market will make the national currency depreciate, giving a boost to the economy and an increase to inflation. This does not happen in the member-country, since its bonds are sold for euros, which leave the country's money market. *De Grauwe* (2011) argues that there is a "devilish interaction" between liquidity and solvency crises. A liquidity crisis can turn into a solvency crisis with interest rates driven up. The investors' fear of insolvency can make the country become insolvent through self-fulfilling movements of distrust. This phenomenon highlights the vulnerability to financial markets' movements of monetary union member states in general. Market efficiency as a disciplining force, however, cannot apply to the financial markets since they are moved by sentiments (fear, panic, euphoria) and rating agencies.

Highly integrated financial markets

Highly integrated financial markets imply that government bonds of monetary union member countries are held to a significant degree outside of the country of issue. Bad equilibrium of member countries affects those with good equilibrium adversely. According to *Arezki* (2011), there are strong spillover effects in the eurozone. Bad news spreads via a complex transmission process, which makes surveillance and regulation complicated. It is impossible to isolate the financial problems of one country from the other members due to these external factors (*Figure 2*).

Figure 2

CDS Spreads for Selected European Countries and Greece Credit Ratings



Source: *Arezki et al.*, 2011

Lack of automatic budget stabilizers

The triggered liquidity and solvency crisis shown above will force governments to introduce austerity measures amid the recession. According to *De Grauwe* (2011), in a non-member state the higher budget deficit generates distrust, which prompts an *automatic* stabilizing mechanism—an important social achievement. Member countries, however, find it impossible to stabilize the business cycle by budgetary policies.

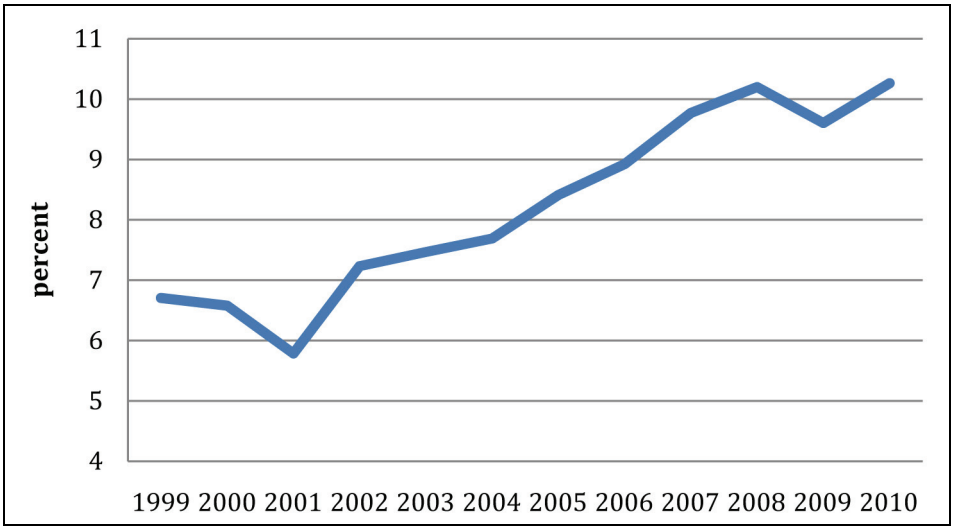
Competitiveness problems

The competitive position of member states has shown large divergences since 2000 (*Figure 3*).

Since the monetary policy tool of devaluing a currency is impossible for them to use, those that lost competitiveness bring down their wages and prices compared to those of the competitors by deflationary budgetary policies. This results in increases in budget deficits. Distrust of financial markets may lead to a liquidity crisis that will trigger a solvency crisis. Trying to improve competitiveness is extremely hard for these countries amid the recession with the increasing unemployment and being hit by banking crises and sovereign debt at the same time. The country gets stuck in the bad equilibrium with a downward spiral and high interest rates. Non-member countries, on the other hand, can issue debt in their own currencies thus can balance a loss of competitiveness by allowing their currency to depreciate in the foreign exchange market. They can avoid the bad impacts described above in ways member countries cannot.

