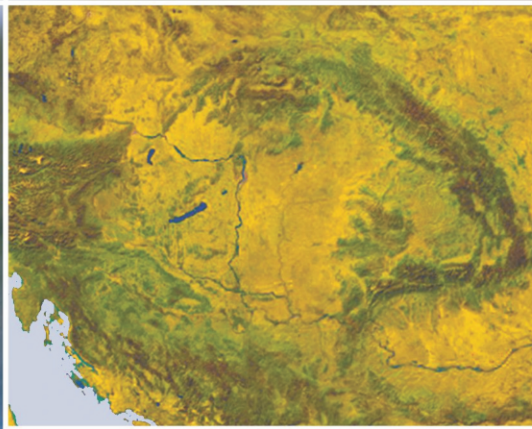


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## The changing nature of labour protest: Comparing the fragmentation of protest rituals on May 1<sup>st</sup> in Berlin and Budapest

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### Abstract

The transition from industrial to post-industrial society has changed the conditions for labour protest in Europe fundamentally. In this paper recent forms of labour protest are explored in two European capital cities, Berlin and Budapest. In the context of growing job insecurity, flexibilisation and fragmentation of labour markets, the motivations and class positions of protest participants are scrutinised, along with the diversified geographies of protest events. Building on empirical results by means of a survey based on structured mini-interviews, the paper argues, first, that a fragmentation of labour protests on May 1<sup>st</sup> is observable. This fragmentation is driven by an overall change of Labour Day celebrations from trade union oriented demonstrations towards segmented party zones of protest in both cities. Second, neither traditional forms of labour protest is nor newly created, more festive forms of labour celebrations attract a significant proportion of people suffering from precarity or unemployment. Thus, most marginalised people in the service-dominated economy do not have a voice in labour protests today.

**Keywords:** protest, labour, urban social movements, Berlin, Budapest

### Introduction

Who engages in labour protest today? We know from the literature that the transition from industrial to post-industrial society has induced a fundamental restructuring of social class divisions, labour markets, and labour politics (BELL, D. 1973; McDOWELL, L. and CHRISTOPHERSON, S. 2009). Under the reign of a service-dominated economy, labour market precarity has risen and labour market polarisation drastically deepened in most countries of the European Union, almost irrespective of their geographical location. As a matter of course, these new conditions of labour and labour regulation are by no means unproblematic and have been

criticised by a wide range of commentators in academia as well as in politics and the media (FAINSTEIN, S.S. and FAINSTEIN, N.I. 1985; HARVEY, D. 2001; GIBSON, C. and KONG, L. 2005; NOVY, J. and COLOMB, C. 2013). Yet, in spite of the continual necessity for intense labour protests that address the new risks and vulnerabilities of employees in the service and knowledge economy, we know from a rich set of literature that today it has become far more difficult for trade unions and labour parties to mobilise people for protests about labour issues (ROSE, N. 1996; TAYLOR, G. and MATHERS, A. 2002; ERNE, R. 2006; TURNER, L. 2009; RUCHT, D. 2010; SULLIVAN, R. 2010; BÖDEKER, S. 2012; DOELLGAST, V. 2012; LARSON, B. 2012; FULTON, L. 2013).

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In this paper we explore the changing forms of articulations of labour protest on May 1<sup>st</sup> in two peculiar contexts in Europe, Budapest (Hungary) and Berlin (Germany). Both capitals appear as a stage and also experimental laboratory for changing forms of the articulation of labour protests that currently came along with a new lively worldwide (SILVEY, R. 2003; MCCARTHY, J. and MCPHAIL, C. 2006; STAEHEL, L.A. 2013; LEE, Y. 2015). Empirical work on labour protest on May 1<sup>st</sup> in Budapest and Berlin is particularly interesting because there is an enormous research gap in the literature concerning the modification of traditional European forms of labour protest beyond fashionable protests against global capitalism like occupy that are rather unique in character (SALMENKARI, T. 2009; FRENZEL, F. *et al.* 2013; BABER, Z. 2015; DISALVO, J. 2015). Whereas most sources of articulations of labour protest in Europe are especially interested in explaining its decline (MCDOWELL, L. and CHRISTOPHERSON, S. 2009; STANDING, G. 2011; BURGI, N. 2014), we set out to examine those modifications of labour protest that are still able to draw a crowd, and ask for the reasons and typical venues of participating, as well as the demographic constitution of the participants in order to explain their future trajectories.

The paper argues that a partly depoliticised fragmentation of labour protests on May 1<sup>st</sup> is observable. At the same time, as our empirical research in Budapest and Berlin shows, new forms of protest are capable of drawing a young, responsive mass audience into more festive forms of protest. However, this fragmentation and at the same time growth of depoliticised forms of protest is not only driven by an overall change of Labour Day celebrations: it is even further more embedded in wider trends of societal restructuring. Because it is only through the scrutiny of ongoing modifying forms of labour protest and effective mobilisation practices that we can learn about the concurrency of the advent, decline, and diversity of contemporary labour protest in Europe (BACCARO, L. *et al.* 2003; GAJEWSKA, K. 2008).

The paper is organised as follows. The next section introduces the transformations of labour protests in Europe today. The third part discusses the comparative research design. The fourth part recounts information about the two different contexts of research concerning labour markets and protests. The fifth section presents the findings and discussion. The final part concludes by presenting three interlinked arguments resulting from the analysis.

### **The transformation of labour protest**

A lively debate has arisen about the reasons for labour protest transformation towards depoliticisation and decline. There is a wide consensus that due to the advance of neoliberalism and managerialism, worker protection in Europe has been eroded dramatically (BURGI, N. 2014). Yet, there is much controversy about the accompanying passivity and consequential erosion of labour protest. It is argued that trade unions have suffered from the process of deindustrialisation because they have not proven to be capable of benefiting from the growth in the service economy. Henceforth, labour unions are struggling for public attention because workplaces in the service economy are barely organised (DOELLGAST, V. 2012; LARSSON, B. 2012; HAMANN, K. *et al.* 2013).

As much as the economy has altered through the rise of the service economy, the societal conditions for labour organisations and labour protest have hardened. Union membership has been assessed as an outdated model based on industrial notions of labour politics and workforce representation in a manufacturing-oriented society. It is even claimed that unions have experienced an unprecedented descent due to their inability to react appropriately to the flexibilisation of the workforce. Especially the needfulness to broaden the normative and social scope of trade unions in order to widen their potential for political support has been the issue of much debate. It has been suggested that there is a growing “*need for unions*”

to express more innovative policy approaches and types of protest, and to expand the field of associative power by moving beyond the workplace within civil society, may be increased correspondingly" (FLYNN, M. et al. 2013, 49).

At the same time, other commentators look beyond trade unions and see alternative responses, e.g. in the rise of urban protest. "Since the 1970s strikes and work stoppages have been increasingly ineffective in the USA and Europe" (SULLIVAN, R. 2010, 149); hence, other forms of unrest are possible and should be taken into account (SULLIVAN, R. 2010; STANDING, G. 2011 and 2014; FREGONESE, S. 2013). There is also a growing debate on the rise of "social movement unionism" (UPCHURCH, M. and MATHERS, A. 2012, 265) as an inspirational model for labour politics and protest: here, a revitalisation of unionism is envisaged through the expansion of labour politics into realms of culture, lifestyle and consumption beyond the workplace. Other authors suggest it is not only the trade unions that are to be blamed for labour protest erosion because a more fundamental, and henceforth, general trend towards the atomisation in society interferes (ROSE, N. 1996). They claim – at the most extreme – that the immense stress of work insecurity has brought about an "anomic social configuration" in most European societies (BURGI, N. 2014, 13).

Altogether, theoretical perspectives on what labour protest means today, who should organise it and which forms it should take, are at least multiple if not unclear. One of the major complications in this debate is the category of "labour" itself. In postindustrial society the political as well as normative and economic concept of labour has become a fuzzy one. Once a solid centre of political organisation and protest, the understanding of labour has fragmented and multiplied. Notions, practices and geographies of labour have become differentiated into many new forms and formulas of work contracts and terms of employment. Furthermore, transformations of labour have contributed to the rise of low wage jobs and insecurity in spite of the often praised so-called "in-

formation economy" (MCDOWELL, L. and CHRISTOPHERSON, S. 2009; MCDOWELL, L. et al. 2014). What once used to be a massive working class has turned into various new fractions like the precariat, minimum wage urban poor, or part-time workers unable to obtain full-time employment. Besides them, better-off groups such as freelancers, yuppies, bobos and other "creatives" are also far from the former (relatively homogeneous) working class and its social needs (SCOTT, A.J. 2007; DONALD, B. et al. 2013). The rise of the creative economy has fostered new "figurations of labour that blur the lines between self-fulfilment and social mobility on the one hand and exploitation on the other" (BERNDT, C. 2012, 347). Today, we know little about the labour force representation of workers in the creative economy (BERNDT, C. 2012; DONALD, B. et al. 2013). Thus, for labour-oriented political parties and organisations like trade unions, it has become increasingly difficult to address and mobilise a former mass audience.

Furthermore, the already complex picture of the state of labour protest today becomes more complicated when taking the research results of social psychology into account. In this field, research on the motivations of people to protest has a long history; one of the major results from a psychological perspective is that people do not only protest out of grievances but at least as much because they have the opportunities and resources to do so (VAN STEKELENBURG, J. and KLANDERMANS, B. 2013, 887). We also know that efficacy impacts on the inclination of people to protest. If the individual's expectations are high that it is possible to alter politics and have an impact on social structures, protest is more likely to occur. The same holds true for collective identities and feelings of belonging to certain groups or organisations; these might foster protest participation as well (SIMON, B. et al. 1998). Moreover, emotions also play an important role in the perception of protest events, for instance the degree to which one feels comfortable with the protest venue and form. Emotions might, thus, function as "accelerators und amplifiers" (VAN STEKELENBURG, J.

and KLANDERMANS, B. 2013, 892), just as identities (KLANDERMANS, B. 2014). Consequently, the emergence of protest is an undoubtedly multidimensional phenomenon.

## Method and methodology

### *Comparative research*

In order to explore the changing nature of labour protest in service-dominated economies, we scrutinise the state of the art of labour protest in the capitals of two post-industrial, yet markedly different European societies. It is apparent from the literature that the condition of decline as well as the strength of labour movements varies highly among different countries. The welfare-regime theory of ESPING-ANDERSEN, G. (1990), as well as the varieties of capitalism approach point towards the path dependence of national development. Likewise, just as capitalism might not be conceptualised as a uniform construct, socialism also had – and postsocialism still has – multiple national and regional varieties (FASSMANN, H. 1997; GRESKOVITS, B. 2004). Therefore, different nations in Europe have developed different approaches in the relationships between state, capital and labour. Consequently, labour protest and the transformation of industrial relations have also followed different routes in European countries (CLASEN, J. et al. 2012). In addition, due to the limits of international employee representation, labour protests often address explicitly national issues (NEIDHARDT, F. and RUCHT, D. 2001, 52).

In our analysis, Germany and Hungary are compared, since they represent complementary as well as overlapping trends. Germany is a particularly interesting case because once it was the bedrock of industrialisation and collective bargaining in Europe (HEYES, J. 2013). Thus, scrutinising labour protest in Germany takes a paradigmatic European case into empirical account, where formerly very strong “unions in a context of global liberalisation have confronted declines in member-

ship, bargaining power, and political influence (...). For too long, German unions have rested on their institutional laurels even as the ground has been slipping away” (TURNER, L. 2009, 294). Especially the erosion of nationwide tariffs is growing. Whereas in 1996 in West Germany still 70 per cent of all wage settlements were negotiated nationwide by national trade unions, this number had diminished to 56 per cent in 2009 (GÖDDEKE, A. et al. 2011, 143). Along with the principle of only one collective bargaining agreement within a firm, the homogenous political representation of the labour force in Germany is shrinking as well. In Germany, we focus our case study on the capital because Berlin represents a quintessential industrial society. Even within Germany the city of Berlin has undergone an enormous amount of rupture and change. A dual track change not only from industrialism to post-industrialism but also – in the Eastern part – from socialism to post-socialism has produced turmoil and the immense restructuring of the local labour market.

Hungary serves as a complementary case study because of its interesting parallels as well as contrasts with the German case. On one hand, Budapest shares with Berlin the legacy of an early heavy industrialisation in high modernity. On the other hand, both cities faced rapid economic transformation especially after the fall of the socialist system. Thus, deindustrialisation and postsocialist transformation occurred simultaneously. Budapest, like Berlin, witnessed rapid growth in the late 19<sup>th</sup> and early 20<sup>th</sup> century, both being the national showcases of modern industrialisation. Later on, both cities continued on comparable pathways during the socialist post-war period and both were, then, sites of rapid societal transformation from the 1990s onwards (IZSÁK, É. and SCHULZ, M. 2006).

Hence, “globalisation was complicated by major political and economic transformation during the past two decades” (BODNÁR, J. and MOLNÁR, V. 2010, 789) in Berlin and Budapest. Yet, in Budapest the market economy is even younger than in Berlin which profited from the West Berlin experience and its strong

connection with West Germany. Therefore, BODNÁR and MOLNÁR suggest that a “*balanced comparison*” (ibid. 794) is possible between the two cities. This comparison also fits into the broader current of international urban studies referred to as “comparative urbanism”, recently propagated by scholars including ROY, A. (2009), McFARLANE, C. (2010), ROBINSON, J. (2011, 2015) or, in the case of post-socialist cities, TUVIKENE, T. (2016).

### *Motives for protest on Labour Day*

In both cases, we are especially interested in the fragmentation of audiences and protests, and the new gestalt labour protest assumes. Our research focuses on the sites and participants of labour protests in both cities: Who is protesting today and where? Which motivations to engage in labour protest today are detectable? And in which forms is a fragmentation of labour protest occurring in times of fragmented labour markets? For this purpose, we examine traditional and new forms of labour protest on May 1<sup>st</sup>, the International Worker’s Day. Since the late 19<sup>th</sup> century, May Day has served as the best known celebration of the international labour movement, worldwide. Labour Day is a nationwide and international event that takes the political components of labour issues to the street and tries to mobilise civil society. It is therefore a highly significant event; May Day celebrations, we argue, provide an excellent instance to scrutinise the diverse geographies of labour protest today.

In both cities, we explore the key venues, as well as the class positions, demographics and main motives of people who engage in such protests. Through the comparison of multiple labour protest forms, this article aims to shed empirical light on the acute change of labour protest in the present time. Particularly, we both look at old traditional forms of labour protest organised by trade unions and labour parties, and at new forms of resistance that emerge from different actors and different needs, and address a dif-

ferent audience. We presume that the fragmentation of the labour force will also lead to a growing fragmentation of protest forms, protest sites and protest events.

