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Fundamental Behaviour of Cold-formed Thin-walled Steel Structures at Elevated Temperatures

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Abstract. Under fire conditions, cold-formed steel loses its strength faster than hot-rolled steel. This is due to enhancement in the strength of cold-formed steel at ambient temperature, but this enhancement diminishing at high temperatures. The loss of strength in cold-formed steel may be 20% higher by comparison with hot-rolled steel. Hot-rolled steel members are generally thick and fail either by local or global buckling (e.g. flexural buckling in column and lateral torsional buckling in beams). In comparison, cold-formed thin-walled members are more prone to local buckling and distortional buckling. With regard to global buckling, thin-walled columns can fail in combined local buckling, distortional buckling with torsional or torsional-flexural buckling, in addition to flexural buckling

Keywords: steel; cold-formed; thin-walled; high temperature; fire; buckling.

1. Introduction

Increases in temperature of a steel section depend on its section factor, which is a measure of the fire exposure area to the volume being heated. Due to small thickness, the section factor of a thin-walled steel member is high and its temperature increase is much more rapid than in a thicker hot-rolled member.

Thin-walled members usually form part of a wall or ceiling and are protected by planar systems (see Figure 1). This type of protection can induce a severe temperature gradient in the depth direction. Furthermore, since thin-walled members lose heat rapidly to the surrounding, a temperature gradient may also be present in the width direction.

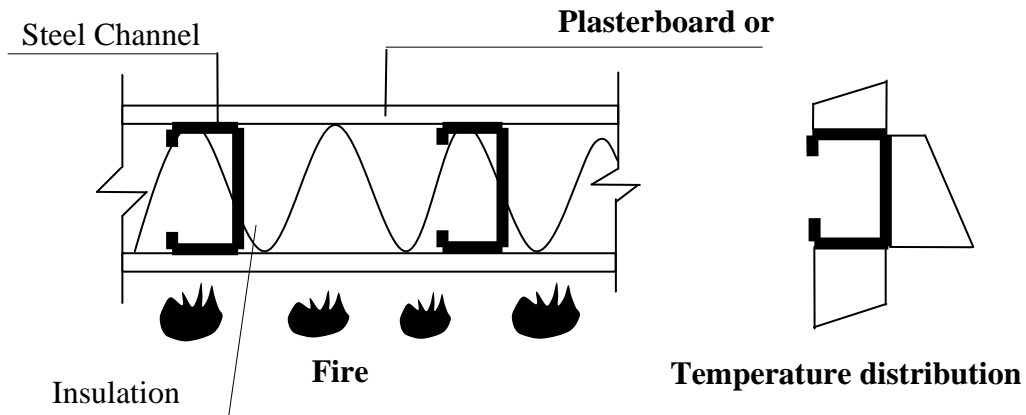


Figure 1. Temperature distributions in a wall panel exposed to fire attack on one side

2. Existing investigation of thin-walled steel structures in fire

Although K.H. Klippstein [1] conducted some research studies on cold-formed steel studs at elevated temperature in the 1970's, more comprehensive works only started after 1990. A number of the studies have concentrated on experiments of light weight steel framed walls [2,3,4] or, tests and numerical studies on cold-formed steel members under uniform high temperatures [5,6].

2.1 Material properties of cold-formed steel at elevated temperatures

2.1.1 Stress-strain relationships

To understand the behaviour of cold-formed thin-walled steel structures in fire, it is necessary to have available information about the mechanical properties of this type steel at elevated temperature.

Table 1. Retention factors for stress-strain relationships of cold-formed steel at elevated temperatures

Steel temperature T	Retention factor for elastic modulus	Retention factor for yield strength $k_{p0.2,T} = f_{p0.2,T} / f_{yb}$	Proposed retention factor for yield strength $k_{p2,T} = f_{p2,T} / f_{yb}$
20°C	1	1	1
100°C	1	1	0.97
200°C	0.9	0.89	0.932
300°C	0.8	0.78	0.895
400°C	0.7	0.65	0.857
500°C	0.6	0.53	0.619
600°C	0.31	0.30	0.381
700°C	0.13	0.13	0.143
800°C	0.09	0.07	0.105
900°C	0.0675	0.05	0.067
1000°C	0.0450	0.03	0.029

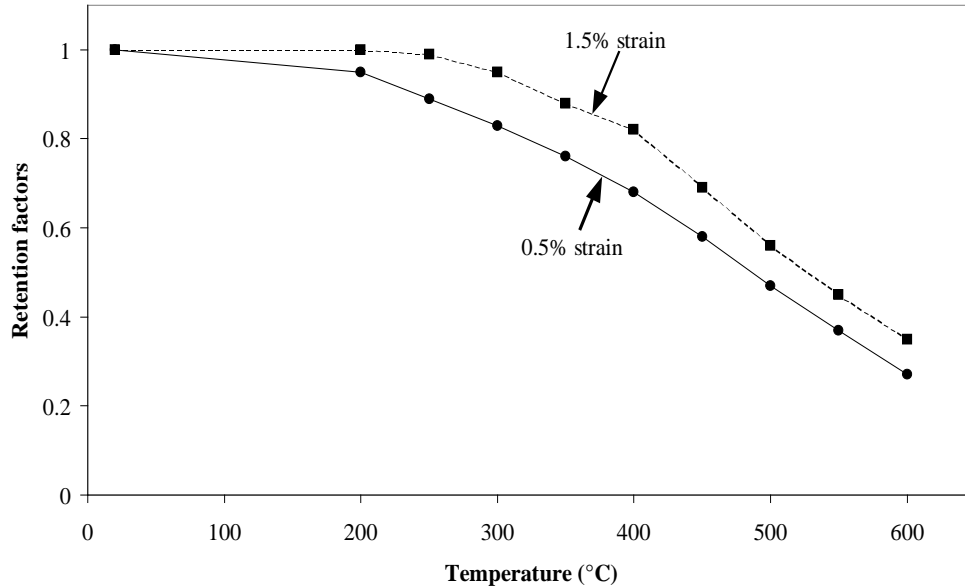


Figure 2. Strength retention factors at the 0.5% and 1.5% total strains [5]

ENV1993-1-3 has recently introduced cold-formed, thin-walled steel structures within its scope. This is done by introducing the strength retention factors in Table 1 and Figure 2 into the design equations in ENV1993-1-2 (CEN 2001) for hot-rolled steel structures. The retention factors for material properties of cold-formed steel in ENV1993-1-2, included yield strength and elastic modulus as functions of temperatures, are given in Table 1.

The test results of Sidey and Teague [7] are shown in Figure 2 as ratios of the steel stresses at the 0.5% and 1.5% total strains to the steel yield stress at ambient temperature. These results were used by Lawson [5] to derive limiting temperatures for cold-formed thin-walled steel members.

Outinen [8,9,10] carried out a large number of transient and steady state tensile coupon tests of cold-formed steel at elevated temperatures and reported stress-strain relationships for S355, S420M and S350GD+Z steel in the temperature range 300°C - 600°C and 700°C-950°C. He observed that there were large differences in the results between two different types of tests. This is in agreement with the test results of Kirby and Preston [11] on hot-rolled steel. He also found that the behaviour of the mechanical properties of cold-formed steel is different for different grades of cold-formed steel and the increase in strength due to cold-forming appears to remain at elevated temperature. The σ - ϵ , f_y and E of grade S355, S420M, S350GD+Z steel in the temperature range 300-950°C have been given. Their measured yield strength for S350GD+Z is quite different from the ENV1993-1-2 recommendation, and they proposed new values of the retention factors, as shown in Table 1, which are based on a total strain of 2%. Figure 3 shows a comparison of the strength retention factors between ENV1993-1-2 and Outinen [8, 9, 10] steady state tests results of S350GD+Z steel based on 0.2% proof stress. It can be seen that the Outinen steady state test results give slightly higher results at temperatures lower than 450°C and slightly lower results at temperatures between 450°C and 650°C. Figure 4 shows a comparison of the strength retention factors between ENV1993-1-2 and Outinen [8, 9, 10] transient state tests results of S350GD+Z steel based on 0.2% proof stress. This is a little different from steady state test results. Outinens transient state test results give slightly lower results at all high temperatures. Outinen gave the same results as in ENV1993-1-2 for the stiffness retention factor and these are the same as for hot-rolled steel.

The cold-forming process used in the fabrication of lightweight steel members leads generally to an increase of the effective yield strength. In open cross-sections, such as C-sections, cold-forming is concentrated in the corners of the cross-section and the yield strength of the plate parts is not greatly influenced by the forming process [12, 13, 14, 15, 16]. Moreover, the influence of residual stresses is smaller at high temperatures.

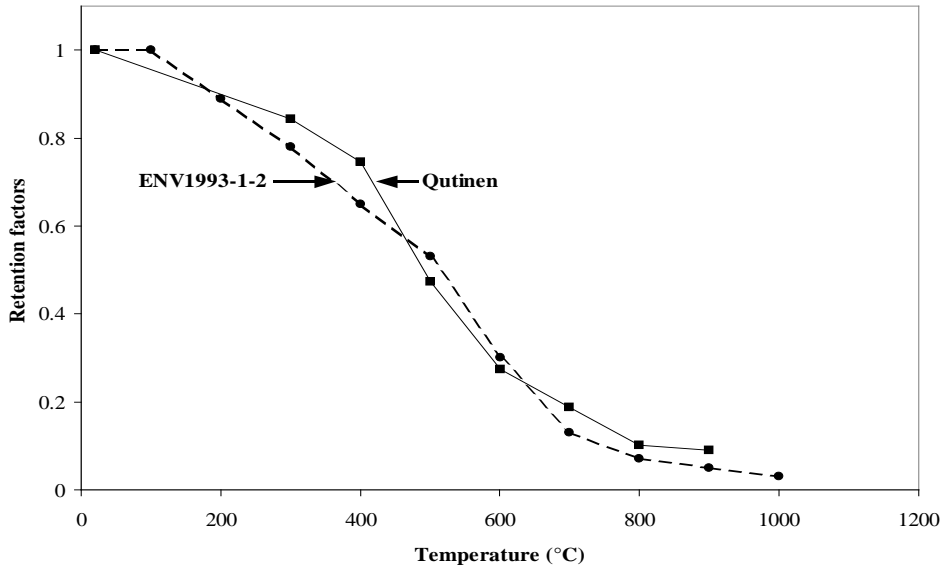


Figure 3. Comparison of strength retention factors for the 0.2% proof stress between ENV1993-1-2 and Outinen steady state test results of S350GD+Z steel

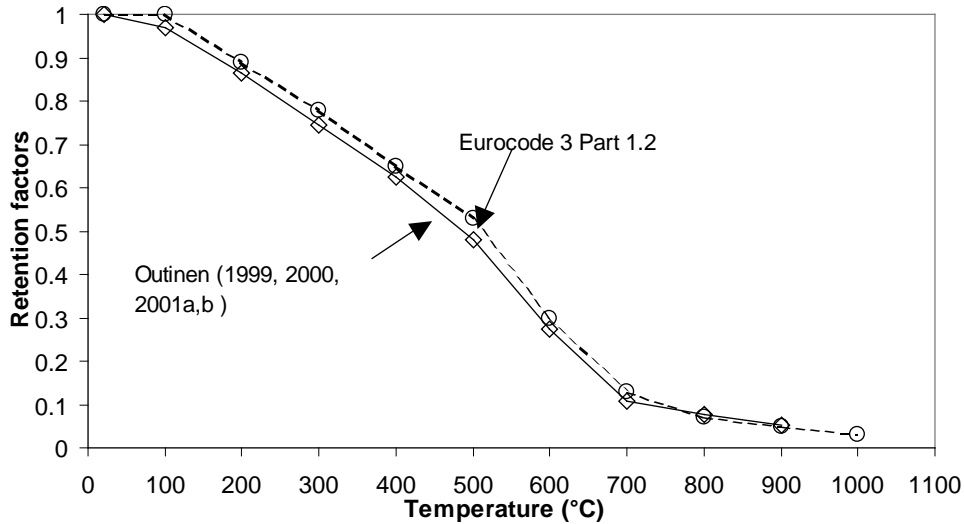


Figure 4. Comparison of strength retention factors for the 0.2% proof stress between ENV1993-1-2 and Outinen transient state test results of S350GD+Z steel

2.1.2 Thermal expansion

The free thermal expansion of steel is relatively independent of the type of steel [17]. The value can be taken either as:

$$\frac{\Delta l}{l} = 0.4 \times 10^{-8} T^2 + 1.2 \times 10^{-5} T - 3 \times 10^{-4} \tag{1}$$

or, with little loss of accuracy as

$$\frac{\Delta l}{l} = 1.4 \times 10^{-5} (T - 20) \tag{2}$$

Lie [18] published the coefficient of thermal expansion at different temperatures as:

$$\frac{\Delta l}{l} = (0.004T + 12) \times 10^{-6}, \text{ for } T < 1000^\circ\text{C} \tag{3}$$

ENV1993-1-2 gives a slightly different version as follow:

$$\frac{\Delta l}{l} = -2.416 \times 10^{-4} + 1.2 \times 10^{-5} T + 0.4 \times 10^{-8} T^2, \text{ for } 20^\circ\text{C} \leq T < 750^\circ\text{C} \tag{4}$$

$$\frac{\Delta l}{l} = 1.1 \times 10^{-2}, \text{ for } 750^{\circ}\text{C} \leq T \leq 860^{\circ}\text{C} \quad (5)$$

$$\frac{\Delta l}{l} = 2 \times 10^{-5} T - 6.2 \times 10^{-3}, \text{ for } 860^{\circ}\text{C} < T \leq 1200^{\circ}\text{C} \quad (6)$$

A linear thermal expansion coefficient of 14×10^{-6} per $^{\circ}\text{C}$ above 100°C is adopted in BS5950 Part [19].

2.1.3 Thermal properties

The temperature rise of steel members, which is a result of heat flow, is a function of the thermal conductivity and specific heat of steel. The thermal conductivity of steel may be taken as defined in ENV1993-1-2 or BS5950: Part 8 [20]. ENV1993-1-2 gives a linear relationship between the thermal conductivity of steel and temperatures from 20°C to 800°C as:

$$\lambda_a = 54 - 3.33 \times 10^{-2} T \text{ (W/mK)}, \text{ for } T = 20^{\circ}\text{C} - 800^{\circ}\text{C} \quad (7)$$

For temperatures higher than 800°C , a constant value of 27.3 W/mK can be used. In simple calculation methods, the thermal conduction of steel may be assumed to be independent of the steel temperature, giving:

$$\lambda_a = 45 \text{ W/mK} \quad (8)$$

BS5950 Part 8 [19], recommends a value of $37.5 \text{ W/m} \cdot ^{\circ}\text{C}$.

The specific heat of steel increases gradually with temperature. A constant value of $600 \text{ J/kg} \cdot ^{\circ}\text{C}$ is suggested for temperatures below 600°C (Lie, 1992 and Anderberg, 1983).

The following values for specific heat of steel are recommended in ENV1993-1-2:

$$C_a = 425 + 7.73 \times 10^{-1} \theta - 1.69 \times 10^{-3} \theta^2 + 2.22 \times 10^{-6} \theta^3; \text{ (} 20^{\circ}\text{C} \leq \theta < 600^{\circ}\text{C} \text{)} \quad (9)$$

$$C_a = 666 + \frac{13002}{738 - \theta}; \text{ (} 600^{\circ}\text{C} \leq \theta \leq 735^{\circ}\text{C} \text{)} \quad (10)$$

$$C_a = 545 + \frac{17820}{\theta - 731}; \text{ (} 735^{\circ}\text{C} \leq \theta \leq 900^{\circ}\text{C} \text{)} \quad (11)$$

$$C_a = 650; \text{ (} 900^{\circ}\text{C} \leq \theta \leq 1200^{\circ}\text{C} \text{)} \quad (12)$$

BS5950 Part 8 gives a value of $520 \text{ J/kg} \cdot ^{\circ}\text{C}$.

3. Cold-formed thin-walled steel members at uniform elevated temperature

The SCI [5] have published a design method for cold-formed thin-walled structural members by adopting the limiting temperature method in BS5950 Part 8 [19] for hot-rolled steel members. In general, the limiting temperatures of cold-formed member are lower. For beams, the limiting temperatures are based on the steel strength at 1.5% strain, as opposed to the 2% strength for hot-rolled steel. The column limiting temperatures are based on the steel strength at 0.5% strain, but the cold-formed steel strength at 0.5% strain is lower than that of hot-rolled steel. The strength reduction factors at different strain levels for cold-formed steel at elevated temperatures are given in Table 2. Figure 5 compares the limiting temperatures of different types of cold-formed thin-walled steel structures and the strength retention factors of cold-formed steel in Figure 5 at different temperatures.

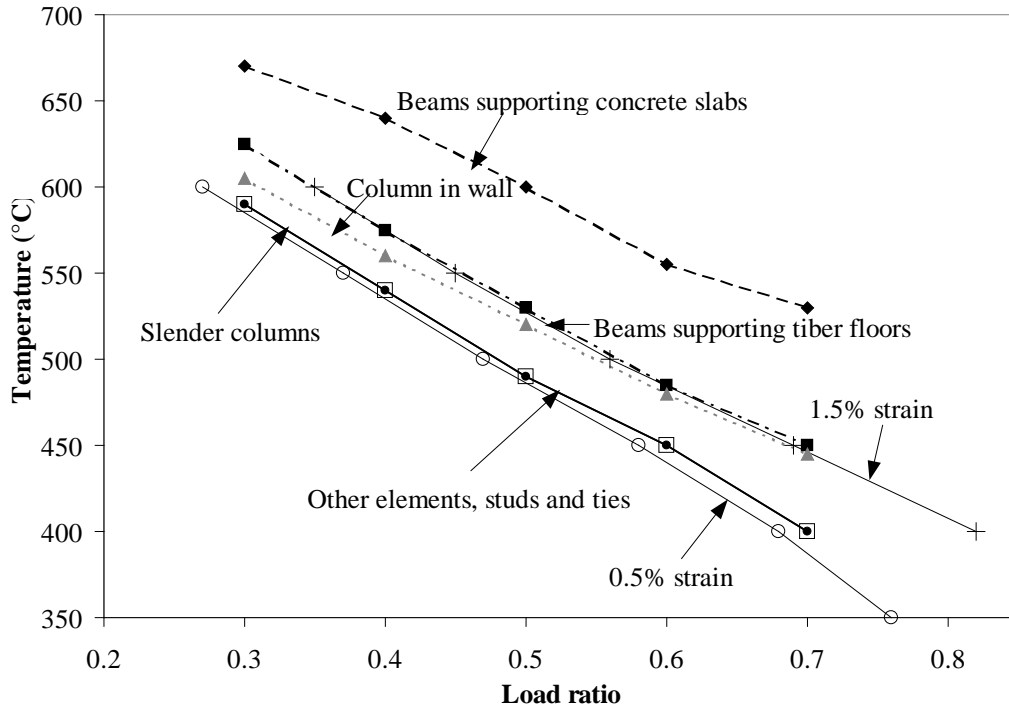


Figure 5. Limiting temperatures (°C) of different types of cold-formed thin-walled steel structures (Lawson 1993)

Table 2: Strength reduction factors for cold-formed steel at elevated temperatures (°C) (Lawson 1993)

Temperature (°C)	200	250	300	350	400	450	500	550	600
0.5% strain	0.95	0.89	0.83	0.76	0.68	0.58	0.47	0.37	0.27
1.5% strain	1.00	0.99	0.95	0.88	0.82	0.69	0.56	0.45	0.35

Ala-Outinen and Myllymaki [21] reported a series of transient-state fire tests on 900mm long RHS 200x200x5 and RHS 150x100x3 rectangular hollow sections under concentric and eccentric compression loading. During all of the tests, the axial load was kept constant and the furnace temperature was controlled to rise from 20°C to 300°C in 3 minutes and subsequently by 10°C/min. They found that the concentrically loaded columns failed in local buckling at the middle of the column, and the eccentrically loaded columns ($e = 28$ mm) failed in local buckling near the top of the column. They also proposed a design method, which is based on ENV1993-1-3. In their method, the reduced yield strength based on the 0.2% proof strain at ambient temperature and the reduced elasticity according to ENV1993-1-2 are used.

Randy [22] carried out a theoretical study and pointed out that the influence of elevated temperatures on local buckling should be taken into account and the calculation method for effective width according to ENV1993-1-3 (CEN 2001) was accurate enough for elevated temperatures, provided that the yield strength was taken as 0.2% proof stress at elevated temperatures.

O. Kaitila [23,24,25] carried out an imperfection sensitivity studies in lipped channel columns 100x40x15x1 with length $L=2500$ mm at high uniform temperatures. The columns are assumed to be attached to plasterboards and are designed to be integrated into a wall structure.

Therefore, the columns are assumed to have sufficient restraint against torsional and torsional-flexural buckling. In his modelling, the influence of thermal expansion has not been considered. He found that the magnitude of initial local imperfections has an effect on the compression stiffness of the structure, whereas the magnitude of global flexural imperfection has more influence on the ultimate strength of the structure. A combination of local and global imperfections should be used in ultimate strength simulations of columns under uniform high temperatures. The suitable value for global imperfection is about column length over 500 and for local imperfection is about the width of web over 200.

Lee, Mahendran and MTMkelTMinen [26] presented the results of 36 steady state fire tests and finite element modelling of the buckling behaviour of thin-walled compression members at elevated temperatures. Four types of lipped channels with 400mm length and pin end supports were studied. The results of the fire tests and finite element analyses were used to determine the plate buckling coefficient k_T at elevated temperatures. They found that finite element analysis could be successfully used to model the behaviour of thin-walled compression members at uniform high temperatures and the current design rules can be modified to take into account the local buckling effects of thin-walled compression members at elevated temperatures if the reduced yield strength and the reduced elastic modulus were used.

4. Cold-formed thin-walled steel in fire

4.1 Temperature distributions of thin-walled panel systems in fire

If Cold-formed thin-walled steel sections are used as part of a fire resistant construction, they should satisfy the three fire resistant requirements, namely integrity, insulation and stability. Fire resistant barriers play an important role in maintaining building integrity and reducing the spread of fire. The insulation condition requires that the unexposed surface of a construction element does not get ignited due to excessive temperature rise. Whether further ignition on the unexposed surface will occur or not will depend on the materials on the unexposed side and their configuration relative to the construction element. However, current fire resistant regulations specify that the average temperature rise on the unexposed surface should not exceed 140°C [7,11]. The load bearing condition requires the load bearing members to remain stable during the entire fire exposure to satisfy the stability requirement.

Gerlich [4] reported the results of 3 fire tests on loaded light steel frame walls and carried out a thermal analysis of these three walls using TASEF. He pointed out that the failure of frame walls was determined by the performance of gypsum plasterboard lining, the cold-formed steel properties at elevated temperature and thermal bowing induced deflection. Because the magnitude of thermal bowing will be determined by thermal properties of gypsum plasterboard lining, the thermal properties of gypsum board will affect the result of tests and numerical analysis on temperature distributions in frame walls. The values of specific heat and conductivity in Figure 6 have been used in his thermal analysis. Because TASEF (Sterner and Wickstorm 1990) does not model mass transfer (moisture movement), the predicted temperature results on the unexposed side were lower than the test results.

Cooper [27] developed GYPST, a Fortran Subroutine to simulate the thermal response of steel stud gypsum board assemblies exposed to fire. Two full-scale standard furnace tests were performed to verify predictions from the model. The thermal properties of gypsum board shown in

Figure 7 has been used in his modelling. Good comparisons were achieved between predicted and experimental results.

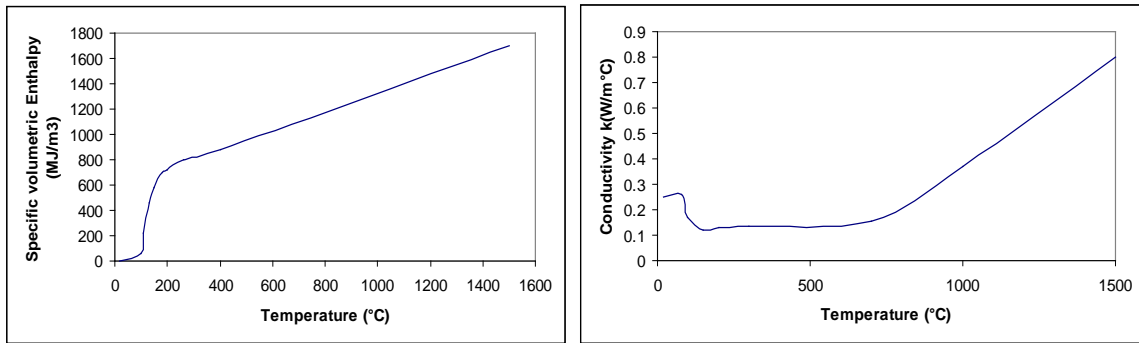


Figure 6. Thermal properties of gypsum board in Gerlich [4]

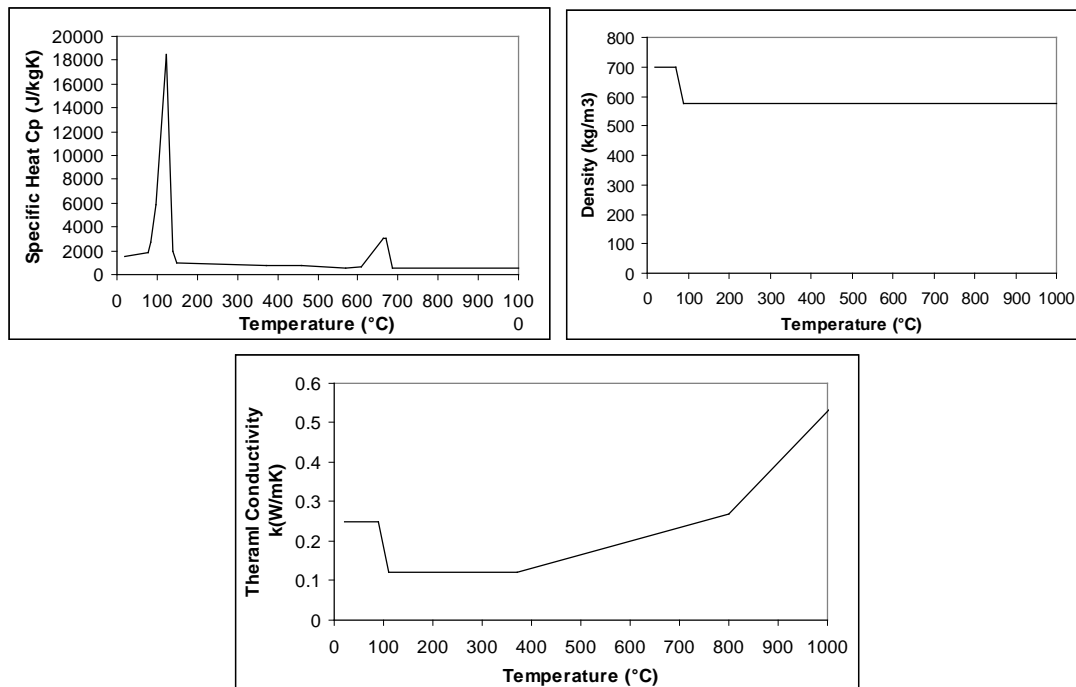


Figure 7. Thermal properties of gypsum board used by Cooper [27]

Sultan, Alfawakhiri and Bnichou [28] presented a one-dimensional heat transfer model for predicting the temperature distribution across loaded and unloaded steel stud wall assemblies with either glass or rock fibre insulation in the wall cavity. Assemblies considered in their study include one unloaded assembly with one layer of gypsum board on one side and two layers on the other side, and three loaded wall assemblies with two layers of gypsum board on each side. In their modelling, moisture migration through the gypsum board was not considered, however, the heat absorbed in the dehydration of the gypsum board was included in the model. Shrinkage of either insulation or the gypsum board due to fire exposure was not considered in the model. After comparing the standard fire tests and numerical predictions, they found that the model provided a reasonable temperature history across the assemblies but some important factors have not been considered in the model, such as forced heat convection, which plays a significant role in the initial 10min to 15 min of the fire test, insulation shrinkage, moisture of gypsum board, all leading to underestimation of predicted results.