Figure 3

Standard deviation relative unit labour costs in Eurozone (in per cent)



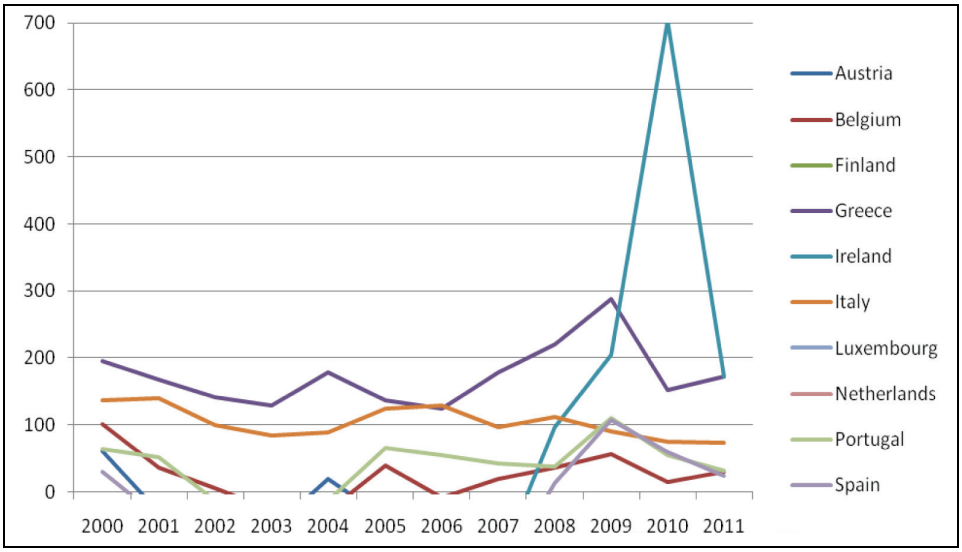
Source: *De Grauwe*, 2011

INTRODUCTION OF THE EUROBOND SCHEME

The joint issue of Eurobonds is another idea to guarantee the stability of the Euro area. *Boonstra* (2005) was the first to make a proposal for the issue of Eurobonds. Moving from national to central financing for all public debt would remove the possibility of raising debt on the financial markets separately. In Boonstra's scheme Eurobonds were to be issued by an independent "EMU Fund" and lent to the participating EMU countries at a premium over the Eurobond rate. This premium was to be based on deficit and debt deviations from the average levels of Germany and France. Only countries performing worse than Germany and France were to pay a premium. In *Figure 4* you can see a hypothetical case where the "EMU Fund" would have been introduced in 2000.

Figure 4

Total premium (basic points) over the EMU fund rate



Source: *Eijffinger*, 2011

The *Figure 4* shows the total premium over the EMU fund rate. The Eurobond solution is expected to offer market discipline, since this scheme would provide shelter from large swings in market sentiments and fiscal discipline, that is, these bonds would have to contribute to strengthening the enforcement of budgetary rules. Speculation is to be deterred. A large participation rate is vital for the Eurobonds to succeed, which is *politically* important. It means that this solution has benefits for both strong and weak member countries. Issuing Eurobonds jointly means that the participating countries become jointly liable for the debt, which would signal to the markets that they are serious about the future of the euro *Juncker* (2010) argues. Pooling the issue of government bonds enable the member

states to defend themselves against liquidity crises stemming from the fact that they have no control over the currency in which their debt is issued that I described earlier. The Eurobond scheme, however, creates the problem of moral hazard, and the resistance of countries that behave responsibly is understandable. Collective liability implies insurance and provides an incentive for countries to count on it and issue much debt. As long as this moral hazard holds, countries are unlikely to jointly issue Eurobonds. The other problem has to do with ratings. For states currently enjoying a AAA rating it would not bring any benefits if the scheme did not allow them to get the best obtainable borrowing conditions. The design of the *common* Eurobonds must eliminate the moral hazard and must be attractive enough for the members with good credit ratings. To design such a Eurobond it would be better to seek a combination of proposals (*De Grauwe and Moesen*, 2009, *Delpla and von Weizsäcker*, 2010, *Juncker and Tremonti*, 2010). This scheme would allow participating members to issue Eurobonds up to 60% of their GDP, which would create "blue" bonds. Anything above 60% would be issued in the national bond markets designated as "red bonds". The senior tranch (blue) would enjoy the best rating while the junior (red) would face a higher risk premium, which might be higher than the interest they pay currently on their total outstanding debt, reflecting the fact that the default probability on the red tranche is likely to increase. The other element of the proposal deals with fees. Pricing of Eurobonds would be related to the fiscal position of the countries participating in the joint issue. As a result a large new government bond market would be created with sufficient liquidity. Its attraction to foreign investors would help the euro become a reserve currency.