### **The context: Changing labour markets – changing protests**

#### *Changing labour markets*

Deindustrialisation and tertiarisation have changed the labour markets of formerly industrialised Western (as well as Central and Eastern) European countries profoundly. In Germany, once a centre of industrialisation in 20<sup>th</sup> century Europe, the share of manufacturing in total GDP declined from 28 per cent in 1980 to 21 per cent in 2005 (BACHMANN, R. and BURDA, M.C. 2009, 38). With only about one-fifth of total GDP generated by manufacturing, the rate of manufacturing employment also dropped. Within 15 years, the number of industrial workers dropped from 9.1 million in 1990 to 6.8 million in 2005 (ibid. 38). Especially in the 1990s, the dynamics of deindustrialisation and labour market restructuring were very rapid, and the drastic structural changes in the labour market had a massive impact on employees.

Due to the way in which the German labour market operates, laid-off manufacturing workers could not smoothly find new places of employment in the growing service sector. Rather the opposite happened: the unemployment rate rose, and large parts of the German population simply stopped participating in the labour market during the height of deindustrialisation. This was possible due to specific labour policies in Germany, since trade unions’ responses in the steel industry, for example, massively promoted early retirement. Just like their British counterparts, unions, employers and the government pursued social compensation plans (FLYNN, M. et al. 2013). Although this peacekeeping strategy worked more or less successfully in the 1990s in Germany by securing the union’s clientele and safeguard-



ing former manufacturing workers relatively smooth transitions into early retirement, the long-term costs of this retirement approach have been very high.

The decade of the 1990s marked another major turning point elsewhere in Europe; during the first years of the post-socialist transition, Central and Eastern European countries witnessed a massive – and extraordinarily rapid – industrial transformation and hence, labour market realignment (CLASEN, J. et al. 2012). Whereas the first signs of widespread deindustrialisation appeared in the 1960s and 70s in Western economies, large state-owned and state-run industrial companies of socialist Central and Eastern European countries were (artificially) maintained until the turn of the 1980s and 1990s, causing an even more serious crisis during the period of the politico-economic transition. As a consequence, labour markets witnessed extremely rapid, almost shock-like changes after 1990. Superimposed and reinforced by the processes of globalisation and neo-liberalisation, this transformation has not only meant a sudden shift from the system of socialist command economy to market economy but at the same time also a transition “(f)rom the system of standardized full employment to the system of flexible and pluralized underemployment” (BECK, U. 1992, 140).

After 1990, owing to the collapse of the Hungarian heavy industry and the mining sectors (along with the breakup of large, Soviet-style agricultural cooperatives), masses of workers lost their livelihood. The socialist era’s (officially-artificially) almost zero unemployment rate rose dramatically within only a few years above 10 per cent. Hence, in the case of Hungary, the most dominant flow by far was from employment to unemployment. Subsequently, even though there were also other trends in Central and Eastern European countries during the transition (such as reindustrialisation – LANDESMANN, M. 2000; BARTA, G. et al. 2008), the key transformation process was definitely tertiarisation. A significant number of former industrial and agricultural work-

ers have been absorbed by the booming service sector. Afterwards, with a considerable delay compared to Western countries, new capitalist forms such as part-time jobs, workforce recruitment and labour hiring agencies started to appear, and their number is still on the increase. As in the case of Germany, using the terminology of BECK, U. (1992, 142), “the boundaries between work and non-work are becoming fluid” in post-socialist Hungary as well, and “(f)lexible, pluralized forms of underemployment are spreading” in both countries.

#### *Changing labour protest movements in Germany and Hungary*

As a consequence of the restructuring of industries and labour markets, the preconditions for labour protest have also massively changed (CLASEN, J. et al. 2012). It seems – not only in Germany and Hungary but in many other European countries – as if the trade unions, who have their origins in the industrial period, are intensively struggling with their political (in)significance. Not only is “union membership throughout Europe (...) older than the general populations” (FLYNN, M. et al. 2013, 46) but also the participation quota of employees in labour protest on International Labour Day and the membership rate of unions have dropped dramatically (Figure 1).

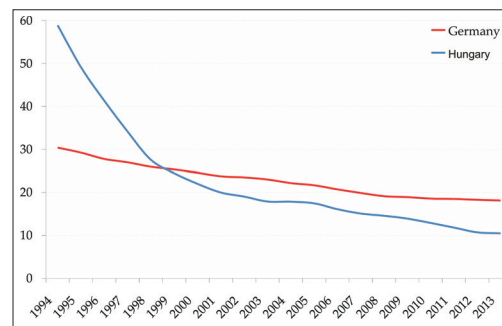


Fig. 1. Trade union density in Germany and Hungary (% of employees, 1994–2013). Source: OECD trade union density data

This negative development in trade union membership is partly consistent with an overall pattern of political participation. In Germany, an alarming signal stems from a study on youth behaviour and youth perceptions. The so-called “Shell Study” shows that while in 1991, 57 per cent of young people had an interest in politics, this number decreased to 47 per cent in 1996, and to 39 per cent in 2006. The turnout of voters for federal elections has also decreased from 90 per cent in 1970 to 70.8 per cent in 2009 (RUCHT, D. 2010, 3). In Hungary, the enormous decline in trade union membership might in part be traced back to specific historical reasons. During the socialist era, trade union membership was compulsory for all employees, and SZOT (the National Council of Trade Unions) was widely considered as the servant of state power. As a result, large masses of disillusioned workers left the union movement after 1989. While in Germany the terms and conditions of 62 per cent of the employees are negotiated through collective bargaining, this coverage rate is only 33 per cent in Hungary (FULTON, L. 2013). The decreasing influence of Hungarian trade unions is indeed embedded into a deeper moral crisis (STUMPF, I. 1995; SZABÓ, A. 2011); according to a related survey, Hungarian’s trust in trade unions was only 3.8 points on a scale ranging from 0 to 10 points (TÓTH, I.G. 2009). In the same survey, however, it was also revealed that the trust in the political sphere was – not that surprisingly – even lower, with the category “politicians” receiving 2.4 points and the government receiving only 2.3 points.

In sum, the shrinking relevance of trade unions and their traditional labour protest can be interpreted as just one indicator of the changing politics in postindustrial society. Whereas traditional mass institutions from the industrial age (such as political parties or trade unions) are in decline, new forms of activism like nature conservation organisations and the ecology movement in general are *en vogue* and attracting new members (NEIDHARDT, F. and RUCHT, D. 2001, 40; BÖDEKER, S. 2012). According to Jürgen

Habermas, in a post-industrial economy new political conflicts no longer emerge around issues of distribution but around values, grammars of life and lifestyles (cited in LASH, S. and URRY, J. 1987, 219). Therefore, a new “territory of government” (ROSE, N. 1996, 331) emerges. The social transmutes – or even dies – with the end of national economies and national societies: ROSE, N. (1996, 330) claims that it is now individuals – and no longer social groups – that are being governed. As a result, an anti-political climate emerges.

Nevertheless, it is reasonable to argue that labour issues in general have not gone away just because of post-industrial transition. New labour markets with new regimes of part-time contracts, minimum wages, precarious work contracts and income polarisation have created new risks like youth unemployment (BECK, U. 1992; PONGRATZ, H.J. and VOSS, G.G. 1998; BOURDIEU, P. 2003; ILO 2013). Thus, the end of industrialism does not necessarily imply the end of social struggles about labour relations. Yet, due to the flexibilisation of the workforce, some commentators argue that political protests should likewise be more oriented towards individual needs. The classic labour movement, however, is oriented towards the masses. In the following, we empirically scrutinise this conflict and the relationship between traditional, collective political protest and innovative, individualised political festivals. We use the various staging of Labour Day celebrations in Berlin and Budapest as lenses through which to look at the state of labour protest (Table 1).

#### *Local contexts: The venues of protest in Berlin and Budapest*

##### Berlin

Since the early 20<sup>th</sup> century, the emergence of labour protests has been accompanied by an intensive debate on how strictly political or festive the rituals shall be. This antagonistic debate is reflected in the dual character

Table 1. Key issues of the Berlin and Budapest case studies

Key issues	Berlin	Budapest
Key transformation process since 1990	Deindustrialisation, tertiarisation	
Influence of trade unions	Slowly declining	Heavily declining
Worker representation	Stronger and more unified	Highly fragmented
Level of political participation	Declining but still significant	Very low

Source: Compilation by the authors.

of May 1<sup>st</sup> celebrations in Berlin. May Day protests in Berlin today are separated into two distinct events which take place at two different venues: the DGB Demo in central Berlin near the Brandenburg Gate and the MyFest in Kreuzberg around the Kottbus Gate (Figure 2).

The protest traditionally organised by the confederation of German trade unions, the DGB (*Deutscher Gewerkschaftsbund*) has never been attended by huge masses, except during the heydays of protest in the early 1950s and the 1960s. A considerable peak in participation is observable in the early 1990s due to a general mobilisation after the fall of the Iron Curtain. The numbers of demonstrators has declined every year since and stagnated at an average of 10,000 during the 1990s (RUCHT, D. 2001). In the 2000s the number declined significantly. Labour union protests in Berlin

are highly ritualised. A march of labour unionists starts in the morning and ends around midday at symbolic, politicised places like the Brandenburg Gate. Here the visitors await political speeches held by union leaders, followed by live music acts on stage. In front of the stage, visitors find information booths and a respectable culinary choice of food and drinks from German Bratwurst to Brazilian cocktails (RUCHT, D. 2003). The number of participants is constantly shrinking. In the period from 2002 until 2010 only around one third of the expected visitors to the DGB events could be mobilised.

In stark contrast, participation levels for events on 1<sup>st</sup> of May in Berlin Kreuzberg are rising. In 1987, Kreuzberg protests were the most radical and violent in German history after WWII, as several thousand leftists lighted more than 30 local shops and burned several police cars around the Kottbus Gate, known as the heartland of leftist activists since then (HANNAH, M.G. 2009). As a consequence, from then on several left-wing groups use Labour Day for their own revolutionary march (“Revolutionäre 1. Mai Demo” or Revolutionary 1 May Demo) through Kreuzberg every year at 6 pm. This demonstration – organised by various groups from anti-globalisation movements and migrant organisations to local radical leftists – is attended by about 10.000 people on average every year. Although tensions run high between police and demonstrators during this “radical ritual” (LEHMANN, F. and MEYERHÖFER, N. 2003, 56) in Kreuzberg, the level of violence has changed significantly, since the introduction of the so-called “MyFest” in 2003. This street festival is a deliberate anti-violence strategy and, thus,



Fig. 2. Survey venues in Berlin. 1 = Brandenburg Gate (Borough “Mitte” – DGB); 2 = Kottbus Gate (Borough “Friedrichshain-Kreuzberg” – MyFest).  
Source: Design by the authors.

mainly organised by the inhabitants of the neighbourhood and promoted by the local municipality. The neighbourhood festival attracts between 25,000 and 30,000 people every year, and is staged in Kreuzberg in order to counterbalance and contain the violent protest of the revolutionaries.

## Budapest

In case of Budapest surveys were made in four different venues: *Városliget* (in District XIV), *Vérmező*, *Tabán* (both in District I) and *Hajógyári-sziget* (in District III) (Figure 3).

In Hungary, the first official May Day protest was held in Városliget (City Park) in 1890, only four years after the violent Haymarket affair in Chicago. Since then, if possible, all commemorations ended up there. Consequently, this venue plays an important symbolic role in the history of Hungarian trade unions and labour parties. After WWII, the ruling socialist party entirely appropriated the event in Hungary. In the beginning, it was a small-scale mimicry of

Soviet celebrations with distant tribunes and military parades taking place in the adjacent Felvonulási tér (Parade Square). However, based on the semiotic analysis of socialist era May 1<sup>st</sup> celebrations, VOIGT, V. (1994) points out that the Városliget events became more and more individualised over the decades of state socialism, almost completely losing their original meaning and scrupulously planned choreographies by the end of the 1980s. (Nonetheless, according to VOIGT, these May Day celebrations still attracted 100,000 to 250,000 people during the 1980s.)

After 1989, Városliget remained the venue of the May 1<sup>st</sup> events of MSZP (the Hungarian Socialist Party, successor of MSZMP, the Hungarian Socialist Workers' Party) and most of the Hungarian trade union confederations. In spite of the widening range of entertainment programmes, this venue still preserved its strong political character, interwoven with an increasing Kádár era nostalgia. At the same time, the number of attendants constantly decreased; throughout the past years, even according to the estimation of the organisers, it could only mobilise "a few thousand" visitors.

As a counterpart to this traditionally left-wing and trade union related location, Tabán is a pure leisure-oriented venue. This recreational green space, situated on the northern slopes of Gellért Hill, has always been out of sight from the repressive gaze. Thus, partly illegal beat and rock concerts were held between 1968 and 1987. From the mid-1980s, however, it started to lose its significance, which eventually led to a ten-year hiatus. Since 1997, it is organised again under the name "Tabán Fesztivál" (Tabán Fest), with open-air rock concerts and a clear non-political message. Owing to its festive and fully apolitical character, this programme is more weather-sensitive compared to other venues; as a result, the organisers' estimations of the annual number of attendants vary between 3,000 and 15,000 people.

Besides Városliget and Tabán, two smaller samples have also been selected in Budapest, in order to grasp the high-level political fragmentation of post-socialist Hungary.

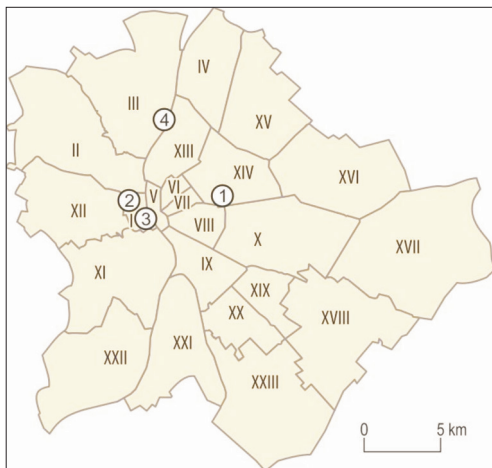


Fig. 3. Survey venues in Budapest. 1 = Városliget (City Park, small urban wood); 2 = Vérmező ("Field of Blood"); 3 = Tabán (so-called "Raitzenstadt"); 4 = Hajógyári-sziget (Shipyard Island). Source: Design by the authors.