Jones [29] reported a comprehensive study of the performance of gypsum plasterboard assemblies, including steel stud walls and timber stud walls. The emphasis of this study was that of the gypsum boards. He pointed out that ablation, cracking and shrinkage of gypsum boards are mechanical characteristics of gypsum plasterboard, which can have significant influences on heat transfer through walls lined with gypsum plasterboard. Unfortunately, numerically simulating ablation, cracking and shrinkage of gypsum boards is too difficult and until now there is no satisfactory resolution to these problems. He suggested that if heat transfer analysis only were used to analysis the performance of gypsum board, different thermal properties of the same gypsum board would be required to achieve the same accuracy between numerical analysis results and test results under the standard fire and natural fire conditions. This is because the different fire expose conditions will generate different temperature gradient and cause different moisture movements, which will seriously affect temperature distributions. Ideally, mass transfer should be considered in heat transfer analysis on steel stud walls and timber stud walls.

4.2 Structural behaviour of cold-formed thin-walled steel in fire

Gerlich [4] reported three full-scale light steel framed wall fire tests in which two 3600mm high wall panels with lipped channel section of 102x51x1.0mm and one 2850mm with unlipped channel 76x32x1.15mm were loaded and then exposed on one side to the standard fire exposure. Substantial temperature gradients in the steel studs were recorded. Local buckling of the steel studs and lateral deflection induced by thermal bowing were observed. In two tests, failure was flexural buckling about the major axis initiated by local buckling of the compression flange between fasteners adjacent to the unexposed lining. The other test's failure mode was by torsional flexural buckling after the unexposed lining failed to provide lateral restraint to the compression flange. This suggests that the non load-bearing gypsum board provided important restraints to the steel studs. He also presented a design model to determine the critical failure temperature of cold-formed thin-walled steel stud. The model is based on the AISI design manual and adopts the reductions in the yield strength and modulus of elasticity of steel given by Klippstein [1]. The proposed design checks are:

$$\sigma = \frac{N_c}{A} - \frac{N_c[e(\Delta T) + e(M)]}{W} \leq f_{y,T} \quad \text{for the hot flange} \quad (13)$$

$$\sigma = \frac{N_c}{A} + \frac{N_c[e(\Delta T) + e(M)]}{W} \leq f_{y,T} \quad \text{for the cool flange} \quad (14)$$

where N_c is the applied axial compression force, A is the gross cross-sectional area of the steel stud, $e(\Delta T)$ is the mid-length deflection due to thermal effects, $e(M)$ is the mid-length deflection due to bending moment and W is the elastic section modulus about the stronger axis of the cross-section; and $f_{y,T}$ is the yield stress on steel at the cold side temperature. This approach does not consider local buckling effects on CF-TW steel studs.

Alfawakhiri and Sultan [30,31] reported the results of six standard fire resistance tests on axially loaded lightweight steel framed (LSF) walls exposed to fire on one side. Each assembly consisted of a single row of galvanized cold-formed steel studs and protected with two layers of fire-resistant gypsum board on each side. Four of these specimens incorporated three types of insulation (glass fibre batts, rock fibre batts and dry blown cellulose) and the other two without any interior insulation. During the early stage of the fire tests, the LSF specimens bowed toward the fire test furnace due to thermal bowing. At the later stage, the LSF specimens without interior insulation continued to bow towards the furnace and failed by compressive crushing on the cold face in the middle of the test specimens, while those with interior insulation reversed direction to bow away from the fire test furnace and failed by compression crushing on the hot face at the locations of the service hole near one end of the assemblies. Because of high temperature gradients in interiorly insulated panels, the results of these fire tests suggest that interior insulation can cause a reduction in the fire resistance of load-bearing LSF walls. Alfawakhiri and Sultan [30,31] have also presented a comprehensive structural model for thin-walled steel wall studs subject to severe heating. In that model, they assumed that flexural-torsional and weak axis buckling failure were prevented by adequate lateral restraints and there was no temperature variation in the vertical direction along the stud but there were temperature gradients across the stud section from

one side to the other. Therefore, under vertical load and non-uniform temperatures, thermal bowing and deflection will be induced, as shown in Figure 8. The total lateral deflection can be calculated as:

$$y(z) = v + v_0 = (\varphi\beta^{-2} - e_y)[\tan(0.5\beta H)\sin(\beta z) + \cos(\beta z) - 1] \tag{15}$$

where, $\beta = \sqrt{N_c / (EI^*)}$; $\varphi = \alpha\Delta T / b_w$ is the thermal bowing curvature; ΔT is temperature difference across the stud section; H is the stud height; I^* is elasticity-modulus-weighted moment of inertia of the unreduced stud section about the neutral axis parallel to flanges; E is the modulus of elasticity of steel at room temperature; e_y is an eccentricity that is dependent on the non-uniform stiffness distribution at ends, loading condition and bounding condition of the stud and is given as:

$$e_y = (1 - K_R)\varphi\beta^{-2} \tag{16}$$

where K_R is a reduction coefficient which has a value of 0.6.

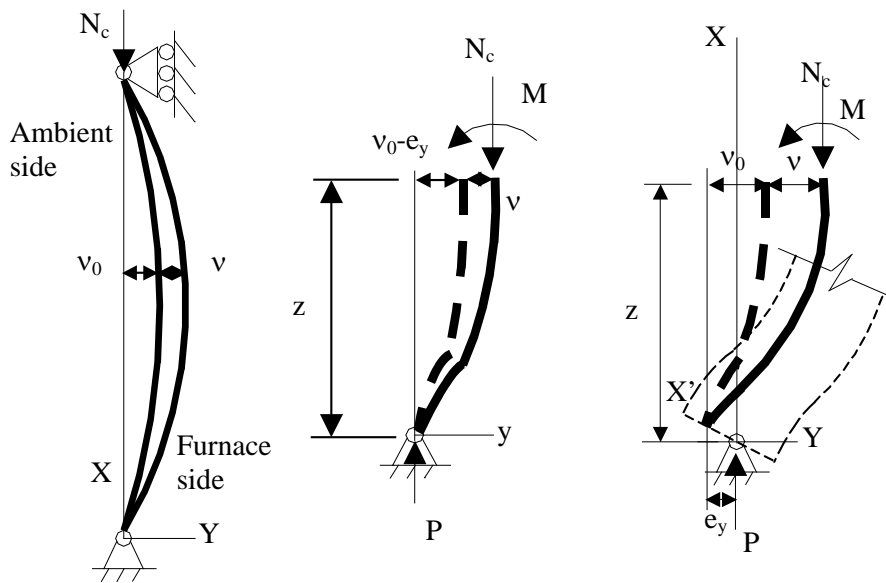


Figure 8. Buckling of a column due to non-uniform temperature effect [30]

After the lateral deflections have been determined, the following two equations can be used to predict the column ultimate failure load.

$$\frac{E_T}{E} \left(\frac{N_c}{A_e^*} + \frac{N_c[e - y(z)]}{S_{eH}^*} \right) \leq f_{yH} \tag{17}$$

, at supports

$$\frac{E_T}{E} \left(\frac{N_c}{A_e^*} + \frac{N_c y(z)}{S_{eC}^*} \right) \leq f_{yC} \tag{18}$$

, at mid height

where, E_T is the elastic modulus of steel at temperature T_H , f_{yH} is the yield stress of steel at temperature T_H ; A_e^* is the temperature dependent elasticity-modulus-weighted effective stud section area in compression; and S_{eH}^* and S_{eC}^* are the temperature dependent elasticity-modulus-weighted effective stud section elastic modulus in bending for compression in the hot flange at supports and cold flange at mid-height, respectively. This approach does not consider column global buckling.

5. Conclusions

This chapter has briefly summarized the existing relevant studies in cold-formed thin-walled steel structure areas, including the studies of the behaviour of cold-formed thin-walled steel structures at ambient and high temperatures. It can be found that although the behaviour of cold-formed thin-walled steel structures at ambient temperature, including local buckling, distortional buckling, global buckling and shear buckling have been well understood and suitable design methods existed, there are only sporadic research studies of cold-formed thin-walled steel

structures at high temperatures. Because of the lack of a systematic research study on cold-formed thin-walled steel structures in fire a suitable design procedure can not be drawn, which impedes the adoption of cold-formed thin-walled steel structures in the construction market.

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ЭКОНОМИЧЕСКИЕ НАУКИ

Belgrade (Serbia) as an Alternative Site or City of Fashion Tourism

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Abstract. Fashion in Western civilization is one of the most influential phenomena. In many parts of the world fashion tourists are growing in number. It is worldwide known that the “Big Five” “Fashion Capitals” are Paris, London, Milan, New York and Tokyo, but throughout the 20th Century, and in particular from the 1980s onwards, smaller cities, or “Style Centers” such as Vienna, Amsterdam, Delhi or Shanghai, have sought to develop their own influence through fashion culture. Could Belgrade be that city?

The focus of the paper was to investigate the link between fashion and tourism in Belgrade (Serbia) and its tourism potentials. This paper has revealed a number of challenges in the fashion industry that may be a stumbling block to the development of fashion as a tourist attraction. The conclusion emphasized the fact that Belgrade is not a destination for fashion tourism and will not be in the near future, but there is room for the fashion industry to make a vital contribution to tourism. The research however will also attempt to provide preliminary recommendations for the development of fashion tourist attraction.

Keywords: Fashion; tourism; fashion tourism; Belgrade; Serbia.

1. Introduction

In the 21st century, fashion is a significant part of the creative industries and an important contributor to the economical development of cities (Jedras, 2011). Fashion is a phenomenon that cuts across every area of life from generation to generation. Bada (2013) stated that: „tourism is a sector that inputs several industries and fashion is one of them as fashion week are popular among designers and trendy fashion lovers and even the media who travel from far and wide to attend”. Because of the importance of fashion, city planners attempt to implement branding strategies in order to enhance a city “fashionable” reputation and contribute to the city’s economical development (Jedras, 2011; Gibert, 2000).

Acclaimed fashion capitals of the world like New York, Paris, Milan and London have thrived in the fashion industry. Yet, throughout the 20th century, and in particular from the 1980s onwards, smaller cities, or "Style Centres" such as Moscow, Vienna, Berlin, Sao Paolo, Kuwait City, Cape Town, Barcelona, Antwerp, Delhi, Melbourne, Sydney, Shanghai, Hong Kong, Mumbai and others have sought to develop their own influence through fashion culture (Beward, 2010; Bada, 2013; Berry, 2011; Skov and Riegels, 2011). This suggests that the fashion city itself is subject to the fashion cycle, which has real cultural and economic consequences. Belgrade as a modern city with important fashion event(s), fashion district, creative and vibrant fashion scene can find its chance in these changes on global fashion scene.

The aim of this research is to identify the importance of fashion in tourism of Belgrade and how the Serbian government can benefit from its numerous potentials. Belgrade has been a city of various culture and talents, which have produced big names in the fashion industry. They left marks on the world map. The success of these people opened the doors of opportunity and the ideas of improving tourist socio economic activities through fashion. The research however will also attempt to provide preliminary recommendations for the development of fashion tourist attraction.

2. Materials and methods

In this study, authors used, mostly, foreign expert literature about fashion, fashion industry and its impact on tourism in a form of fashion tourism. Due to the problem of limited updated books, the research was done using also web pages, articles and blogs of fashion analysts or fashion designers themselves. Domestic literature was very modest, but it helped in a way of better understanding history and development of Belgrade fashion. Based on this data and data that were collected in the field through observation (visiting fashion district, attendance on fashion shows) and interviews with fashion designers, organizers of fashion events and employees in government institution, authors were able to present the current state of fashion industry and its connection and usage in tourism industry.

The field base analysis shows that using potentials of fashion industry and individuals is very sporadic, without strategic approach for development and adequate support. The research was supposed to determine how fashion industry is currently being used by the tourism industry and to anticipate the largest potential to be taken into account while planning future tourism development of Belgrade. One of the aims is also to show how and for what purposes fashion industry can be used in the tourism by fully exploiting potentials and values of all participants.

3. Fashion tourism

Fashion is increasingly understood as a global phenomenon based on the changes in the organization of garment production across the globe as well as the huge economic significance of garment production in world trade (Hansen, 2004). Cosmopolitan cities like Paris, Milan, New York, Tokyo and London have a long history of a thriving fashion industry which has contributed significantly to urban development. In Italy the fashion industry is second only to the mechanical engineering sector in terms of financial turnover. Paris, in particular, is globally renowned for its fashion prowess and has been dubbed the "Fashion Capital of the World" (Gatawa, 2006). Additionally, fashion has contributed to urban tourism development by attracting "fashionistas" to particular cities. In Los Angeles, for example, the central garment manufacturing area was transformed from a collection of old factory buildings into a "fashion district" that is now a centre of upscale production and showroom activities (Scott, 2004).

For some time now there has been an evolution of the "new tourist" who requires and is willing to pay for more than the regular package of sun, sea and sand, the typical tourism packages. Destinations worldwide are beginning to diversify in repackaging their tourism product by introducing niche market and alternative forms of tourism such as fashion tourism.

There is no „official" definition of fashion tourism. According to Cabrera (2012) who writes a fashion blog, fashion tourism is defined as: the phenomenon of people travelling to and staying in places outside their usual environment to enjoy experiment and possibly consume fashion. The phenomenon of fashion tourism is often called „Fashion travel" or "Shopping tourism". Organizing and visiting fashion events (Fashion week), attending seminars, roundtables, workshops bringing together most important fashion experts, travelling abroad to shop, visiting fashion museums, even staying in hotels labelled as "fashionable" can be called fashion tourism.

Fashion has been closely linked to the development of shopping tourism in the developed world. Shopping can be viewed as a part of the travel experience or the primary focus of destination travel, which can be the major motivation for a leisure trip. Leisure tourists or tourists who travel for the main purpose of shopping look for exciting opportunities to shop while travelling. According to the tourism statistical data of the U.S. office of travel and tourism industries on tourism performance matters, shopping ranking is at the top participation activity for Asian (90%) and Western Europeans (86%) (Tom, 2012). In the city of Florence on a typical shopping tour visitors were taken to famous fashion stores like Gucci, Prada and others specializing in gold, cashmere, leisure and silk. They also got the opportunity to visit the homes of famous designers and dine with them (Timothy, 2005).

There are a number of shopping festivals that cater to the different needs of the tourist shoppers from different part of the world. Shopping festivals are created by countries to increase the economic growth by providing good quality products and services usually from their respective culture. Tourists from various parts of the world come for shopping festivals in Hong Kong, Dubai and some other places, shopping festivals have therefore become big attractions of tourist destinations. One clear example of the growth of shopping tourism is Dubai, which holds a 'Dubai Summer Surprises' shopping festival for ten weeks each year. This festival has grown from attracting 1.6 million visitors who spent AED 2.15 billion in shopping during the festival 1996 to over 3.35 million tourist arrivals with tourist spending at AED 9.8 billion in 2009 (Saleem 2010).

Even in some cases, shopping malls (retail tourism enhanced by entertainment facilities) attract much more visitors than traditional tourist attractions (Southall, 2009) indicating importance of shopping tourism for economy (Table 1)

Table 1: Approximate visitor numbers in 2008 to retail attractions and traditional attractions

ATTRACTION (retail)	VISITOR NUMBERS	ATTRACTION	VISITOR NUMBERS
Trafford Centre	30 million	Chester Zoo	1.25 million
Meadowhall	30 million	British Museum	5.9 million
Bluewater	27 million	Kew Gardens	1.3 million
		Cadbury World	0.5 million

Source: Southall, 2009

Travelling for fashion purposes is done in different style (for example, visiting Fashion week, enjoying fashion tour in Milan or New York). Fashion week is an event in the fashion industry that lasts for about one week. This event showcases fashion designers or brand names in fashion to come out and display their latest collection on runway shows. Buyers and various media houses attend this event to take a first look at the latest trends in fashion and most importantly this event gives an opportunity for the industry to know what is trendy in the fashion world for the season. The most important fashion weeks take place in the four most popular fashion capitals of the world, New York, London, Milan and Paris (Bada, 2013). Most recently Los Angeles, Madrid, Toronto, Istanbul, Dubai, Berlin, Copenhagen, Australia, and Dallas are some of the other places in the world where important fashion shows are being held.

Connection between fashion and tourism is sometimes presented in a very unusual way, like the fashion show of famous designer Karl Lagerfeld on Chinese wall in 2007* or 200 models of French designer Pierre Cardin in Chinese desert presented in 2008†. Not only these events promote fashion designers and their work, but also contribute to tourism promotion of destinations and countries in which they are held. Today, fashion designers or fashion houses seem to be dissatisfied with "mere" designing clothes, jewellery, furniture etc., they have seen their opportunity in joining tourism industry (Louis Vuitton published its own collection of travel guide for more than 25 cities; Bvlgari owns hotels and resorts in Milan, Bali, London and is planning to open new one in Shanghai in 2015; famous Italian designer Roberto Cavalli hosts fashion lovers in

* http://www.wmagazine.com/fashion/2007/12/fendi_china/

† <http://www.china.org.cn/english/entertainment/229219.htm>

pecially designed restaurants and clubs in Milan, Dubai, Delhi, Beirut, Kuwait, Florence and St. Tropez while French designer Pierre Cardin owns few buildings for different events such as parties, conferences, fashion shows etc. and fashion museum "Past, Present, Future" devoted to his 40 years in fashion design business).

Fashion has become an increasing global phenomenon and new linkages between fashion and other economic sectors such as tourism are constantly emerging.

4. The "birth" of Belgrade fashion

Belgrade is the capital of the Republic of Serbia. It is located in South-eastern Europe, the Balkan Peninsula on 116.57 m altitude. Its urban part covers the area of 36 km², and its total area is 322 km². The population of the area is about 2 million in 16 urban and suburban municipalities (Ćorović, 2007). Fashion has always been an important segment in not only history of Belgrade, but also in its present and future.

The book "Clothing in Belgrade in 19th and 20th centuries"* highlights the period between the two world wars, when Belgrade became the capital of the Kingdom of Serbs, Croats and Slovenes and resembled a metropolitan city in every segment. During the mid 19th century, Belgrade started accepting Parisian fashion that was arriving from the neighbouring Austria-Hungary, which at that time held the monopoly over the fashion market in Belgrade. Craftsmen from Vojvodina, Vienna and Pest were arriving to Belgrade due to huge interest of Belgrade elite in fashion products from European magazines. It was the birth of Belgrade fashion.

At the same time when the Karađorđević dynasty started its rule in 1903, the fashion paper "Nedeljne ilustracije" was started and dressmaker studios in Belgrade progressed with time in their originality and fashion trends which contributed that Belgrade becomes the real fashion centre between the two wars (Prošić – Dvornić, 2006).

After the World War I, the owners of Belgrade dressmaker studios were well-informed from fashion magazines; they also attended the new fashion collection shows and were able to offer excellent copies or interpretations of new models to their customers. One of the most talented fashion designers was Lenka Lam Majer. The world of Belgrade fashion between the two wars was an authentic one in its own way. The most prominent figure was dressmaker Voja Jeremić, who founded the Academy of dressmaking supported by the Ministry of trade (Popović, 2000).

Definitely, the survival of fashion in Belgrade was contributed by long-cherished cosmopolitan spirit of the Belgrade people, who have always had excellent taste in clothing and wanted to look nice. Belgrade is said to be an elegant city, with tradition and sophisticated lifestyle.

5. Characteristics of Belgrade fashion and its use in tourism

Serbia is the country with unfailing creative source of partly used potential. In 1996, when the first Fashion week was launched on the initiative of Nenad Radujević, there were only a few who predicted blissful future for it. Instead of showing recognition and support for the great economic potential of domestic fashion industry (such as Spain did), the state left the domestic fashion to the initiative of individuals with the vision and strong nerves.

In Belgrade, education of future professionals in fashion industry is possible at the Faculty of applied arts and French higher education school for fashion and fashion management "Mod'Art". Many students continue their education abroad in certain prestigious fashion centres. What emerges as one of the problems is the lack of fashion criticism and fashion journalist schools which further leads to the fact that fashion in Serbia is deprived of social, prestigious status.

5.1. The state's role in fashion and fashion tourism promotion

Participation of the state in fashion sector development is perceived in activities of The Serbia Investment and Export Promotion Agency (SIEPA) as the separate organisation of the government of the Republic of Serbia. SIEPA offers the support and help to small and medium businesses from all sectors. Its textile sector started cooperation with fashion designers in 2008 at the fair of designers and agents in New York. The help was offered in sending nine models to New York and communication with the fair representatives, but unfortunately the validation of models failed and the designers were not given the licence to exhibit at the fair. However, SIEPA intensified cooperation with designers and fashion sector and with Nenad Radujević from fashion studio

* Prošić-Dvornić, M., (2006). Clothing in Belgrade in the 19th century and at the beginning of 20th. Stubovi kulture, Belgrade.

“Click”. The first event was the participation of Serbian designers at the fair “Rendez-Vous Femme” in Paris at national stand of Serbia - Showroom Serbia with seven designers participating twice.

SIEPA was the sponsor of Belgrade Fashion Week in April and October 2008. Journalists from Spain, Germany, Greece, etc. were invited to promote the event among foreign clients. Moreover, the workshop with a consultant from Paris was organised for 25 designers from all over Serbia to train them about activities in world fashion business (price formation, collection selection, new trends in fashion business, etc.). The economic crisis influenced the work of the agency and the smaller budget contributed to cancellation of the participation at the fair in Paris the following year. However, successful participation at previous fairs and contacts helped Serbian designers to export their collections, to be represented in fashion media, internet portals for customers (buyers) and other professional clients. In addition, the consultant was employed to help in creating the recognizable national brand and connect them with clients (data obtained by Jelena Radoičić, SIEPA).

5.2. Fashion tourism in Belgrade

Fashion tourism in Belgrade develops through several key fashion events, projects and presentation of the parts of the town as potential tourist destinations for fashion tourists:

1. Fashion events. Several fashion events visited by domestic and foreign visitors in Belgrade:

- Belgrade Fashion Week is a commercial, promotional and artistic festival of fashion, having the concept of similar events in the world, but unique in Serbia. It has been held since 1996 twice a year in mid April and end of October by the fashion studio “Click”. Domestic companies and designers, young designers, students and also international brands and creators participate at this event. Adequate presentation of domestic fashion regains the confidence of professionals and public in creativity and quality production from Serbia. Special importance and attractiveness is assigned to visits of foreign designers. They arrive to Belgrade owing to professional consultants from world fashion centres (Milan, Paris, London, Lisbon, Toronto, Mexico, etc.) the fashion shows are organised at several venues in Belgrade; some of them are tourist attractions as well. Additional programmes parallel to the main event are exhibitions of fashion accessories, other artistic exhibitions to attract more artists and venues (exhibitions of photography’s, drawings, jewellery, unique clothing items, student works, design, etc.).

This event is the gathering place for debates, lectures and round tables on fashion phenomenon and domestic fashion market development with participation of competent professionals. It is estimated that the Fashion Week is visited by 15,000 people every year. The visitors are mainly from Belgrade, but some also come from abroad (designers, journalists and other experts in fashion industry). There are no data on the exact number of the visitors by days (data obtained by Nataša Višnjić, fashion studio “Click”).

- Fashion Selection – Another fashion week show organized by fashion agency “Select”. The concept of this event is similar to Belgrade Fashion Week, but the prizes are awarded in 11 categories and the event is famous for the Fashion travel for only the invited guests to visit a different destination every year (Kavala, Greece; Pecs, Hungary; Thermal spa Olympia, Slovenia; etc.), where the newest Serbian fashion collection of a Serbian brand is presented each year.

- Fashion festival “Catapult” is designed by “Pero Art” centre as a cultural, artistic event aimed at promotion of artists from fashion design and applied arts (unique jewellery, fashion accessories, unique clothing and shoes). The festival is held in shopping centre “Delta city”.

- Fashion fair in Belgrade comprises two international events: Fair of textile, clothes and equipment and Fair of leather, shoes and equipment. It is held at Belgrade fair in cooperation with the Union of textile, clothes, leather and shoes producers sponsored by Ministry of economy. The fair gathers about 200 exhibitors, about 40 foreign from 12 countries. Additional programmes are fashion shows, lectures and workshops. The Fashion fair is not in the calendar schedule of the Belgrade fair for the year 2013.

2. Belgrade shopping guide. Tourist organisation of Belgrade and fashion studio “Click” created and presented the first Belgrade shopping guide in 2012 which is the fashion market of the capital with three brand segments: Serbian, Belgrade and international. Belgrade brands are highlighted as well as “Belgrade Design District” –where young designers exhibit. In addition, there

is a joint venture of Tourist organisation and Tehnicom Computers, i.e. a mobile application *City guide Android* which introduces tourist to sights and shopping spots*.

3. Belgrade (Čumić) Design District was founded in 2010 in the place of a former first market and crafts centre and it is now a fashion corner. As a well known concept in bigger European cities, design district is a mixture of design, fashion, art and space for promoting innovative Serbian fashion designers. Design district has its website: www.belgradedesigndistrict.blogspot.com.

4. Shopping tourism. Belgrade is the city where a buyer can find brand shops sold all over the world. Majority of large trading companies have already arrived or announced the arrival for the near future. There are several large shopping centres in the city (Table 2) with shops of the most famous brands, and two streets – Knez Mihajlova and Boulevar of the King Alexander are the most famous shopping zones. Within the “Strategy of trade development in the city of Belgrade”†, the recommendation for modernisation policy and revitalisation of shopping centres and other modern retails is given with the special emphasis on the contribution of these objects to the development of the city and its image of a modern city at international level.

Table 2 The biggest shopping centres in BelgradeName	Year of opening	Total area (m ²)	Total number of shops, boutiques and restaurants
Delta city‡	2007	85,000	130
Stadium shopping centre §	2013	75,000	80
Merkator centre**	2002	52,000	78
UŠĆE shopping centre††	2009	50,000	137
ZIRA shopping centre‡‡	2007	40,738	over 30

6. Discussion

Talent and creativity of designers in Serbia or Belgrade do not lag behind the world to a large extent. Sometimes the problems Serbian designers face may become their advantage in terms of creativity, due to the fact that they are forced to count on their own creativity more than to technological support. The problems are visible in business activities, sale and managerial approach. There are numerous options for quality production of clothes and accessories, which is essential for future designers and investors. Still there are people who make needlework, crochet, embroider, and knit. That is invaluable since the old crafts are slowly vanishing.

Fashion has to be observed in a much broader sense than the two weeks of fashion show a year may offer. Other important aspects should be taken into account, such as production that would be done in Belgrade or its surroundings. Huge opportunity is perceived in organisation of small factories and ateliers that would offer foreign designers the possibility to produce their fashion lines in Serbia. What makes Serbian brands different from foreign at the domestic market is primarily the assortment. Foreign brands are present with larger selection of models, which renders higher possibility of combinations and more interesting shopping experience for the fastidious customers.

The question arises about the difference between the Fashion Week in Belgrade and in some of the fashion capitals. In terms of organizational issues, it is similar to any other fashion week in the world, which is witnessed by foreign fashion journalists who had the opportunity to compare Serbian fashion scene to others and they described it as vivid and exotic. Also, Belgrade Fashion Week is among the best 40 in the world and received an invitation to participate at the first World Fashion Week in New York in 2012§§. On the other hand, it is impossible to compare this event

* <http://www.beoclick.com/clanak/Beogradski-vodic-za-kupovinu>

† More in Faculty of Economics (2008) “Strategy for trade development in Belgrade”, page 386.

‡ <http://www.deltaholding.rs/code/navigate.php?Id=103>

§ <http://stadionsc.rs/o-nama/>

** <http://www.mercator.rs/sr/prodajna-mesta/detail.html?pm=112712>

†† <http://www.usceshoppingcenter.com/en/page/1/o-nama>

‡‡ <http://www.verano.rs/sr/?page=ziracentar> (Center include: Zira shopping center, Zira business place and Zira hotel)

§§ http://www.worldfashionweek.tv/WFW/participating_countries.html

with the fashion weeks in Milan, Paris, London and New York, because these are the places which dictate the trends and where the most prominent people in the world of fashion work. The tribute to Belgrade (Serbian) fashion scene seems to be the programme World Fashion of French satellite channel FTV (Fashion TV) where Belgrade Fashion Week is together with Madrid, Barcelona, Moscow, Sao Paolo, Sydney, etc. *

The most famous world designers participate in fashion weeks since it is the place where they are treated as celebrities by both the media and audience. Fashion week is intended also for the audience and the buyers. Fashion in Serbia is more popular in media than it is real situation. The main problem is the living standard, since fashion depends on purchasing power and it is a huge business in the west. When the purchasing power improves in Serbia, it might be compared with other countries.