THE EUROPEAN STABILISATION MECHANISM (ESM) AND LONG-TERM STABILITY

To guarantee the future of the European Monetary Union strict reforms are needed. The EMU has to be made a more integrated fiscal union with strengthened fiscal rules regarding enforcement in particular. On this basis a permanent defense mechanism for the euro should be set up. From 2013 a permanent European Stability Mechanism (ESM), the "European Monetary Fund", will replace the European Financial Stability Facility. Besides this move joint Eurobond issue has been designed to guarantee the stability of the euro area. Setting up the EMF enables the eurozone to avoid *ad hoc* interventions or calling the IMF. The IMF has no mechanism for allowing orderly default, while within the EMF orderly default is allowed and prepared for. The moral hazard problem can be limited through conditionality. Considering the reasons that make a monetary union vulnerable one should see that systemic features of a monetary union cannot be ignored when trying to predict the long-run efficacy of the European Monetary Fund. Moral hazard thinking means strict punishment and severe austerity packages to those experiencing increasing debt, which does not contribute to restoring the balance. In addition, member states can be forced into default by financial markets as described above. The recent crisis emphasized some features of the monetary union that may

call into question whether there is any governance structure that can deal with them. The governance that is supposed to govern it from 2013 on will encounter these systemic properties, which may well remain imminent for a while. Long-term stability, however, would require ceasing them through a transition.

CONCLUSION

The design of the European Monetary Union excludes any automatic solidarity (insurance) mechanism (i.e. automatically organized money transfers to countries experiencing excessive debt accumulation) that can work properly in a federal state with automatic redistribution from the centralized budget to the deficit regions. The monetary union should be made *sustainable* through a transition to a *political union*, though member states show little willingness to do so. Some steps have already been taken in the direction of a union where it is not the severity of the punishment that really matters.

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HOW CAN HIGHER EDUCATION COMMUNITY CONTRIBUTE TO ACHIEVEMENT OF SUSTAINABLE DEVELOPMENT?

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ABSTRACT

These days, sustainability confronts us as a serious threat - or, more correctly, its absence is the threat. At the same time, and as a total complete contrast, it also offers most significant opportunities. Our current methods of production and consumption are simply not sustainable in the long term and so, for the purpose of saving the environment, both consumer and producer behaviour needs to be changed. Consumer behaviour is affected by values and attitudes, under the blanket name of 'lifestyle'. Lifestyle is not only influenced by choice, but connected to socio-economic factors, and to economic resources. Likewise the level of commitment affects the behaviour of the consumer. Education provides some degree of support in changing people's behaviour and behavioural culture. Sustainability Education is now starting to play an increasingly active role in education. This paper examines the current situation, the trends in educational activity and different solutions within the frame of our international comparison. University activities in environmental education are very useful as a source of raising environmental awareness and helping consumers to make "greener" choices in their lives. Education, in fact, has considerable social value in reducing harmful environmental impacts. Effective education can produce a change in society's attitudes, values and actions, and the focus on education for sustainability is a key element in the creation of sustainability-focused attitudes and values. What is more, universities should be a major contributor to society's efforts to achieve sustainability.
Keywords: Sustainability Education, sustainability-focused attitudes, sustainability knowledge

SUSTAINABILITY VS HUMAN BEHAVIOUR

The Millennium Ecosystem Assessment (MEA) warns that the Earth and its population are in a time of severe crisis characterised by pollution, climate change, invasive species, over-exploitation, habitat change and the loss of ecosystem services. If we want to save the environment, we must to change our behaviour. We must consume less (but what to do about poorer countries?), reduce our ecological footprint and make decisions that result in the protection of biodiversity, the ecosystem and our future well-being (*MEA*, 2005).