These were the May Day celebrations of two relatively new, albeit completely different political parties; Hajógyári Island provided the venue for the May 1<sup>st</sup> events of Jobbik, Hungary's extreme right-wing party (founded in 2003), while the green liberal party, LMP (Lehet Más a Politika = Politics Can Be Different, founded in 2009) organised their May Day commemoration on Vörösmarty (Field of Blood). At both locations, political speeches were framed with cultural programmes and leisure activities, creating a bizarre pastiche of protests, political rallies and a peculiar festive atmosphere.

### Findings and discussion

The leading hypothesis of the analysis is that traditional trade unions draw on a labour force that is not part of the modern flexibilisation of labour. The change in society, in Germany as well as in Hungary, shapes new forms of street protest. First, we assume that the traditional mass demonstrations of the German trade union confederation (DGB), as well as the events of the Hungarian trade unions and that of the Hungarian Socialist Party (MSZP) do not reach broad parts of the actual labour force because their aims, rituals, and protest forms are relicts of a bygone era. Second, these traditional mass demonstrations also do not reach socially excluded, unemployed, or disabled people either.

The study consists of 507 standardised mini-interviews (each taking 10 to 15 minutes), which were carried out at six venues in Berlin and Budapest during May Day 2011. The selection of the respondents was based on random walk technique, with prefixed starting and ending points in the case of each venue. The questions were predominantly focused on the main motives of the interviewees to visit that particular event, their views on its possible political impact, the number of people they were accompanied by, and the amount of time they were planning to spend on the event. In addition, it was also asked whether or not they were always visiting the same venue. Questions on age and highest educational attainment provided information on the socio-economic status of the attendants, whereas the de/politicisation of May Day was supposed to be grasped through their membership in any trade unions and/or political parties. Eventually 287 interviews could be realised in Berlin and 220 in Budapest. First similarities and differences are presented in the descriptive statistics (Table 2).

The two samples vary in regard to demography and attitudes. The people interviewed in Berlin are younger (t-test value \*\*  $p < 0.01$ ) and slightly longer educated (t-test value \*  $p < 0.05$ ) than the Budapest sample. The difference regarding the degree of politicisation and the level of organisation in trade unions is more descriptive. In the Budapest sample,

Table 2. Descriptive statistics of the Budapest and the Berlin sample

Indicator	Berlin		Budapest	
	%/Ø	n	%/Ø	n
Age	38.0 (SD 15.8)	286	44.2 (SD 17.0)	218
Years in education	14.0 (SD 3.0)	287	13.4 (SD 2.8)	217
Member of a trade union, %	33.4	286	19.5	219
Member of a political party, %	16.4	286	15.9	219
Motive: cultural framework programme, %	38.7	286	35.0	220
Motive: unionised, %	19.2	287	9.5	220
Motive: political engagement, %	21.6	287	42.7	220
Will the event have a political impact? %	47.0	285	37.7	219
Size of group*	3.8 (SD 6.8)	279	5.6 (SD 13.8)	219
Attendance in minutes	261.0 (SD 139.3)	286	266.2 (SD 200.4)	220

\*Without the extreme values 300 and 634. Source: Own survey.

people are more interested in politics and to a lesser extent in trade unions, presumably because of the abovementioned generally weak position of Hungarian trade unions. In the Berlin sample, members of trade unions are more frequent than members of political parties, indicating that May Day is a traditional trade union event. In Budapest people visit the events with more companions than in Berlin (t-test value  $* p < 0.05$ ). The tendency towards a higher degree of politicisation in Budapest might explain this. Smaller groups are an indicator of the higher motivation for hedonism in Berlin because people here visit MyFest with friends, whereas in Budapest, membership in an organisation could be a motivation. The higher standard deviation of the variables *size of group* and *attendance in minutes* in Budapest permits such an interpretation.

A specific affinity of trade union members in Berlin to traditional labour issues indicates the significant link between the tendency to always visit the same venue every year and being member of a trade union. Trade union members more frequently visit the same event every year, as a chi-squared test indicates ( $** p < 0.01$ ). This result shows a kind of tradition among organised workers. In Budapest this tradition does not exist at the same level of intensity as the same test is not significant in this case, which could be interpreted as another indicator of the immensely fragmented Hungarian trade union movement. Concerning the age of members of trade unions and non-members participating in May Day events, a significant difference exists between these groups in both the Berlin and the Budapest sample.

In both samples, members are older than non-members (t-test values Berlin  $** p < 0.01$ ; Budapest  $* p < 0.05$ ). These findings correspond with the hypothesis that traditional trade unions do not have much to offer to the new labour force. Traditional labour organisations experience difficulties in responding adequately to the flexibilisation of labour markets, and subsequently, do not reach the “next generation” of workers. As Hungarian

trade unions themselves regularly report over the past few years, they can only retain their otherwise rapidly declining membership numbers by trying to mobilise retired members as well (SZABÓ-MORVAI, Á. 2010).

An analysis of gender and age aspects in the Berlin sample shows a coherence between these two variables and the venue of the interview, which leads in the same direction as the results displayed above. On the one hand, as expected, the German trade union confederation venue is more male ( $* p < 0.05$ ) and older ( $** p < 0.01$ ). On the other hand, MyFest is more female ( $* p < 0.05$ ) and younger ( $** p < 0.01$ ). These figures make clear that young urban milieus prefer a more hedonistic May Day event. The connection between trade unions and their ideologies and the young urban milieu seems to dismantle in Berlin.

In Budapest, there is a significant connection between the particular May Day venue and gender ( $** p < 0.01$ ). The event of the extreme right-wing party Jobbik is more male, whereas the venues of the open-air music festival (Tabán) and the green party (LMP) are more female. These findings are affirmed by studies of extreme right-wing movements in Hungary: according to BERNÁT, A. et al. (2012), the majority of Jobbik voters are male (66%), which is different from those of other parties that exhibit a larger proportion of female voters (56%). Younger generations are also overrepresented among them: 25 per cent of Jobbik sympathisers are under 30 years of age, and 52 per cent are under 40 years (BERNÁT, A. et al. 2012, 361).

The significant connection between the venue of the interview and age ( $** p < 0.01$ ) in Budapest is similar to Berlin. The chi-squared test indicates that the participants of the venue of the socialist party/trade unions are older, in contrast to the visitors to the public festival who are younger than statistically expected. Obviously, the tendency is similar in both cities: traditional forms of May Day protest only mobilise older people. The new milieus of the urban labour markets and the disadvantaged and excluded people

choose different forms of protest or political amusement. The comparative perspective is informative in this regard.

The attitude of the visitors towards the venue was measured on a Likert scale with eleven items representing opinions and impressions. To construct the attitudinal dimensions, a principal component analysis was calculated: in both samples, Berlin and Budapest, two dimensions are obvious. The first component can be interpreted as a dimension of “politicisation” because the factor subsumes active political statements and attitudes. The second dimension is a hedonistic one, subsuming more pleasure-seeking, fun-oriented items. For both cities, the first two variables explain about 50 per cent of the variance. The two factors are labelled “politicisation” and “hedonism” and function as dimensions of attitudes towards the May Day venues, which have to be explained.

Overall four linear regressions were calculated to explain the dimensions of the principal component analysis. The descriptive statistics of a range of the independent variables included are shown in *Table 3*. The regression model concerning the hedonistic dimension in Budapest is not explainable due to high levels of autocorrelation as signified by tolerance measures. This might partly be traced back to the bad weather conditions on May Day 2011 in Budapest – and hence, to the relatively small sample of the hedonistic Tabán venue. (As discussed above, the open-air programme of Tabán Fest is always more weather-sensitive compared to the explicitly politicised events of the other Budapest venues, which are more likely to attract their usual audiences even under more severe weather conditions.) Consequently, in the following, the three regressions are discussed.

The three regressions on politicisation and hedonism in Berlin and Budapest are calculated with the same analytical strategy. Each regression is composed of four models to gauge the different impacts of individual variables and context variables on either politicisation or hedonism. The primary func-

tion of the first model (MP1; MH1; MP5) is to control for demographic factors. The second model (MP2; MH2; MP6) additionally includes membership in trade unions and political parties, as well as the belief in the political impact of the visited event. These variables can be subsumed as individual political factors. The third model (MP3; MH3; MP7) adds the personal motives, while the fourth model (MP4; MH4; MP8) also includes all contextual factors like the geographical ones (the venue of the interview), the temporal ones (the time of the interview) and the size of the group.

In the case of the first regression on the factor “politicisation” in Berlin, model one (MP1) explains only a small part of the variability of the degree of politicisation in the sample but age is significant (the older, the more politicised). Model two (MP2) is far more meaningful according to the coefficient of determination. Here, the number of years spent in education becomes significant; the shorter the education was, the more politicised the person is. A possible explanation for this influence is that the majority of trade union members are blue-collar workers and older in the sample because age remains significant. Another indicator for this interpretation is the strong significant influence of the items “believe in the political impact of the event” and “member of a trade union”.

The second model (MP2) makes explicit that older, less educated members of trade unions in Berlin are politicised, which means they believe in the impact of their event. In model three (MP3), the strongest impact comes from “political motive”. “Years in education” and “political impact of the event” remain significant.

The fourth model (MP4) shows that the significant factors are “years in education”, “political impact of event”, “motive: cultural framework” (indicating that the speeches and music are considered important), “political motive”, as well as the context variables of “venue” and “interview in the morning”, which means the interview was held at the DGB demonstration. Thus, the fourth model clearly shows that people visiting the DGB venue are the most politicised in the Berlin

Table 3. Linear regression models on the factors “politicisation” and “hedonism” as dependent variables

Independent variables	Berlin “politicisation”				Berlin “hedonism”				Budapest “politicisation”			
	MP1	MP2	MP3	MP4	MH1	MH2	MH3	MH4	MP5	MP6	MP7	MP8
Years in education	.098	.195**	.192**	.133*	-.051	-.049	-.004	-.021	-.033	.026	.049	-.010
Age	-.245**	-.122+	-.050	-.018	.373**	.319**	.274**	.149*	-.261**	-.252**	-.088	-.025
Gender (1 = male)	-.010	.025	-.004	.034	-.046	-.053	-.047	.009	-.106	-.045	-.004	.016
Member of a trade union (1 = yes)	-	-.254**	-.076	.008	-	.178*	.045	-.103	-	.055	.038	.054
Member of a political party (1 = yes)	-	-.024	.044	.042+	-	.091	.117	.188**	-	-.237**	-.203**	-.170*
Political impact of the event (1 = yes)	-	-.454**	-.378**	-.351**	-	-.172*	-.173*	.188**	-	-.259**	-.185**	-.158*
Motive: cultural framework programme (1 = yes)	-	-	-.133+	-.234**	-	-	-.179*	-.159*	-	-	.341**	.282**
Motive: meeting friends (1 = yes)	-	-	.002	-.010	-	-	-.054	.050	-	-	.189**	.257**
Motive: fine weather (1 = yes)	-	-	-.082	-.147**	-	-	-.072	-.044	-	-	-.009	-.015
Motive: spontaneous decision (1 = yes)	-	-	-.018	-.002	-	-	.139*	.077	-	-	.190**	.219**
Motive: political motive (1 = yes)	-	-	-.514**	-.311**	-	-	.013	-.094	-	-	-.072	-.031
Motive: unorganised (1 = yes)	-	-	-.087	-.069	-	-	.017	-.034	-	-	-.032	-.045
Motive: political engagement (1 = yes)	-	-	.090	.029	-	-	.006	.024	-	-	-.025	.067
Motive: other matters (1 = yes)	-	-	-.095	-.113*	-	-	-.167*	-.167*	-	-	.085	.139
Size of group <sup>1</sup>	-	-	-	-.059	-	-	-	-.034	-	-	-	-.159*
Attendance in minutes	-	-	-	-.104*	-	-	-	-.257**	-	-	-	-.094
Interview in the morning or afternoon (1 = afternoon)	-	-	-	.186**	-	-	-	-.093	-	-	-	.098
Berlin: Venue of interview (1 = MyFest; 2 = DGB)	-	-	-	-.350**	-	-	-	.487**	-	-	-	-
Budapest: Venue of interview (1 = hedonistic)	-	-	-	-	-	-	-	-	-	-	-	-
R <sup>2</sup> (rectified), %	4.8	37.1	46.2	55.4	12.0	14.4	18.3	37.7	7.0	20.5	34.9	42.3

<sup>1</sup>Without the extreme values 300 and 634; + p < 0.10; \* p < 0.05; \*\* p < 0.01. Source: Own survey.

sample, regardless of whether they are trade union members or not, since “member of a trade union” is not significant in the model.

The second regression analysis on hedonism in Berlin shows only a small impact of demographic factors (MH1) but age is significant (the younger, the more hedonistic). As opposed to (MP2), model two (MH2) is not more meaningful than MH1. Membership in a trade union or political party does not contribute much to the explanation of hedonism. Even in the third model (MH3), age remains the most important factor for hedonism. Visitors plan to go to the venue because of the cultural programme. Additionally, these hedonists do believe in the political impact of the venue. In model four (MH4), it becomes obvious that membership in a political party is a negative predictor for hedonism. However, belief in the political impact of the event strengthens the hedonistic dimension. Age remains important (because younger people are more hedonistic), as does the cultural programme and unspecific “other matters”. According to the regression model, the two strongest predictors of hedonism are the two context variables “venue of interview” (which means that visitors of MyFest are hedonistic), and attendance in minutes. Here, it becomes obvious that hedonists stay longer at the event.

The four models (MP5-MP8) on “politicisation” in the Budapest case show similarities and differences to the Berlin



models (MP1-MP4). The first model (MP5) is only slightly meaningful but age is significant (the older, the more politicised). In the second model (MP6), age remains significant (again; the older, the more politicised). This has been theoretically expected based on the younger generations' general distrust in the political sphere and public affairs in Hungary; according to SZABÓ, A. (2011), in 2000, 55 per cent of Hungarians aged 15–29 were not interested in politics, whereas in 2008, it grew to 60 per cent. An indicator for a high degree of politicisation in Budapest is the strong significant influence of the items "believe in the political impact of the event" and "member of a political party".

This makes it clear that older members of political parties in Budapest are politicised, which means they believe in the impact of their event. The third model (MP7) makes obvious the strong politicisation of parts of the population due to the fact that hedonistic motives like the cultural fringe events, meeting friends, and a spontaneous decision to go to the venue are strong negative predictors. The individual political factors "membership in a political party" and "believe in the political impact of the event" remain significant, while age does not. The context model four (MP8) displays the influence of the venue; Tabán as a cultural festival is an obstacle to politicisation. Political motives are not significant due to the auto-collinearity of the model, i.e. methodological reasons as indicated by the tolerance value.