It is necessary that Belgrade Fashion Week ceases its role of the local event but starts presenting itself all over the world and bring foreign customers and journalists to make estimations of the future of Serbian fashion. The support of the authorities, Ministry of culture and economy is inevitable at this point. Numerous countries support their designers by providing ateliers and financial aid for them, ore export-import subsidies. In Serbia there is still the old system running that should be changed in order to let fashion cross the boundaries of the local community. Belgrade Fashion Week should also attract the larger number of high quality participants to improve its renown In that sense, business actions referring to favouring domestic designers' collections, connecting participants to improve quality, possibilities of fashion debate at roundtables, creation of funds for young designers, cooperation between journalists and designers should be performed. Participants should also attempt to present collections for the following season as it is done in world fashion centres (spring-summer collection is to be presented in autumn) in order to enable clients to order in time. Thus, producers may produce the exact ordered number of items, avoiding experiments and excessive storage of goods.

Project "Zone 45" has shown that there is the need of joint presentation and acting at the market, since individual markets (Serbian, Croatian, and Slovenian) seem to lack enough strength for success. The project is aimed at gathering and presentation of the most famous regional fashion designers within local fashion week shows and in such way supporting the development of regional fashion scene[†].

Support of the state is needed primarily in promotion of Serbian designers first in Serbia since a few people know about designers and their retails. Then, well planned support promotion of domestic fashion at the foreign market. Moreover, the cooperation between organizers of the event and Tourist organization of Belgrade should be improved (TOB). Currently the cooperation is limited to giving the promotional material about Belgrade by TOB to the organizers of the event who distribute it to the visitors and organize the sightseeing tours on their own. Also the tourist guides might introduce foreigners to Serbian fashion and include the visit to Dorćol as a potential fashion quarter into sightseeing tours. Not only should the positive image of Belgrade be achieved, but also special attention should be devoted to designing commercial catalogues, internet presentations, finding customers, and training the staff. It is only the well formed and complete joint offer that will represent domestic textile industry at both local and foreign markets in a quality, secure and more successful way.

Belgrade is still unattractive shopping destination for foreign tourists. It has been shown in the results of the research conducted by the Global Blue company[‡] that makes transactions between globe shoppers, merchants and banks and has introduced "The Globe Shopper Index" that enables both the comparison of 33 European and 25 Asia Pacific cities, according to their shopping advantages and disadvantages, as well as a dynamic. According to this research, Belgrade occupies the following positions within several categories (marked as priorities):

1. In the category "Convenience"[§], Belgrade is at the 25th position with index 45.3;

* <http://www.fashiontv.com/videos/fashion-weeks>

† <http://www.belgradefashionweek.com/srpski/aktuelnosti.php>

‡ Global Blue (2011). The Globe Shopper Index – Europe. Global Blue, Switzerland.

§ 1. Use of foreign languages (convenience of using a UN language in the principal shopping areas);
2. Shopping hours (number of hours major shops open on Sundays (or equivalent), and the average

2. In the category "Hotels and transport"* , Belgrade is at the 32nd position with index 34.9;
3. In the category "Culture and climate"[†], Belgrade is at the last 33rd place with index 30.2;
4. In the category "Affordability"[‡], Belgrade is at the 5th position with index 75.9;
5. In the category "Shops"[§], Belgrade is at the 31st position with index 32.0.

In support of the fact that Belgrade is not the destination for shopping tourism stands the research of Jones Lang LaSalle Agency according to which Belgrade occupies the 44th place out of 57 towns in 2012^{**}. The results of Strategy of trade development in Belgrade show that the primary motive for arrival to Belgrade for shopping purposes is valid for domestic tourists only and their reasons for shopping are the following: attractive ambience and wide range of products of highest interest, as well as the need to buy a present or a product ordered by partners, relatives or friends^{††}. Although the Strategy defines shopping as one of key elements for a city break, shopping tourism in Belgrade will remain underdeveloped for a long period, excluding domestic, daily consumers. Development of purchasing habits as the part of attractiveness during the tourist visit to Belgrade may generate tourism and trade, only in case the two sectors recognise the importance of cooperation and collaboration.

7. Conclusion

Fashion has become an integral part of tourism, and is a tourism activity in its own right. Unless fashion is incorporated within a destination's tourism offer, through marketing and stakeholder collaboration, it is unlikely that the growth potential will be achieved.

Belgrade is represented in the fashion industry through a lot of elements (for example Belgrade Fashion Week, Belgrade Design district, shopping tourism etc.) that may be involved in the tourist offer of the city. Fashion, as a universal, accessible language, is certainly one of the most attractive ways to present another, more beautiful side. It might be a good opportunity to promote Serbian fashion and tourism abroad and improve the image of Serbia abroad.

Although Belgrade is on the list of European fashion tourism destinations among the last, the fact is that it will take more time and effort to improve this position, but this "mission" should be completed. The mission success will depend on the development of a separate framework for fashion tourism in Belgrade, better marketing, cooperation, support and efforts in promotion by all stakeholders. The offer should be quantitatively and qualitatively improved with appropriate value

number of hours high street shops are open Monday–Saturday); 3. Price negotiation (likelihood of negotiating a discount at a department store, a boutique store and a market stall) 4. Safety (qualitative assessment of the prevalence of violence and petty crime, as well as the threat of military conflict, political unrest and terrorist attacks)

* Luxury hotels, a choice of flights and efficient transport are, for most, welcome aspects of any international shopping trip.

[†] Major cities offer a wealth of cultural experiences and sightseeing opportunities, although climate can vary, so it is best to be well prepared for the shopping season according to destination (Attractions & UNESCO sites, International cuisine, Popular events, Strictness of visa regulations, Agreeability of climate)

[‡] For any shopper, whether they are looking for the latest fashions, a high-end camera or a handcrafted souvenir, getting the most for one's budget will always be a high priority (Exchange-rate stability, Dining, Hotels, Shopper favourites, City transport).

[§] The number and variety of shops and brands to be found at any destination are essential criteria for the serious shopper.

^{**} This report examines the expansion and presence of international retailers in the key, leading European retail cities adding two new retail markets in Eastern Europe (Belgrade and Bratislava). More in: Jones Lang LaSalle (2013). Destination Europe 2013 - The 250 most renowned retailer brands and their presence across the key European cities. Jones Lang LaSalle, Chicago.

^{††} Other reasons for tourists to spend their money on shopping: 1. Better prices in terms of quality compared to the place/country of origin; 2. Stress free environment and plenty of time for shopping compared to the daily routine at home; 3. The need to buy items that remind of the visit, either as tourist experience or planned shopping of souvenirs as proofs of the visit. Additional reading in "Strategy of trade development in Serbia" published by the Faculty of economics in Belgrade in 2008.

for the money. The economic importance of fashion tourism cannot be underestimated. The presentation of the fashion tourism on local and foreign markets will be better, safer and more prosperous if produced by joint efforts.

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Белград (Сербия) в качестве альтернативного месторасположения или города модный туризм

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Аннотация. Мода в западной цивилизации является одним из самых важных явлений. Во многих частях мира число модных туристов растет. Хорошо известно, что "великих пять", "столиц моды" являются Париж, Лондон, Милан, Нью-Йорк и Токио. В 20-ом веке, а особенно после 1980-ых годов, небольшие города, "центры стиля", такие как Вены, Амстердам, Делхи и Копенгаген пытаются развивать собственное влияние через модную культуру. Может ли, город Белград быть таким городом?

В центре внимания этой работы является исследование между модой и туризмом в Белграде (Сербия) и туристическими потенциалами, которые мода может иметь. В этой работе выделяется то, что существует много вызовов в индустрии моды, которые могут быть препятствием в развитии моды, как туристического аттракциона. В заключении подчеркнута, что Белград, в настоящее время, не место для модного туризма, и он не будет в ближайшем будущем, но существует достаточно места для индустрии моды, чтобы осуществить значительный вклад в туризм. В работе также подчеркиваются рекомендации для развития модного туризма Белграда.

Ключевые слова: Мода; туризм; модный туризм; Белград; Сербия.

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Ensuring Food Security and Power Crisis Solution In Bangladesh Through Renewable Sources

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Abstract. Bangladesh is an agro-based country. Its economy is completely dependent on agriculture. Fertilizer is the most important element in cultivation. The raw material which is used to produce fertilizer is natural gas. Natural gas is also the fuel of our major portion of electricity production. In our country there is a large gap between the demand and production of electricity. This gap is increasing day by day. Due to high price of other conventional fuel and reduction of gas reserve government of Bangladesh cannot increase the production of electricity according to its requirement. On the other hand fertilizer production is also reducing due to lack of raw material. As a result government imports fertilizer to fulfill its demand which is creating pressure in the reserve of foreign currency. Cost analysis shows that Fertilizer import cost is 9.33 times higher than Gas cost. In this paper we proposed to preserve the present reserve of natural gas for fertilizer production and suggested that the use of renewable energy should be increased to produce electricity that is our demand.

Keywords: Fertilizer, Natural Gas, Renewable Energy, Food Security, Power Crisis.

Introduction.

The economic development of an agro-based country like Bangladesh mainly depends on the progress of the agriculture sector. Since food security, improvements of the living standard and creating of employment opportunities of the large population of the country are directly connected to the development of agriculture. Government is continuously trying for the development of this sector. There have been continued efforts by the government for the overall development of this sector. 76% of total population of Bangladesh living in the rural areas and 90% of the rural population directly connected with agriculture and around 50% of the labor force is directly engaged with agricultural activities [1]. To secure the food sector of Bangladesh it is required sustainable growth of agricultural sector and should proceed in a planned way. The main purpose of giving high importance in agricultural sector in Bangladesh is to provide sufficient food for her increasing population.

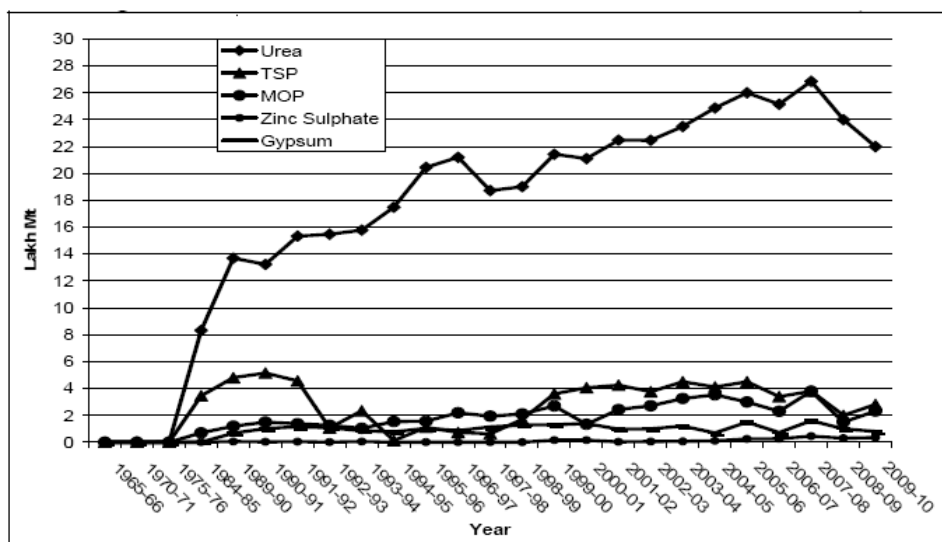
It is considered that fertilizer is one of the most important input for increasing crop production but the use of fertilizer should be balanced otherwise the use of fertilizer will be less efficient. Efficient use of fertilizer increases the sustainable high growth of crop. Bangladesh is a

densely populated country and population of it is increasing in a high rate. As a result its cultivating land is reducing day by day. So efficient use of fertilizer should be given highest priority to increase the food production of Bangladesh. Therefore by increasing irrigation facilities, proper timely supply and availability of fertilizer should give highest priority for the sustainable growth and increase the production of rice in Bangladesh. Various types of fertilizer such as Urea (Nitrogen), Triple Super Phosphate (TSP), Muriate of Potash (MP), Gypsum and Dasta ($ZnSO_4$) are used in various proportions in the agricultural land of Bangladesh. Among this fertilizer Urea use is highest. The raw material of this Urea is natural gas. Natural gas is also the major fuel in our power generation. It is also used in household cooking and many vehicles also use natural gas as a fuel. At present 67.38 % of electricity is generated from natural gas [2]. But it's a matter of great sorrow that our reserve of natural gas is decreasing in an alarming rate. To provide food for the huge population of Bangladesh production of rice must be increased in a sufficient manner. In this sense Urea is the most important fertilizer for Bangladesh. If we can't provide gas for Urea production our food security might be at risk, then we might have to look out from to the foreign countries. So it is mandatory to keep the natural gas for fertilizer production as much as possible.

Electric power supply is the key for the economic development of any country. Without electricity any kinds of economic development is imaginable. To sustain the economic development huge amount of electricity is required in all sectors such as agriculture, industry, SME etc. Agriculture sector and other income generating sector of rural areas in Bangladesh demand of electricity is increasing day by day. However, there is a huge gap between the supply and demand of electricity. Maximum demand served so far 6066 MW [2] against peak demand of 7518 MW [3]. In 2030 it is expected that the peak demand will be 33,708 MW [3]. Government has given highest priority to the development in Power Sector and has committed to make electricity available to all by 2021. For this reason Government took several mini and mega projects to fulfill the demand. According to Government perspective plan at 2021 major portion (53%) of electricity will be produced from coal, oil 3%, Hydro 1%, Nuclear 10% and renewable sources 3%.

But coal has an adverse environmental effect [4]. It will have more adverse environmental effect for the climate vulnerable country like Bangladesh. Moreover conventional fuel price is increasing day by day which will increase the price of electricity as well. This will create total imbalance in the economy. So we must generate electricity in such a way that is environment friendly and keep the fuel available to fulfill the demand of electricity. In this sense without renewable energy there is no good alternative. In renewable energy solar energy is highly available, environment friendly and has no fuel cost without initial investment and some maintenance cost. As an agro based country like Bangladesh biomass is also available here in a huge amount, which is a good source of renewable energy. So our government should increase power generation from renewable sources instead of other conventional sources. If we can generate significant amount of power from renewable sources then it will not be necessary to hike to high the price of electricity so frequently and in this process emission of significant amount of CO_2 and other green house gases can be reduced.

Present and Future Demand Of Natural Gas for Fertilizer Production: Fertilizer is the most important nutrient element in soils and plays the most vital role in crop production in Bangladesh. Fertilizer application mainly depends on the soil types, growing season, irrigation applications and the cultivars used and agro-climatic conditions of the locations. High yielding varieties of rice are highly responsive and need adequate supply of fertilizer to achieve targeted production [5]. Fertilizer is a must for producing a desired level of rice. And among all the various types of fertilizers, Urea is the most useful one in Bangladesh because for major portion of paddy rice production it is the vital element. Production of Urea is directly dependent on natural gas(NG). This natural gas is also used by the power plants nowadays. Uses of natural gas in the power sector has effects on the lessening of its stock. To ensure food security we must ensure the usage of Natural gas for Urea production and increase the uses of renewable source of energy in power sector.



[1 Lakh Mt = 0.1 Million Mt]

Figure 1: Consumption of Fertilizers in Bangladesh [6]

From figure 1 it is clear that Urea is the highest amount of consuming fertilizer in Bangladesh. The study over Urea Fertilizer at present and upcoming years for Bangladesh-is a very much apprehensive issue. About 350 Million Standard Cubik Feet Per Day (MMSCFD) natural gas is required for the yearly production of about 3 million metric ton Urea .This is about 17% [7] of today's daily gas production of the Country. Ensuring guarantee gas supply and improving the Plant Reliability; Bangladesh total requirement of Urea could be achieved. Besides, if we can ensure the power generation from renewable sources to decrease the load on gas, we can achieve our desired Food Security.

Year	Population (million)	Paddy rice req. (million tons)	Boro rice (million tons)	T.Aman rice (million tons)	Aus rice (million tons)
2007	157.75	36.93	19.20	15.14	2.59
2020	191.65	44.87	23.33	18.40	3.14
2030	220.24	51.56	26.81	21.14	3.61
2040	253.09	59.25	30.81	24.29	4.15
2050	290.83	68.09	35.41	27.92	4.77

TABLE-1: Paddy rice demand in Bangladesh in year wise (average) [8]

Rice production systems play an important role to the reduction of hunger and poverty in Bangladesh. If the annual population growth continues at usual rate (1.4 percent annually), it is estimated that the total population would be 191.65 million by 2020, 220.24 million by 2030, 253.09 million by 2040 and 290.83 million by 2050. Table 1, shows the paddy rice demand in Bangladesh for next 40 years. Therefore, huge amount of food will be necessary for the future generation to meet their food demand and major part of the demand will be provided by rice. From the analysis of the last 40 year's data, it is found that the per capita rice consumption rate in Bangladesh is 153.02 Kg per person per year. If the current rice consumption rate is continued to 2050, the total demand of rice would reach to 68.09 million tons which is more than 1.8 times compared to 2007. The total demand of rice would reach to 51.56 million tons in 2030 which is more than 1.39 times compared to 2007. [9]

Total rice production in Bangladesh was 34.28 million tons in the year of 2008-09, where Boro rice contributed more than 55% (18.5 million tons). From the analysis of the last few years' data we found that its contribution in total rice production follows a increasing trend. Urea is the most important fertilizer for production of Boro rice [5].

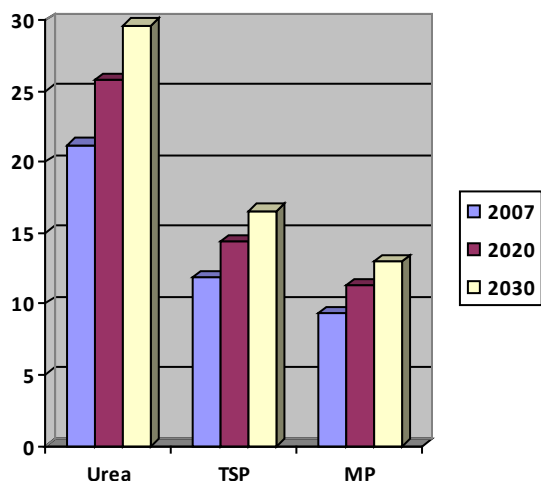


Figure 2: Fertilizer Recommended Dose

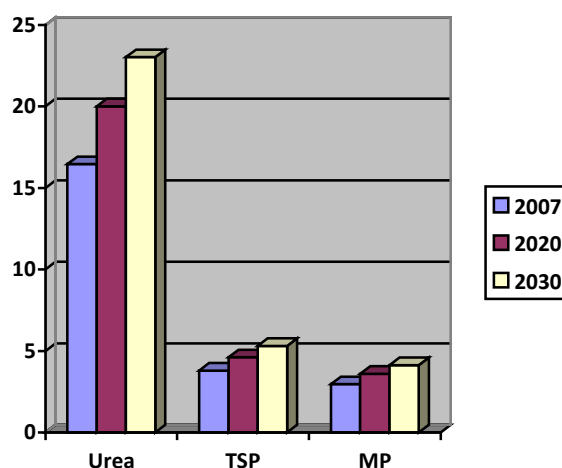


Figure 3: Fertilizer Actual Dose

According to the fertilizer recommended dose, requirement of urea fertilizer would be 2.963 million tons, TSP 1.651 million tons and MP 1.297 million tons (calculation based on average rice production data) in 2030. Considering the actual dose in field level, the total demand of urea, TSP and MP in 2030 might be 2.302, 0.531 and 0.431 million tons, respectively (calculation based on average rice production data) [9].

It is studied from the Fertilizer recommended dose and actual dose data that, increase in application of urea is increasing more rapidly than other fertilizers.

Financial Year	Import in MT	Total Consumption in MT
2005-06	771521	2451375
2006-07	651972	2527795
2007-08	1162823	2762783
2008-09	1440341	2532966
2009-10	1465582	2408000
2010-11	1813671	- 2655044

TABLE 2: Consumption and Import of Urea [7]

At this stage, we've to look over the scenerio of production of urea. We know that after our local production remaining fertilizer requirements of the country such as urea, TSP, MOP etc are met through import. The total urea fertilizer production in 2008-09 was 1.5 million tons in six urea factories of Bangladesh and total demand was 2.850 million tons. Domestic production covered 52.6% to the total demand of urea. Similarly, TSP domestic production was 50,000 tons, which covered 10%, MOP demand was 0.4 million tons which was completely imported from foreign countries [1]. It is quite evident that fertilizer demands are heavily dependent on imported fertilizer. Therefore, any disruption in the supply chain, it is quite possible to affect the total production system.

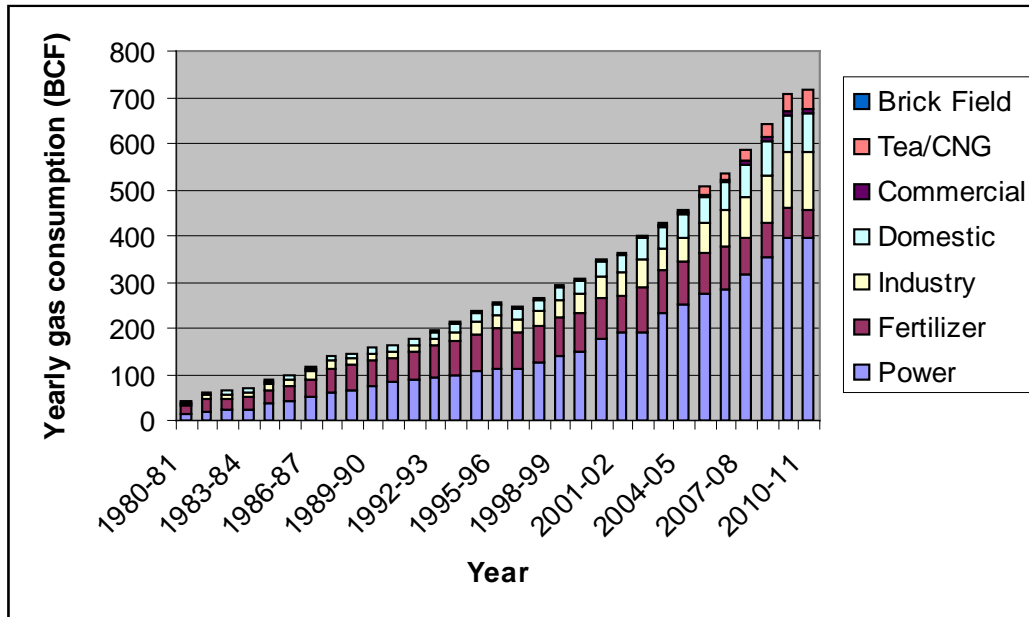


Figure 4: Consumption of natural gas in different sector of Bangladesh 1980-2011 [10]

From the Figure 4 it is clear that the highest amount of natural gas is consumed in power sector. Though, fertilizer production is consuming significant amount of Natural gas, but it is not enough to fulfill the demand of total consumption of fertilizer.

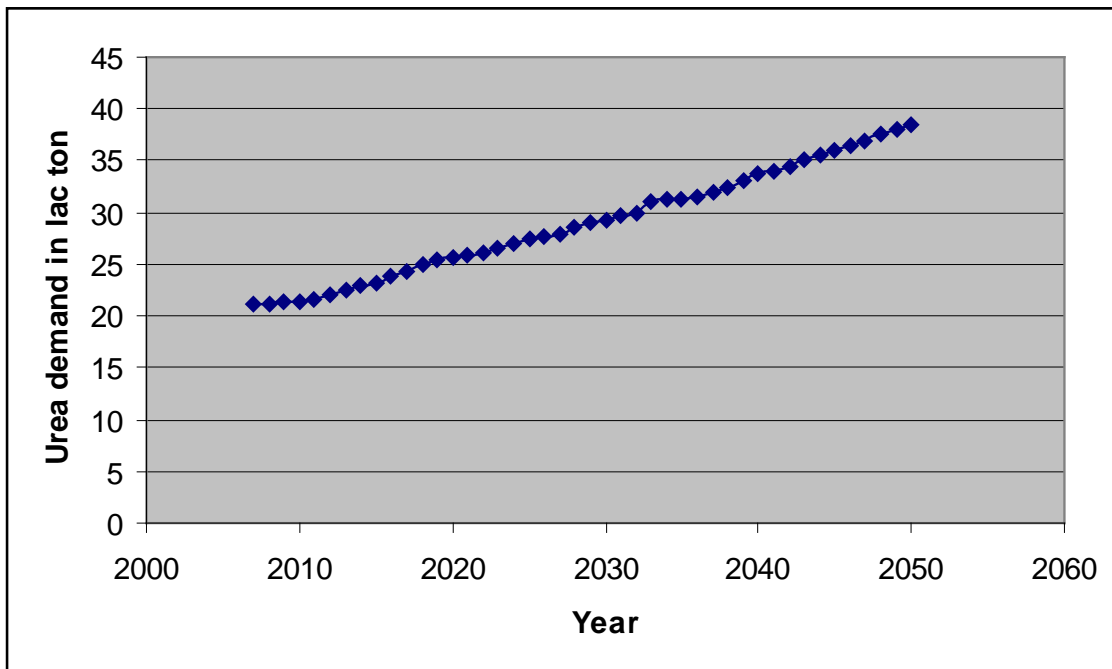


Figure 5: Future projected Urea demand of Bangladesh in lac ton (1 million = 10 lac) [9]

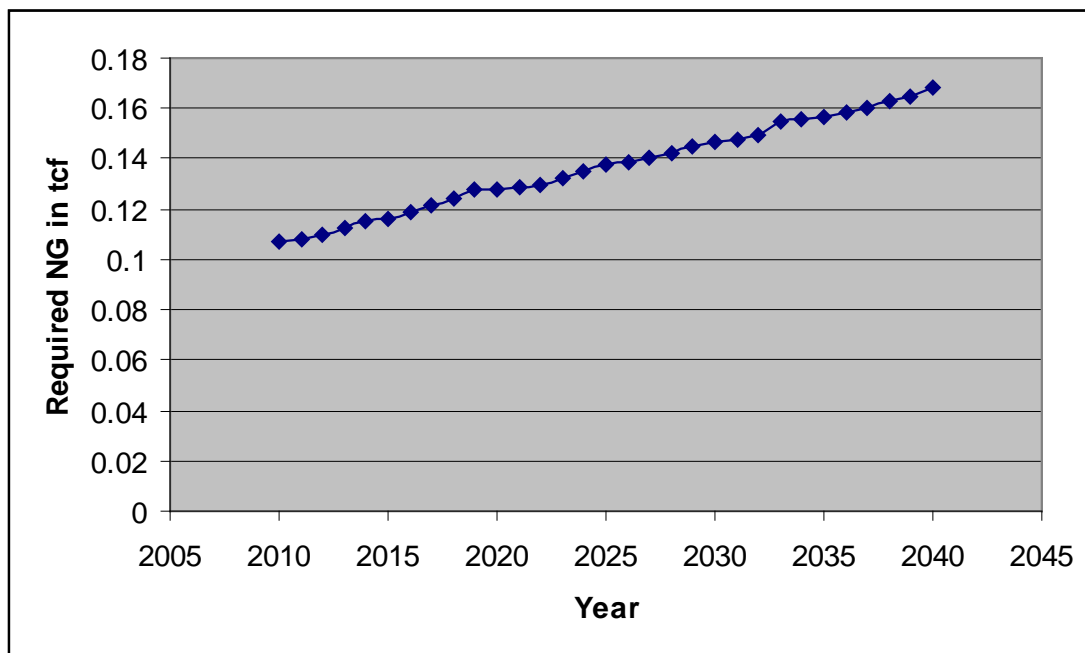


Figure 6: Required Natural Gas to fulfill the future fertilizer demand in Bangladesh

Figure 5 shows the projected Urea demand in Bangladesh till 2050. Figure 6 shows the required Natural gas demand to fulfill the future fertilizer demand. To produce 1 ton Urea it is required 50 MSCF NG in Bangladeshi plant. To ensure total food security we recommended the total fertilizer is done by our domestic Natural gas not depending on imports from foreign country and increasing the power generation from renewable sources.