Our behaviour is affected by values and attitudes, and 'lifestyle' has become a synonym for the concept of behaviour patterns (*Spaargaren and van Vliet*, 2000), referring to the degree of coherence. Lifestyle is connected to consumption-choice and the decision-making process, as also to the social or symbolic dimension of consumption (*Spaargaren and van Vliet*, 2000). For instance, green consumers are concerned with both the quality of the environment and with that of well-being of life.

Lifestyle is not only influenced by choice, but connected with socio-economic factors and economic resources. The level of commitment also affects consumer behaviour. The behaviour of the individual consumer (with low environmental concern) is likely to deliver personal benefits and costs, without future-orientated outcomes. They prefer free-market solutions and shift the responsibility for solving environmental problems on to others (*Poortinga et al*., 2004).

We need to control our consumption choices and so what we used to think of as 'consumer responsibility' should rather be 'consumer social responsibility'. Consumers must take responsibility for their activities and for society. We talk of corporate social responsibility, but neglect consumer social responsibility – and the latter is at least important as the former. We must accept responsibility to change human behaviours and empower future generations to react to environmental problems.

SUSTAINABILITY EDUCATION (SE)

There is a general consensus on the notion of education as an important tool in achieving change and sustainable development (*Mochizuki and Fadeeva*, 2010). In consumer social responsibility, humans must adopt more sustainable lifestyles - but what does a sustainable lifestyle mean? To manage environmental problems we need to change human behaviour – namely, change culture. We must do more than raise awareness of opportunities; we must do it in a reasonable way. The challenge is to design ways to evaluate the effects of projects effects over the longer term and to make efforts to improve and achieve results. Education will help us to achieve society's environmental goals (*Keene and Blumstein*, 2010).

Environmental education has an essential role in teaching people to respect nature and behave in a way which will preserve it. Sustainability education seems to be a suitable way for students to develop key competencies in sustainable development. Basic technical concepts behind pollution prevention and sustainable design are easy to explain to students, but technology, product quality and environmental assessment have changed over the last decade and continue to do so currently. We need to restructure the education to meet the requirements of the global economy, namely globalization.

UNESCO (2005) defined essential characteristics of the education for sustainable development. **'**All of them deserve attention, but we emphasize that education for sustainable development is interdisciplinary, locally relevant and culturally appropriate, and deals with the well being of all three realms of sustainability (environment, society and economy) and builds civil capacity for community-based decision-making, social tolerance, environmental stewardship, adaptable workforce and quality of life' (*UNESCO*, 2005, 30-31. p.).

Sustainability is becoming the new point in environmental education, and emphasis is shifting from the traditional learning style to another solution. The issue of education in sustainability has developed from studying nature to taking a new look at the way we think, in which measures to sustain standards of living are pursued and environmental burdens reduced.

The sustainability education challenges basic assumptions, practices, and institutions of established disciplines. The sustainability education challenges both, what is taught in and how (*Cortese*, 2003). If our graduates are to cope creatively and successfully with society's most difficult problems, they must be exposed as students to those problems, and higher education needs to find innovative ways to develop students' capabilities (*Rowe*, 2007). Literature on education for sustainability calls for pedagogical innovations that provide interactive, experiential and transformative learning (*Steinemann*, 2003; *Rowe*, 2007; S*ipos et al.*, 2008). *UNESCO's* (2009) Bonn Declaration calls for building the capacity for knowledge into action for sustainability, and calls for curricula to be oriented to meet this goal.

Pollution prevention, sustainable design and better (cleaner) production demonstrate our main value through industrial applications. It is, therefore, more important for students to have direct personal experience of environmental fields. The value of pollution prevention activity depends on a number of variables (e.g. the local community, regulatory drivers, technology, labour costs). The best solution depends on how well the student identifies the variables and gathers related data and how these data can be applied. Thus, learning how to identify and analyse these variables is an essential skill for implementing sustainable development.

There is a clear trend towards education in sustainable development education in both the school system and the corporate sector. In addition, if education is incorporated into education concerning sustainability, business can contribute more than it has done to date. We can achieve institutional cooperation in delivering sustainability education, and then we have a chance to create the societal change necessary for sustainability.