### **Conclusions: Fragmentation and de-politicisation of labour protest**

The nature of labour protest is fundamentally changing. Due to the decline of union membership and the flexibilisation of the workforce, an erosion of protest is detectable. While there is much debate in the literature on the reasons for this dramatic downswing, there is little empirical work on the motivations and socio-demographic characteristics of participants in protests today. In this paper we explored the motivations of labour

protesters in Berlin and Budapest. In both cities we compared traditional, union-oriented forms of labour protest as well as new forms of festive, more individualised labour protest. Through our empirical research results based on structured mini-interviews, we advanced three interlinked arguments.

First, a clear fragmentation of labour protests in the forms of venues, audiences and protest motivations is observable. Apparently, the new conditions of labour in times of a flexibilisation of the workforce find resonance in the growing differentiation of protest. Especially younger generations are drawn to new types of festive protest that address lifestyle needs like hedonistic consumption (food, music, cultural entertainment).

Second, newer forms of labour protest have a paradoxical effect: on the one hand, they are able to mobilise a young, educated audience, whereas on the other hand, these festive forms of protest clearly draw a much more depoliticised crowd that attends for reasons of cultural consumption.

Third, we directed attention towards the question of the unemployed and the marginalised. In neither of the observed protest venues – be they old fashioned, unionised labour protest or newly redesigned hedonistic protest – are they present. The urban precariat consists of a growing section of the labour market, yet, it is barely represented in any of the Labour Day celebrations today. Hence, our empirical results sadly confirm existing comparative studies on labour protest and the unemployed in Europe (BAGLIONI, S. *et al.* 2008, 326). The erosion of unionism does not automatically lead to new forms of protest by the unemployed. Rather, atomisation prevails.

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## The challenge of diversity in rural regions: refugee reception in the German federal state of Saxony

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### Abstract

Recent inflows of asylum seekers and their internal redistribution have confronted many European countries with questions of how to integrate the newcomers without neglecting needs, fears and perceptions of the resident population. This is especially true for rural regions in East Germany, which has experienced huge internal outmigration since the political and economic transformation period following 1989–1990, but which never has been a destination for international migrants. Based on theoretical approaches from sociology and social psychology, the paper analyses local reception conditions, attitudes and perceptions of local populations and decision makers in rural regions of the East German federal state of Saxony, following the research question of how individual and group related attitudes develop and how those are reflected and responded to by public decision makers. Findings suggest that the migration history and the political and economic development are important context factors for the understanding of local reception conditions. Lacking experiences with diversity, combined with the involuntariness of refugee allocation, provides for a hostile environment and xenophobic behaviour. On the other hand, the opportunity to experience first-hand contacts to migrants in the neighbourhood can support the acculturation process and subsequently change public attitudes towards migrants and refugees. The perception of relative deprivation, which is found specifically in vulnerable groups in the context of transformation situations, can result in destructive attitudes and can jeopardize democratic processes and puts public representatives under pressure. The paper concludes that the challenge to integrate refugees could bring forward general debates about social cohesion and might furthermore fuel processes of institutional adaptation and social innovation. In order to maintain social peace, it recommends the empowerment of local actors in rural regions to take over a leading role in local discourses, actively support civic engagement and fight the effects of destructive discourses.

**Keywords:** diversity, migration, refugee reception, Pegida, rural regions, East Germany

### Introduction and research questions

Migration has severely changed the population structure and social fabric of many regions in Europe. Especially in recent years, many urban but also peripheral, rural regions in Europe experienced increasing population diversity due to the inflow of various groups of migrants, among them European free movers, labour migrants from third countries and refugees<sup>2</sup>. Contrary to ur-

ban agglomerations, rural communities often have few experiences with diversity.

In Germany, the huge inflow of refugees since 2013 and their redistribution among federal states and counties confronted many rural municipalities with questions of integration and diversity for the first time. Dealing with those questions we can observe a new East-West divide, with the post-socialist part of Germany appearing as especially hostile, xenophobic and even dangerous for

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<sup>2</sup> In this article the term “refugee” is used to characterise a person who fled his or her country. The term does not reflect the formal status of the fled person in the asylum process.

foreigners. A longitudinal study on the reception culture in Germany revealed that recently almost every second East German citizen believes that immigrants are not welcome in Germany, while in West Germany, this perception is found in one third of the population (Bertelsman Foundation 2015, 16). As those differences were not found in earlier versions of the survey, it can be assumed that East and West Germany are developing in different directions concerning the willingness and ability to develop a welcoming reception environment for immigrants.

Differences regarding the openness towards immigrants can be found throughout Europe. The European Eurobarometer-survey shows differing perceptions concerning immigration in accordance to age and social status. Negative and hostile perceptions were especially frequent in older age groups and in those groups with low social status (European Commission 2015, 151). Thus, the socio-economic and age profile of regions may serve as part of an explanatory frame for the analysis of diverging reception cultures.

In Germany, regional differences are not only found in perceptions towards immigrants, but also in practices like for example criminal attacks against foreigners or refugee accommodations. Police statistics covering the year 2015 revealed a high number of criminal assaults against refugee accommodations in most East German federal states. In Saxony, with a share of 5 per cent at the total population and accommodating 6 per cent of asylum seekers, there occurred more than one tenth of all incidents against refugee accommodations in 2015 (JANSEN, F. 2016).

Several factors are currently debated as an explanation for those obvious differences. First, there are considerable differences concerning experiences with heterogeneity, which is due to the different immigration histories of the two German states. Also, the experience of political, economic and social transformation in East Germany seems to play a role. Particularly for inhabitants of rural areas in East Germany, the transfor-

mation period was associated with various losses. Experiences of personal loss (such as the loss of employment and social status or loss of social networks due to outmigration of family members) mingled with the (perceived) disconnection from economic and social progress, which also included the dismantling of public infrastructure. Those processes of “peripheralisation” particularly hit the more vulnerable segments of rural populations, such as the elderly, the poorly educated and the unemployed and poor people (LASCHEWSKI, L. 2009; LEIBERT, T. and GOLINSKI, S. 2017).

Another argument is the persisting stance from socialist times not to be a self-determined subject, but rather a victim of state intervention. This attitude prevents a reflection on creative possibilities of the self and promotes the retreat into private life, political abstinence and a general mistrust of public institutions and political actors (HILSBURG, S. 2015).

This paper takes off from those principal considerations in order to explore the perceptions and practices of refugee reception in a post-socialist rural part of Germany. The paper discusses explanations concerning the development of xenophobia and analyses how notions of xenophobia transfer into practice of both residents and public authorities.

Following the introduction, in section 2 the paper will elaborate explanatory approaches on integration, acculturation and xenophobia and give an overview on existing research concerning migration, integration and diversity in rural regions. Section 3 introduces the case study region in terms of economic and population development and migration history as an explanatory frame for the empirical research. Section 4 reports on the research methodology and the main findings, which are finally discussed and generalized in section 5. The paper draws on statistical material and case studies which the author and co-workers carried out in the federal state of Saxony in the course of the years 2015 and 2016.

## Migration and integration in rural regions – explanatory approaches and empirical evidence

### *Explanatory approaches on integration, acculturation and xenophobia*

Dealing with the question of preparedness of local communities for the reception of international migrants, it is important to consider the two-sidedness of the integration process, affecting migrants as well as members of the host society. Historical key approaches from integration research like the race-relations-cycle focus on the role of newcomers and the steps they have to take in order to become a full member of the host society (PARK, R. and BURGESS, E.W. 1921; TAFT, R. 1957). Integration is seen as a multi-step process, which provides for a gradual approach to different segments of the host society until full assimilation. At the same time a gradual alienation from the society of origin occurs. More recent approaches suggest the alternative of simultaneous integration in societies of origin and arrival and the development of transnational identities (PRIES, L. 1997; WELSCH, W. 1999). In addition, the integration of migrants into the host society is no longer equated to assimilation, but it is rather conceptualized as equal participation, while the migrants' different characteristics and cultures are accepted by the host society. But even those approaches lack the perspective on the host society's characteristics and the designation of factors that enable, promote or hinder the integration of foreigners.

The requirements of intercultural understanding are addressed in approaches from cross-cultural psychology. In REDFIELD *et al.*'s acculturation approach, acculturation is described as a bundle of phenomena "which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original culture patterns of either or both groups" (REDFIELD, R. *et al.* 1936, 149). Thus, basic elements of the acculturation process are contact (continuous and first-hand),

reciprocal influence and change. BERRY, J.W. (2006) furthermore stresses the contextual configurations of acculturation, considering the diversity of the reception society and its acculturation strategies as well as the voluntariness of migration. Reflecting those approaches, we can hypothesize that the host society's constitution in terms of socio-economic situation, demographic development and migration history will influence integration and acculturation processes. In addition to the experience of heterogeneity, the socio-economic situation of the specific locality must be considered in order to describe differences in the ability to integrate.

For a better understanding of the dynamics and quality of inter-group-relations, approaches from social psychology are helpful which focus on social group identity. Following TAJFEL, H. and TURNER, J.C. (1986), social identity is the "part of an individual's self-conception derived from the perceived membership in a relevant social group". Social identity theory predicts intergroup behaviour considering perceptions of group status differences, legitimacy and stability of those differences and the ability to move from one group to another group.

The development of negative dynamics in inter-group-relations is correlated with the endangerment of status devaluation, for example in the context of social or economic transformation processes. In those situations, social groups may react with active degradation of groups which are perceived to rank lower, or because of a perceived competition in the context of social benefit allocation. This mechanism is also referred to as relative deprivation (PETTIGREW, T.F. 2001). This approach appears to be especially suitable for the analysis of intergroup relations in transformation situations. Several empirical studies show correlations between relative deprivation and the development of right wing attitudes in various European countries (HEITMEYER, W. 2010; KÜPPER, B. and ZICK, A. 2010).

Regarding the general openness towards foreigners, the form of nationhood seems to



play a crucial role. Especially, the “ethnic” type of national feeling was found to correlate with features of xenophobia, (HJERM, M. 1998) while the “civic” type produced a greater openness towards heterogeneous societies and furthermore correlated with a higher level of institutional legitimacy (BILLIET, J. *et al.* 2003; CEOBANU, A.M. and ESCANDELL, X. 2008). Several authors discuss the prevalence of the “ethnic” type of national belonging in post-socialist societies due to specific historical paths into nationhood, which might be object to challenge and change during the European integration process (SMITH, A.D. 1991; WHITE, G.W. 2000; HJERM, M. 2003).

#### *Empirical evidence on integration and diversity in rural regions*

Empirical research results on the effects of rural society structures and infrastructures on the integration of foreigners are scarce. In Germany, HOFFMEYER-ZLOTNIK, J. (2000) used the data of the German General Social Survey (ALLBUS) 1996 with a total of 3,290 interviewees to determine the influence of the settlement structure on attitudes against foreigners. His findings show that discriminatory positions are mainly influenced by education, age and existing contact with foreigners. People with high education, previous contacts to foreigners and low age displayed the least discrimination tendencies. Regarding regional differences, HOFFMEYER-ZLOTNIK, J. (2000) showed that the discrimination of foreigners in cities is lower than in the countryside, while discriminatory attitudes were generally higher in East Germany than in the west of the country.

NADLER, R. *et al.* (2010) studied international migration into peripheral rural regions, focusing on the specific potential international immigration could have for the development and competitiveness of rural regions. Using empirical case study material from the West German Saar region and the East of Saxony, they focused on the attitudes and experiences of international migrants and their reflec-

tions of integration and acceptance in rural settlements.

They differentiated two groups of international migrants in terms of migration motivation and lifestyle: career oriented migrants on the one hand, and family life oriented migrants on the other. The group of highly skilled and career-oriented migrants reported a strong distance between themselves and rural German neighbours; as a reason, they identified less their foreign origin than their higher education and cosmopolitanism, which divided them from their rural neighbours and sometimes led to retreat of the latter (NADLER, R. *et al.* 2010, 115). The group of family oriented migrants often showed more active efforts to integrate and had more everyday interactions with rural German inhabitants. They reported discriminatory experiences, particularly if they showed visible cultural differences, like wearing a headscarf. Some reported that due to the widespread rural poverty, they would rather hide their own (good) economic status for not arousing envy among the locals (*ibid.* 116). NADLER, R. *et al.* (2010) conclude that positive effects of international migration in rural areas can only occur if newly arriving migrants manage to become firmly rooted in the social community.

A recent locality study by Roos, U.M. (2016) on migration and integration of foreigners in the rural town of Merzig in the German Saar-Region compared the attitudes towards integration, xenophobia and heterogeneity among local residents with and without migration biography. Roos, U.M. (2016) revealed that the positive attitudes against foreigners correlated with the intensity of intergroup-connections in the direct neighbourhood, personal private contacts and contacts at the workplace. Generalizing from her empirical results, she concluded that intercultural contacts and neighbourly relations have a strong positive influence on integration processes in rural settlements. Furthermore, she stressed the significance of key persons (such as mayors, teachers and so forth) for the development of public attitudes, as they are strongly accepted as role models in rural societies.

Also a number of policy oriented studies on integration practices in rural settlements confirm the results elaborated above, notably that rural settlement structures lead to a higher degree of social control; that exclusionary practices against newcomers and the perception of cultural differences are strong; and that there is a lack of ethnic networks, interculturally trained professionals or differentiated integration structures which could support integration (cp. MIKSCH, J. and SCHWIER, A. 2000; SCHADER-STIFTUNG 2011; GRUBER, M. 2013). Furthermore, all studies stress the role of key persons for the local integratory climate. The publicly displayed personal attitude of the mayor, the teacher or the local priest towards immigration and foreigners can significantly influence the public climate and, thus, form an important basis for acceptance and integration of foreigners in local societies.

### **The federal state of Saxony as source and destination of migration**

In the following section the paper will briefly describe the socio-demographic development of the case study region since 1989/90 in order to empirically frame the analysis of reception and integration practices and the social conflicts arising from the arrival of asylum seekers.

#### *Internal migration and demographic decline*

The federal state of Saxony already experienced population losses prior to the transformation period, but since the political revolution of 1989, the outflow increased tremendously. Between 1990 and 1993, more than 400,000 people left Saxony, which makes 8.5 per cent of its 4.7 million inhabitants. Between 1990 and 2013, the population number decreased by 15 per cent, due to emigration and declining birth numbers (4.7 million to 4.0 million) (StBA 2014).<sup>3</sup> Emigration was

highly segregated by age, education and gender, leading to an extended peripheralisation process of geographically remote and rural regions. While mostly younger and better educated people (among them a high proportion of women) left, the remaining population represented growing proportions of elderly, unemployed and less educated people, who faced an ongoing downsizing process of public infrastructure and a stagnation of economic development (GLORIUS, B. 2015, 26) (*Photo 1 and 2*).