Present Status of electricity demand, generation and load shedding: Electricity is mandatory for the technological development and economic growth of a nation. Bangladesh has been facing a severe power crisis for about a decade. Known reserves (e.g., natural gas and coal) of commercial primary energy sources in Bangladesh are limited in comparison to the development needs of the country. Power generation in the country is almost entirely dependent on fossil fuels, mainly natural gas that accounted for 82.12% of the total installed electricity generation capacity in 2011. At present 50% people of the country have access to electricity with vast majority being deprived of a power supply. The government of Bangladesh has prepared power system master plan PSMP-2010 covering a plan period of 20 years (2010-2030) to realize the goal to provide access to electricity to all, although at present there is high unsatisfied demand for energy, which is growing by more than 10 % annually [3].

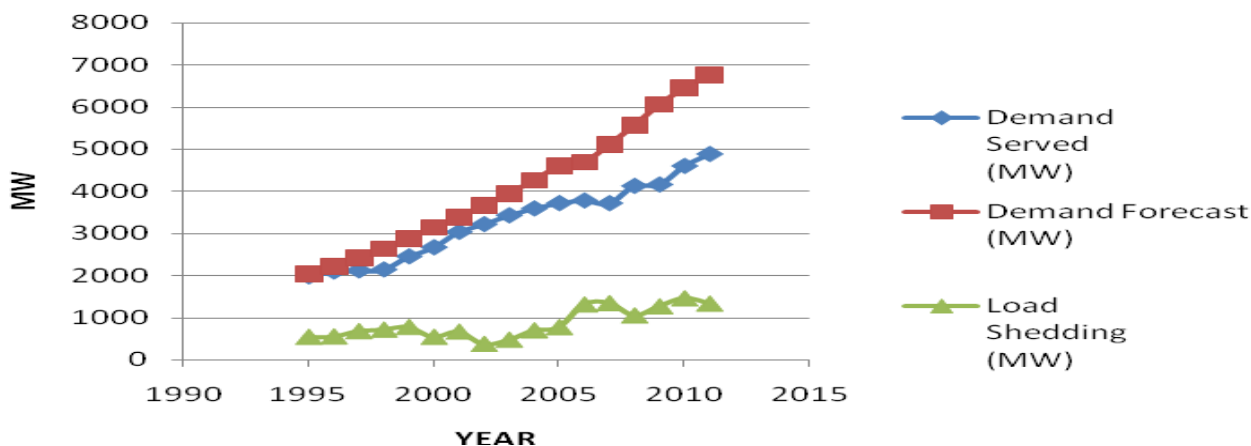


Figure 7: Power demand-supply gaps and load shedding in Bangladesh [2]

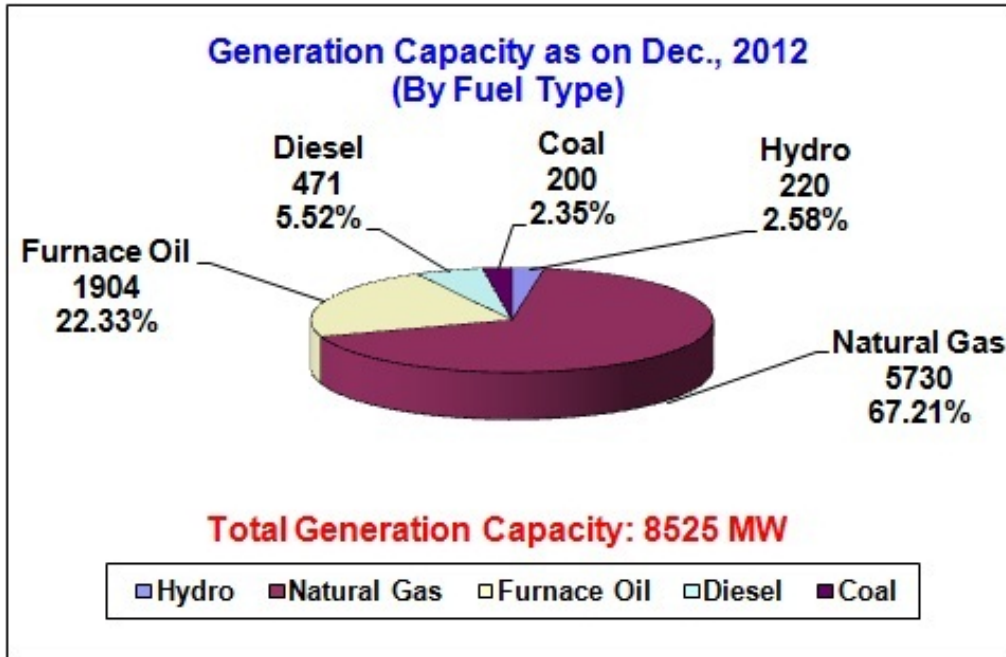


Figure 8: Fuel Wise power generation [2]

Future Demand Forecast and Generation Plan of the Government: Bangladesh is mainly an agrarian country with a population of 161.083 million [11]. Only 22.88% live in urban areas, while the remaining 77.12% live in rural areas. At present electricity demand growth is about 10% which is expected to be more in coming years [3]. Generation shortage forces Bangladesh Power System (BPS) for massive load shading hindering nation’s development activities.

The preliminary demand forecast was made according to Power System Master Plan (PSMP) -2010 based on 7 % GDP growth rate. The actual demand could not be supplied for the last few years. The maximum demand served so far is 6066 MW as on 22 March 2012 against the peak demand 7548 MW [2]. The electricity development is required to be accelerated to increase access and attain economic development. The desirable economic growth rate would be about 7% per annum. Based upon this preliminary study the anticipated peak demand would be about 10,283 MW in FY2015, 17,304 MW in FY2020 and 25,199 MW in 2025. According to PSMP- 2010 Study year-wise peak demand forecast is shown in below figure.

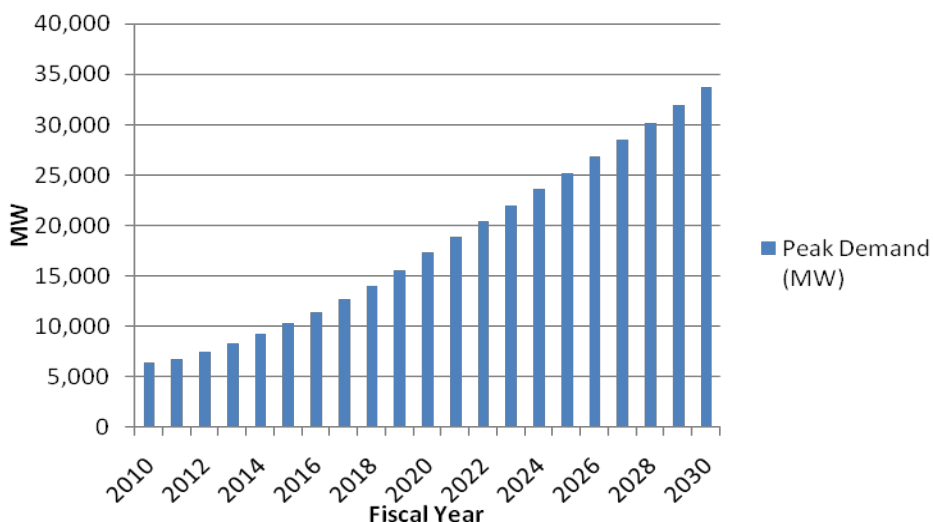


Figure 9 : Year wise peak Electricity demand [3]

Energy	Bangladesh	
	2010	2021
Gas	87.5%	30%
Oil	6%	3%
Coal	2.5%	53%
Hydro	2.7%	1%
Nuclear	0%	10%
Renewable	0.5%	3%

Table 3: Perspective plan of Bangladesh power generation 2010-2021 [3]

From the Perspective plan of Bangladesh power generation 2010-2021 is given in Table 3, we can say that coal is expected to be the main fuel for future power generation in Bangladesh. The government of Bangladesh has planned to generate 2900 MW power from coal in the next 5 years [12], although coal power has adverse environmental effects and coal reserves are limited. The government has also focused on furnace-oil-based peaking power plants. As a result, the share of CO₂ emissions coming from fossil-fuel-based power plants in the national CO₂ inventory is expected to grow, and there is a growing dependency on imported fossil fuels for power generation. Increasing the use of fossil fuels to meet the growing worldwide electricity demand, especially in developing countries, not only counteracts the need to prevent climate change globally but also has negative environmental effects locally. In Bangladesh, the power sector alone contributes 40 % to the total CO₂ emissions [13, 14]. In this case, it is necessary to develop and promote alternative energy sources that ensure energy security without increasing environmental impacts.

Renewable energy potential in Bangladesh: Bangladesh is known to have a good potential for renewable energy. Whereas fossil energy sources are fixed in stock, renewable energy sources are not limited, but usually are not in ready-to-use forms for power generation. To convert renewable energy into electricity, energy-converting systems are needed. Therefore, the potential renewable energy is dependent on the technical ability of this conversion system.

Solar Energy: Bangladesh is situated between 20.30° and 26.38° north latitude and 88.04° and 92.44° east longitude with an area of 147500 Km², which is an ideal location for solar energy utilization. The GeoSpatial Toolkit provides the solar map of Bangladesh and it shows that the solar radiation is in the range of 4 - 5 kWh/m²/day on about 94 % of Bangladesh (Figure 10). Data on average sunny hours per day (Figure 11) and monthly solar radiation (Figure 12) were taken from NASA for 14 widely distributed locations in Bangladesh using the Hybrid System Optimization Model for Electric Renewables (HOMER) software. The average sunny hours per day are 6.5, and the annual mean solar radiation is 0.2 kW/m². This indicates that Bangladesh theoretically receives approximately 69751 TWh of solar energy every year, i.e., more than 3000 times higher than the current (2006) electricity generation in the country [15].

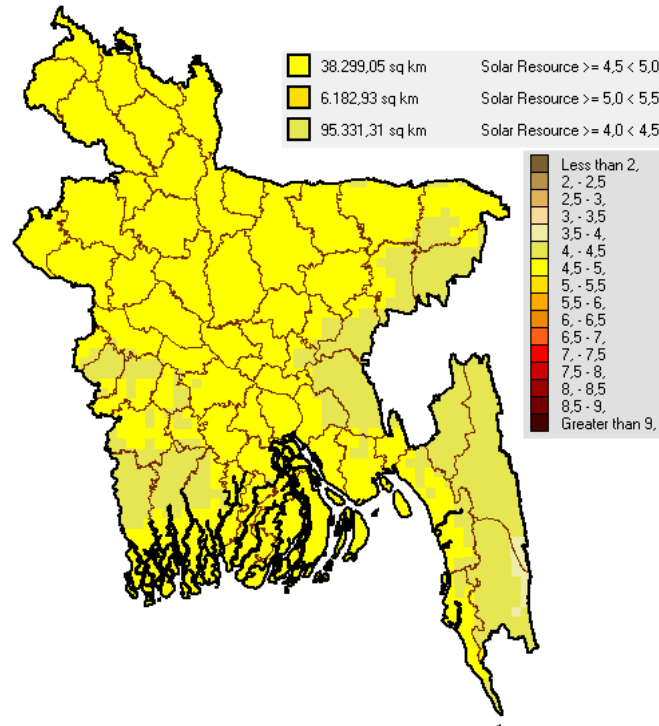


Figure 10: Solar radiation (kWh/m²/day) and area of Bangladesh with highest potential for solar energy utilization.

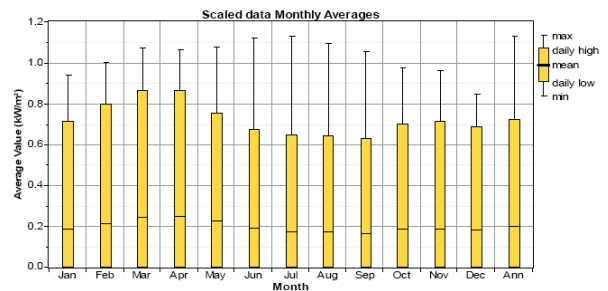
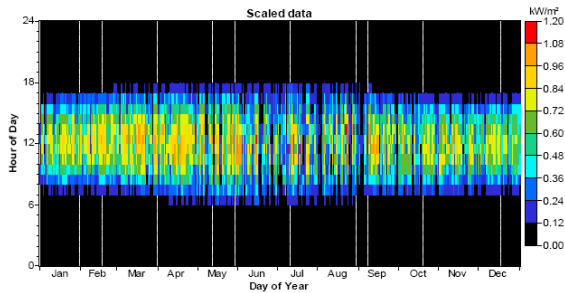


Figure 11: Monthly average sunshine hours in Bangladesh **Figure 12:** Monthly average solar radiation in Bangladesh

The average annual power density of solar radiation is typically in the range of 100 – 300 W/m². Thus, with a solar PV efficiency of 10 %, an area of 3 – 10 km² is required to establish an average electricity output of 100 MW, which is about 10 % of a large coal or nuclear power plant [16]. A study suggests that 6.8 % (10,000 km²) of the land in Bangladesh is necessary for power generation from solar PV to meet the electricity demand [17]. Another study states that the total household roof area is about 4670 km² [18] which is about 3.2 % of the land area. In urban areas (Dhaka city), 7.86 % is suitable for solar PV electricity generation [19]. Considering the grid availability, only 1.7 % of the land in Bangladesh is assumed technically suitable for generating electricity from solar PV [20]. The capacity of grid-connected solar PV is derived using the annual mean value of solar radiation (200 W/m²) and a 10 % efficiency of the solar PV system. Thus, the technical potential of grid-connected solar PV in Bangladesh is calculated as about 50174 MW [15].

Another potential solar energy technology are Solar Home Systems (SHSs). Households can use SHSs without access to the national grid network, especially those in remote and mountainous areas. According to a survey report, a market of SHSs of approximately 0.5 million households reaching 4 million in the future is envisioned in Bangladesh [21]. Considering an average standard 50-Wp solar panel for each household [22], the technical total capacity will be equivalent to 200

MW. The same capacity is applicable for the hybrid system, as this system is suitable only for rural non-electrified remote areas. Economic viability of SHS was discussed in [23], and techno economic analysis of hybrid system was explained in [24].

Wind energy: The theoretical potential of wind energy output for Bangladesh in the form of hours with full power is relatively high in only coastal regions. Assuming that 1000 h of full power is the feasible threshold for the exploitation of wind energy, the areas that satisfy this condition in Bangladesh would be sufficient for the installation of 4614MW of wind power [15].

Biomass energy: Biomass energy such as rice husks, Municipal solid waste (MSW), poultry droppings and bagasse are useful for electricity generation, as field residues are used for fertilizer and animal waste as a cooking fuel in Bangladesh. 50% of the rice husks are used for energy applications such as domestic cooking and steam production for rice parboiling. Therefore, theoretically only 50% of the rice husks can be used for power generation. MSW and bagasse can be used to 100% for grid power generation, as sugar mills are connected to the grid network. A study found that only 57% of poultry droppings are viable for small-scale power generation [25]. It can be estimated that a ton of rice paddy could produce 282 kg dry rice husks with a calorific value of 16.3 MJ/kg [24]. For gasification in gas turbine systems, this residue would generate about 10.6 kW. A survey [26] found that 540 rice mills exist in Bangladesh, and that the capacity ranges from 30 to 120 tons/day. Counting only rice mills with a capacity higher than 30 tons/day, the technical potential of electrical power is about 171 MW [15].

Bangladesh has installed 14 sugar-mill-based cogeneration plants using bagasse. Average crushed-cane capacity per sugar mill is about 1400 tons/day in Bangladesh, and could generate up to 12.75MW and in total about 178.5 MW [15].

MSW have a good potential for power generation. Dhaka city alone has a capacity higher than 5000 tons/day [27-29]. Per capita waste production 0.4 to 0.71 kg/day and in other large cities it varies from 0.36 to 0.43 kg/day [30]. Considering the four major city corporation Dhaka, Chittagong, Rajshahi and Khulna average waste generation per day 0.5 kg/day, a total of 8300 tons waste are generated daily. The average recovery rate of MSW is 70% [30], i.e., 2.12 million tons per year. From this waste the potential of power generation is about 33 MW [28-29]. If the considering area can increase the potentiality of this sector will be increased also.

Over 25,000 fixed-dome biogas plants have been installed and some large farms produce electricity using biogas technology. For heating purposes, a medium-size farm is suitable, while larger farms could also produce electricity. Poultry farms that have more than 500 birds could generate about 360 GWh per year which is equivalent to 197 MW considering to run the plants 5 h/day [31].

Hydro Power: Bangladesh has not much opportunity to generate hydropower due to its flat land. It has some hydropower generation opportunity in hilly area. Different ranges hydropower generation potentials are categorized in two divisions i.e. small hydropower potential, large hydropower potential. Small hydropower means plant which has capacity less than 10 MW. This also further categorizes into small hydro- (>3MW<10 MW), mini hydro- (>300 kW<3 MW), micro hydro- (>5 kW<300 kW), and pico hydro- (<5 kW) power plants that differ with respect to investment cost and annual hydropower availability.

Capacity range	Number of sites	Location/ region	Total capacity (KW)
Small hydro (3–10MW)	14	Northeastern region	111000
Mini hydro (300kW to 3MW)	11	Mainly at Teesta barrage, Rangpur and northeastern region	12900
Micro hydro	32	Chittagong hill tracts, Sylhet, Dinajpur, Rangpur	798
Pico hydro	11	Lake Fiaz, Chittagong	4
Total			124702

Table 4: Small hydropower potential [32]

Large hydropower means plant which has capacity greater than 10 MW. At present, 230MW of hydropower are generated at the Karnafuli hydropower plant, which is the only hydro-electric power plant in Bangladesh; it is operated by the Bangladesh Power Development Board (BPDB). The BPDB is considering extension of this power plant to add another 100MW capacity. The additional energy will be generated during the rainy season. Two other prospective sites for large hydropower plants at Sangu and Matamuhuri have been identified by the BPDB. It estimates that the potential capacity is 140MW at Sangu river and 75MW at Matamuhuri river.

Solution of Power Crisis through Renewable Energy and Ensuring Food Security: According to PSMP-2010 it is predicted that power demand of Bangladesh at 2030 will be 33,708 MW. To fill up this huge amount of demand government of Bangladesh is trying to generate power at its earliest time. As a result government set many oil based quick rental power plant. But due to high oil price and its fluctuating market our economy is in high pressure due to this quick rental power plant. Inflation rate is increasing and foreign currency is also under pressure to import huge amount of oil for power generation. Bangladesh government planned at 2021, 53 % of its total electricity will be generated from coal, 30% from Natural gas, 3% from Renewable energy against its 18838 MW total power demand [3]. Although apparently coal has low production cost but it has adverse environmental effect. Moreover we have not huge reserve of coal. If we continue with coal based power generation after a few years we have to import coal for power generation. If we consider import cost and its environmental impact during the production time plus import time, production cost of electricity from coal based power plant will be no longer remain low.

If the Government trying to generate 30% of total electricity power from Natural gas it will be around 5651.4 MW. In Bangladesh around 10.22 thousand standard cubic feet (MSCF) gas is required for 1MWh electricity generation [2], total gas demand to fulfill the demand at 2021 will be around 1386.18 MMSCF per day.

At 2021, in Bangladesh Urea fertilizer demand will be 2.613 Million Tons [33]. The average requirement of Natural gas to produce 1 ton Urea fertilizer in Bangladeshi plant is about 50 MSCF. To fulfill the present fertilizer demand 350MMSCFD gas is required and at 2021 it will be 365.82 MMSCFD [7].

Bangladesh produced and consumed about 0.7 Tcf gas in 2011, and the annual gas consumption is likely to increase to about 1 Tcf within three to four years. Assuming an average production and supply rate of about 1 Tcf gas per year, the 16 Tcf of remaining reserve (as of Dec 2011) should run for about 16 years [34]. In 2011, Power Sector Master Plan prepared by Japan International Cooperation Agency (JICA), forecast long-term production forecast gas production is expected to reach a peak in 2017 and then decline. Taking the base case scenario as reference, production is expected to peak at 3320 MMSCF per day in 2017 and then start to decline (JICA 2011). As the production continues to decline, the gap between demand and supply will continue to widen. However, gas production is expected to continue to 2030 and perhaps beyond, although lesser and lesser in volume over time. According to this projection, gas as a fuel will contribute to 25% of the total electricity generation in 2030 (compared to 88% in 2010) while coal's contribution at that time would be 50% (compared to 4% in 2010).[4] According to this projection , if no new reserve is discovered or if the existing reserve is no more develop Bangladesh present proven reserve of Gas will exhaust by 2030. Although Electricity can be generated from other sources but what will happen for Fertilizer after 2030. In that case we have no alternative without importing the whole demand of Urea Fertilizer. This will make our foreign currency reserve completely imbalance and also our economy. So to keep the food sector secured we must reduce the utilization of gas for power generation in a significant amount as early as possible and should keep this Gas for fertilizer production.

If we can reduce the utilization of Natural Gas in electricity generation within 5% of total demand by 2021, required gas demand for 941.9 MW (5% of 18838 MW) electricity generation will be around 232 MMSCF per day. For the production of total Urea demand required gas demand will be 365.82 MMSCF per day and considering other industrial and domestic demand, yearly total demand of Natural Gas will be around 500 billion cubic feet (bcf).

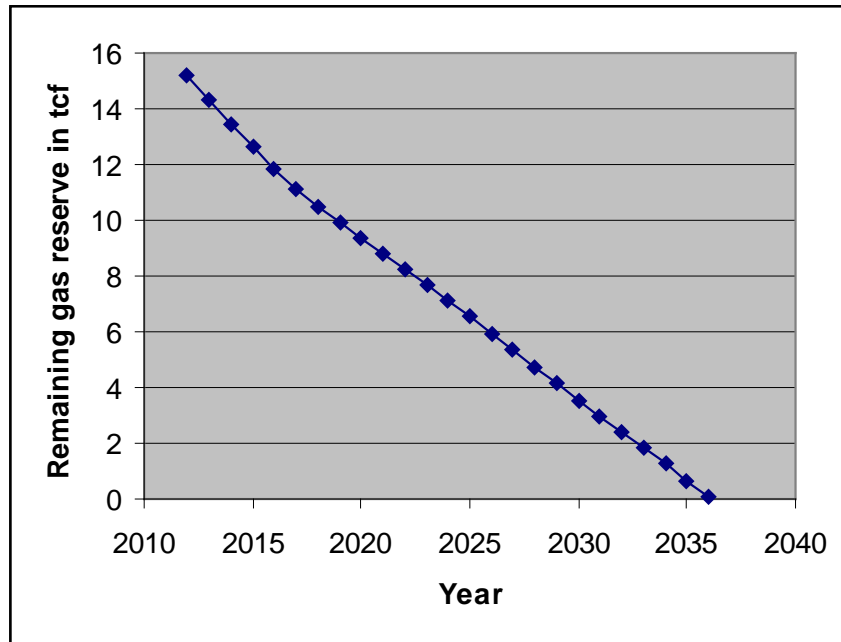


Figure 13: Natural Gas reserve decreases with time

If we can continue the reduction of using Natural Gas in other sector and provide the full demand for fertilizer production present proven reserve of the Natural Gas will continue up to 2040. Figure 13 shows the how present reserve of Natural gas decreases with time. By developing the reserve of Natural Gas, increasing the Fertilizer plant reliability and reducing the system loss of Gas we can easily continue our Natural Gas reserve for many years.

Among many others alternative for power generation renewable energy is the most effective. From the assessment of renewable energy we have seen that if we can use solar and other renewable sources properly our country will get a permanent solution in power sector.

Cost Analysis: In The Fiscal Year 2010-2011 total demand of Urea fertilizer was 2.5 million ton. But due to gas shortage local production was 1 million ton, rest of the 1.5 million ton fertilizer demand served via import. 1 ton Bag urea import costs US\$ 560 [7]. So 1.5 million ton Urea import cost is $1.5 \text{ m} \times 560 = 840 \text{ million US } \$ = 6619.2 \text{ core taka}$ for Urea only. In worst case if we have to import all fertilizer the import cost will be $2.5 \text{ m} \times 560 \text{ US } \$ = 1.4 \text{ b US } \$ = 11032 \text{ core taka}$. [1 US \$ = 78.8 taka] If we consider the gas cost for shortage amount of fertilizer which we had imported is Gas cost for 1.5 m ton urea [1 ton urea = 50MSCF; 1 MSCF = US\$ 2] = 150 million US \$ = 1182 cr Tk. So for saving 150 million US \$; we are paying 1.4 b US \$ or 1400 million US \$. In other words to save 1 US \$ Gas we are paying 9.33 US \$ to import Urea.

Conclusion: Bangladesh is one of the worst environmentally vulnerable countries in the world. It has a large population. To ensure food security government should concentrate to the local production of fertilizer. So it is necessary to preserve natural gas for fertilizer production as much as possible. It is shown that if the contribution of Natural Gas as a fuel for power generation can be made 5% of the total country demand by 2021 our existing proven reserve of Natural gas will continue up to 2040. Otherwise our food security will be in danger. But at the same time we have to increase our power generation also for the development of our growing economy. Among many other alternative fuels renewable energy is the only environment friendly. It is available in nature, so there is no tension for fuel availability. Although it's initial investment cost is high but if we imagine after 20-30 years later situation then it will no longer seem costly. From various surveys we have seen that to fulfill our present and upcoming power demand renewable resources is sufficient. If we want a permanent solution for our power crisis renewable energy especially solar energy will be the most effective solution.

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Glo-regionalism in Energy Cooperation Approaches of the SCO Region

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Abstract. In twentieth century, especially during the Cold War era, the two ideas of Nationalism and Internationalism were the main competitor approaches in different schools of thought in the field of international studies. However, global integration between states and nations from economic, cultural, and communicational aspects has created a new magnificent world which is more integrated and the interests of political units are more incorporated. Based on this new world order, the major rival trends in the world arena are two recent dominant approaches of globalism and regionalism. The appearance of the successful regionalism regimes in Europe and also in the South East Asian region while they have tried to keep their correlations with the global trends, have prepared a suitable model for other regions to construct regional unities in a globalized framework.

This paper aims to examine one of the most important issues in the SCO region, - the exploration and transportation of energy - in the framework of the regionalism and globalism approaches. Regarding to this matter, the outlook of the energy cooperation between the SCO countries and the position of the other powerful players in the region will be analyzed. The opportunities and challenges confronted with the producers and consumers of this strategic commodity to achieve energy security in this region also will be discussed.

Keywords: Globalism; Regionalism; SCO; Eurasia; Energy.

Introduction.

The access to different sources of energy has special strategic significance in recent times, particularly for fast growing and emerging economies. Eurasia sits atop the world's major energy resources, and recent years have seen rapid developments in the exploitation and transportation of these resources to the outside world. At the same time, however, some security concerns are growing in the region. Exploitation of Eurasia energy resources is taking place in a climate of serious competitions that threaten peace in the region. On the other hand, regional security issues include inter-ethnic and inter-religious tensions have provided a favorable atmosphere for different actors to further their agenda. Such a kind of circumstances requires concerted regional efforts to deal with these deeply interlinked security issues.

Regarding to these realities, it seems that Shanghai Cooperation Organization (SCO) as the most powerful and united regional mechanism can play an important role to improve the security of access to energy resources in this region for both energy producing and consuming countries.

Besides the task of guaranteeing the access to the energy security, there are two additional tasks of particular importance for SCO strategic planners.

First, regional stability, especially in the turbulent ethno-religious regions, is a serious issue. The SCO countries view the claims for autonomy and participation in the politico-economic power of the central governments stated by ethnic and religious minorities as a direct threat to their territorial integrity. The fact that potential future energy transportation routes from the resource-rich Caspian basin will have to cross unstable regions raises this problem.

Second, the SCO great powers such as China and Russia promote a multipolar world order in their foreign policy strategy. As a result, in spite of some competing interests in the strategic perceptions of the SCO countries, the situation is prepared for a regional cooperation in different dimensions.

Today, the SCO is the sole institution with the potential to become a nucleus of a broader regional cooperation regime in Eurasia. It is also notable that there are several issues in which the members have strong common interests with the other powerful countries, e.g. regional stability. In fact, strengthening of regional cooperation mechanisms, with rather than against the outside powerful players such as the United States and the European Union, has prepared a very reasonable means for absorbing geopolitical tensions and creating a new framework of cooperation, especially in the field of energy security.

Geographically, the Shanghai Cooperation Organization has the elements to serve as an effective forum for such efforts. The organization occupies territory from the Arctic to the Indian Ocean and from Kaliningrad to Shanghai, its six full members account for 60 per cent of the land mass of Eurasia and its population is a third of the world's. With observer states included, its members account for half of the human race and take in a stretch of Eurasia from the South China Sea to the Baltic Sea and from the Persian Gulf to the Bay of Bengal. It may become the second political pole of the world after the United Nations.