Effective education can produce a change in societal attitudes, values and actions. The focus on education for sustainability is a key element in creating sustainability-focused attitudes and values. Providing descriptions of the technologies and applications, then teaching the students how to recognise and use the latest innovations and how to evaluate new technologies are key topics in any sustainability courses. The students learn the mechanics of identifying, analysing and creating sustainability in the classroom. *Fowler and Engel-Cox* (2006) found that, until the students have practical experience applying pollution prevention and sustainable design recommendations to a real-life situation, they do not understand the complexity of the process. Although performing environmental assessments for real organisations is likely to involve more effort for both teacher and student than a traditional lecture-based course, the authors believe that the experiential learning activity is the more valuable investment for the students, community organisation and the university. *Brundiers et al.* (2010) words, 'bringing real-world issues in classroom' contributes the right way for sustainability education. To develop sustainable solutions for complex issues environmental scientists need boundary crossing skills next to domain specific knowledge and social skills (*Fortuin and Bush*, 2010). The scientists need to be able to intersect the barriers between theory and practice, but to how to cross these barriers is an ongoing debate.

The sustainability education helps students increase their understanding of sustainability problems, complement their methodological competence in applying problem solving approaches and gain hands-on experiences. Exploring, evaluating approaches makes students aware of the powerful role of values, resources, attitudes.

Universities can and should apply radical innovations in their educational methods, including curriculum, teaching, research and other services. Of course it is impossible define the appropriate competences for sustainability education. Without list of competences, universities need a deliberative and situated process of first specifying competences, and then articulating them in their educational programmes.

How university educational programmes can better preparation students to suitably deal with complex environmental issues and contribute to sustainable development? What should be taught, what should be learned, what abilities for acting, which concepts and problem solving strategies should have acquired as a learning process? What kind of complementary elements might we need in order to generate a positive cycle of change for sustainability? An environmental education programme will produce different outcomes since we have no clear goals or objectives.

Students and teachers try to focus on sustainability through challenge conventional methods of education and require new modes for integrative learning. Efforts to adjust curricula to meet these challenges are increasingly common (*Scholz and Tietje*, 2002; *Steiner and Posch*, 2006). Many of them focus researches, real life learning, and promote creative, self-regulated learning. They need to transport theoretical knowledge into the practice. The problem is the disciplinary gaps, are rooted in differences between scientific paradigm and languages and the real world. Several studies reported a positive relationship between higher education and environmental concern. Moreover, education has a stronger effect on environmental concern than has age, because, not just the intention but the knowledge that supports effective function. Teachers can stimulate to think critically, to act adequately, to make properly decisions by asking questions and providing tools. Facilitation rather than lecturing can be better methods. They need to expose the complexity of environmental and societal problems to students. *Fortuin and Bush* (2010) reveal that realize that one should cross boundaries to solve problems could be one of the most important elements in the education.

Universities need for better understanding of, and innovations to sustainability challenges. There are examples of how universities in different parts of the World are trying to facilitate students to develop competencies for sustainability. In other words, how they translate the concept of competence theory into actual learning activities, courses, programmes. There are many good examples of sustainability being incorporated into the curriculum, and other activities. Sustainability has become a general orientation for learning. But the outcome is very complex and unpredictable.

BARRIERS TO SUSTAINABILITY EDUCATION

Sustainable development, sustainability is hard to define and implement, ultimately difficult to teach. Sustainability education is very complex issue. The lack of definition and methods are being blocked existing efforts to Sustainability Education.

The effectiveness of SE is debated in light of the requirements of nature and society. The economic and technological forecasting is ambiguous. An environmental education programme will produce different outcomes since there is lack of regarding goals. With environmental education we can cause irreparable damage to the environmental system when there is no evidence of environmental benefit. A lot of questions are to be raised. What should be taught and learned, which concepts and problem solving strategies should have acquired as a learning process? Further, traditional disciplines are being hardly inserting in a transdisciplinary framework.

Sustainability Education need to built a linkage between sustainability and economic well being of nations. Without linkage teachers need to integrate sustainability knowledge, skills, values to the curriculum, as they want.