Those processes proceeded with high regional variation (*Figure 1*). Especially remote areas and de-industrializing regions experienced a population loss of up to one quarter of their population and a continuing outmigration. The age-selectivity of outmigration and the constantly low birth rates simultaneously led to a sharp increase of the average age. Notably the counties in the Erzgebirge mountains along the Czech border as well as in the district of Bautzen and in parts of the rural core of Saxony are strongly ageing. Thus, e.g. the municipality of Johanngeorgenstadt in the southern Erzgebirge lost more than half of its population between 1990 and 2013; the average age increased by 13.6 years to 51.1 years in the same time.

#### *International migrants in Saxony*

The former German Democratic Republic (GDR) had a low level of internationalization. The immigration regime mainly provided for temporary labour migration without possibilities to stay for good; also students and scientists from other socialist countries lived in the GDR, as well as small numbers of political refugees and migrants who arrived due to marriage with a GDR citizen. In 1989 a total of 190,400 foreigners (1% of the total population) lived in the GDR, of which 93,568 were contract workers (BADE, K. and OLTMER, J. 2004, 95). For comparison, the share of foreign population in the former Federal Republic of Germany (FRG) was 8 per cent at the end of the 1980s.

<sup>3</sup> Between 2013 and 2016, the population slightly increased from 4,046,385 to 4,084,851, mainly due to net migration gains of foreign population.



*Photo 1. Abandoned school building in a small town in Saxony. Photo by GLORIUS, B.*



*Photo 2. Empty shops in a provincial town center, Saxony. Photo by GLORIUS, B.*

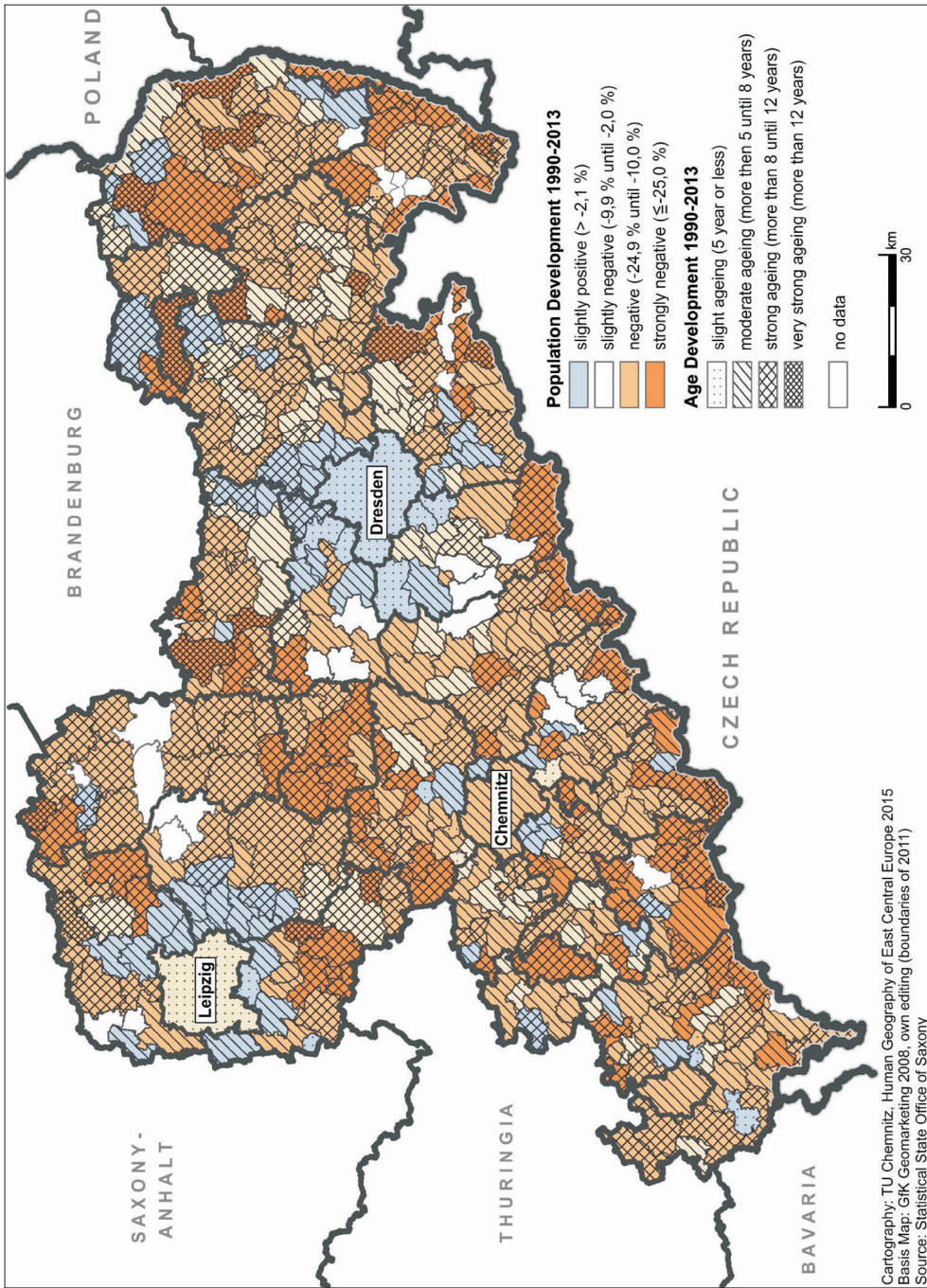


Fig. 1. Population and age development in Saxony per county, 1990–2013. Source: Federal Statistical Office. Own design.

In the beginning of the 1990s the immigration dynamics to Germany changed drastically and, thus, also touched the new federal states which were reunited with the western part at October 3<sup>rd</sup> 1990: There was a huge inflow of asylum seekers (ca. 1 million from 1991–1993) – especially refugees from the Balkan wars (ca. 290,000 from 1991–1993) –, resettlement migration of ethnic Germans from Eastern Europe (ca. 850,000 from 1990–1992, and around 2 million from 1990–1999) as well as arrivals of Jewish quota refugees from the former Soviet Union (28,462 in 1991–1992) (HAUG, S. and SCHIMANY, P. 2005; BAMF 2014). All those groups had in common that they could not settle at free choice, but they were distributed under the paradigm of burden sharing among and within the German federal states. This is also the case regarding newly arriving asylum seekers, of which the federal state of Saxony – according to the national distribution key “Königsteiner Schlüssel” – has to accommodate 5.1 per cent (BAMF 2016, 13).

A further group of international migrants residing in Saxony are European free movers. Their numbers increased significantly since the new EU member states gained full freedom of residence. Due to Saxony’s location bordering Poland and the Czech Republic, there are significant immigration numbers from those two countries. But also the number of migrants from Southern European EU-member states has increased since those countries are facing financial and economic crises. Lastly, there is a considerable number of international students residing in Saxony on a temporary basis. Summing up those groups, the federal state of Saxony hosted around 164,000 foreigners in the end of 2015, which represented 4 per cent of its total population (*Table 1*).

### *Refugee reception, distribution and accommodation in Saxony*

Since the changes of the Federal Law of Asylum in 1993, the number of incoming asylum seekers and asylum applications had been steadily decreasing and reached levels of ca. 20,000 in the beginning of the cs 2000s. Due to increasing conflicts in the Near East and the constant inflow of refugees over the Mediterranean in the 2000s, countries of arrival like Italy were facing severe reception and accommodation problems and refugees started to move onwards, for example to Germany. Since 2014, refugees from the West Balkans and those travelling over the Balkan route has led to quickly increasing arrival numbers of asylum seekers in Germany. While in 2014, there were ca. 174,000 first time asylum applications in Germany, this number increased to about 442,000 in 2015, but the arrival numbers prior to registration and asylum application were estimated around one million for the same year (BAMF 2016, 7). As the federal office for migration and refugees fell behind in the registration and application procedures, the number of asylum applications was still increasing in the years 2016 (ca. 722,000 first time applications) and 2017, even though the number of arriving asylum seekers dropped since the closure of the Balkan route in March 2016 (BAMF 2017a).

After crossing the German border, asylum seekers are registered by the federal police and then distributed over the federal states according to their shares of total population and economic situation (BAMF 2016, 13). The federal state of Saxony has to accommodate 5.1 per cent of all newly arriving asylum seekers, which made 6,030 persons in 2014, 27,180

*Table 1. Main groups of foreigners in Saxony between 2013 and 2015*

Population groups	2013	2014	2015
Total population	4,046,385	4,049,504	4,084,851
Foreign population, of which	106,663	123,648	164,230
EU free movers	37,147	43,561	50,182
asylum seekers	5,663	11,163	32,201
international students	13,610	15,472	16,611

Source: Der Sächsische Ausländerbeauftragte 2015, 130; 2016, 152.

in 2015 and 23,661 in 2016 (measured in terms of first asylum applications; see BAMF 2017b, 5). Among the federal states, refugees are again distributed over the counties according to population share. *Figure 2* displays the distribution of asylum seekers in counties and cities of the federal state of Saxony in February 2015 and shows that practically every region is touched. However, the proportion of asylum seekers within the total population still is quite moderate, mostly varying between one and two percent.

Since 2013, counties and towns in Saxony agreed on a desegregation strategy, aiming to provide individual accommodations for about 50 per cent of all asylum seekers. After arriving from the federal first reception facility, asylum seekers usually spend a couple of weeks in a collective facility of the county or town. Then they are allocated to individual apartments, which are preferably offered to families with children, but also to groups of individuals. However, the implementation of this strategy varies considerably between counties and towns, which is (among other reasons) due to the differing availability of adequate housing facilities (*Figure 3*).

### Refugee reception and the challenge of diversity in rural regions of Saxony – methodology and findings

#### *Research methodology*

Since the year 2015, the author has been carrying out fieldwork in rural municipalities in Saxony in order to explore commonalities and

differences in the reception situation, the interactions between asylum seekers and local population and the public discourses evolving around the reception of asylum seekers. The research design consists of a mixed methods approach, containing expert interviews with politicians, administration professionals, social workers and teachers for migrants, focused interviews with migrants, as well as participant observation and the analysis of administrative bulletins, newspaper articles and social media blogs. The following elaborations display results from a first series of interviews (*Table 2*) concentrating on the management of reception and accommodation procedures, integration practices, personal experiences and underlying problems.

The experts were found in the counties “Meissen” and “Landkreis Leipzig”, while other county officials refused to take part in the study, due to time constraints, but also because of the high level of public attention for the topic and possible negative consequences for their daily work. Interviews followed a common structure, using an interview guide which contained the main topics of interest, which were the genealogy of refugee reception, the constellation of actors in the field, specific challenges and problems and an assessment of local integration potentials. The interview guide ensured the comparative character of the interviews and at the same time left enough room for the interviewee to express additional issues. The interviews were taped, transcribed and analysed via thematic content analysis.

The main aim of the analysis was to find commonalities and divergences in the local practices and strategies of refugee reception

*Table 2. Characterisation of interviewees*

Type of interviewee and field of expertise	Date of the interview	Code
Mayor	26.05.2015	#E1
Mayor	28.05.2015	#E2
County representative, social affairs	28.05.2015	#E3
Housing administration, social worker	03.06.2015	#E4
German teacher for young asylum seekers	08.02.2016	#E5
Asylum seeker	10.06.2016	#M1

*Source:* Own data.

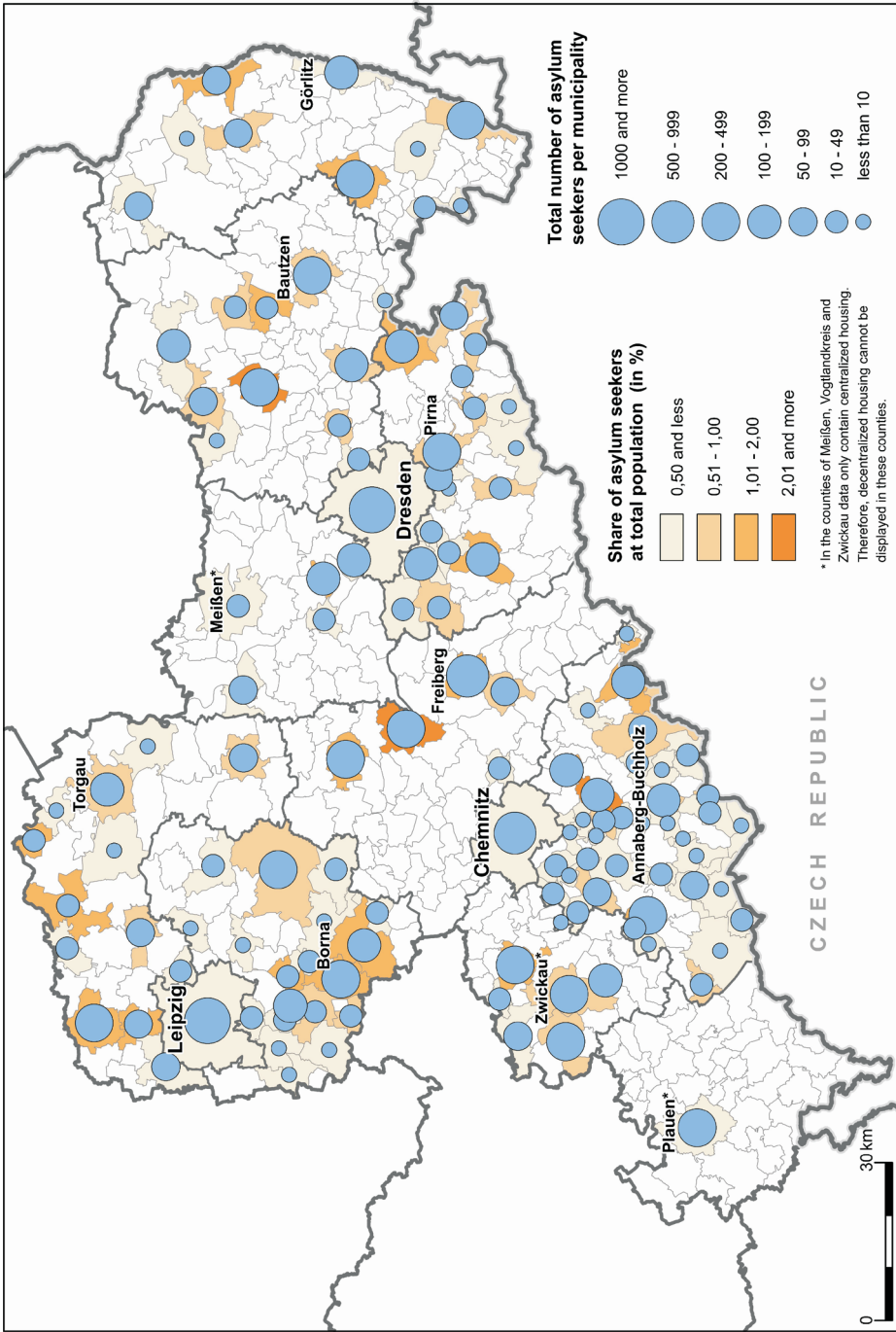


Fig. 2. Distribution of asylum seekers in counties and towns of Saxony, February 2015. Source: Federal Statistical Office, Federal County Board. Own design.