With these regards, in the world that Globalism describes the reality of being interconnected, and explains a world which is characterized by networks of connections that span multi-continental distances, the SCO, based on its traditional Silk Road, provided an economic and cultural link between ancient Eurasian territories, could present a new kind of cooperation and interrelations in the framework of a kind of "Glo-regionalism" in different economic, political, cultural and strategic aspects. The term of Glo-regionalism presents the two levels of cooperation between the SCO members who are trying to be integrated regionally without ignoring the necessity of cooperation with their Western partners in a global structure.

This article seeks to explore the implications of SCO's engagement with energy security issue as a Glo-regional subject in the Eurasia region. The authors try to understand what practical problems such an expanded organization could help to solve, what opportunities it could realize, and how the SCO's engagement in energy trade is a function of favorable political developments in both regional and global levels.

They also attempt to analyze how the constellation of interests under analysis provides the necessary framework for examining the SCO in terms of its possibilities and limitations in the field of energy cooperation. The idea that how closely energy politics and geopolitics are interrelated in the SCO region and how important the region is for Asian and non-Asian powers, particularly with regard to its multi-ethno-religious feature and its huge amount of energy resources also will be examined.

A Review of Transformation in the SCO's Missions and Functions

When the Shanghai Five was formed in 1996, its primary objective was to boost border security and reduce troop levels along China's frontiers with former Soviet republics through a variety of confidence building measures. Initially the grouping looked a little tentative. To this end, Russia, China, Kazakhstan, Kyrgyzstan, and Tajikistan set up an intergovernmental structure to settle territorial disputes and to coordinate action on common threats such as terrorism, separatism, and extremism. (Rashid, 2002)

In June 2001 the group admitted Uzbekistan, renamed itself the Shanghai Cooperation Organization, and broadened its objectives to include interregional economic cooperation, trade, and investment. In 2004 the six member states established a permanent secretariat in Beijing and

a regional antiterrorism center in the Uzbek capital, Tashkent. Mongolia was granted observer status in 2004, followed by Iran, India, and Pakistan in 2005. (Pabst, 2009)

Later on it became clear that the foremost objective of the two key members—China and Russia—was to secure their strategic interests and to insulate the region from the negative influences of the Afghanistan and Pakistan-inspired religious extremism and terrorism. Since 2002 some SCO countries have held joint antiterrorist exercises along their shared borders. More significant, in 2007 units from all six members participated in a collective military exercise that started in the Chinese northwestern Xinjiang region and ended in the Russian Urals. The SCO has not only forged links with CSTO*, but it also has set up the SCO–Afghanistan Contact Group for the purpose of building joint counteraction against terrorism, illegal circulation of narcotics and organized crime. (Singh Roy, May 29, 2009)

Gradually it became a powerful grouping which has acquired a regional anti-terrorism structure and has sufficient resources to fight terrorism, separatism and extremism in Eurasia. It has created a joint mechanism to counter threats to regional peace, stability and security and to strengthen cooperation in fighting drug trafficking and illegal migration. (Narain Roy, September 15, 2007)

However, a careful analysis of developments within the SCO indicates that over the years its focus has shifted from settling border issues to security and now to economic cooperation. Of equal geopolitical significance is SCO's project to form a body charged with defining a common energy policy, to upgrade political relations to reflect the growing strategic importance of the organization, and to create closer links with other transregional economic and political bodies such as the UN, the EU, the World Customs Organization, the Commonwealth of Independent States (CIS), the Association of Southeast Asian Nations (ASEAN), and the Eurasian Economic Community (EurAsEC). (Dushanbe Declaration of Heads of SCO Member States, August 28, 2008) It has also gained observer status in the UN General Assembly.

In fact, since 2004, the SCO's influence and role has been growing in the Central Asian region and its activities are significant in terms of making the international community take notice of this regional grouping. Trade among SCO member states has made headway during the past decade. Trade between Uzbekistan and other SCO members reached 42.1 per cent of the country's total foreign trade in 2006. In Tajikistan, the ratio was 36.6 per cent that year. Sino-Russian trade hit \$55.45 billion in 2010, five times higher than in 2000. China now is Russia's top trade partner. China's trade with SCO members in Central Asia has kept an average annual growth rate of about 40 per cent. In 2010, the trade volume was \$28.52 billion, 14.81 times higher than it was in 2000. (Mingwen, August 11, 2011)

Overall, it can be concluded that the SCO has emerged as an important factor in the Eurasian security architecture. Today, the SCO has expanded to include South and West Asian countries within its fold. While the SCO represents a major development in the strategic landscape of the Central Asian region, the inclusion of India, Iran and Pakistan as observer states in the SCO mechanism suggests that it is gradually expanding into the wider region. In the next steps it is expected that Sri Lanka and Belarus will become dialogue partners of the SCO. It would therefore be appropriate to rename it as the 'Asian Cooperation organization', if it wishes to emerge as a significant Asian multilateral body seeking to play a greater role in the Asian Region.

An Outlook to the Energy Cooperation Attitudes in the SCO Region

A huge energy cooperation network now stretches from the west to the east of the SCO region. The SCO started to delve into the energy sphere in 2004, when members adopted an action plan that established a basis for cooperation between the organization's three energy-producing states (Russia, Kazakhstan and Uzbekistan) and the three consumer countries (China, Tajikistan and Kyrgyzstan). During the Moscow Summit in October 2005, members expressed an intention to promote joint energy projects. Then, in November 2006, Russian officials suggested the idea of creating an "Energy Club" when Vladimir Putin proposed to set up a mechanism that would unite energy producers, consumers and transit countries. Russia's initiative was supported by other members. Kazakh Prime Minister Danial Akhmetov said, "I believe that in the future we will focus on issues related to energy security. Development and implementation of this program, an energy

*. Collective Security Treaty Organization

strategy and an energy club are fundamental tasks for our heads of government." (Tomberg, September 20, 2006)

Energy security also topped the agenda of the summit meeting in Kyrgyzstan in August 2007, when SCO members agreed to establish a unified energy market. The idea was to make the oil and natural gas of energy-rich states available to energy-deficient states for their development. President Putin had been working behind-the-scenes to create an energy club emphasizing the need for greater energy cooperation that would give a "powerful impetus" to regional projects among the SCO countries. As he said, "I am convinced that energy dialogue, integration of our national energy concepts, and the creation of an energy club will set out the priorities for further cooperation." (Narain Roy, September 15, 2007)

The participated leaders in Bishkek Conference presented an integrated policy in the field of energy cooperation. In his quest to diversify Kazakhstan's export markets, Nazarbayev said in Bishkek, "The draft Asian energy strategy envisions the establishment of an SCO energy agency, which would be a type of 'brain center' and database, while transactions on the market for energy resources could be made through an SCO energy bourse." (Russian News Room, August 16, 2007) He also said that forming an oil and gas club was one of the pivotal ideas for the SCO, as the existing pipeline system linking Russia, Kazakhstan, Central Asia and China, could serve as a basis for establishing a uniform SCO market. Putin endorsed Nazarbayev's calls, stating, "I am sure that the initiated energy dialogue and accompanying national energy strategies as well as the establishment of an energy club will set the priorities for our further cooperation." (Daly, August 22, 2007)

Simultaneously, Iran's president, present as an SCO invited observer, reiterated his proposal to hold a meeting of SCO energy ministers, remarking, "I suggested last year that a meeting should be held between oil and gas ministers of SCO member states to optimize cooperation in transportation, prospecting, development and refining. As before, Iran is ready to organize such a meeting." (Daly, August 22, 2007)

The following year Kazakh Prime Minister Karim Massimov speaking in reference to an impending meeting of SCO energy ministers and in affirming that "the existing system of pipelines on the SCO space connecting Russia, Central Asian states and China is a serious basis for the establishment of an SCO unified energy space," said: "The projects on the establishment of a unified energy market and the SCO common transport corridor could become bright examples of the global approach to defining the forms and mechanisms of cooperation." (Rofoof, May 29, 2009)

This process continued and in the summit session of SCO in Beijing in 2009, Russian Prime Minister Vladimir Putin reiterated a proposal that Shanghai Cooperation Organization member states form an energy forum. "Energy traditionally holds a key position on the global agenda, which prompts me to remind you of Russia's proposal to set up a permanent mechanism for dialogue on the issue, a SCO energy club or forum," Putin said. He also said an informal exchange of opinions could promote energy cooperation in the region. (Mingwen, August 11, 2011)

Generally, it seems that Russia's initiative to set up the Asian Energy Club will serve as a mechanism to unite energy producers, consumers and transit countries. Apart from Russia, these are China, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan. They are already implementing several bilateral and multilateral energy projects, such as oil and gas exploration, production and shipment. According to the SCO General Secretary Muratbek Imanaliyev, the energy club principles are being developed on the basis of the existing elements that are employed in the bi- and tri-lateral trade and economic cooperation agreements within the SCO. "In the zone of our attention are such energy projects as the Turkmenistan – China gas pipeline since it goes through the SCO countries, and the pipelines from Kazakhstan to China and from Russia to China. And we pay priority attention to these projects," he emphasized. (Mingwen, August 11, 2011) however, he did not make a clear that while the projects which are built by investors who have carried out feasibility studies, what kind of mechanism by the SCO could be sought.

Indeed, within the organization not only world leading hydrocarbon producers are represented, but also their biggest consumers.

In 2010, China imported 18.5 per cent of its crude oil from the SCO region (from Iran 8.8 percent, Russia 5.9 per cent and Kazakhstan 3.8 per cent). In the field of importing natural gas, China's first import natural gas pipeline was the Central Asian Gas Pipeline (CAGP), which spans

1,130 miles and bring natural gas imports to China from Turkmenistan, Uzbekistan, and Kazakhstan. In March 2006, CNPC officials also signed a Memorandum of Understanding with Russia's Gazprom for two pipeline proposals, one from Russia's western Kovykta gas field to northwestern China. A second proposed route, called the Eastern pipeline, would connect Russia's Far East and Sakhalin Island to northeastern China. China and Kazakhstan are the fourth and the thirteenth oil importers from Russia.

India also imported 11 per cent of its consumed oil from Iran in 2010. India and Pakistan's natural gas import demands are expected to increase in the coming years. Although a variety of economic, political and security issues have delayed a project agreement for the Iran-Pakistan-India (IPI) Pipeline, however, the importance of this project for the natural gas consuming countries makes it possible to be realized in future. India and Pakistan also has worked to join the Turkmenistan-Afghanistan-Pakistan Pipeline (TAP or Trans-Afghan Pipeline). In Central Asia, while Uzbekistan imports oil from Kazakhstan, it sent over half of its natural gas exports to Russia and the remainder to neighboring states such as Kazakhstan, Kyrgyzstan, and Tajikistan in 2010. Uzbekistan is also a transit country for Turkmenistan's gas exports to Russia and China. (EIA country analysis briefs, 2010)

As a result, the SCO could represent a platform, where the member states should have a possibility to substantially discuss on regular basis the organization's energy strategy, joint implementation of projects in the sphere of hydrocarbons exploring, production, processing, and transportation.

As said by Leonid Moiseev, Special Representative of the President of Russia for SCO affairs, "This club or forum – no matter how it is called – can become a brain and information trust, which would contribute to coordination of long-term programs in the sphere of the fuel-energy complex. It could in perspective elaborate common strategic guidelines, help to create general infrastructure, which should serve to implementation of joint projects, as well as persist in its position in foreign economic policy. And it is reasonable at that to involve in this mechanism's work the SCO observer states too". (Krans, October 28, 2009)

The Challenges Confronting Energy Cooperation in the SCO Region

Although the SCO has achieved steady development during the past decade, it remains a young regional organization. It still faces tough challenges. Here we will do a brief review of the main challenges that the SCO has faced in three internal, regional and international levels.

a. Internal Challenges

It is an undeniable fact that following the collapse of the Soviet Union, most of the Eurasian countries' economies weakened as regional trade collapsed. Throughout this period, religious and cultural differences also have often created the ethnic, religious and sectarian conflicts in the region. Terrorist and extremist forces have also used these religious and cultural differences to incite disunity and manufacture turmoil. (Guang, 2007) On the other hand, different separatist groups in the region have tried to challenge the powerful central governments in most of the Eurasian countries. The tyranny governments in these countries also have faced several democratic movements against the long standing economic corruption and political dictatorship.

The lack of open economic markets in the SCO region also play an important role in decreasing the suitable situations for establishing an enduring coalition in the field of economic collaboration, particularly energy cooperation.

Generally, the events have occurred during last two decades in the region, have prepared an unstable and shaky situation for the ruling governments in the SCO region. These realities not only have decreased the legitimacy of their decisions in both external and internal affairs, but make the long term and huge amount of foreign investments in the field of energy exploration and transformation insecure.

b. Regional Challenges

Some analysts believe that considering the complex relations among all the Eurasian powers, longstanding bilateral conflicts and contradictory alliances, more conflicts will be brought to the negotiation table in the event of the SCO's enlargement. From this perspective, it is hard to see how the SCO could provide a truly multilateral trade framework considering that all regional initiatives

so far, e.g. the Economic Cooperation Organization (ECO) and the Eurasian Economic Community (Eurasec) have remained ineffective.

Despite the necessity of cooperation in the economic sphere, the fact remains that long term economic cooperation has weak links in Eurasia. Therefore, economic cooperation within the SCO framework is likely to take more time. (Singh Roy, August 22, 2008) In fact, the SCO member countries that export oil and gas are so far not only partners, but also rivals on the promising markets in East and South Asia. Furthermore, we should not forget such an important factor in the SCO development as competition between its largest founders, Russia and China. Despite recent friendship between Russia and China, there are serious concerns within the higher levels of Russian decision-makers about China's increasing political, economic and military growth and its implications for Russia in its backyard in Central Asia, West Asia and the Asia Pacific region. Russia has been trying to maintain the Central Asian states within its orbit and China has been reluctant in letting additional states into its strategic interests in Central Asia. China has been obviously increasing activity in the region. Chinese companies' efforts to get a foothold in the energy sectors of Turkmenistan, Kazakhstan and Uzbekistan are beginning to threaten Russia's position in Central Asia based on monopoly on export gas pipelines to Europe.

On the other hand, Central Asian SCO members are paradoxical about conducting win-win economic and trade cooperation with China. Although China's giant market and huge investment potential and Central Asian nations' underdeveloped manufacturing industry and investment shortages could form a complementary framework for cooperation, Central Asian members are often uncertain to deepen and expand cooperation with China, worrying about excessive economic dependence on China. (Mingwen, August 11, 2011)

Enlargement also poses a problem to the SCO. Although a protocol of accepting new member states was formally signed in 2010, SCO members have yet to reach a consensus on which applicant should be accepted first. If this problem cannot be solved soon, it will negatively affect the SCO's reputation. However, the hostility between India and Pakistan stands out as the most serious obstacle to a greater regional dialogue including all the actors. Judging by the experiences of the South Asian Association for Regional Cooperation (SAARC) where the conflict between India and Pakistan has brought the entire organization into deadlock, both China and Russia will probably think twice before admitting these countries, especially as the Central Asian member states have the destabilizing effect of Pakistan's support of the Taliban fresh in mind.

The hostility between India and China does not facilitate things either. Although bilateral relations have improved since the 1962 Sino-Indian War, tensions still exist. Here India's active lobbying for keeping China out of SAARC may affect China's position about India's membership in SCO. (Niazi, 2006, 6) China's rapid development of infrastructure in Central, Southwest and South Asia is also feared in Indian policy-making circles to be a Chinese strategic encirclement of the South Asian subcontinent.

On the other hand, concern over relations with the USA is also limiting India's participation within the framework of the SCO. Carrots from the USA in assisting India with civilian nuclear technology as well as repeated statements of the bloc-like nature of the SCO from the USA is hindering a more extensive Indian participation in SCO. Signs of this cautious approach to the SCO from the Indian side are increasingly seen. The Indian leadership rarely makes statements on intention to join the SCO. (Norling & Swanstrom, September 2007)

As a result, considering the strategic interests involved in energy projects it seems that these states will find it difficult to cooperate in the field of energy in near future. In fact, within the energy sector it may also seem illogical why China and Russia would give an advantage to India and Pakistan to participate in the competition over Central Asian energy resources. Regarding these matters, it will pose major difficulties in initiating a dialogue among all the states in the SCO region.

c. International Challenges

It seems that Western considerations focus on the SCO increasingly becoming a mechanism to oust the United States and its Western allies from Central Asia. The most obvious challenge to US and European interests in this field is in terms of balance of power. From the US and EU point of view, the SCO countries may raise their bargaining positions vis-à-vis the West when speaking in concert. Based on their concerns, it should also be acknowledged that it would be wrong to assume

that the SCO is a 'neutral' organization without any agenda besides promoting all of its members' interests. Given the arms transfer makes up a large portion of the trade between China and Pakistan, Russia and India, Iran and Russia, Iran and China and China and Russia this may pose significant challenges to US and European interests in the long term as these states' scientific competencies, technological know-how and economic growth promote defense modernization. (Norling & Swanstrom, September 2007)

Therefore Wary of Moscow's and Beijing's transregional ambitions, Washington has launched new diplomatic initiatives centered on creating a "Greater Central Asia" that would revolve around treating South Asia and Central Asia as a single unit. (Pabst, 2009)

By the way, the Energy Club that has not been officially established yet is already perceived in the West as a basic model of Oriental gas OPEC. Given the high price of fuel in recent years, international observers have started to wonder whether the SCO's energy-cooperation initiatives actually pose a challenge to Western economic interests. Taking into consideration that the SCO members and observers do in fact control about 23 per cent of the world's oil and 55 per cent of natural gas reserves, with Russia accounting for the single largest gas reserves on the globe, the ability of the SCO-coordinated activities to move markets would seem considerable. (Raith and Weldon, April 24, 2008)

It was specifically Moscow's proposal to create an Energy Club that caught the attention of Western policymakers. Some saw the announcement as an attempt by the SCO to move from only coordinating its participants' national energy policies to actually setting up some kind of energy cartel. (Raith & Weldon, April 24, 2008) This causes obvious concerns in the West, which is actively trying to weaken Russia's and China's influence in this region, while simultaneously increasing its own expansion there.

Generally, some hostilities appeared between two sides during last years and the United States application for observer status in the SCO, but was rejected in 2006. (Hiro, June 16, 2006) & (Bhadrakumar, April 18, 2006) following that, at a wide-ranging State Department briefing, Richard Boucher, US assistant secretary of state for South and Central Asian affairs, announced US's reluctance of cooperation with the SCO: "We've criticized it [the SCO] when they went wandering into political areas. We've criticized it when they started making pronouncements about other countries, like us ... we're not looking for any formal association with this organization." (Raith & Weldon, April 24, 2008)

However, it is expected that Western countries stay engaged with the SCO on the political, as well as the economic level. In recent years, the Obama Administration has called for more regional input into and burden sharing for complex problems such as Afghanistan, and agreed to U.S. participation at a SCO-sponsored international conference on Afghanistan in 2009. (Boland, June 20, 2011) In January 2010, Secretary of State Clinton, in remarks on Asian regional architecture in Hawaii, stated that "we have also seen new organizations, including the ASEAN Regional Forum, ASEAN+3, the Shanghai Cooperation Organization; we hope that we will be able to participate actively in many of those,"(Clinton, January 12, 2010) raising the possibility of future U.S.-SCO engagement.

The Opportunities of Energy Cooperation in the SCO Region

There is no doubt that the SCO is partly a vehicle for the permanent members and observers to justify and legitimize their own interests in the Eurasia region. It seems that there is a need to realize the benefits involved with increasing engagement across the East Asia/Central Asia/and South Asia regions. Undoubtedly, greater interdependence could raise the costs of conflicts among the Eurasian states. Any development promoting increased regional dialogue about trade and other issues may have conflict-preventive effects in this conflict prone region.

Obviously, the SCO's move into the trade sphere should not primarily be assessed in terms of its ability to provide a regulatory multilateral framework of trade, similar to that of the European Union's common market or the North American Free Trade Association, but as a way to coordinate and discuss such issues. Considering the growing complementarities between India, Pakistan and China on the one hand and Russia, Iran and the Central Asian states on the other in the energy sector, there is truly a need for a multilateral forum where energy infrastructure and trade and transit coordination may be discussed. The move of the SCO into the trade sphere and its

engagement with Iran, India and Pakistan is a sign of the growing trading ties within Eurasia that has consolidated itself in the post-Cold War period.

The trade between the SCO members in this region has a long history. Through the Kuchan, Roman, and Persian empires trade have been conducted from the Indian Ocean stretching as an arc from the Rimland of the Indus basin to the Heartland of Central Asia. (Starr, 2005) What today stretches up north of the Pamir mountains, into the Fergana Valley, to Khorgos in the East and the Caspian in the West was a zone of strong economic interaction which may see its economic revival today.

During Soviet time cross-border interaction and trade between Central Asia, Afghanistan, China, and Iran were minimal. In addition, before Deng Xiaoping's leadership in the 1970s and the opening up of the Chinese economy, China's foreign trade was similarly limited and the same applies to the period of Nehruvian socialism in India. A century of almost constant instability and conflict in Afghanistan, more than 60 years of conflict between India and Pakistan, and border disputes in the entire SCO region have had detrimental effects for these economies.

The disintegration of the Soviet Union, and China and Indian integration into the world economy have however significantly altered the opportunities for cross-border trade in Greater Central Asia and with its neighbors. Trade potential between China, Afghanistan, India, Pakistan and Iran, the five Central Asian nations, and all the way to Western Europe is considerable. A major driver for this is growing energy needs in India, Pakistan, China and enormous energy supplies in the Caspian, the Middle East, Central Asia and Russia that would be led to significant complementarities between the SCO economies. (Norling & Swanstrom, September 2007)

However, it is important to consider that to date, trade, energy and economic matters are mostly settled bilaterally on the sidelines of the heads of states summits and the regional coordination aspect is often neglected. Paradoxically, the bulk of these deals seem to be between the SCO members and observers. This indicates that a greater regional dialogue including not only China, Russia and Central Asia, but also its neighbors in South Asia is needed. Even if the economies of the current SCO members are already complementary, the inclusion of Iran, India and Pakistan into a greater dialogue would increase the ability to discuss matters of concern and bridge the South and Central Asia divide.

From this perspective, SCO can play an important role in confidence-building and conflict prevention in Eurasia. For the first time since partition of British India in 1947 into India and Pakistan (India, Pakistan and Bangladesh in 1971) the basic interdependence between India on the one hand, and the states of Afghanistan, Pakistan, Iran, Central Asia, China and Southeast Asia on the other, seems to be restored.

As mentioned before, there are some arguments that the SCO may face the same fate as the SAARC if India and Pakistan join it. There are however some differences between these two cases. The problem with the SAARC has been that India's absence has postponed the heads of state summits, which has essentially placed the whole organization in stalemate. A SAARC summit without India would not have much legitimacy considering the weight of that country. In contrast to the SAARC, the SCO can have its deliberations even if India or Pakistan do not participate the summit.

It is also important to include Afghanistan into the regional economy, not least for the former post-Soviet states. If this could be achieved, this would mean increased access to ports in Pakistan at Gwadar and Iran at Bandar Abbas and Chah Bahar for Central Asia giving important outlets for products to the world market. India and Pakistan will also get a further source of energy and an important diversification away from a reliance on the Middle East.

On the other hand, as the successful restoration and reconstruction of Afghan society and infrastructure is a key component in a dynamic South and Central Asian market, Afghanistan is going to be further integrated into the SCO structure. There has been increasing talk recently in Europe and the United States about the possibility and even necessity of a dialogue between the SCO and NATO. Common approaches to combating terrorism and normalizing the situation in Afghanistan could well become the basis for boarder cooperation with NATO. The SCO is particularly valuable here because some of its member-states and observer countries carry a great deal of weight with individual Afghan ethnic groups (specifically: Tajikistan, Uzbekistan, Iran, Pakistan, and India). These influential external players could motivate those groups inside Afghanistan to join internal conflict resolution talks. (Lukin, July 21, 2011)

Moreover, for the first time since the 1960s China has shown a more moderate and objective position in the conflict between India and Pakistan. Although China still is, and has been, Pakistan's main supporter in the last 50 years, ties between China and India are improving. (Deepak, 2006, 49)

Generally, regional cooperation in the SCO region could bring fruitful achievements for the different partners although their interests are not overlapped in all aspects. For China, the SCO provides a perfect political and economic mechanism to contain the Uighur separatist movement, access to Central Asian energy resources and economic benefits. The SCO provides China an opportunity to regain its strategic space which had started waning post 9/11 with increasing US influence. For Russia, the SCO provides an opportunity for strengthening its political, military and economic ties with the Eurasian countries and for engaging China economically while at the same time balancing US influence. For Central Asians, the SCO provides greater maneuvering capacity to balance the major powers and gain economic and military aid. Central Asian countries are looking to reduce their vulnerability to external powers. Their responses to this new unfolding situation is driven more by their need for economic support and investments in various sectors, and fear of increasing political opposition, than by the fear of great power rivalry and hegemony. (Singh Roy, July 4, 2006)

And in the field of energy, while the three countries of Central Asia, including Kazakhstan, Uzbekistan and Turkmenistan, along with Iran and Russia, are considered as the major oil and gas producers in Eurasia, other members of the organization, such as China, India, and Pakistan, are among the largest energy consumers in the world. Regarding this reality, organizing a network of cooperation among energy producers and consumers in the Caspian region is achievable through multilateral cooperation, intra-organizational investments and providing energy transportation network between these countries. It can also allow the participated countries to expand energy cooperation through the formation of **a consortium of SCO's national oil companies**.

The Future Perspective of Energy Cooperation in the SCO Region

While it is attractive to explain the objectives of the SCO countries in terms of balance of power alone, this often neglects the fact that the organization is more than an expression of power politics. Increased interactions across Eurasia in all directions increases the potentials of the SCO states to find new markets and Central Asia will find itself in the middle of this trade network. This is not to say that these growing arrangements in Eurasia do not cause challenges to Western interests. But the benefits should also be recognized. The increased interdependence and regional cooperation in Eurasia will raise the costs of conflicts and provide a climate encouraging to cross-border interactions, which in the end will benefit Western firms as well.

During recent years the diversity of interests of the member countries has prepared a suitable ground for the SCO to keep its neutrality position in the regional competitions between the Eurasian powerful rivals. For instance, while the Astana summit in 2005 was important for its declaration asking the United States to provide a time frame for the withdrawal of its military forces from the SCO territories, the Dushanbe summit in 2008 was held against the backdrop of Georgian crisis and speculations about the start of a 'new cold war' between Russia and the US.

Actually, since the six SCO members do not share a common ideology directly aimed against the West, there is no reason to be overly concerned about the organization, which is clearly not a transformed version of the Warsaw Pact. In fact, this is no rerun of the nineteenth- or twentieth-century "Great Game" among empires. Nowadays, sovereignty and legitimacy are not monopolized by states but are widely—although of course unequally—distributed among a wide range of actors, including multinational corporations, religious groups, non-governmental activists and regional and international organizations operating on all layers of the complex matrix of 21st-century power. (Raith and Weldon, April 24, 2008)

Cooperation in the SCO has discarded Cold War thinking, providing a good example of coexistence among nations of different religions and cultures. Member states include believers of Taoism, Buddhism, Eastern Orthodox Christianity, Hinduism and Islam.

With China and Russia, the SCO occupies two of the five permanent UN Security Council seats. The organization is suspended to play an increasingly important role in promoting regional economic development and cultural cooperation as well as guaranteeing regional security. In the future, it will continue to help further economic development in member states and the region in

general. With the SCO's increasing influence in the past years within the Eurasian region, it is expected to play an important role in the future as well. The SCO's geographical proximity to Afghanistan particularly, with the Central Asian countries, will require that neighboring countries engage Afghanistan bilaterally as well as through the SCO in specific areas like controlling drugs and terrorism and energy transportation.

The SCO is of strategic significance to both China and Russia. It is also important for Central Asian member states, not only because China is their major investment and trade partner. The SCO also provides them a best platform to conduct independent diplomacy and advance economic growth. The SCO region is significant for China, India and Russia with respect to dealing with threats to security posed by non-state actors such as terrorists and drug-traffickers. The three could also cooperate with regard to energy resources, transport and investment in the region. However, competition could not be ruled out and hence it was necessary to structure their interaction in terms of 'cooperative competition' and well-coordinated trilateral interaction, for example, by each agreeing to specialize in a particular sphere or sector.