One of the reasons why many communities perceive little attention for Sustainability Education is the *financial resources*. Reorienting education will require additional resources. Education for sustainability still remains an enigma to many schools, governments and individuals. While many of them have willingness to adopt Sustainability Education, are *no models* they can apply. It is also true that it is *impossible to create a curriculum would be successful to all* nations. Every communities need to define and improve own specific curriculum. Every community needs to develop their own sustainability goals and local educational system can create suitable programs and modify their curriculum.

Governments and schools are unaware of the linkages between sustainability and education. Moreover they need to develop a creative, innovative climate and implement different policies to give teachers; staffs have the right to adopt new pedagogical methods. Students and professors require new modes for integrative learning. However, it is much easier to talk and write on *development of revolutionary and innovative curricula* there are remarkable efforts to adjust curricula to meet these challenges (*Scholz and Tietje*, 2002, *Steiner and Posch*, 2006).

Unfortunately, the need to achieve sustainable development today is not perceived as an urgent task. Communities must be aware of necessity of Sustainability Education. The recognition and active participation of educational sector is inevitable. The most difficult obstacle is *lack of popularity of sustainability*. The themes of sustainability are not being current in nations.

There is no debate on universities' need for better understanding of and innovations to sustainability challenges. *Sustainability has become a general orientation for learning but in a lot of cases in words only.*

Some universities adopted sustainability strategies, the majority have only taken the minimum approach neither preparing their students to live in the green economy nor fulfilling them with responsibility. Nevertheless, one of university

focuses management, planning, others to curriculum and training, and others the daily practice. The tools have focused either operational practice without broader meaning, or theoretical framework without operation process.

RESEARCH

The purpose of this paper is to analyze of how universities in different parts of the world are trying to foster students and staffs to develop a range of competences for sustainability. Change to more creative pedagogies, attention to real-world learning has led to development of knowledge and skills of the students.

I have developed 36 benchmarking indicators has been shown in *Table 1*. The websites of all ten universities (*Table 2*) have been studied carefully to obtain relevant data. With this method we can not say the level of commitment. Rather absence or presence of sustainability activities occurring in universities.

Table 1

Benchmarking Indicators for Universities

Administration	Curriculum/study opportunities	Research	Operation	Other activities
Sustainability office	Undergraduate study	Research Centre/Institute	Energy	Conferences
Policies/ Strategies	Postgraduate study	External Funding	Carbon Emission	Students group
Institutional declaration	Doctoral studies	Research Collaboration	Waste Recycling	Events
Action Plan	Environmental Sustainability Education (courses)	Journal	Building	Partnership
Awards	Student Research	Communication with Research Centre	Purchasing	Website
Sustainability Reports		Other research activities	Water	newspaper
Audit			Food	Raising awareness
			Paper	
			Conservation	
			Transportation	
			Fair Trade	
			Sustainability management System	

Table 2

Analyzed Universities

Europe rank	World rank	University
1	19	University of Cambridge
2	31	University College London
3	32	University of Southampton
4	41	University of Oxford
5	43	Swiss Federal Institute of Technology ETH Zurich
8	67	University of Edinburgh
11	85	Utrecht University
14	98	Freie Universität Berlin
23	113	University of Copenhagen
111	301	University of Manchester

RESULTS

The analysis of websites partially shows the university's commitment of sustainability (*Figure 1*, *Figure 2*). On this paper I had analysed only 10 preferred best practice. The highest mark is 36 due to UBC Canada, which our main take-off. Surprisingly, one of the best universities related to sustainability is not belongs to the best universities: University of Manchester. All universities have received maximum point for study opportunities; considering that their first function is providing education and training. Besides, every institution prefers technical aspects, such as energy, emission reductions, waste recycling, water, paper use efficiency, conservation, which are not only environmental friendly, but also cost-effective. They have integrated renewable energy systems into the built environment of campuses. Universities great emphasize on providing information to student.

The problem is the motivation of individuals. Education without empiric learning to deliver theoretical knowledge into the practice will be meaningless. Fieldwork is very important to develop students' ability to integrate classroom-based knowledge and to facilitate communication between participants (*Scholz and Tietje*, 2002; *Steiner and Posch*, 2006). Beside education, trainings, events, groups are the most significant source for understanding sustainable development values, and principles.