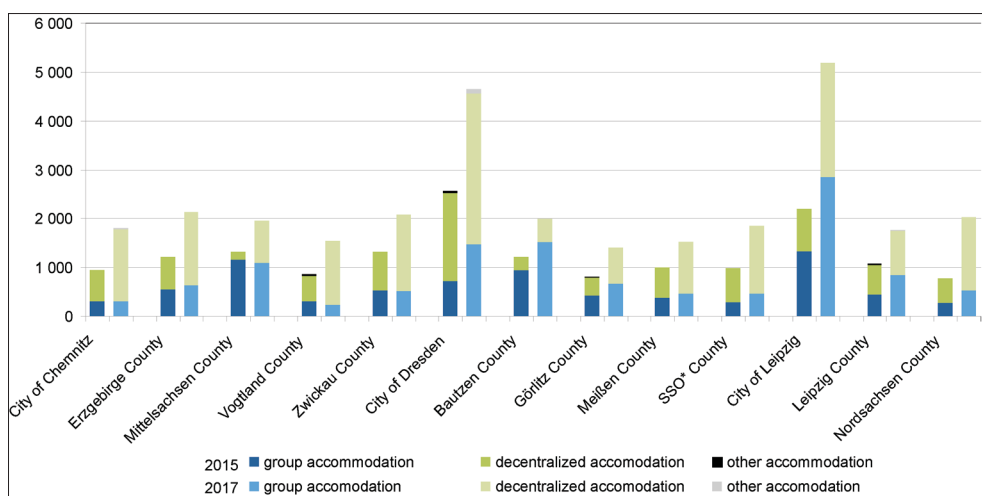


Fig. 3. Asylum seekers in Saxony per type of accommodation, February 2015, 2017. \*Sächsische Schweiz – Osterzgebirge. Source: Federal Statistical Office, Federal County Board. Own design.

and the development of local discourses. Special interest was given to the question, how the experts' perception of local discourses influenced their professional activities and decisions regarding the management of refugee reception. For further validation of the arguments, data from two interviews with a teacher and a young asylum seeker were integrated in this elaboration. They were drawn in the context of a study on integration of refugee youth into vocational schools in the county "Erzgebirgskreis."<sup>4</sup>

#### *Diversity and xenophobia in discourse and practice*

Rural populations such as in the case study regions in rural Saxony appear to have little experience with diversity. Migration experiences mainly consist of the huge internal outflow, which – due to its selectivity – left behind local populations with high levels of ageing, unemployment and other social problems (DORNBUSCH, R. and WOLF, H.C. 1994; GLORIUS, B. 2010; CUDNY, W. 2012). In

those local populations, outdated patterns of thought and behaviour from socialist times persisted to a large extent, such as the contradictory behaviour towards international migrants: During socialist times, the presence of labour migrants was justified with the obligation of international socialist solidarity with countries such as Poland, Vietnam and Cuba, while in everyday-life migrants from those countries were living segregated and under strict control of security police. Contacts between locals and foreigners were rare and not supported by the state, who suspected that migrants from more liberal socialist states such as Poland might bring counter-revolutionary ideas into the country. This brought forward manifold stereotypes and accusations, which were reflected by the daily press and, thus, legitimated xenophobic and racist stereotypes of the resident population. In relative absence of foreigners, racist stereotypes were never reflected and, thus, remain stable even in the higher strata of today's East German society (MÜNCH, S. 2013).

This argumentation can be found in the expert interviews, as in the following quote from an interview with the mayor of a county town, who is explaining (and excusing) the negative reactions of some locals against refugees:

<sup>4</sup> All interviews were held in German and were later translated into English.



“They rarely have experiences with foreigners. On holidays, yes, then I go to the bazaar, there is bustle, it’s loud, there are exotic smells, but I definitely don’t want to have this at home in front of my doorstep.” (Mayor #E2)

Also in other interviews there was a tendency to excuse or “naturalize” xenophobic behaviour of the local population, like in the following quote from a teacher of an integration class for young asylum seekers, who reflects her experiences doing fieldtrips with her students:

“I also do fieldtrips with larger groups even though we are being recognized in the bus and in the train and sometimes we annoy people. The students don’t do any harm, but if I am showing up with a group, and there are ten coloured students who raise all attention, then you experience just the normal life here, so sometimes you are harrassed and shouted at.” (Teacher #E5)

Also the asylum seekers witness negative reactions of locals, starting with negative non-verbal and verbal reactions up to vandalism against their accommodation and personal attacks:

“Many people just approach me and ask ‘What do you want here? Why don’t you leave?’ and you can do nothing about it. (...) They say, this is not my home, and that I receive money without doing anything for it, and I don’t want to explain myself all the time.” (Asylum Seeker #M1).

After this interviewee’s accommodation was attacked several times, he addressed the mayor of the town, who suggested to move to another town, where people might be less hostile.

Those xenophobic discourses and practices as described above are embedded into a discursive frame that plays down daily racism, so that it appears as “normal” and justified behaviour. In this context, the attitudes and public gestures of local key persons such as mayors, school directors or priests play a crucial role for the development of local attitudes and practices. The passivity which was displayed by the interviewed experts in those municipalities hinders a reflection of

xenophobic attitudes and even prepare the ground for harsh xenophobic and anti-islamic reactions and racist assaults.

*Xenophobia without foreigners and the importance of first hand contact*

Following J.W. BERRY’S (2006) argumentation, continuous first-hand contact is crucial for the acculturation process. Asylum seekers who are located in large compounds have difficulties to achieve first hand contacts with locals, apart from contact with integration professionals or NGOs. Analysing the institutional strategies for the accommodation of asylum seekers in rural municipalities, the strategy of decentralized refugee housing is framed in a twofold way: Whereas on the one hand, the argumentation follows BERRY and stresses the greater ease to get into daily contact and, thus, create a higher level of acceptance – and of mutual support –, decentralization is also pursued to prevent the stigmatization of neighbourhoods or draw the attention of right wing radicals.

According to the author’s observations and interviews, the actual experience of living side by side with a foreign family indeed stimulates contact, understanding and mutual help. Especially in the smaller towns with scarce or no social infrastructure, there are German neighbours who call in and try to solve administrative issues for the asylum seekers, as an interviewee (social worker #E5) reports. According to her opinion, this behaviour is closely connected to the tradition of mutual help, especially in the remote villages, and the newcomers are not excluded from this tradition.

On the other hand, in the absence of foreigners, racist stereotypes are produced and reproduced on the basis of rumours spreading through printed and social media. This becomes evident in the following quote reflecting a town meeting prior to the allocation of asylum seekers and the attitudes that were displayed by the local population during the public discussion:

“Sometimes I find it very difficult to understand where those fears come from, it’s actually the fear of the unknown. Because if you get to ask more deeply, there has never been any contact with refugees. It is a fear of something which is completely unknown. For me, personally, this is always difficult to understand” (Social worker #E4).

This quote indicates that the observed public reactions might not (only) be based on racist motives, but on the anticipation of changes in the local environment which might have negative consequences for the own way of living. Those fears develop on the basis of stereotypes about the cultural otherness of the newcomers, including assumptions on deviating ways of living that could disturb one’s own lifestyle, for example because of noise, unusual smells or formerly unknown use of public spaces. During the public meetings, however, those individual stereotypes are collectively reinforced. Quite frequently, following the interviewees and participant observation results, town meetings in the context of asylum seeker allocations are infiltrated by right-wing activists, who use populist methods to raise public resistance and provoke aggressive and racist remarks. In the observed cases, public officials failed to develop a proactive and deescalating communication strategy which could support a rational discourse among local inhabitants. This is all the more problematic when one considers the discourse leading role of key persons in rural communities.

#### *The effects of relative deprivation*

The correlation between deprivation and extreme right-wing attitude has been repeatedly described and confirmed in empirical studies. The increase of extreme right-wing attitudes is contextualised with a perceived or actually experienced social decline – not only in post-socialist Germany, but also in neighbouring European countries (HEITMEYER, W. 2010; KÜPPER, B. and ZICK, A. 2010). The perception of relative deprivation is found to result in a destructive attitude against democratic principles and institutions and leads to the re-

jection of social groups that are perceived as being different. Social groups suffering from relative deprivation frequently feel attracted by authoritarian, chauvinist or right-wing extremist ideas (HEITMEYER, W. 1997; ENDRIKAT, K. *et al.* 2002; SCHMIDT, M.G. *et al.* 2003). Indeed empirical studies find differences between East and West Germans, with the East Germans more strongly tending towards chauvinist, racist and social-darwinist attitudes and propagating authoritarian regimes (DECKER, O. *et al.* 2014, 35) (Table 3).

A survey on the participants of the xenophobic “Pegida<sup>5</sup>” movement found even higher right wing extremist, chauvinist and xenophobic attitudes than in the total of the East German population (DAPHY, P. *et al.* 2015, 29). The study also found very high levels of distrust against all sorts of public institutions, political actors and the media (*ibid.* 27).

During the expert interviews, political and administrative actors expressed their awareness of the fact that public distrust can threaten their own legitimacy as public representatives. Consequently, they developed a strategy to cope with public distrust and tried to create as much transparency as possible prior to the refugee assignment. As the distribution of refugees affects different levels of governance and as the registration and application procedure dropped behind the inflow of refugees during the year 2015, the municipalities – as the last link in the administrative chain – were frequently left mal-informed on details of those refugees that were allocated to their municipality. Neither were they informed about exact numbers, nor about special needs, or about cultural, ethnic or religious characteristics.

As the people in charge knew how important transparency is for a trustful relationship between local populations and legislation, they organized information meetings prior to the arrival of refugees. However, this was not effective as they had no details to tell, as this mayor explains:

<sup>5</sup> „Pegida” stands for „Patriotische Europäer gegen die Islamisierung des Abendlandes“ / “Patriotic Europeans against the islamisation of the western world”.

Table 3. *Right wing and extremist attitudes in East and West Germany in 2014 in per cent*

Attitudes	Total	East*	West**
Advocacy of dictatorships	3.6	5.6	3.1
Chauvinism	13.6	15.8	13.0
Xenophobia	18.1	22.4	17.0
Antisemitism	5.1	4.5	5.2
Social darwinism	2.9	4.6	2.5
Derogation of national socialism	2.2	1.2	2.5

\*N = 503, \*\*N = 1,929. Source: DECKER, O. *et al.* 2014.

"I have no problem to step in front of the masses and tell them 'that's how it is, that's we have to go through', but when I am asked 'Who is actually coming?', and I say 'I don't know!' – you can say that once, but at the second or third occasion, you lose your credibility" (Mayor #E1).

A further aspect covered by relative deprivation theory is the fact that the newly arriving refugees enlarge the population entitled for social benefits. This results in distribution conflicts of social goods of limited availability, like social housing, and, thus, scales up social envy. The interviewees in the present case study contextualize this fact with the general social problematics in their county, which resulted from economic transformation and public cutbacks. The new conflict on social benefits for refugees is just one more example of social deprivation in the eyes of those social groups who perceive themselves as losers of the transformation:

"That's why I say, we don't have problems because of the asylum seekers, but because of the general social problematics." (County representative #E3).

Even though only parts of the local populations are actually deprived, the perception of being disadvantaged against a group of newcomers and the question if the needs of those newcomers are legitimate or not prepares the ground for hostile discourses and concomitant racist activities.

## Conclusion

Summing up, this paper addressed the question of preparedness for the challenges of heterogeneity in regions and populations for-

merly untouched by international migration. It deals with the case of refugee accommodation in the federal state of Saxony, which is largely characterized by remote regions that underwent a peripheralisation process during the last decades due to population losses. In a naïve sense, those regions have plenty of space for newly arriving migrants. But are they ready to respond to the challenge of diversity? The paper drew on theories from social psychology to explain intergroup behaviour, like acculturation theory, social identity theory and relative deprivation approach. Also, it gave an overview on existing (but scarce) empirical evidence on migration and integration in rural regions. Many of the findings from those studies and of the hypotheses drawn from the theoretical elaborations could be supported by the presented results.

Relative deprivation theory helped to understand the development of right wing extremist attitudes, combined with a decreasing legitimacy of public institutions. Social groups fighting against deprivation were confirmed in their distrust and their "otherness" by the experience of mal-information on arriving refugees and by perceiving refugees as social group inferior to them, albeit competing for social support. Low intercultural competence and xenophobic reactions could be explained with the historical context of a homogeneous society where heterogeneity was officially denied. Also missing first hand contact serves as explanation for existing fears and xenophobic reactions, and the historical context of nation building and national belonging might reinforce the concept of ethnic homogeneity and, thus, oppose the settlement of strangers. As earlier findings

on rural regions suggested, the crucial role of key persons in shaping local discourses on integration were also found in this case study. Unfortunately, in the discussed local examples, the passive role of key persons supported the spreading of rumours and enforcement of xenophobic stereotypes and offered right-wing activists an entry gate for taking over local discourses. In the relevant cases, right-wing activists not only acted openly on town meetings, but also had massive influence in local networks which formed in social media.

In generalized terms, those findings may be relevant also for other parts of post-socialist Europe, which are simultaneously struggling to cope with the effects of economic transformation and with the adaptation towards a more civic nationhood model in the course of EU integration and societal modernization. In this context, the recent arrival of asylum seekers appears to have a catalyst role, by highlighting existing societal conflicts that so far were not openly addressed. Pending tasks concerning the integration of refugees could bring forward necessary debates about social cohesion and might furthermore fuel processes of institutional adaptation and social innovation. However, in order to maintain social peace, local actors in rural regions must be empowered to take over a leading role in local discourses, actively support civic engagement and fight the effects of destructive discourses.