For balance of power in the region, Russia would need India and India would require the support of Russia in Central Asia and the AfPak region. China has always tried to counter Indo-Russian security cooperation by forming strategic military ties with Pakistan and this trend is likely to continue in the future as Beijing tries to maintain the balance of power in Southern Asia. In fact, the relationship between China and Russia is a typical one between two great powers - on one hand, pragmatic considerations urge both sides to co-operate; on the other hand.

With these regards, the SCO's international position will continue to be promoted by Russia and China, as it suits their common interest in building a multi-polar international system in the framework of the regional integrations. At the same time, both states use the organization to balance each other's political and economic weight in the region. The strategic triangle of Russia, India and China (RIC) can be used by Russia and India to engage China constructively. Given the centrality of China in international politics, India and Russia can keep China in a much more constructive way under the RIC mechanism.

Although there is widespread belief that the future of SCO will depend on how successfully it is able to deal with the issue of economic cooperation in the Eurasian region, one can count various reasons for the lack of certain results. The major shortcomings for the SCO have been mainly the absence of political will and confidence; difference in economic status of member states; cultural differences and domestic challenges of Eurasia countries. In addition, opposition from the countries that are left out has been a major source of weakness. Finally, lack of clear direction for cooperative activities has prevented it from moving forward.

Therefore, the future of SCO would depend firstly on how it addresses the contradictory interests of member states and other regional and extra regional players in the region. Secondly, how cooperation and mutually advantageous equality would serve as the basis of the relations among member states and states with observer status. Thirdly, the question of expanding the organization would determine the scope and role of the SCO. Fourthly, the SCO's success in economic co-operation would be conditioned by the fear of smaller SCO members, in that smaller states might fear that their resources would become vulnerable to exploitation by larger members. If the SCO has to emerge as a successful regional organization, it should develop into an effective multilateral organization to address security and economic challenges in the region on the basis of mutually beneficial terms among its members.

In the field of energy cooperation, based on the mentioned arguments in this article, it seems that cooperation in the field of energy production and security will increase within the SCO so long as it meets the political and economic interests of its member states. However, a closer look at the actual state of the SCO's cooperation mechanisms make it clear that the group currently lacks the ability to create an energy or natural gas cartel. The supposed Energy Club probably will be little more than a consultative body to discuss already existing cooperation. In fact, today the establishment of a cartel is very unlikely. Because of differences in their energy interests, the SCO member states would prefer setting up a coordination center rather than a cartel based on producing countries' common policies.

We also should consider that it is still a big question whether SCO countries are willing to redefine their energy security on a regional (or multilateral) framework.

However, Energy co-operation could be a foundation from which the region could form an integrated community using the basic framework to promote market efficiency and accelerate liberalization across the region. Besides, more energetic efforts by the SCO members in implementing joint economic and energy projects could strengthen security in Central Asia. Creation of the SCO Energy Club in any case must contribute to closer cooperation of energy resources producers, their consumers and transit countries. The realization of this idea can transform SCO into a self-sufficient energy system both in global and regional contexts.

At a time when intense competition for access to the world's natural resources is continuing and is likely to increase, enhanced energy linkages and associated ties can contribute to the development of a co-operative mechanism involving East Asia, South Asia, and Central Asia - exactly the opposite of the "Great Game". However, if these players are unable to manage wisely their internal dynamics and organize their interdependence rationally, the mutual efforts will not create any real results to remove the sense of isolation each may feel and influence them that uncooperative energy policies would work against their own best interests in the longer term. (Christoffersen, 2004)

In many respects, chaos in Eurasia stems from poverty and despair. If these issues will be resolved within the SCO on a parity basis, for instance, joint projects implemented in the energy and economic spheres, then tension in the region would gradually lessen and fall short of the levels where extremist groups could flare up with armed acts.

And finally, it can be argued that it is too early to expect convincing results from the SCO as it would need a time frame to mature and is still in the process of defining its political characteristics and functions. Maybe the SCO members should act, as a Chinese aphorism says "from the simple to the complex".

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Spatial Planning and Sustainable Tourism – A Case Study of Golija Mountain (Serbia)

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Abstract. The goal of this paper is to present and analyze the spatial plan of special purpose for the Golija Nature Park from the aspect of sustainable tourism development. The paper also gives an overview of the existing spatial plan with reference to its drawbacks and also proposes some solutions regarding the use, protection and management of the Nature Park area. A brief discussion is also given about the development of a sustainable tourism product of Golija through effective spatial planning.

Keywords: spatial planning; sustainable tourism; Golija; Serbia.

1. Introduction

Tourism, observed as a complex social and economic phenomenon, has risen to unprecedented levels of development and prosperity worldwide.

The past few years, the travel and tourism industry had to face a series of unpredictable events. The political uncertainty, terrorism, the variation and variability of consumer habits and demands, the economic turbulences and so on, created various pressures on the industry. In an effort to adapt to a changing marketplace, the travel and tourism industry had to restructure and refocus its efforts. While business plans have become shorter, more governments began to realize that they can not leave the growth and development of this industry only to chance. On the other side, the increased global awareness for these issues represented a huge opportunity for prospective directions in the industry. Noticeable is the shift in thinking about sustainable development and proper spatial planning as well as their impact on tourism and the mutual connection between them.

The providers of tourism services tend to offer such products and services that correspond to the given tourism needs of the consumers, who in a way "unite" themselves due to some mutual and specific necessities. Taking into account the geographical principle of determining the tourism market, we can define tourist destinations – spatial integrities where all transactions are occurring and are executed.

It becomes evident that the increase and expansion of the tourism markets, as well as the increase of the number and size of tourist destinations, or with other words – the growth of the

overall tourism industry, will generate enormous effects on the economy, on the cultural identity, as well as on the physical surrounding and environment. On a global level, this requires adequate developmental allocation of tourism localities and destinations.

Openly and unequivocally it can be concluded that spatial planning and the development in general, can become unsustainable, if no detailed or thorough analysis and adequate research are undertaken. These should be focused on redefining the existing models and standards for establishing and executing tourism activities in certain areas.

Tourism represents a cross-sectional occurrence, involving a wide range of involved parties (stakeholders) from almost every domain who have different and often contradictory interests and agendas. The decisions about tourism development should be balanced between the national and the local needs, the private sector and the state, the local communities, the communities of citizens, between the tourists and the mass media etc. Especially political decisions should take into account the direct returns as well as the long-term benefits, which require a clear and well defined vision.

Therefore, sustainable tourism development is a very complex and complicated task to achieve [1].

2. Spatial planning as an opportunity for sustainable development

Tourism spatial planning and design denotes general and communal organization that includes establishment, maintenance and protection of rural and communal equipment or, as it is referred to by many authors, general and communal infrastructure [2, 3, 4, 5, 6].

Sustainable development is a kind of development that adjusts the needs of present generations without compromising the ability of the future generations to satisfy their needs. Sustainable development needs to improve the integration of three independent developmental dimensions: economic, social and environmental.

Spatial planning can be used as an instrument for coordinating the socio - economic development through preventing environmental problems and simultaneously protecting the natural and cultural environment. The challenge for planning is to ensure efficient use of limited land resources and ensure balanced regional business development and balanced use of resources, including natural resources and landscape resources, soil, water and air. Because spatial planning has a long-term character, it can also involve important principles of sustainability.

Therefore, the use of spatial planning to promote and enhance sustainable development includes the concepts of development and protection more as complementary, rather than contradictory elements.

Several action programs can be developed that individually refer to different areas and needs, however it is important to take into consideration the integration of sectors through spatial planning (regional planning and business development, sustainable urban development, transport, biodiversity, cross – border cooperation and regions, etc.) democratic and public participation, development of planning instruments, etc. This must be done in order to promote sustainable development on a given territory.

Of course the central place for such a promotion can represent the right strategic development of the tourist destination, like the development of sustainable tourism [1].

3. Regional settings

Golija stretches in the north-south direction, in a S-shape between Novi Pazar and Raška on the south and Ivanjica on the north. It covers an area of about 75,000 ha. River and creek valleys separate numerous hills. The highest peak is Jankov kamen (1,833 m), followed by Radulovac (1,785 m), Bojevo Brdo (1,748 m) and Crni Vrh (1,725 m). The peaks offer beautiful sightseeing to Golija's forests and pastures, as well as the peaks of nearby Kopaonik, Komovi and Prokletije mountains. The rivers, Moravica and Studenica have their headwaters at the mountain. Studenica breaches through the mountain, in its deep valley with several shorter gorges. Its right tributary Izubra has three waterfalls of total height of around 20 m, and several cascades. The area of Golija has 6,600 inhabitants within 42 dispersed rural communities which are characteristic of these mountainous regions. The main economic activities are livestock raising and extensive farming, and collection of forest products such as mushrooms and medicinal herbs. Within the reserve is the Studenica Monastery, which is a cultural World Heritage site and a popular tourist destination, while monasteries of Sopoćani, Stari Ras and Klisura lie at the Golija outskirts. With its beauty and

diversity of the landscape, forest wealth and water, as well as preservation of original natural and cultural values, Golija is one of the most attractive mountains in Serbia [7].

Golija is located about 150 km from Belgrade. The nearest town is Ivanjica located 45 km from the mountain top. The existing tourist resort in Gobelj and weekend settlements in Odrvračenica and Bele Vode are centers of present and future tourism development. The town of Ivanjica also has an important role as the largest tourist center from which tourists could get to the mountain relatively quickly by ski lifts [8].

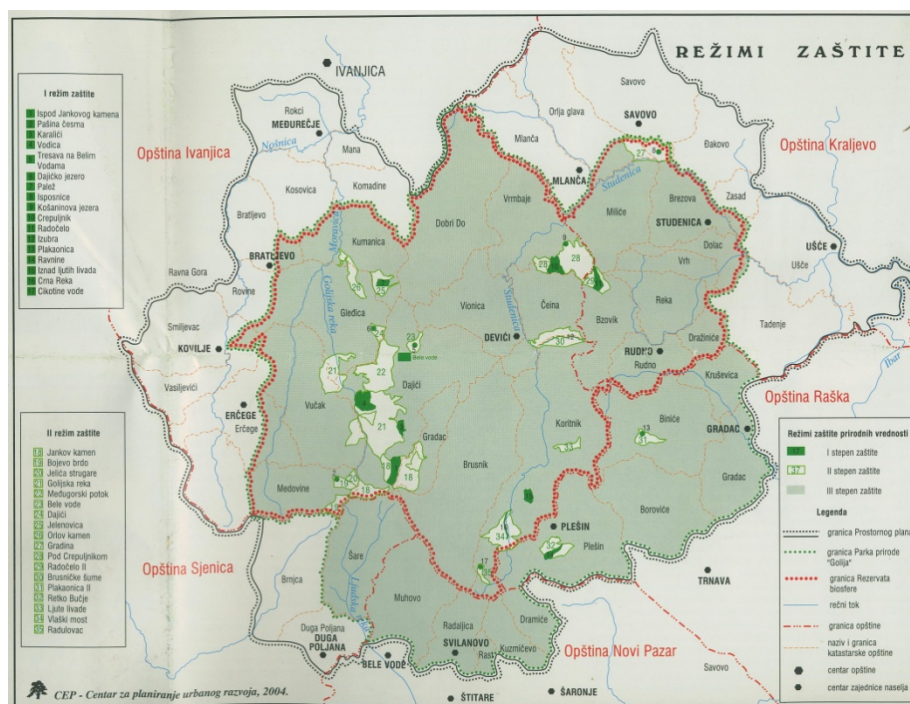


Figure 1. Location of the Golija Nature Park and levels of protection
Source: http://www.golijskidar.com/galerija_mape_en.html

If we take into account that the Golija is situated among the mountain pearls of Serbia and it is known that the objectives of the Spatial plan of special purpose, it can be concluded that in exceptional circumstances for lasting and sustainable development. It is located in the most developed tourist mountain region, which is a good basis for the development of tourism, which is certainly one of the goals of spatial planning.

4. An overview of the Spatial Plan for special purposes of Golija

The region of Golija touches the Ibar Highway to the east and the main road Raška - Novi Pazar - Sjenica to the south. A significant railroad Kraljevo - Raška - Priština also runs through the valley of the Ibar River [9]. Based on these facts, we can conclude that the Golija region has no major roads because all of them bypass the center of the region and are only nearby. This situation is not enviable given that the goal of the spatial plan is the establishment of good transport links to the area and its surroundings. The central parts of Golija are quite isolated and poorly connected, so this is one big drawback for this territory.

As a solution to this problem it would be useful to build roads which would connect the territories within the Golija region and thereby improve transport links. However, road construction requires substantial investment and it raises the question of the economic feasibility of the Spatial plan of special purpose. What justifies the economic investment on a larger scale is that Golija is located in the most developed tourist region of Serbia and the invested funds would return more quickly than it other parts of the country.

One of the drawbacks of the Spatial Plan is that it does not offer a concrete solution to the problem of traffic connections of Golija to other parts of the country, and it is evident that sustainable and durable development include, among other things, the existence of good transport links. The Spatial Plan would have to provide a possible solution for the traffic problem in the

future, what financial investments would be required, how will the work be carried out and how it will affect the development of the area. A good geostrategic position is not always a guarantee of development although it is one of the most important conditions.

The geological and geomorphological settings of Golija suggest extremely vivid, natural landscapes that are inherently attractive. The aim of the Spatial Plan is to conserve the geomorphological and geological features that are very distinctive in this area. The Golija mountain with its surroundings represents a place that can be used for scientific and recreational purposes. This is also incorporated into the existing plan so investments in these areas are more than economically justified.

The objection to the existing plan is that it does not offer concrete ways and purposes for which the vivid environment of Golija might be used. The plan should contain some specific proposals, and should offer a long-term picture about the use of vivid landscapes as one of the key attractions of Golija. The data about the geomorphological and geological features is only descriptively included into the Plan, without a detailed analysis and evaluation, which is a big drawback of the plan

The plan also proposes the development of winter tourism, however in the chapter on the characteristics of the climate it does not indicate the number of days with snow. This data is available later on in the document in the chapter about tourism. All climate data is thirty years old, which is a big drawback considering the fact that climate is a variable parameter which can change. One of the things that is also missing is the evaluation and analysis of the snow cover thickness which isn't even mentioned in the climate description.

If we add to this that the goal of the spatial plan is the protection of natural landscapes and the environment with a healthy climate, then a series of concrete measures should be taken to implement this in practice. The Spatial Plan, as a document that provides long-term solutions must clearly state the measures for achieving these objectives.

The hydrological features of Golija together with other natural elements represent an area that should be preserved because the landscape diversity is one of the main features of this area. The Plan also intends to provide a quality environment in which the hydrological resources present an integral part. This attitude towards the natural values of Golija is very positive and provides a smooth development of this region in the future, which is one of the general objectives of the Spatial Plan.

The drawback of the plan is that the hydrological characteristics of the area are only factually presented and the lack of data, analysis and evaluation of high and low waters in some streams, which in terms of flood control are very important. Durable and sustainable development can not be planned in the area where there is a risk of flooding in the spring, or for which no data on the high and low waters exists.

The Spatial plan of special purpose also predicts the protection of the land from erosion and degradation. This is one of the general objectives of the Plan, because of erosion and soil degradation problems in many mountain regions. However the drawback of the Plan is once again related to the mere description of the soil, without specific analysis and evaluation. No reference was made to how the problem of soil erosion impacts agriculture and how the degradation of land in the future will reflect on the agricultural activity and production.

Due to the great wealth of the flora and fauna of Golija, the general objectives of the Spatial Plan state the preservation of biodiversity, protection, restoration and rehabilitation of the flora and fauna. It is also indicated that based on the Seville Strategy a healthy ecosystem should be preserved. All these arguments justify that the Spatial Plan highlights the importance of such diverse plant and animal life of Golija and it mentions a number of measures which would help in its preservation.

An objection to the Plan is that it states that no systematic studies of fauna have been conducted on the territory of Golija which is considered to be a big oversight. You cannot plan the protection and restoration of flora and fauna, as well as the preservation of biodiversity and ecosystem if there is no detailed and systemic research.

In the case of natural resources of Golija it can easily be seen that this is an area of extraordinary natural beauty and wealth, but the lack of data for many of the mentioned parameters can also be noted. And without this adequate data no long-term planning can be done

correctly. Some of the data is more than thirty years old, which is unacceptable given that many natural factors are changeable over time and require monitoring.

A large amount of data is only descriptively presented and factually entered into the Plan, without the analysis and evaluation, and without possible actions for the future. For a small number of parameters specific and concrete measures are given and also how they will provide a lasting and sustainable development.

Given the current poor demographic state in the Golija region, the economy does not have enough workforce which is needed for a more serious development of tourism in the future. Population aging is also one of the important problems of the area.

The main criticism of the Plan is that it does not provide measures and methods that would improve the current demographic situation. If the plan states that in future this will be a tourist area, the question is who will be employed in the tourism industry and who will be the leader in the tourism industry if the bad demographic situation continues. The plan should include concrete measures that would impact on the improvement of poor demographics.

As a part of the Golija Nature Park there are two cultural monuments of extraordinary importance: the Studenica and Gradac monasteries. Since 1986 the Studenica monastery is on the UNESCO World Heritage List. The Nature Park also has nine more cultural monuments of great importance, five monuments that have not been categorized yet and four other protected monuments.

The Spatial Plan predicts the protection, conservation and preservation of cultural values, which is very commendable. It also provides the promotion of cultural heritage as tourist attractions and monuments of history. Promoting heritage monuments would lead to an increase in interest for visiting these areas, which would mean the development of tourism and strengthening of the economy. This region would thus become more attractive to live in which could result in more and more people living in this area.

The drawback of the Plan is that it does not specify the measures which would realize the objectives related to the tourist affirmation of Golija, and the plan also does not provide a vision for the future of this region.

Out of all the branches of industry in the Golija region, tourism is the most sustainable one with about 1200 beds. There is a significant number of beds in spas and private accommodation. Hunting and fishing are compatible with tourism and the climate is good for winter sports [9]. What most of all favors tourism is certainly the natural environment, cultural heritage and wealth of Golija. The part of the plan related to tourism is fair and sustainable. It guarantees a continuous and sustainable development of the area. According to the measures of the Spatial Plan, Golija should occupy a permanent and important place in our tourism industry along with the inclusion of the surrounding rural areas

A major drawback of the Plan is that it does not offer many specific solutions and measures to be applied in order for the tourism industry to be sustainable and to develop. For the most part it highlights the natural beauty and cultural treasures just as undeniable quality but the plan lacks practical solutions on how to promote and use those qualities in the tourism industry.

5. The use, protection and management of the investigated area with proposed solutions

The natural wealth and beauty of Golija along with its rich cultural heritage are just some of the qualities that this region possesses and necessary measures should be taken to protect them.

The natural resources of Golija are undeniable and present one of its biggest assets for sure. As it is mentioned in the Plan, the natural wealth and beauty are protected through many zones and each zone has a separate treatment. The Golija Nature Park covers over 75 183 hectares and it is divided into three levels of protection. The first level takes 0.74%, the second 5.16% and the third 94.10% of the territory. The Biosphere Reserve Golija-Studenica is entirely within the Nature Park and all protection measures, planning and arrangements apply the same as in the Nature Park [9].

The construction of permanent facilities to accommodate tourists and restricted access for vehicles, except in case of emergency in the area of the park with the first level of protection is one of the positive things in the Plan. The Plan also deals very well with the protection of the second zone in the Park because it prohibits the exploitation of minerals, fishing, plowing roads and such. For the third zone of protection a similar set of measures is proposed as it is done for the second

zone along with the prohibition to build industrial and similar structures and the prohibition of the destruction of plant and animal species.

In order to better protect the natural resources, a more thorough study of them is necessary. For a large number of natural phenomena the Plan does not contain enough information and for some others key information are missing which is a major drawback. The use, protection, durable and sustainable development cannot be effectively planned if the area has not previously been fully investigated.

As it was discussed earlier, the demographics of Golija is a parameter that is not in favor of Golija when it comes to the tourism development of the region. Therefore, a good population policy is highly recommended not only for this but for other areas with similar problems.

Cultural and historical sites of Golija require protection, preservation, conservation and restoration. Promoting cultural heritage and creating promotional activities can lead to the strengthening of the economic base of the region which the plan predicts and mentions [9].

Protection of cultural heritage implies the protection of space itself but also the areas that require restoration and rural reconstruction. Cultural goods of high value require special protection and conservation as mentioned in the Plan.

The plan provides for an equitable and decentralized network of settlements, which is one of the rules that should be applied not only in this part of Serbia, but also at the national level. For the implementation of this policy, a number of political, social and cultural measures that affect not only regional and spatial planning is needed. The construction of roads, development of tourist centers, improvement of human resources and such is also predicted by the Plan. All these measures are justified, but they require a financial investment and a good economic base, and the Plan does not contain a solution for this problem. Each construction on the park territory is strictly controlled and defined so as not to disturb the natural environment, cultural heritage and other resources. Tourist facilities should be constructed in a natural setting along with parking space with the characteristics of the local architectural heritage which is quite justified.

Industrial facilities are subject to all rules of construction, especially when it comes to architectural design solutions and solutions with properly selected locations. The positive side of the plan is that it provides for the relocation of a timber plant, because this industry undermines the rule of preservation of natural resources. Construction in the Nature Park is mostly limited and is only available for scientific purposes, and specific tourism purposes. This rule puts the protection of not only natural resources but also cultural heritage. For certain parameters important to the economy there is no, or a lack of data and that is one drawback of the Plan. The plan must give clear information and analysis on the development of the economy, and not only factually present facts, without analysis and the vision of the situation in the future.

The construction of roads for all modes of transport is recommended, because the entire area lacks all sorts of traffic infrastructure. The Plan assessed the situation related to the lack of roads very well and the construction of new roads is welcome with the same rules of construction that do not interfere with the preservation of natural and cultural heritage. The construction of roads is necessary and that is what the Plan provides.

Infrastructure, technical and utility systems are an integral part of the investments in Golija. Water supply and water management are an important part of investments and the Plan envisages the construction of two reservoirs to generate electricity. Construction of the power infrastructure is carried out in accordance with the rule about the protection of nature and cultural heritage which is logical. Similar rules apply to the construction of telecommunications infrastructure also.

The construction of public services, roads, infrastructure, technical and utility systems is necessary, but the plan does not mention the required funds and how would these tasks be carried out which is a big drawback.

Waste treatment is very important, and consequently, the Plan predicts recycling, reduction and disposal of unused waste out of the protected area. This measure is justified because it intends to protect the nature park.

The economic development and construction of commercial buildings in the wider Golija region can not be absolutely stopped in order to preserve the natural environment, but it must strictly take into account what it is that the Spatial Plan predicts and requires. Therefore, in agriculture and forestry, protection measures from surface erosion, improvement of the quality of land, preservation of hunting grounds and the protection of fish and such should be taken into

account. The exploitation of mineral resources should be planned, and the water supply limited so that it does not violate the natural state of water flow [9].

Within the economy only the tourism industry has greater freedom for development than other industries. Tourism development is defined by the Master Plan, which presents itself as a modern mountain destination with extraordinary natural and cultural factors. With the implementation of the Master Plan Golija, in terms of tourism, this region is becoming an important competitor to Kopaonik and Zlatibor mountains and thus reaches the very top of national tourism. The plan provides for innovation in tourism, quality enhancement, development of rural tourism and recreational tourism. What fully justifies such a strategy of the Plan is the permanent and sustainable tourism development. The development of tourism for winter sports is already a part of the Plan, which is achievable with huge investments and a strategy that has ambitious scale.

Preserved and pristine environment is very important in terms of protection and the smooth development of the project region. It is needless to speak about the importance of environment preservation, although the plan envisages a number of measures for the conservation and protection of natural and man-made resources areas along with the rational and sustainable use of resources. The positive thing is also that the Plan is subjected to strict compliance with all legal requirements and obligations relating to the protection and enhancement of environmental quality. The Plan is based on the principles of prevention of environmental pollution and the principles of integrity, which means mandatory inclusion of environmental requirements in all plans / programs or activities and facilities [9]. Therefore, the Plan presents a very carefully thought out way to preserve the environment which is very commendable. The only drawback is that the protection of the area is not only a problem related to the lack of space in the Nature Park but it is a problem which should be solved on the national level, and the Plan must not only relate to the protection of this area.

It should be noted that the protection of the park in case of war and natural disasters, is also included in the Plan and fairly regulated.

6. The development of a sustainable tourism product of Golija through efficient spatial planning

In 2009 a spatial plan of special purpose was adopted for the territory of the Golija Nature Park for the period until 2021. The concept of nature is directed towards the conservation of natural resources, restoring of parts of space that have the potential natural values for which the area is put under the protection and maintenance of traditional cultural values that maintain a balance of sustainable development of the protected area.

Tourism in biosphere reserves should meet the needs of visitors to meet the authentic natural areas in order to enjoy the scenery, natural features and traditional values, without violating the conservation of natural resources. An effective biosphere reserve implies common synchronized action of experts in natural and social sciences, groups for conservation and development, management authorities and local communities in charge for the management of the reserve and the local community [10].

According to the Spatial plan of special purpose for the Nature Park Golija (2009), the concept of tourism development at Golija is explained as follows:

- In the next 10-12 years Golija can be an exemplary mountain destination that integrates protected natural and cultural resources in the modern system of perception and experience.
- Golija promotes life in the mountains, which highlights, but also protects and nurtures identity and a rich features of the space and the people who live in it.
- The development of an innovative system of ski and other activities for winter and summer tourism will lead to a formation of an economy of 4-5 thousand concurrent users, and thus, create an image of an attractive destination that will reach about 15 thousands of concurrent users through steady growth.
- The success of Golija will be built through innovative, but also sustainable development, which provides long-term benefits to all key stakeholders, and especially to all residents of the area.

With the promotion of tourism in this area one should emphasize above all that Golija is a brand because it binds concepts and other brands such as MAB, UNESCO, World Heritage, Nature Park (park), the Monastery Studenica, Gradac and also general values such as multiculturalism, the

continuity of civilization and similar concepts. Taking into account the resources, attractions and attributes of the area, the proposal is that a competitive market positioning of Golija should be based on the wealth of natural and cultural resources, and the history, tradition and identity of the destination, because it allows the integration of these elements and their formation in a differentiated experience, products and activity. The long term proposal is that Golija should position itself on the market using four key tourist attraction of this region - the magic of nature, life on the mountain, history and culture and other activities typical for mountains. The market positioning of Golija rests on five pillars (Figure 2), which present the entire space, and serve as a framework for defining the products that will Golija offer to its guests [11].

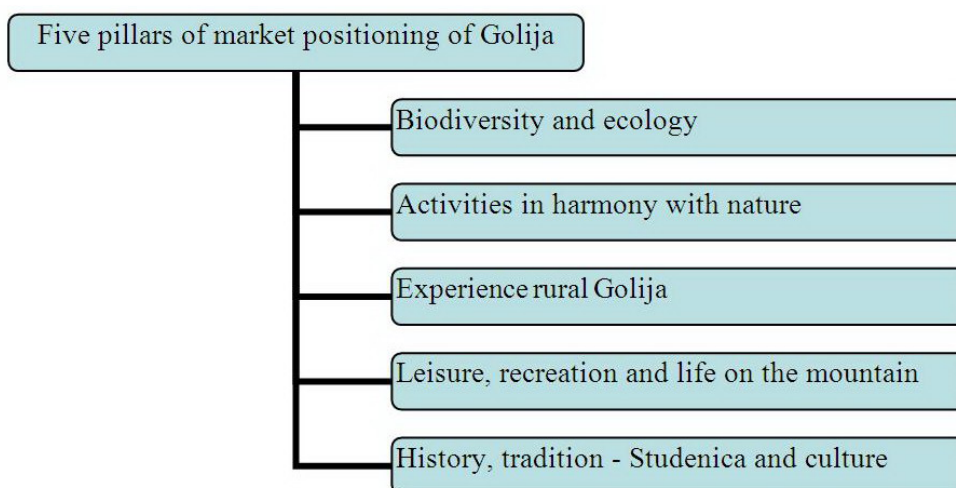


Figure 2. Market positioning of Golija [11]

Tourist centers are planned in the areas of Deviči, Ostatija-Koritnik, Studenica, Rudno, Gradac (with the development of rural tourism in the surrounding village) and tourist sites:

1. Bele Vode (with settlements Dajići, Srednja Perna and Staro Selo) - Centre of the Nature Park management;
2. Golijska Perna, Vrhovi-Odvračenica, Šeremetovica-Kuti-Plešin (which also includes the surrounding villages and hamlets) - as a unique tourist resort that is linked with the ski resort Golija. Possible ski areas, areas around the monastery Studenica and Gradac, Šeremetovica Kuti-Plešin, Odvračenica and Golijska Reka, possess elements to be declared as areas of importance for tourism or to be declared as tourism areas [9].