Students need new types of knowledge of sustainability to be incorporated into all courses is able to see global problem from many different perspectives. The new educational method need to move towards multidisciplinary cooperation to deliver new knowledge, values, attitudes. The best practice university' methods emphasize the importance of knowledge networks in which student can exchange information understanding. The members of communities of practice learn from each other, are able to change their view and act on sustainability goals.

Figure 1

Universities' commitment to the indicators

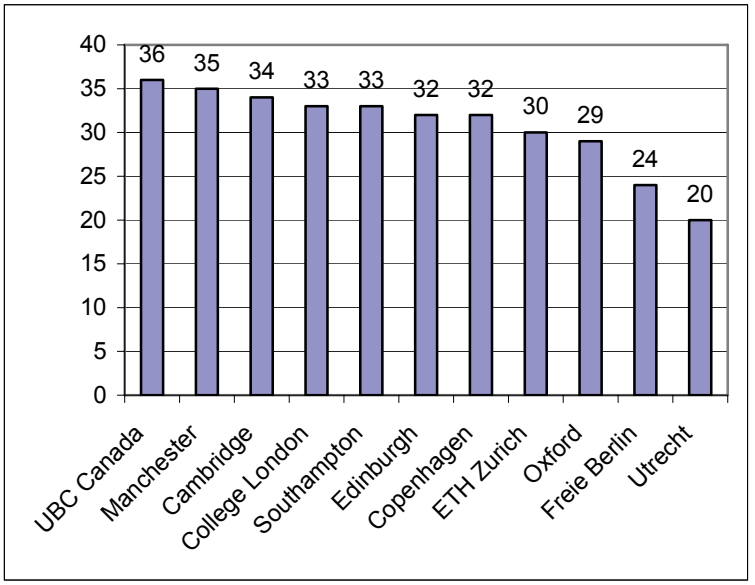
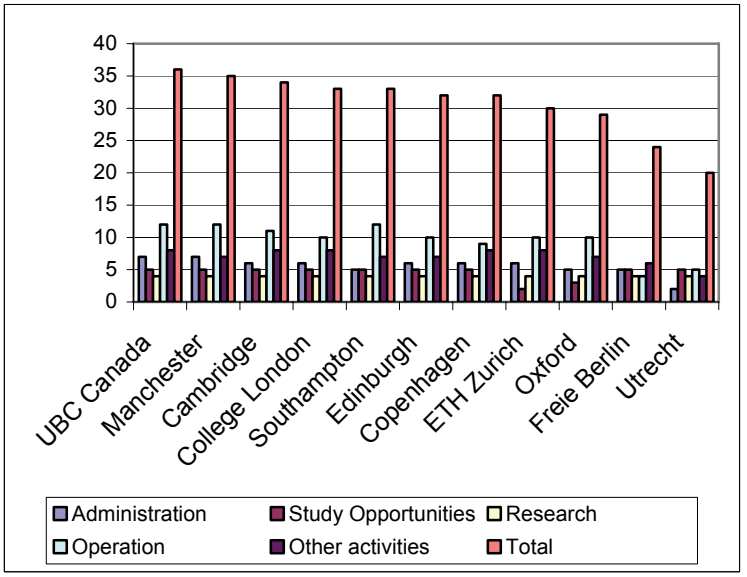


Figure 2

Universities' commitment in all function



CONCLUSION

With the present climate threats, the world community faces unique possibilities not only to unite across countries and continents, but to invent and explore new forms of social life, some of which will be more sustainable than others. Making progress towards sustainability is not just a problem of changes products and technologies, but rather an adoption of sustainable practices by governments, companies and consumers, but this cannot be achieved without a radical change in our lifestyle, our values and attitudes.

Sustainability education helps to raise public understanding of relevant practices as dynamic factors in the shaping of a new sustainable future.

In this paper we tried to show some illustrations of universities' commitment for development sustainability awareness of their students and employees.

Universities can and should produce graduates with values, skills, and knowledge addressed to sustainability. They have responsibility to define and facilitate sustainable development within their teaching and learning.

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