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## Geographical analysis of climate vulnerability at a regional scale: The case of the Southern Great Plain in Hungary

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### Abstract

This paper provides an example for regional scale analysis of climate vulnerability incorporating environmental as well as socio-economic indicators. Researches have focused on different aspects of climate vulnerability so far, but usually there is little connection between the physical and social dimensions. Our study provides a more complex analysis, which builds on the application of international indices which have been used on the local and regional levels very rarely. In our research we combined physical and human geographical approaches and research techniques. The physical geographical assessment is based on indicators referring to ground water levels and vegetation production, while the human geographical side of the analysis focuses on economic and social sensitivity, adaptation and exposure indices, combined in the so-called socio-economic climate vulnerability index. In the analysis we tried to figure out the most sensitive areas in the Hungarian Southern Great Plain region. The main findings of the study are „hot spots” which coincide on both analyses, therefore, the most sensitive areas under current climate change conditions could be delimited. This study also demonstrates that the resolution of global climate change vulnerability indices is not suitable for regional scale analysis because of the significant territorial differences. Therefore, local or regional scale assessments are needed for the preparation of strategies for the elaboration of mitigation and adaptation policies.

**Keywords:** vulnerability indices, climate change, climate vulnerability analysis, climate sensitivity, Hungary.

### Introduction

Due to its serious consequences on mankind, there is a need to assess the effects of climate change in a more complex way. The changes of climate have spatial variations and affect the various countries and regions differently (GLANTZ, M.H. 1995; O'BRIEN, K.L. and LEICHENKO, R.M. 2000; LOBELL, D.B. *et al.* 2011), therefore, policy-makers on the sub-national level need decision support tools which are able to summarize the situation of their regions in a simple and effective way (HANGER, S. *et al.* 2013). One of these tools can be the usage of global climate vulnerability indices which appeared in the last decade such as the Global Climate Risk Index from

Germanwatch (<https://germanwatch.org> 2006) or the ND-GAIN index from the University of Notre Dame (<http://www.gain.org> 2014). While they have a solid scientific background, they are not suitable for supporting policy-making and other related tasks (DE SHERBININ, A. 2014).

To achieve this goal, the scale of the climate vulnerability analysis must be reduced to regional, sub-regional or local level. In recent years the modelling of climate change and its effects had a leap forward in terms of spatial resolution which enables deeper understanding of the effects from the viewpoint of the environment, economy and society (FOWLER, H.J. *et al.* 2007; CHRISTENSEN, J.H. *et al.* 2007; MEARN, L.O. *et al.* 2009; JACOB,

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D. et al. 2014). While at the end of the 1990s economists only tried to identify those sectors that were the most vulnerable to any change (DERCON, S. and KRISHNAN, P. 1996; SCOONES, I. 1998), in the last few years, due to improvements in modelling, the number of publications providing numerical analysis of economic and social impacts on regional level has been continuously increasing (SCOTT, D. et al. 2008; AAHEIM, A. et al. 2012; PANDEY, R. and JHA, S.K. 2012; WARNER, K. and GEEST, K. 2013). At the same time the interest of social sciences has also turned towards this issue (PATZ, J.A. et al. 2005; HUNT, A. and WATKISS, P. 2011; IPCC 2014). The experiences of the heatwave in Western Europe in 2003, the water scarcity in Barcelona in 2008, or the floods in South-Eastern Europe in early autumn of 2014 showed that the most vulnerable and deprived social groups have also lower adaptability to extreme weather conditions and to the challenges caused by climate change (VINCENT, K. 2004).

In this paper we want to make a brief assessment of the global climate vulnerability indices and to carry out a regional-scale climate vulnerability analysis in the Southern Great Plain Region in Hungary. In the course of research the following questions were addressed:

- What does the climate vulnerability mean at different geographical scales, and how this term can be interpreted in geography?
- What are the main vulnerability factors regarding climate change in Hungary and especially in the Southern Great Plain Region?
- What types of spatial differences are to be expected regarding to the natural, economic and social systems of the Southern Great Plain at the settlement level?
- What can be the role and function of the dual nature of geography in the research of such a complex phenomenon?

The last question about the role of geography is important both in preparation of policy documents and elaboration of adaptation strategies because of the dual nature of geography, the complex methods and con-

cepts geographers use when investigating the effects of climate change. It is an intriguing question whether geographers succeed in “developing” appropriate synergies between the two sides of geography when responding such questions like climate change. This dilemma arose not only in Hungarian but also in the Anglo-Saxon geography, as professional debates and scientific publications reflect (POLLARD, J.S. et al. 2008; CASTREE, N. 2014).

### **Assessment of global climate vulnerability indices and the concept behind them**

There are a lot of climate vulnerability indices applied by various institutions nowadays. KREFT, S. and his colleagues (2016) created the Climate Risk Index (CRI), on the base of hazardous weather events. Precipitation, floods and landslides were the major causes of damage in 2014. High incidence of extreme precipitation matches with scientific expectations of accelerated hydrological cycles caused by climate warming. Serbia, the Islamic Republic of Afghanistan as well as Bosnia and Herzegovina were identified as the most affected countries followed by the Philippines, Pakistan and Bulgaria. Two of the three most affected countries in 2014 were hit by the heaviest rainfalls and worst floods since records began 120 years ago (KREFT, S. et al. 2016). The index is calculated on the basis of deaths caused by natural disasters, remediation costs, loss of GDP and Human Development Index (HDI). According to this calculation Hungary occupies the 60<sup>th</sup> position among sixty-two European countries, where aridification, droughts, or groundwater level sinking can be clearly linked with effects of climate change.

The Nature Serve organisation in the US elaborated the Climate Change Vulnerability Index (CCVI), which identifies plant and animal species that are particularly vulnerable to the effects of climate change ([www.natureserve.org](http://www.natureserve.org)). It can be used for the evaluation of the natural components of climate vulnerability, but the index was experimented only

for the US, so it cannot be used for international comparisons.

Another CCVI was elaborated by UN Office for the Coordination of Humanitarian Affairs focusing on global crises and disasters ([www.reliefweb.int](http://www.reliefweb.int)). In the case of Hungary, the red mud sludge disaster in 2010 and the flood in 2013 were recorded. In our opinion, this approach has a limited scope, and we need more indicators for climate vulnerability evaluations.

Verisk Maplecroft, which is a leading global risk research and forecasting company, made another CCVI. It evaluates 42 social, economic and environmental factors to assess national vulnerabilities across three core areas. These indicators include: exposure to climate-related natural disasters and sea-level rise; human sensitivity in terms of population patterns, development, natural resources, agricultural dependency and conflicts; thirdly, the index assesses future vulnerability by considering the adaptive capacity of a country's government and infrastructure to combat climate change ([www.maplecroft.com](http://www.maplecroft.com)). In this evaluation Bangladesh, India and Madagascar are the most vulnerable countries in the world. The resolution of the CCVI map is 22 km<sup>2</sup> and it shows distinct spatial differences only for the bigger countries for example Russia or Canada.

WHEELER, D. (2011), as member of the Centre for Global Development, created the Climate Vulnerability (CV) index, which displays country rankings for four dimensions of climate impact: Extreme Weather, Sea Level Rise, Agricultural Productivity Loss and Overall. Based on his CV index China, India and Bangladesh are the most vulnerable countries regarding the effects of climate change. Hungary's climate vulnerability is low (CV = 0.025), but for example Kazakhstan's index is lower (CV = -0.237), which shows the strong differences between sub-indices used for CVI calculations.

Indian Climate Vulnerability Index consists of household parameters of all the three dimensions of vulnerability such as Exposure, Sensitivity and Adaptive Capability. Exposure is defined by 'Natural disaster and Climate

variability', whereas Sensitivity by 'Health', 'Food', and 'Water' and Adaptive Capability by 'Socio-demographic profile', 'Livelihood strategies', and 'Social networks'. The CVI vulnerable status ranges from high (0) to low (1) (PANDEY, R. and JHA, S.K. 2012). This research is very similar to our approach, based on sub-indices focusing on natural and social problems.

The University of Notre Dame created the so-called ND-GAIN Country Index (Notre Dame Global Adaptation Initiative). It summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience ([www.index.gain.org/](http://www.index.gain.org/)). This index continuously monitors and analyses 45 indicators for 192 countries in order to assess climate change related vulnerabilities and readiness for improvement. The top five countries are Denmark, New Zealand, Norway, Singapore and the United Kingdom, while the last five countries are Sudan, Burundi, Eritrea, Chad and Central African Republic. Hungary is in the middle of the list, with deteriorating tendency. This ranking is based on a wide group of indicators; therefore, we think that ND-GAIN Country Index is more useful than other indices based on very few indicators.

All the aforementioned international investigations on climate vulnerability are based on the concept of vulnerability. According to PITTMAN, J. et al. (2011) vulnerability can be defined according to three main components: exposure, sensitivity and adaptive capacity. In this respect exposure means the lack of protection against possible risks in the examined area/sector, and it can be identified with the effects (e.g. water quantities, climatic factors, economic-social framework). Sensitivity means the totality of the social, economic, political, institutional, cultural reactions against the effects. Finally, adaptive capacity is an answer to exposure; how a given country, economic sector, social group is able to prevent the harmful effects. The adaptive capacity is determined by the economic situation, the level of economic development, the information, the infrastructure, the knowledge



level and abilities of the society, the local and regional level institutional set-up, and the wider socio-economic and political processes.

Vulnerability can be examined from different aspects that are summarized by FÜSSEL, H.M. (2007). The most widespread approach is based on risk analysis which focuses on the elements that are particularly exposed to climate change. The socio-economic approach of risk analysis puts emphasis on humans, highlighting the extent to which a certain social group is vulnerable and why. The combination of natural and social approaches is the integrated approach, which has its roots in geography and human ecology. Vulnerability can be approached also on the basis of resilience, when applying the concept of flexible adaptability borrowed from ecology to analyse the effects of the climate change and to define the extent of vulnerability (LENDVAY, M. 2016).

Finally, it is also important to emphasise that the concept of vulnerability can be applied in the same way at settlement, country or continental level. However, the selected indicators and factors for the analysis should have specific regional relevance because this has a significant influence on the results (HOLSTEN, A. and KROPP, J.P. 2012). In this sense global or continental scale climate vulnerability scores/rankings might be misleading at regional scale, however, there is an opportunity to identify the most relevant indicators and sectors related to a particular region which are likely to give better results than a uniformed approach.

### **Physical and socio-economic factors of climate vulnerability in Hungary**

Climate change in Hungary – regarding the climate indicators – is primarily characterized by increasing drought sensitivity. Calculations based on the Pálfaí aridity index and the assumed climate change scenarios say that the national average of aridity index may increase by 12.5 per cent in the next 25-30 years (PÁLFAI, I. 2007).

Damages caused by drought are closely linked with changes in the rainfall distribution. Rainfall in Hungary will be increasingly infrequent, and will be accompanied by higher temperature, consequently, the potential evapotranspiration will increase, and this makes the groundwater reserves more important (VIG, P. 2009; MILLÁN, M. 2014). However, the source of water is steadily decreasing which not only increases the vulnerability of the soils but also its flora, and human activities such as agricultural production too. Therefore, fluctuating crop yields due to the weather conditions can be used for the determination of climate vulnerability, however soil characteristics should also be taken into account (SISÁK, I. et al. 2009).

The extreme occurrences of high temperatures are highlighted by the heatwaves in a tangible way. Several studies have shown that significantly longer heatwaves with higher temperatures can be expected in the future, which can last throughout the entire summer. On the basis of the models hottest temperature records of the 20<sup>th</sup> century may be exceeded even by 12 °C (RÉVÉSZ, A. and SZENTELEKI, K. 2007). This demonstrates that Hungary's climate will drastically change in the future, and the number of extreme events will increase, of which the most dangerous will be the heatwaves beside the increasing incidence of storms, the high intensity precipitation and the more frequent flash floods (NOVÁKY, B. 2007).

Climatic changes have a direct impact on vegetation and crop production (OLESEN, J.E. et al. 2011; WILCOX, J. and MAKOWSKI, D. 2014; LADÁNYI, Zs. et al. 2016). Agriculture is one of the most vulnerable sectors regarding climate change, therefore, its adaptive capacity is a serious issue. Responses are not the same in different countries (VANSCHOENWINKEL, J. et al. 2016), thus, evaluation of the adaptation of agriculture play a significant role in vulnerability assessments.

Beyond the aforementioned methods and indicators, geographical analogy can also be used for the determination of environmental vulnerability. This method is about searching such areas where current climate condi-

tions are similar to what the examined area may have in the future – so it can help to see the potential effects of the climate change (HORVÁTH, L. 2007). This approach is very useful in identifying new plants and techniques for agricultural production.

It is also important to monitor the changes of the natural vegetation. The vulnerability of the climate zonal forest associations is great, particularly at higher altitudes in Hungary (CZÚCZ, B. et al. 2010). At the same time in the lowland associations wetlands, salt meadows, floodplain associations are in danger due to the disappearance of water.

The effects of climate change on the society and economy occur indirectly through the natural environment. Generally, the effects are the most serious in those sectors – from an economic point of view – which are closely linked to the natural environment, e.g. agriculture, forestry and tourism.

Economists seek to assess the expected damages in monetary-term in order to make the impact of climate change more tangible. In connection with the drop of GDP different calculations and assumptions have been carried out. Starting from the double CO<sub>2</sub> emission (compared to pre-industrial levels) the biggest drop in GDP is expected in Africa, it is followed by the Middle East, the Pacific region and Latin America (TOL, R.S.J. 1998). FANKHAUSER, S. and TOL, R.S.J. (2005) forecast on average a 5 per cent GDP decrease at 3 °C temperature increase, although with substantial differences across countries. At the same time other models predict 1-15 per cent decrease of GDP at 3 °C increase over the next 20–30 years (YU, W. et al. 2013).

Agriculture is high on the list of sectors which are seriously affected by climate change. Hungary is situated on the boundary of plant production zones and relatively minor climatic changes could significantly change the agro-ecological conditions. Damages caused by adverse climatic conditions are significant from a financial point of view as well; e.g. in 2007 – due to the combined effects of extreme events – there was a loss of 500 million USD in agriculture

and forestry (GAÁL, M. et al. 2009). In agricultural production the horticulture is one of the most sensitive sectors, including fruit production, which is particularly vulnerable to spring frost damages, early autumn frosts, the winter lasting cold, as well as drought, excessive rain, extremely high temperatures, or hailstorms (GONDA, I. 2009).