The Spatial Plan of Special Purpose for Golija (2009) proposes the focus of the region on the following products:

1. Mountain vacation (summer and winter). Winter and summer vacation, according to the number of arrivals and overnight stays is one of the largest sectors of tourism. In the case of Golija, this product consists of different leisure and recreational activities in winter and summer. Winter holidays are mainly focused on sports and recreation in the snow (skiing, sledding, snowboarding, cross country skiing, etc.) and summer activities are related to a wide range of recreational activities in nature. In the domestic market, this product takes on the role of the first vacation in the winter, but in the summer also, and for the international market in the role of a second or third holiday of the year. Given the micro-climatic characteristics, it is possible to develop medical tourism in terms of treatment of stress, disease management, and similar conditions caused by modern life, and even more programs of prevention of these diseases. Similar to medical tourism is the tourism for the healthy body and mind (wellness tourism), which attracts many tourists and in addition to staying in good quality accommodation it also includes the possibility of training (fitness room, gym, yoga, fitness), various cosmetic and medical treatments for the face and body and a healthy and controlled diet. The offer of health tourism should also include the existing spas in the vicinity of the area (Ivanjica and Novi Pazar).

2. Special interests (mountaineering activities in summer and winter, activities related to the culture of Golija). Various market niches are the product of special interests, and the activities that form them happen in natural, unusual, exotic, remote or wild environments. This

product of special interest implies a high level of participation in activities from tourists and mostly takes place in the open air, while users expect the experience (controlled) of risk and / or excitement, or peace while testing their skills in selected activities. Products of special interest are usually divided into rough and mild activities. Due to its rich natural and cultural heritage, Golija should focus on selected activities of special interest for which it can provide quality tourism infrastructure. Items of special interest are mostly linked to a particular season, but given the large number of its niche market, the product is attractive throughout the year. This product typically presents the third vacation in a year, or an extra activity during the main holiday. Among the special interests we have:

- **Religious programs** that include pilgrimages with shorter or longer breaks, especially when it comes to the monasteries of Studenica, Žiča, Gradac and Sopoćani which are the most important monasteries in the region, with visits to smaller and less famous churches and monasteries;

- **Educational and scientific programs** through recreational classes, study tours and study and research stays of nature lovers and other experts from home and abroad. Because of the MAB status more visits of researchers with different profiles should be expected - these programs are to target specific tourist and other facilities (visitors centers, etc.);

- **Cultural tourism**, given the great wealth of cultural and historical monuments, ethnological and other values of the area which are unavoidable segments of tourism that should be merged with the cultural and historical values of the immediate environment and implemented on the basis of high-quality programs because they are not only of local, regional, national but also of international importance.

Programs for these two forms should be designed to target groups, and the offer should include programs such as "The cultural and natural pathways," "panoramic roads", "flower paths", "Wine Trails" and similar in order to ensure the unification of most of the available tourism resources of Golija.

3. Rural tourism - with different levels of services, programs, subtypes (agro-tourism, ethnic tourism, etc.). It includes a range of activities, services and additional services that organize the rural population on family farms in order to attract tourists and create additional revenue. This product opens the most rural areas to potential visitors along with rivers or lakes, and guests can experience the traditional hospitality of the local population, and so the levers of economic growth and the rising of living standard is tightly connected to the rural communities based on the principles of sustainable development and conservation of natural resources. Rural tourism usually presents the second or third vacation and lasts up to 10 days. The product is very seasonal and demand peaks in the spring and autumn. The main motives for traveling to rural areas are rest, "drowning" in nature and gastronomy, while secondary motives are the activities in rural areas and special interests. Rural tourists will often separate an entire weekend for their vacation in a rural area, while longer stays are less common, but can last up to 10 days.

4. Special recreational activities - active holidays - This type of tourism (a different range of sports and recreational activities, a variety of controlled adventure) does not require expensive infrastructure. Some of these activities are riding tours, cycling (especially on mountain roads, villages and forest roads), rock climbing, paragliding, flying ultra light aircrafts, walking, hiking, orienteering, bird watching, nature photography, touring and cross-country skiing and more. If the program of constructing artificial reservoirs and mini hydropower plants was implemented it would create the conditions for activities related to water. Tourism segment of active holidays and events also includes sports and recreational activities in nature - competitions in running (marathons of various types, orienteering, cross), cycling (mountain bike, special races only in this area), fishing, paragliding, kayak and canoe slalom and others. It is certain that this region is also suitable for excursionists and the emitting areas are primarily in local urban centers and also those in urban centers in the rest of the country. Golija also has a chance, along with the tourism products of winter and summer holidays that are the backbone of tourism, to develop golf as a complementary component, with the greatest focus on the domestic and regional market. The golf tourism product is now a product with the most intense growth, and in the following decade a 100 % increase in the number of golf courses is expected. The main characteristic of the tourism product of golf is that players spend on average three times more money than those that come for

their vacation. The golf tourism product today is one of the main elements of every offer in luxurious resorts and its marketing today uses the integration of this product with conferences, meetings and events, providing a unique experience for business guests.

5. Meetings, travel, incentives and events - This product includes individual travel to a specific destination for business / professional reasons, but also an organized form of travel based on business motives. Sub-segments of this product are individual business trips, meetings, tourism incentive trips, seminars, educational programs and trainings, conventions and corporate business meetings, business fairs and certain events. Entertaining, cultural, and fair and exhibition type events, and similar events that are well organized and well covered by the media can be another reason for the arrival of tourists to the area. Exclusivity and uniqueness of the Golija environment and its surroundings could be a reason for the development of event programs in this area (organization of different gatherings - seminars, conferences, conventions, assemblies, presentations, etc.). Identified key priority projects have the purpose to increase the competitiveness of the tourist destination of Golija. Furthermore, these projects will strengthen and direct the development of tourism in accordance with the defined key holders of market positioning. These projects will improve the general infrastructure / mobility, the construction of tourism infrastructure as a foundation for the development of tourism products to complement the summer and winter offers on the mountain [11].

Table 1: Golija project priorities. Adapted from ref. [11]

Area	Project
Biodiversity and ecology	Golija panoramic way
	Tourist signalization and interpretation
	System of viewpoints
	Internal mobility and parking
	Visitor centers/Interpretive centers
Winter and Summer activities	Hiking and bicycle routes
	Hiking theme route "The Mountain Story"
	Nordic ski paths
	Adventure park (on the Golija River)
Experience rural Golija	Rural eco/ethno village
	Rural ethno village in the modern concept of real estate development
	Healthy diet program for the needs of the Golija tourism market
Studenica and culture	Interpretation of the wider area around the monasteries of Studenica and Gradac
	Raška - Museum / theme park of the ancient serbian state
Miscellaneous	Education programs about tourism and its activities for the local population

7. Discussion

To become a notable tourist destination, Golija must enter the tourism market with a unique product. What sets Golija apart from other tourist destinations in Serbia is that it was declared a Biosphere Reserve by UNESCO and its territory includes the Studenica and Stari Ras with Sopoćani, which are on the UNESCO World Heritage List. Therefore, its touristic positioning should be developed in this direction.

The untouched nature, clean air, healthy food on the one hand, and priceless cultural heritage and the tradition on the other, present the motives on which tourism should be based in this region. From these motives several tourism products could be developed which would make this destination competitive in the market, such as: ecotourism, wellness tourism, rural tourism, religious tourism, sightseeing and excursion tourism, recreational tourism (cycling, walking, hiking, horseback riding, paragliding). The recognition of a tourist destination will not be achieved by promoting Golija as a destination for winter sports because of already competitive destinations

of Kopaonik, Zlatibor and Tara and Golija should not compete with them. Golija could be oriented towards winter sports for kids like Divčibare with which it can compete. It also shouldn't be promoted as a destination of M.I.C.E tourism, as it has competition in Belgrade, Novi Sad and major urban centers, and thus the golf course on Golija would be useless.

The tourism development of Golija should be primarily oriented towards the summer season with accommodation in highly categorized accommodation facilities (hotels, boarding houses or homesteads) that incorporates healthy living on a mountain with recreation, adventure, education and culture. Projects such as the panoramic road, viewpoints, the system of hiking and bike paths are a big hit in the affirmation of Golija as a tourist destination, and the construction of the adventure park on the Golija River, the eco / ethno village in Rudno, the museum / theme park in Ras, activities that complement the Golija environment are tools for attracting more tourists to the area. The Golija Mountain resort should be developed more towards the direction of wellness tourism such as the medical center Čigota Zlatibor and not so much in the direction of skiing tourism because it has greater chances to achieve recognition from both domestic and foreign tourists.

In order to achieve the planned number of beds (47 200 beds) by the year 2025, as stated in the Spatial Plan, the annual average of newly built beds should have been 3000 starting in the year 2008. Given the state of the country and other external factors, this trend is ambitious and apparently unrealistic.

From all of the above it can be concluded that priority investments in the tourism development of Golija should not be the ski lifts, ski trails and skiing resorts, golf courses, etc., but projects related to transportation infrastructure, accommodation facilities, tourist signs, projects related to summer sports-recreational activities and projects that develop the above mentioned forms of tourism. In this way Golija will become a recognizable and unique tourist destination, synonymous with relaxation in unspoilt surroundings, relaxation, adventure and also spirituality and education.

8. Conclusion

The quality of the tourist destination and integrated management is clearly linked to regional and spatial planning and developmental issues. Spatial planning of a destination, if it aims its economic, social and environmental development to be based on tourism, within its planning strategies it needs to incorporate sustainable tourism. That is necessary in order not to create excessive exploitation of tourism resources and the occurrence of a future risk for total disability for any tourist activity, because the environmental damages can be irreparable.

There exists a strategic dilemma among managers and decision makers about the development of destinations on whether product management or destination management should be considered. From the above said it can be concluded that the answer is managing the destination as a whole - that means not only creating quality products and services, specified and specialized for certain market segments in a given destination, but sustainable development, preserving the local resources, quality of residential lifestyle and quality satisfaction of tourist needs. The understanding of the destination as a complex system and as a set of activities and actors whose roles are intertwined and should be coordinated, represents a necessity in order to develop the right strategies for future long-term sustainable development.

With its wealth of natural and cultural values Golija requires an active and creative role of people in the protection and promotion of goods and it finds its valuation in tourism, recreation and education as key forms of sustainable development of the area. Therefore, proper interpretation and presentation of the experience of Golija, and the design of competitive products and activities that tell a story of tradition and culture of the region, enables a significant economic revitalization of the area. Golija should offer products related to activities on the mountain, products based on nature, culture and tradition, which are formed in a competitive manner and by international rules and standards.

In order for Golija to become a recognized tourist destination, it is necessary to improve the general infrastructure and to construct the tourism infrastructure as a foundation for the development of tourism products to complement the summer and winter offers on the mountain. It is necessary to classify tourism and catering facilities and stimulate the construction and equipping of the higher categories of accommodation. Trained staff is necessary for quality services (catering,

recreation and sports instructors, entertainers, sports equipment rental, repair services, etc.), and through the school system and other faster, easier, more efficient and less expensive forms of education (courses, seminars, workshops and etc.) necessary knowledge and skills for tourism should be obtained, especially for the younger population. Intensive and quick development of new, high quality and distinctive tourism products and programs is needed along with the engagement in eco - certification programs at the local and international levels and the encouragement in the development of brands and products with geographical indications, the use of new communication technologies in the tourism business, tourism promotion, tourism signalization, education and information.

Considering that Golija is a Nature Park, tourism development should be based on continuous monitoring of the impact of tourism and its compatible activities on: the environment, particularly in the areas of protection, population status and habitat of endangered plant and animal species, the state of biodiversity, the state of the continuous existence of natural and cultural landscape, as well as economic, social and cultural consequences - impacts that tourism can have on the local community and therefore plan further action.

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Территориального планирования и устойчивого туризма – на примере Golija гора (Сербия)

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Аннотация. Цель этого документа заключается в представлении и анализе пространственных плана специального назначения для парка Golija природы с точки зрения устойчивого развития туризма. В документе также дается обзор существующих пространственных плана со ссылкой на свои недостатки, а также предлагает некоторые решения, касающиеся использования, охраны и рационального использования природной территории парка. Краткий discussion также данные о развитии устойчивого туризма продукт Golija посредством эффективного территориального планирования.

Ключевые слова: территориальное планирование; устойчивого туризма; Golija; Сербии.

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Subject's Identity in the Process of Communication

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Abstract. The authors of the article note that the problem of identification is especially important at the present stage of civilization, characterized by active processes of globalization and integration and strengthening of communicative-discursive exchange. Identity is a complex and ambiguous phenomenon, complicated by several factors. They distinguish different types of identity, formed and dominant in a particular historical era. They include ethnic identity, linguistic identity, religious identity, national identity, cultural identity, transcendental identity. Also the authors present communication as a condition for the self-identification of the individual.

Keywords: identification; globalization; integration; ethnic identity; linguistic identity; religious identity; national identity; reflection; communication.

Introduction

The problem of identification is especially important at the present stage of civilization, characterized by active processes of globalization and integration and strengthening of communicative-discursive exchange. Everyone always relates to some social community – ethnic group, nation, race to which he belongs through the communication. And only through interaction with other subjects of communication the person builds his identity, forms his self-determination.

Identity is a complex and ambiguous phenomenon. Modern understanding of identity is complicated by several factors. Firstly, the existing popular culture is a system of exclusion. Secondly, the agent of modern social action realizes himself in a rich informational system. Thirdly, modern environment is multicultural and multiethnic.

This is due to the fact that many research processes of identification are implemented in many sciences: philosophy, sociology, psychology, anthropology, ethnography, cultural studies. And each of these sciences has its methodological principles, allowing to explore various elements of the identification process from different perspectives. The more researchers interact with each other, the more completed is the problem, because identity is a result of many interactions on cultural, ethnic,

linguistic and other levels. And we will try to present different approaches to the issue of the self-identification of the person, as well as we'll highlight the types of identity.

But first of all we'll determine the notions "identity" and "identification". Let us note that the distinction between them is not essential. It's semantic and practical as they imply the same phenomenological reality. Typically, the first is the result of the process, the second is the process itself. Depending on the socio-cultural environment at different historical stages of human existence we distinguish the following types of identity, formed and dominant in a particular historical era. They include ethnic identity, linguistic identity, religious identity, national identity, cultural identity, transcendental identity.

Ethnic identity is one of the fundamental types of the subject's identity. This is due to the fact that ethnic identity refers to the subject's relationship with his blood ties, "roots", that is, of course, the basis of process of self-determination of each individual. The main theoretical approaches to the analysis of the concept of ethnic identity are implemented mainly through psychological studies.

Historically, one of the main approaches to the problem of identification is presented by the founder of psychoanalysis Z. Freud. The problem of identification was subsequently investigated also in psychoanalysis by G.S. Sullivan (interpersonal psychoanalysis), E. Fromm (humanistic psychoanalysis), E. Eriksson (epigenetic analysis).

One of the most popular approaches in psychology to the explanation of ethnic identity is behaviorism. Its representatives believe that the process of identification is the result of inter-group conflict. They highlight the importance of external criterion of characteristic accessories of the individual towards the group. Studies confirm that in some cases because of his similarity a person can identify himself with two ethnic groups if these ethnic groups are similar to each other in appearance, for example, the Belarusians and Russians. But if ethnic groups are not similar to each other, more so if we mean different races, the child of a mixed-race family will be a stranger to both races. Representatives of activity approach believe that the process of identification is determined by the cross-group activities. Ethnic identity is a dynamic formation and various factors can influence its formation and change, leading to the transformation, especially in the case of a change of environment, or in the case of inter-ethnic marriage.

Ethnic identity became the subject of intense research in the last decade. Political events of the 1990 's were greatly intensified by ethnic conflicts not only in Russia but all over the world. Formed under the influence of several factors (globalization, integration, European Union, etc.) trends of the situation in today's society, and on a personal level, and group, require responsible analysis of many of the concepts and categories. If ethnic identity is changed by other types of identity, social identity, for example civil, it is very dangerous for human identity in general. This threatens to destroy the "I-image", to lose ties with any culture in the world, to leave yourself in this world. This kind of identity is important for any person and for its interaction with others.

Ethnic identity is very closely connected with one more type of identity - religious identity. Let's look at the interaction of religious and ethnic communities at different stages of historical existing of humanity. Many thousands ago ethnic and religious boundaries largely coincided. With the emergence of the world's monotheistic religions – Christianity and Islam – ethnic and religious boundaries didn't match, in the era of the Middle ages ethnic consciousness was forced out by religious consciousness. Later religion has lost ties with the ethnic group, it wasn't identified with it. Members of the same ethnic group are composed now of people belonging to different religions, although some national religions are preserved. Among them are Armenian-Gregorian Church (Armenians), Shinto (Japanese) etc.

In Muslim countries, the situation is somewhat different: ethnic consciousness is clouded by religious consciousness. So, in the Arabic countries, ethnic minorities are all non-Muslims, as well as those belonging to different lines of Islam, non-dominant in the country.

Ethnic communities and the religious communities are characterized by hierarchy. Any religion consists of different directions, movements, sects, and churches. And even if the country is, for example, completely Christian, its residents can claim different sects and churches of Christianity. So the Germans (the residents of FRG) are Protestants and Catholics. Among the Scots also Protestants and Roman Catholics exist. But in the United States 260 churches are registered, mostly of them are Christian.

Membership of different representatives of the same people to several churches usually leads to the formation of various ethnic and religious groups within one ethnic group. Such groups are old

believers among the Russian people, Copts among Egyptians. These religious groups differ from the nations in which they were formed by cultural, domestic differences, traditions, customs, way of life.

Despite advances in science and technology in the second half of the 20th century, the influence of religion is still high. Many political and socio-cultural processes occur for a religious reason or in a close connection with religion. The recent events in Russia and in the whole world also prove it. We must take into account the religious factor because we analyze events on inter-ethnic or inter-religious or intercultural basis.

One of the most significant factors that often influence the subject's identity is language. Language and people are closely linked with each other. V. Humboldt believed that mentality of the nation is a specific way to form the structure of the language. In particular, he wrote that inflectional languages, by design, are typical for those peoples "who are on the path of meditation centered" [1, c. 145]. Under the formula of "language is the spirit of the people" Humboldt "understands a specific form of materialization of sound thinking and mental activities inherent in all media of the national language" [1, p. 150]. In any case, the individual interpretation of the language is always defined by the established linguistic patterns of a nation. In this connection, we should mention certain linguistic formulas those are present in each language.

Например: Das ist ...

There are (is) ...

How do you do?...

In each language the so-called "free" units are present. The speech of every person includes such "formulas" and "free" units. Open "formulas" and various kinds of phraseological units help to understand the nation's mental peculiarities. To understand phraseological units is impossible without a knowledge of the culture of the people. Actually, all the language units have some cultural fullness only in varying degrees. Losev A. rightly notes that in the word and, in particular, in the name all our cultural wealth, accumulated over the centuries is.

One of nonverbal tools of identification is paralanguage. It helps to determine the subject. The formation of paralanguage is due to the same factors as the formation of the language itself, namely culture, mentality of the nation, its psychological features. Paralanguage includes the following tools: facial expressions, gestures, the distance between people and others. All these displays are quite different among different peoples and, consequently, different information is shown differently. As a very famous example here is the nod of the head, which in Bulgaria means "no", and in Russia means "yes".

Thus, linguistic identity is also a complicated process as ethnic or national. And if we deal with verbal communication and nonverbal characteristics of the subject's speech, we must take into account all their wealth.

One more type of identification – national identification is correlated with linguistic identification, since language is one of the core topics that define the subject belonging to a specific national community.

The transition from feudalism to capitalism, according to Marx's theory led to the formation of ethno-social forms of bringing people together as a nation. Many studies have highlighted that any nation is a phenomenon of modern times. Foreign studies of the term "nation" acquired political sense – people belonging to one (national) state. The patriotic literature's definition of the nation understands the critical role of economic factors in the formation of this type of social community. But we agree with the position of those scientists who lean towards the so-called postmodern concepts and invest political content into the concept of "nation". It is more modern in comparison to the Marxist approach and more applicable for Russia, because there are many peoples in our country and native culture is a complex amalgam of diverse ethnic elements. From this perspective, we look at the problem of national identity in this work. Our understanding of national identity will be similar to civil identity.

Many commentators rightly point out (M. Semlyuk, S. Walker) that the end of the cold war and the changes in the political map of the world in the past decade, led to the crisis of identity of many states, as all countries have been forced to re-examine their role and status in the international arena [2, c. 78]. W. Bloom considers the relationship of national identity and influence of political behavior and identifies three types of relationships between these phenomena [3, p. 89].

Type 1. National identity as a resource. An example of this kind of relationship of identity and foreign policy can serve as a messianic nationalism. Messianic vision usually leads to aggressive actions

of the nation vis-à-vis other countries. As a rule, this propaganda of "messianism" is at the heart of imperialism (Russia, Poland).

Type 2. Foreign policy as an instrument of nation-building. Foreign policy plays a special role to determine the identity of the state (the states which were formed after the collapse of the Soviet Union and Yugoslavia, and choosing Russia or United States as their partner and patron, define their identity in different ways.)

Type 3. National identity determines foreign policy. This happens when any public ideas receive the status of Government and affect the country's foreign policy.

The hallmark of the modern globalizing world that is approved in many states is the idea that there are no external enemies. The fact of destruction of economic borders, erasing of political and cultural controversies is already quite evident. Now groups of states form a new socio-psychological shape, they change their image. National identity of their citizens changes also.

Now is a time of constant changes and disasters, upheavals and explosions – the collapse of many views, including those upon which a traditional identity was based for a number of decades and centuries. Nowadays the human identification is much more difficult, and this is due primarily to the complexity of relationships in society. Many interfering factors such as professional occupation, social mobility, social status began influence the identification process. The development of culture and society have expanded the range of identification and led to the emergence of new kinds of identities and new forms of research in this area.

One of the brightest representatives of sociological thought, dealing with issues of identity is E. Durkheim. A main factor in the development of the man he considers to be the social factor, based on the collective views of large communities of people. Durkheim refers to such views coherent system of ideas, customs, religious beliefs, moral attitudes, public institutions [4]. They are models and elements for the identification of the individual in the course of his life. Durkheim writes that in each of us there are two creatures, one of which consists of all mental states which are related to the subject's private life (individual "I"). Social "I" is the second being in man. It is a composite of attitudes, feelings, habits. E. Durkheim notes that it is important to add to the only born selfish and asocial creature a social one. The addition of this creature to the personal creature, connecting them into one individual is a process of identification, a personal "I"-conception.

The problem of social interaction has been actively changed by German sociologist M. Weber. He notes that the specificity of the interaction depends on the type of social solidarity, in which, Weber distinguishes organic and mechanical solidarity. The type of a society determining the social identity of a person depends on the nature of a social action.

K. Horney studies the influence of sociocultural determinants in subject's identity most of all. So, she believes that socio-cultural conditions have a profound effect on the development and functioning of the individual [5]. Socio-cultural factors, from her perspective, explain a lot in interpersonal relationships. F. Boas also studies social conditions and different cultural contexts which influence the process of forming of different peoples. He is convinced that the behavior of future generations is determined by biological factors and by specific cultural peculiarities [6, p. 84-98].

Self-determination is the most important act for any person in his life for a famous philosopher, psychologist and a methodologist G. Schedrovitsky. He writes: "If the circumstances are such that self-determination does not occur, then the person doesn't become [7, c. 58]. The most important part of self-determination for the man as he believes, is his reflection. G. Schedrovitsky calls the man's former framework of his life as the subject of his action the first level of reflection. The second level of reflection is the position of the man who reflects towards himself in the process of thinking. Communication is a basic condition for the implementation of reflection and, consequently, self-determination.

Reflection is the internal mechanism of socio-cultural identification for some other authors. V. Slobodchikov and E. Isaev note that reflection is directed to self-determination and due to the variety of practical situations of social reality of human existence, requiring from a human being a developed ability to communicate with others [8, p. 94]. When a person becomes a part of the universe or world culture, he fully becomes a person, according to G. Schedrovitsky. Thus, mental or transcendental self-identification is the highest form of self-identification.

No coincidence that communication is a condition for the self-identification of the individual. A modern man is firstly a communicating person, understanding that he creates something new and trying to express it for others. To live, according to M. Bakhtin, is to engage in a dialogue and ask questions. The main purpose of all processes occurring in the world today can be formulated as a

constructive dialogue in the general cultural and communicative space. I. Vasilenko characterizes this space as a common space of development of thought: the circle of shared ideas and concepts that emerge during the discussion and do not belong to any of the parties, they exceed the subjective opinions of interlocutors and become the common partners' status [9]. This dialogue is an art of joint formation of new political and socio-cultural concepts, which can explain the common field of political interactions.

But the main objective of this dialogue is the self-realization of partners. This problem grows into the relevance of self-fulfillment of each culture in a communicative space in the modern world in the context of actual dialogue of cultures. The various institutes of communication help to carry out such a dialogue, to identify ways and means of its regulation. Intercourse is a necessary condition for the existence of an individual in a society because, as Aristotle writes, a human being is a political animal. The phenomenon of intercourse is studied for several centuries by many scientists at the interface of many sciences, such as: philosophy, sociology, psychology, linguistics. Very often, the term is replaced by the term "communication", which is to our mind is broader than intercourse. We'll try to differentiate these two concepts.

The term communication comes from the Latin. To communicate means to share, to communicate, to talk. In the dictionary of the modern Western sociology (1990) we find the following definition of communication:

- ✓ 1) any means of the objects of material and spiritual world;
- ✓ 2) intercourse, transmitting information from a person to person;
- ✓ 3) intercourse and sharing of information in the community (social communication).

Thus, the term "intercourse" is included into the term "communication". Webster's New Word Dictionary (1989) gives the following interpretation:

- ✓ 1) the act of transferring of information, signals, messages in the conversation;
- ✓ 2) information or message;
- ✓ 3) intercourse based on the sympathy of the relationship;
- ✓ 4) means of communication.

V. Konetskaya gives the following modern variants of the understanding of the term "communication". It's a means of communication, a synonym for the concept of "intercourse", as the transferring and exchange of information in a society in order to influence it. [10]. The term of communication in its theoretical aspect of the study appears also in the works of K. Jaspers, E. Toffler, J. Habermas, M. Buber, J. Mead, D. Bell, T. Shibusaki, D. Watson. To summarize the investigations, it can be concluded that communication is a collaboration of people determined by socially significant characteristics, by specific situations, by rules, by regulations, representing the spiritual informational exchange among actors in the society.

The transformation of the world into a common communicative space destroyed many moral norms, values, ethical guidelines, which had played the role of foundation for previous generations. A modern man because of the growth of technology and the emergence of new means of communication opened different opportunities for himself, but at the same time, he found himself one by one with the surrounding world. Serious transformations happened in all spheres of our society: in technosphere, in sociosphere, in infosphere. Reconstruction of values, aspirations to large-scale thinking, new principles in management – all these features mean a complete rebuilding of social spheres. The above trends are unfolding against a backdrop of intensifying communicative discursive exchange. The interaction between individuals and peoples defines the view of a new cultural world, its following existence and development. It is obvious that we cannot talk about the identity of the subject of the transitional phase of civilization as about something permanent and unchangeable. A modern individual can have several identities that compete with each other or are complementary. Or we can say that his identity is in crisis, it changes.

Today, for some people, there is a risk of loss (total or partial) of the identity on the individual or group level. This fact threatens to destroy a real self-image, to lose human relationships, to lose cultural roots and to make a false self-image. The real identity of a subject can be defined only as a result of his participation in the cultural and communicative processes. Communication helps us to fully identify our real identity. The more meaningful and rich is the interaction between the actors the more correct and complicated is the process of their identification.

Conclusion

Among all the types of identity (ethnic, religious, linguistic, national, transcendental) transcendental identity is the highest form of social identity and at this stage of civilization is the most significant. On the one hand, the transition epoch, which is now in the world, initiates the need for knowledge based on rationalization (science), hence the need for a substantial increase of the cultural level of the individual rises. On the other hand, the finding of an individual's personal freedom gives rise to the need for an internal mechanism of moral self-regulation to ensure socially responsible individual moral behavior (reflection). The communication can become a mechanism of this kind, providing the link between state and society; society and state, society, state and individual, and shaping a new ideological concept of the modern world. Rethinking of communicative realities, its approval of the new structure is a condition for development of cultural pluralism.

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Идентичность субъекта в процессе коммуникации

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Аннотация. Авторы статьи отмечают, что проблема идентификации субъекта очень существенна на современном этапе существования цивилизации, для которого характерны процессы глобализации и интеграции и усиление процессов коммуникативно-дискурсивного обмена. Идентичность – это феномен сложный и неоднозначный, усложненный рядом факторов. Авторы выделяют различные виды идентичности, сформированные и доминирующие на различных исторических отрезках. Здесь можно назвать этническую, лингвистическую, религиозную, национальную, культурную, трансцендентальную идентичность. Коммуникацию авторы представляют как условие для самоидентификации каждого индивида.

Ключевые слова: Идентификация; глобализация; интеграция; этническая идентичность; лингвистическая идентичность; религиозная идентичность; национальная идентичность; рефлексия; коммуникация.

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ПОЛИТОЛОГИЯ

The International Cooperation in the Fight Against the WMD Terrorism

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Abstract. The WMD terrorism belongs to current most compelling security threats. It has its roots yet in the 1970s. The interconnection of the most destructive weapons and terrorist groups ready to cause a large number of casualties and extensive material damage resulted in international efforts and a complex agenda to fight against the security threat. The main aim of the article is to analyse main legal and institutional instruments of the WMD non-proliferation and disarmament regime and to critically assess their contribution to preventing and countering the WMD terrorism security threat.

Keywords: Weapons of Mass Destruction; Terrorism; Security Threat.

Introduction

Weapons of mass destruction (WMD) [1] belong currently to the most destructive weapons constructed by human being. They were designed to kill a large number of people and to cause extensive material damage. During the Cold War the proliferation of WMD was connected mainly to state actors in the context of ideological competition between superpowers, the USA and the USSR. The intense proliferation of WMD led to the creation of vast stockpiles of WMD that were influencing international relations for decades. During the Cold War the nuclear war between the superpowers was perceived as the most compelling security threat [2].

The security threat of non-conventional terrorism [3] was connected only to states sponsoring terrorism that could potentially provide terrorist groups with WMD during the Cold War. Nevertheless, concrete events of non-conventional terrorism can be identified back in the

1970s and proved the incoming trend. To most significant examples of WMD terrorism belong following incidents. In 1973 the left-oriented terrorist group Symbionese Liberation Army used cyanide against two employees of an American school and killed one of them. In 1984 the Kult Rajneeshpuram infected food in a restaurant in Oregon in the US by the bacteria of salmonella and poisoned more than 700 people. These attacks were perpetrated by primitive chemical and biological weapons. However the most serious WMD terrorism attack in the history occurred in 1995 when the Japanese cult Aum Shinrikyo used chemical weapon sarine in Tokyo subway and killed 12 people and intoxicated more than 5000 [4].

The end of bipolarity did not lead to the expected positive change of the international security environment. On the contrary, new security threats and challenges connected to the WMD proliferation occurred. New trend was marked by the increase in the number of proliferators of WMD on state and non-state level. Particularly dangerous became the efforts of terrorist groups. Their primary aim became to achieve a large number of casualties that creates a global atmosphere of fear and influences the public opinion psychologically on the global level [5]. This was demonstrated by the most lethal multiple terrorist attack perpetrated by Al-Qaeda on 11th September 2001 against the US. In consequence of the changed character of current terrorist groups and continued proliferation of WMD, the interconnection of both security threats is still present. A terrorist attack with sophisticated nuclear, chemical or biological weapons would probably have profound consequences on international security. Therefore the global fight against any efforts of terrorist groups to acquire and use WMD became priority of security strategies and doctrines. Its success will definitely influence the character and extent of the WMD terrorism threat in the future.

Under these circumstances the aim of the article is to analyse main legal and institutional instruments of global nuclear, chemical and biological non-proliferation and disarmament regimes that have an impact on the fight against the WMD terrorism. The article critically evaluates their contribution to preventing and countering of the WMD terrorism and identifies their main shortcomings that hinder the success in the elimination of the WMD terrorism threat.

Preventing and Countering the WMD Terrorism

Concrete historical examples of WMD terrorism attacks proved that especially western societies are vulnerable to them. As a result, demands on the complex fight against the WMD terrorism threat are rising. However it is problematic as it is closely connected to the character of current terrorist groups. Specific terrorist groups follow extreme goals and do not hesitate to use more violent non-conventional methods to achieve them, including WMD. Moreover, concrete terrorist groups and organizations have capabilities to acquire and use non-conventional weapons. These are the primary reasons why preventing and countering the WMD terrorism have become one of the priorities of the international community since the mid-1990s [6]. The character of this security threat is essentially influenced by the efficiency of international multilateral measures and cooperation in the complex fight against the terrorism agenda.

The fight against the terrorism can be generally defined as “long-term activities that include the use of non-military instruments and methods in the ultimate extent” [7]. These are mainly diplomatic, political, economic and legal instruments, international cooperation, implementation of preventive and repressive measures etc. Their primary aim is to prevent and counter terrorist acts. In this context, main elements of the fight against WMD terrorism are:

1. Measures to prevent the proliferation of nuclear, chemical and biological weapons, materials, technologies and know-how;
2. Measures to secure existing weapons, materials and technologies arsenals;
3. Repressive instruments criminalizing illegal activities connected to WMD proliferation for the purpose of terrorism [8].

The first two groups of measures include international legal norms and international institutions that are integral parts of the global non-proliferation and disarmament regimes. They are preventive measures as they prevent the proliferation of nuclear, chemical and biological weapons, provide for the security of nuclear, chemical and biological materials and for the effective protection of facilities for the WMD production. In the context of the WMD terrorism their primary aim is to prevent terrorist groups and organizations to acquire and use nuclear, chemical and

biological weapons, materials and technologies to achieve their aims. Such a scenario would have in fact catastrophic impacts on international security.

The third group of instruments includes international legal norms and institutions to counter the WMD terrorism that are repressive in nature. Their aim is to constitute mechanisms that enable states to prosecute and punish perpetrators of WMD terrorism acts. These instruments concretely criminalize illegal activities with nuclear, chemical and biological weapons, materials and technologies perpetrated by non-state actors, including terrorists. The effective fight against WMD terrorism demands the mutual compliance of all the three groups of international instruments. The following chapters deal with the main international legal and institutional instruments of the global non-proliferation and disarmament regimes that contribute also to the fight against the WMD terrorism.

Major Legal Instruments

The Treaty on the Non-Proliferation of Nuclear Weapons

One of the most important integral parts of the global non-proliferation regime is the nuclear non-proliferation regime. Its legal and political keystone is the Treaty on the Non-Proliferation of Nuclear Weapons [9] (also known as the Nuclear Non-proliferation Treaty, NPT) of 1968 (entry into force in 1970). The primary aim of the NPT is to prevent the horizontal proliferation of nuclear weapons and technologies among State Parties, to promote peaceful use of nuclear energy and to move towards nuclear disarmament.

In relation to the nuclear terrorism prevention, the NPT has only limited jurisdiction as it does not deal with the threat directly. Relevant to the nuclear terrorism prevention is the article VI. that contains binding commitment of State Parties to pursue negotiation on effective measures to end nuclear arms race and on nuclear disarmament [10]. In the context of the nuclear terrorism, only comprehensive nuclear disarmament can prevent the misuse of nuclear weapons and technologies for the purpose of terrorism. This aim can be achieved only providing that all nuclear-weapons states abandon their nuclear arsenals.

Despite American and Russian bilateral activities in the nuclear arms control, no significant progress from the short-term perspective can be expected. Problematic states in this context are Israel, India and Pakistan that possess nuclear weapons or, in the case of Israel, are suspected to possess them. They did not ratify the NPT so they stand beyond its legal regime and international control. Another problematic state is DPRK that withdrew from the NPT in 2003 after its military nuclear programme had been revealed. This action de facto meant the impairment of the credibility of the NPT regime. On the other hand the NPT regime has been weakened by Iran that as a State Party does not observe its obligations arising from the NPT and is being suspected of the development of the military nuclear programme in the long term [11]. As a result of this development in international relations, it can be asserted that actual implementation of the NPT commitment of State Parties related to the nuclear disarmament does not lead to the prevention of the nuclear terrorism.

Other articles that prevent the nuclear terrorism indirectly can be considered those that prevent the horizontal proliferation of nuclear weapons and technologies and in fact the formation of new nuclear powers with nuclear arsenals that could be a relatively easy target for non-state actors. These are article I. of the NPT that obliges the Nuclear-Weapon States (NWS) [12] not to transfer nuclear weapons or other nuclear explosive devices or control over such weapons and devices to any Non-Nuclear Weapons State (NNWS). Other relevant article is the article II., according to that the NNWS have the commitment not to receive nuclear weapons or nuclear explosive devices or control of such weapons and devices [13]. These NPT provisions can serve as an effective prevention of the nuclear terrorism only under the condition, that all states developing nuclear programmes ratify the NPT and at the same time accept its verification mechanism of the International Atomic Energy Agency (IAEA) that consists of system of controls and measures to secure nuclear materials, especially the fissile material and sensitive activities within the fuel cycle in nuclear reactors as uranium enrichment and reprocessing. The verification mechanism is the base for monitoring and limiting the access to sensitive materials and technologies and in fact increases their security. The implementation of the verification mechanism reduces the risk of acquiring and use of nuclear weapons, technologies or materials by terrorist groups.

The NPT can serve as an effective preventive measure of the nuclear terrorism only under the condition that all states become its State Parties and accept the verification mechanism that through strict measures enables the control of compliance with the NPT obligations and is able to secure declared or undeclared nuclear and radioactive material against efforts of terrorist groups to acquire and use it. On the other hand, the NPT can serve as an effective preventive measure in the case of establishment of an institution with the right to control the implementation of commitments of State Parties and to enforce sanctions mechanism in case of any NPT provision violation.

The Chemical Weapons Convention

In order to prevent chemical terrorism, the chemical non-proliferation and disarmament regime plays a significant role. Its substantial element is the multilateral Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (the Chemical Weapons Convention, CWC) that was adopted in 1993 (entry into force in 1997). Its main aim is a complex elimination of all sorts of chemical weapons. In this context the CWC can be considered as an important instrument in the chemical terrorism prevention.

The CWC does not deal with the chemical terrorism directly. According to the Article I. of the treaty the State Parties have the obligation not to use, develop, produce, otherwise acquire, stockpile or transfer chemical weapons to anyone. In addition to that they have the commitment not to help and assist to anyone in any activity that is prohibited by the CWC. In the context of the chemical terrorism prevention, another commitment of State Parties is relevant. It is a commitment to secure and destroy all chemical weapons and to destroy all chemical weapons production facilities under the jurisdiction of the State Party [14]. The obligations stated above have only indirect connection to the prevention of chemical terrorism as the destruction of chemical weapons and the prohibition of their production eliminate one of the potential means of chemical terrorism. The observance of these obligations by State Parties has the potential to eliminate the security threat of chemical terrorism.

However, not only chemical weapons can be misused by non-state actors. More probable is the misuse of toxic chemicals and their precursors. According to the Article VI. of the CWC State Parties have the right to develop, produce, acquire, stockpile, transfer and use toxic chemicals and their precursors [15]. At the same time they have the commitment to adopt all necessary measures to ensure that all toxic chemicals and precursors under their jurisdiction are used in accordance with the CWC [16]. Especially these provisions are significant for the chemical terrorism prevention as an effective control and verification mechanism of a State Party has the potential to prevent and eliminate the efforts of non-state actors to acquire and use toxic chemicals and precursors for the purpose of terrorism.

Among the CWC provisions that can be applied to the chemical terrorism prevention, the CWC contains also provisions regarding its countering. According to the Article VII. of the CWC State Parties are obliged to prohibit and not to permit anyone under their jurisdiction to perform activities that are in violence of the CWC. At the same the State Parties are obliged to adopt sanctions to punish such activities [17]. State Parties decide about the implementation of the CWC on national level. The main benefit of these CWC provisions is the fact that State Parties are obliged to create a legal monitoring mechanism to control toxic chemicals and their production facilities. Within this mechanism State Parties are required to provide for the physical protection of chemical facilities that de facto serves as a prevention of any terrorist groups efforts to acquire and use toxic chemicals to achieve their goals. On the other hand, the fight against the chemical terrorism is strengthened through the commitment of State Parties to adopt repressive measures against acts and activities that violate the CWC and at the same time to cooperate with other State Parties to the CWC in investigation and prosecution of criminal acts violating the CWC. However, one of the shortcomings of these provisions is the fact that State Parties decide about the implementation of them. As a result the criminal law adopted by State Parties is not unified and has different effectiveness. Another significant problem is that some State Parties have not adopted effective law for the implementation of their commitments arising from the CWC yet [18].

Therefore to strengthen the international regime of the CWC in the chemical terrorism prevention it is inevitable to expand the jurisdiction of the treaty [19]. The main challenges in this

area are primarily states beyond the regime that are at the same time developing a civilian or a military chemical programme. In this situation the CWC is not able to serve as a relevant measure in the prevention of the chemical terrorism as the development of a chemical programme may provide potential sources of weapons for terrorist groups.

The Biological and Toxin Weapons Convention

As in the case of nuclear and chemical terrorism, there is no international treaty that deals directly with the bioterrorism. Its prevention is indirectly dealt within the Convention on the Prohibition on the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (BTWC) that was adopted in 1972 (entry into force in 1975). The BTWC as the international multilateral disarmament treaty is the core of the biological non-proliferation and disarmament regime. It was the first international treaty that prohibited one category of WMD and included provisions relevant for the non-proliferation of biological weapons.

Significant provisions of the BTWC for the bioterrorism prevention are those that prohibit biological weapons. According to the Article II. of the BTWC, State Parties are obliged to destroy or divert to peaceful purposes all biological agents, toxins, weapons, equipment and means of delivery [20] under their jurisdiction. Their destruction or diversion to peaceful purposes has to be completed as soon as possible, ninety days after the BTWC entry into force at the latest [21]. Another relevant article for the bioterrorism prevention is the Article III. of the BTWC according to which State Parties have the obligation not to transfer directly or indirectly to anyone biological agents, toxins, weapons, equipment and means of delivery that are banned by the BTWC. At the same time they have the obligation not to assist, encourage or induce any state, group of states or international organizations to produce or acquire them. As according to the CWC, State Parties commit themselves through the BTWC ratification to adopt all necessary measures to prohibit and prevent the development, production, stockpiling, acquiring or retention of biological agents, toxins, weapons, equipment and means of delivery banned by the BTWC, within their territory and under their jurisdiction [22]. This provision indirectly deals with countering the bioterrorism. On the other hand as a shortcoming of the BTWC can be considered the fact that the treaty does not oblige State Parties to adopt sanctions measures to punish illegal activities with biological agents and toxins that violate the BTWC.

The most serious shortcoming of the BTWC is the fact that it did not anchor any control or verification mechanism [23] that would monitor the observance of State Parties commitments and would be able to verify the destruction of biological weapons stockpiles, the compliance of State Parties activities regarding biological agents and toxins with the BTWC, the fulfilment of State Parties obligations regarding the prevention and punishment of illegal activities with biological agents and toxins on their territory and under their jurisdiction that violate the BTWC [24]. On the other hand, the BTWC did not anchor the establishment of an institutional structure that would implement the BTWC provisions or sanctions mechanism and would investigate any complaints about BTWC violations. In compliance with the BTWC State Parties have the right to submit a complaint to the UN Security Council to investigate an alleged BTWC violation by any State Party. In the area of obligations fulfilment, the BTWC anchored the commitment of State Parties to cooperate mutually in solving of any issues regarding the BTWC. The evaluation of the fulfilment of obligations takes place in the Review Conference that is held every five years [25].

Despite the fact that biological weapons present a serious security challenge as the risk of their potential misuse by terrorist groups is very high, there is no complex international treaty that would deal explicitly with preventing and countering the bioterrorism. On the other hand, the BTWC is still a significant instrument in the elimination and regulation of biological weapons. In order to strengthen its political value it is inevitable to expand its jurisdiction on other states and firstly on those states that are suspected of the military biological programme development.

Major International Institutions

The International Atomic Energy Agency

One of the most significant actors in preventing and countering the nuclear terrorism is the International Atomic Energy Agency (IAEA). The IAEA as an organization within the UN was established in 1957 with the primary aim to serve as a global scientific forum for scientific and technical cooperation and promotion of the use of nuclear energy for peaceful purposes.

The IAEA deals with the nuclear terrorism indirectly through the control and monitoring of Member States compliance with the obligations arising from the NPT. As it was already mentioned, the IAEA presents a verification mechanism to the NPT and deals with the accuracy, correctness and completeness of declared nuclear materials and activities in nuclear facilities by Member States. The verification mechanism is implemented through the safeguards system based on Safeguards Agreement and Additional Protocol between the IAEA and a Member State. Within the safeguards system on-site inspections, monitoring and evaluation in the Member States's territory with declared nuclear material are performed. The aim of these activities is the verification of characteristics of declared type and amount of nuclear material and its technical protection [26]. Since 1997 the IAEA verification mechanism has been strengthened through the Additional Protocol. On the ground of the Additional Protocol the IAEA has the right not only to verify the compliance of the nuclear programme with the NPT but also to monitor all nuclear activities within the territory of the Member State complexly. This means that the IAEA has the access to extent information and to nuclear facilities with the aim to verify declared and potential any undeclared nuclear activities of the Member State [27].

Besides verification activities, the IAEA serves also as an expert organization. It deals with the prevention of the nuclear terrorism through the Department of Nuclear Safety and Security. Current IAEA activities within nuclear safety and security are realized through the Nuclear Security Plan for 2010-2013, that is based on international agreements and its aim is to assist Member States in the strengthening of national nuclear safety and security in order to prevent the nuclear terrorism threat [28]. The implementation of the Plan is realized in three areas.

The first implementation area is the prevention that includes measures for the physical protection of nuclear and radioactive materials against the theft, illegal ownership, smuggling, unauthorized use, as well as measures for the physical protection of nuclear and radioactive facilities and their transport against sabotage or any other malicious act [29]. The physical protection of nuclear and radioactive materials and facilities is a commitment of Member States arising from international treaties [30] regarding the non-proliferation of nuclear weapons. In order to support the implementation of this commitment the International Physical Protection Advisory Service was established in 1995. Its primary aim is to upon the Member State request to send an expert group to assist in the evaluation of the quality of systems for the physical protection of nuclear and radioactive materials and facilities and their compliance with international standards. The expert group may recommend to the Member State any appropriate measures to enhance the effectiveness of the system [31]. Another instrument in this area is the International Nuclear Security Advisory Service whose task is to identify any needs of the national nuclear security and to recommend further areas for the cooperation [32]. In the issue of the nuclear terrorism prevention, the IAEA assists Member States also in localizing and securing of orphan radioactive sources [33] and in preventing of occurring new orphan sources as they are extremely risky as potential instruments for the nuclear terrorism. In this perspective a significant instrument is the Trilateral initiative of the IAEA, the USA and the Russian federation. Its main aim is to promote securing of radioactive material sources lost after the dissolution of the USSR.

The second implementation area of the Plan is the ability to detect and react on malicious acts regarding nuclear and radioactive materials. The development of this area within the IAEA activities is inevitable in case of the prevention failure. The aim of this area is to enhance national capacities and capabilities of the Member States in detecting and preventing the efforts of non-state actors to acquire nuclear and radioactive materials to achieve their goals. The IAEA activities in this area are aimed at the evaluation of capacities and abilities of Member States to counter illegal smuggling, thefts or other illegal acquiring of nuclear and radioactive materials. The process of evaluation is performed within an expert group of the IAEA – the Nuclear Security International Advisory Service that recommends Member States measures to strengthen national systems detecting unauthorized transfers of nuclear and radioactive materials [34]. In addition, the IAEA activities within the verification of NPT obligations compliance contribute to nuclear security. Significant are the IAEA inspections that contribute to the detection of thefts or illegal manipulation with nuclear and radioactive materials. The IAEA also provides recommendations to national authorities in the area of strengthening and improving of nuclear and radioactive materials control.

The last area of the Plan implementation regarding the nuclear terrorism prevention is the coordination of the information about the nuclear security and its analysis. It covers close cooperation a coordination of activities and programmes in the area of the nuclear security with the IAEA departments on the one hand. On the other hand, it covers cooperation of the IAEA with relevant international institutions in this area such as the International Criminal Police Organization (INTERPOL), the European Police Office (EUROPOL), Organization for the Security and Cooperation in Europe (OSCE), the UN Office on Drugs and Crime (UNODC) etc. Since 1995 the IAEA manages an information system regarding incidents of illicit smuggling and unauthorized activities with nuclear and radioactive materials – Illicit Trafficking Database. Its main aim is to support and facilitate the exchange of information among Member States about unauthorized activities with nuclear and radioactive materials and to assist in identification of potential security threats.

Despite mentioned IAEA activities in the prevention of the nuclear terrorism, the organization still has limited mandate in this area. In order to strengthen the effectiveness of the IAEA it is inevitable to extend the jurisdiction of the NPT and at the same time to expand the international control of national nuclear capacities. Another shortcoming is the advisory role of the IAEA towards Member States in implementation of international commitments regarding the nuclear terrorism prevention. The IAEA has only the right to recommend Member States to adopt appropriate measures or adequate legislative instruments in case of revealed shortcomings. However, the recommendations are not legally binding for Member States and their observance is connected only to the political will and capabilities of a Member State.

The Organization for the Prohibition of Chemical Weapons

The Organization for the Prohibition of Chemical Weapons (OPCW) presents the control and verification mechanism for the CWC. This specialized international organization was established in 1997 with the aim to perform activities in the area of chemical disarmament, non-proliferation of chemical weapons, protection against toxic chemicals and international cooperation.

Within its broad agenda, the OPCW is active in the prevention and fight against the chemical terrorism. One of the OPCW indirect functions in the prevention of chemical terrorism is to monitor the situation in the proliferation of chemical weapons. This includes activities connecting to gathering declarations of State Parties to the CWC about the possession of chemical weapons and facilities for their production [35]. In addition to this activity, the OPCW controls the destruction of chemical weapons and dismantling of their production facilities as well as controls old and abandoned chemical weapons. The OPCW simultaneously monitors and controls the physical protection and safety of declared chemical weapons of State Parties to the CWC that are examined regularly [36]. These activities are significant for the prevention of the chemical terrorism as the reduction of chemical weapons and their safety means the elimination of potential sources for the chemical terrorism. However a serious challenge in this issue is the fact that the real destruction of declared chemical lags behind fixed schedule deadlines.

Another important function of the OPCW able to contribute to the chemical terrorism prevention is the verification of observance of Member States commitments. It covers monitoring of civilian chemical facilities. Most of toxic chemicals and their precursors that could be potentially used for the purpose of terrorism are used in civilian sector. Therefore the CWC verification mechanism deals with monitoring and verification of their use [37]. State Parties to the CWC producing toxic chemicals, their precursors and other chemicals [38] are obliged to declare them to the OPCW [39]. On the ground of the declaration the monitoring within the verification mechanism is authorized. The OPCW has the right to perform inspections in Member States to verify the compliance with the CWC. Member States have the right to initiate inspections against other Member State in case of any doubts about its compliance with the CWC. Such inspections cannot be refused by the Member State [40]. In addition to that, the OPCW monitors the commerce with specific dual-use chemicals that could be potentially misused for the production of chemical weapons.

Another function of the OPCW relevant to the chemical terrorism prevention covers monitoring, gathering of information and assistance in building of national mechanisms for the protection of chemical facilities, assistance in the implementation of commitments of State Parties to the CWC regarding criminalization of activities that violate the CWC, informing about the export

and import of chemicals and building of national programs for the protection against chemical weapons [41]. In addition to that the OPCW contributes to the prevention of chemical terrorism through consultations and assistance to Member States, exchange of scientific and technical information, promotion of cooperation with relevant international institutions etc.

Conclusion

Currently there is a general agreement on international level that the WMD terrorism presents a compelling global security threat. This is proved by several international agreements, institutions, initiatives, programmes and projects that are aimed at its preventing as well as at its countering. They create an international regime that has the potential to eliminate efforts of terrorist groups and organizations to acquire and use WMD to achieve their goals. The article focused on the significant legal and institutional instruments of global nuclear, chemical and biological non-proliferation and disarmament regimes that contribute to the complex fight against the WMD terrorism.

When assessing the effectiveness, the regime of the CWC can be considered as the most effective. On the one hand, the treaty eliminates chemical weapons through the prohibition to possess and use them. On the other hand, the treaty created the verification and implementation mechanism – the OPCW that performs complex activities for the promotion of the prevention of chemical terrorism. It is namely the monitoring of the situation in the chemical weapons proliferation, monitoring of their protection and destruction, monitoring of civilian chemical facilities and commerce of dual-use chemicals that are highly risky in the context of the chemical terrorism. Moreover the OPCW provides the expert assistance for Member States in the implementation of their commitments on national level arising from the CWC. However a serious shortcoming of the CWC regime is the fact that the treaty does not anchor any sanctions mechanism against a State Party violating the CWC. Another shortcoming presents the absence of any legal norm or provision dealing directly with preventing and countering the proliferation of chemical weapons for the purpose of terrorism.

The weaker instrument for preventing and countering the WMD terrorism is the international regime of the NPT. Its main contribution is the prohibition of horizontal proliferation of nuclear weapons that indirectly prevents the nuclear terrorism as well. In addition to that the IAEA as the verification institution of the NPT performs expert functions in the prevention of nuclear terrorism. The IAEA monitors and controls the physical protection of nuclear and radioactive materials and facilities, assesses the national capacities of Member States for detecting unauthorized activities with nuclear and radioactive materials etc. However the main shortcoming of the regime is the fact that the NPT does not prohibit the possession of nuclear weapons in the case of NWS that could potentially become source for the nuclear terrorism. Another shortcoming is the fact that the IAEA is not charged also with the implementation of the NPT and does not have sanctions mechanism to enforce Member States' compliance with the NPT.

The least effective instrument is the BTWC and its international regime. Its main contribution is the fact that the treaty prohibits the possession and use of biological weapons. However it does not anchor any verification mechanism of the treaty as an institution that could verify State Parties' compliance with the BTWC or enforce the implementation of the treaty by State Parties. In addition to that, the BTWC does not deal with the prevention and the fight against the bioterrorism directly.

All international regimes constituted by the NPT, the CWC and the BTWC face the same shortcoming, namely the fact that the treaties were not ratified by key proliferators of WMD. Their nuclear, chemical and biological arsenals are therefore excluded from the international control and monitoring. This means that it is unable to verify their use only for civilian purposes on the one hand. On the other hand it is impossible to verify their safety and protection against any potential efforts of non-state actors to acquire and use them [42]. For these main reasons the international non-proliferation and disarmament regimes are insufficient in the complex fight against the WMD terrorism.

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9. The NPT has currently 190 State Parties.

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12. According to the NPT there are 5 recognized Nuclear-Weapon States: the USA, the Russian Federation, the Great Britain, France and China.

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14. Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction. UN General Assembly 1993. URL: http://www.opcw.org/index.php?eID=dam_frontend_push&docID=6357

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19. Currently, the CWC has 188 State Parties. States that have not ratified the treaty yet are Israel and Myanmar. States that have not adopted the treaty are Angola, Egypt, DPRK, Somalia, South Sudan and Syria.

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Международное сотрудничество в борьбе с терроризмом ОМУ

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Аннотация. Применение оружия массового уничтожения (ОМУ) с целью терроризма принадлежит в настоящее время к наиболее важным угрозам безопасности. Она имеет свои корни еще в 1970-х гг. Взаимосвязь самых разрушительных видов оружия и террористических групп, способных причинить большого количества жертв и значительного материального ущерба, требовали международных усилий и создание комплексной агенды для борьбы с угрозой безопасности. Основной целью статьи является анализ основных правовых и институциональных инструментов нераспространения ОМУ и разоружения, и критическая оценка их вклада в предотвращение и противодействие угроз безопасности применение ОМУ с целью терроризма.

Ключевые слова: Оружие массового уничтожения; терроризм; угроза безопасности.