International publications dealing with tourism also extensively address the effects of climate change, as summarized by BECKEN, S. (2013). It should be noted that this sector may be less exposed in Hungary. Adverse effects linked to the climate change may have negative effects on city tourism in particular in the case of lasting heatwaves.

Moving onto the social effects of climate change, they may be understood best through various social problems and challenges that can be linked with it. The level of poverty, the differences in access to resources, the volume of migration from peripheral regions towards the centre may provide indicators which can help to assess and quantify the social consequences (GASPER, R. et al. 2011).

International research results indicate that big cities are more vulnerable to the effects of climate change than rural areas. The vulnerability of human settlements is strongly influenced by size, or economic functions. Their vulnerability is expressed in lack of energy, damage in the infrastructure, industrial damages, diseases, higher mortality rates caused by the heatwaves, food shortages and water scarcity (GASPER, R. et al. 2011; LANKAO, R.P. and QUIN, H. 2011). Therefore, indicators of social vulnerability should include the economic situation of the local community, the growth rate of the population, and its age, sex and ethnic composition (BORDEN, K.A. et al. 2007).

## Research methods

### *Geographical framework of the study: The Southern Great Plain*

The Southern Great Plain region of Hungary has a population of 1,3 million people, and

located in the South-Eastern part of Hungary. The total area of the Southern Great Plain is 18,339 km<sup>2</sup>, which is about one fifth of the total area of Hungary. Population density is below the national average (72 people/km<sup>2</sup>), however, urban ratio is relatively high, 67.9 per cent of the inhabitants live in cities (the largest city is Szeged with ca. 165 thousand inhabitants). Yet, the high number of scattered farmsteads and outskirts provide the landscape of the region a rather rural character. Administratively the region is divided into three counties: Bács-Kiskun, Csongrád and Békés (Figure 1). The landscape of the region preserves the typical appearance of the famous Hungarian “Puszta” (steppe), featuring four major rivers (Tisza, Körös, Maros and Danube) and three national parks (Duna-Dráva NP, Kiskunság NP and Körös-Maros NP).

Southern Great Plain is typically an agricultural region; 85 per cent of its land is used for agriculture. Crop production, horticulture and animal husbandry play a decisive role in the local economy. In term of soils, large part of the region is covered by humus poor sandy soils, which is widely used for fruit and vegetable production. The southern and eastern part of the region is covered by valuable chernozem soils formed on loess. Agricultural production is the most intensive in this part of the region, the main crops are: wheat, maize, sunflower, sugar beet etc. In addition to agriculture, food industry and light industry form the basis of the economy. The largest foreign direct investment has been made in the region by Daimler Group in 2009 when a Mercedes-Benz factory was established in Kecskemét.

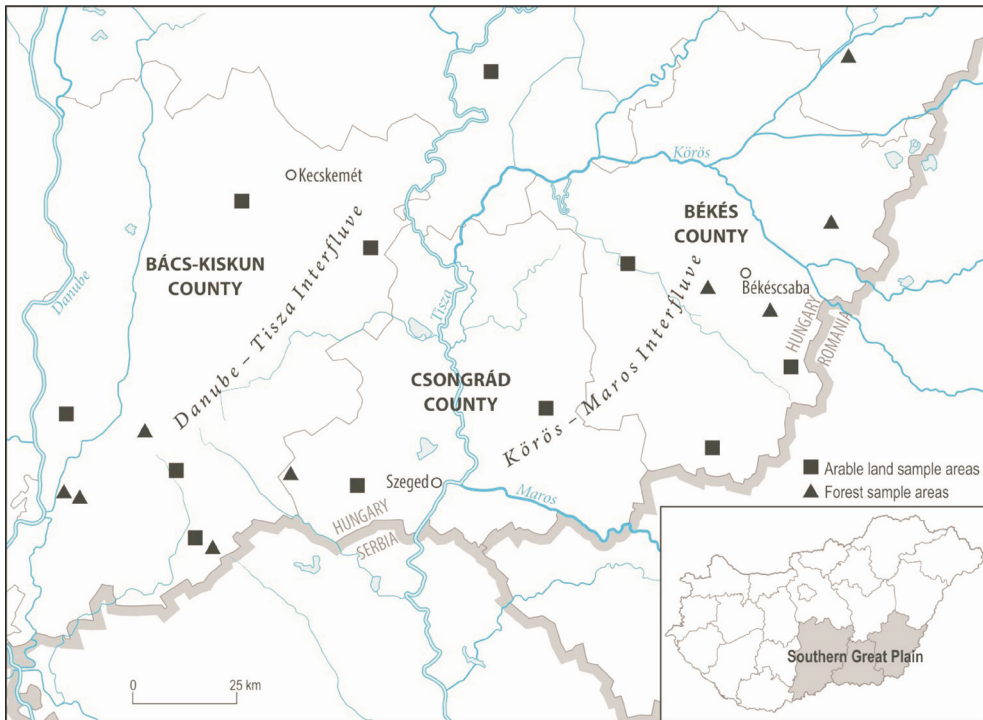


Fig. 1. Map of the study area

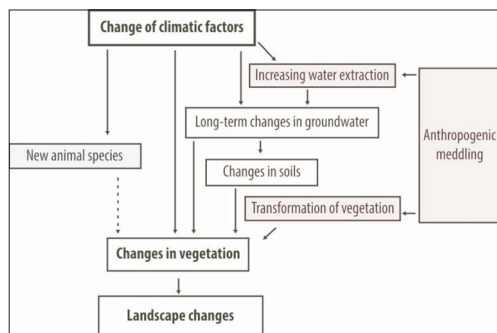
### Measuring environmental aspects climate vulnerability

Landscape change is a clear evidence of climate change. Therefore, indicators that connect landscape changes with climatic factors should be considered. Based on our earlier studies it is mainly the change of vegetation that relates to climate change, and the reasons for the change are rainwater and groundwater and – occasionally – soil change. *Figure 2.* shows the process of landscape change under climate change.

To identify the spatial pattern of climate vulnerability within the region from an environmental point of view we applied the following method:

(1) GIS based analysis of changes in the groundwater level of the Danube–Tisza and the Körös–Maros Interfluves. One of the first observed consequences of the climate change was the decrease of groundwater levels in the Danube–Tisza Interfluve, which generated a serious discussion about the reasons of this phenomenon (PÁLFAI, I. 1994). We have constructed a re-controlled and normalized database of groundwater levels for the interfluves.

(2) Analysis of biomass production of forests and arable lands based on remotely sensed satellite data. We used vegetation indices (NDVI, EVI) to approximate the biomass production of 12 sample areas (RAKONCZAI, J. et al. 2012).



*Fig. 2.* The process of landscape change due to climate change

### Measuring socio-economic aspects of climate vulnerability

In setting up the framework of the socio-economic climate vulnerability index (later refer as CVI) we relied mainly on domestic studies based on the CIVAS<sup>3</sup> model which was developed in the CLAVIER<sup>4</sup> project. We relied on the results of the document prepared by Hungarian Non-profit Ltd. for Regional Development and Town Planning entitled „Four-years Program to Prevent the Adverse Effects of Climate Change 2010–2013” (NFGM, VÁTI 2010), and the seminar entitled „Regional Assessment of the Climate Vulnerability by the Example of NCCS<sup>5</sup>” held by the National Adaptation Centre (SELMECZI, P. 2014). Regarding the calculation method of the CVI we mainly used the work of HAHN, M.B., RIEDERER, A.M. and FOSTER, S.O. (2009), in which a Livelihood Vulnerability Index was established in a Mozambican case study.

On the basis of these sources a settlement level climate vulnerability index was defined using indicators referring to the exposure, the socio-economic sensitivity and the adaptation capacity of the local society. As a first step those social characteristics and economic sectors were defined, which are deemed vulnerable to climate changes, further we chose those indicators which seemed to be suitable to explore spatial differences. The economic sensitivity sub-index components are: the ratio of the agricultural sector in employment (2011), labour income share of the small-scale agricultural sector (2011) and ratio of industry in employment (2011).

The emphasis was placed on the weight of the primary sector as the most vulnerable among the economic sectors. It should be noted that the structure of the sector is dual in the region, since micro-regions of the non-industrial and industrial farming are chang-

<sup>3</sup> Climate Impact and Vulnerability Assessment Scheme.

<sup>4</sup> CLAVIER: Climate Change and Variability – project focused on Central and Eastern Europe.

<sup>5</sup> NCCS: National Climate Change Strategy.

ing. That's why we applied two different indicators for this topic.

The proportion of the employees working in the industry is included in the sub-index in addition to the two agricultural indicators, since for example the construction industry or some part of the processing industry are highly exposed to the climate change due to technological reasons or because the protection of workers during heatwaves requires the suspension of the work. It might bring a significant loss of effectiveness and lastly could entail a loss of income and profit.

Indicators of the social sensitivity sub-index are the following: patients of respiratory and cardiac distress per 1,000 inhabitants (average of 2011–2012), number of visits to a general practitioner per 1,000 inhabitants (average of 2011–2012), proportion of people aged over 65 among permanent residents (2012). In the setup of this sub-index we focused on the social groups which are more sensitive to the climate change due to their age or health conditions. One of the relevant indicators is the proportion of patients with respiratory diseases reflecting the growing presence of allergenic plants and prolonged allergy season. The cardiac patients are highly sensitive to climatic affects, while the number of visits to the general practitioner basically was applied to represent general health status of the local communities. The proportion of people aged 65 or older has been chosen as an indicator since the literature and experiences of the heatwave of 2003 in Paris showed that elderly people are highly affected by the increased length of heatwaves and heat days.

The adaptation sub-index contains the following elements: per capita income (2012), proportion of graduates within the 25+ population (2011) and the number of scientific, technical-technological enterprises per 1,000 inhabitants (2012). Both in the international and national literature, the income of the local community is closely connected to the adaptation capacity of the local society. The other two indicators in the adaptation sub-index represent the intel-

lectual, scientific and technical potential which can be used in the adaptation process.

Finally, we have mapped the exposure to climate change of each settlement, and we tried to determine an exposure sub-index. Diverging from the literature – and from the CIVAS model – we did not use the national climate modelling results because we thought that the factual changes can provide appropriate indication for the estimation of exposure. The exposure sub-index contains the following indicators: change of the number of heatwave days between 1980–2010, change of average temperature between 1980–2010, change of rainwater quantity 1980–2010, volume of urban land (2011) and the quantity of communal water supplied in the settlements (2012). To formulate this sub-index, in addition to the climate indicators two further indicators were selected, which are able to reflect the effects of changes. One of them is the volume of urban land which wishes to represent the urban heat-island effect. It has a great importance because the consequences of the heatwave days are further enhanced by the buildings and the infrastructural objects. The other selected indicator was the supplied water quantity in the settlements, since it is believed that its scarcity will determine the future of the Southern Great Plain basically.

We calculated the socio-economic climate vulnerability index on settlement level because we assume that there are significant spatial differences in the effects of the climate change even at the micro-geographical scale. Also, actions against the immediate effects of climate change must be taken on local level. The calculation of the sub-indices and the climate vulnerability index was performed according to the method defined by HAHN and his colleagues (2009). In the case of the sub-indices the indicators ( $I_x$ ) have been decoupled from the units by the Min-Max normalization, and have been transformed between ranges 0–1 ( $I_{normx}$ ).

$$I_{normx} = \frac{I_x - I_{min}}{I_{max} - I_{min}} \quad (1)$$

After that arithmetic mean was calculated from the values of the indicators ( $I_{normx}$ ) without weighting, which gave the results of the sub-indices ( $SI_x$ ).

$$SI_x = \frac{I_{norm1} + I_{norm2} + \dots + I_{normx}}{x} \quad (2)$$

The summarized climate vulnerability index (CVI) value was defined in such way that the arithmetic mean of the indicators included in the social and economic sensitivity sub-index was deducted from the index of exposure, and the given value was multiplied by the value of the adaptation index.

$$CVI = (SI_{exp} - (SI_{soc} + SI_{eco})) \cdot SI_{adapt} \quad (3)$$

## Results and Discussion – climate vulnerability of the Southern Great Plain

### *Climate vulnerability based on change of ground water level*

Aggregated data showing changes of ground water resources from 1961 to 2010 were used for two sub-regions: the Danube–Tisza Interfluve and the Körös–Maros Interfluve (Figure 3).

As data demonstrate the ground water level in the Körös–Maros Interfluve is more stable, and the quantity of the annual rainfall causes less variability, while in the case of Danube–Tisza Interfluve some drier or wetter years can result even 2 km<sup>3</sup> change of the water resources. In the last three decades the overall water scarcity exceeded 7–8 km<sup>3</sup> by our calculation in the Southern Great Plain. MAJOR, P. (1994) studied the long-term reasons of the decrease and identified that there was a drier period between 1971 and 1985 when the amount of precipitation was less by 1,000 mm in the area compared to the long-term average. The changes in precipitation of the last decades show extreme variability rather than decreasing in quantity. There is a slight increase in annual precipitation in the Southern Great Plain in the last 55 years. At the same time the annual mean temperature shows a 1.5 °C increase which means that the evaporation loss

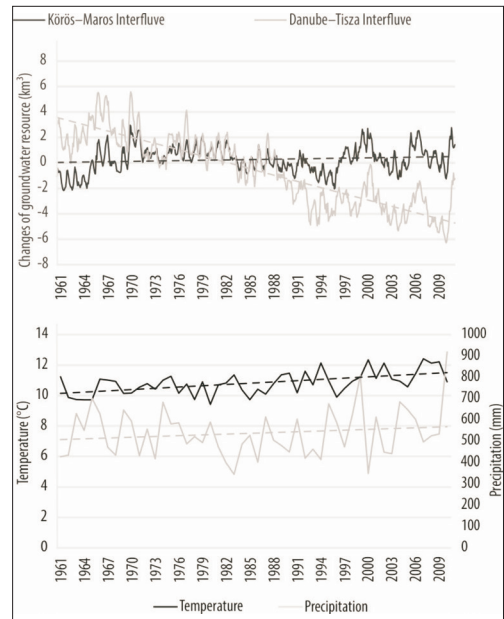


Fig. 3. Monthly aggregated changes of ground water resources together with annual mean temperature and precipitation (1961–2010)

has significantly risen. This means the rainfall could not be utilized by the vegetation and the soils, so it causes water scarcity even in years with higher precipitation.

Another issue related to the ground water level can be understood in hydrological aspect; since the interfluves are above their surroundings (the Danube–Tisza Interfluve by 30–50 m and the Körös–Maros Interfluve by 10–15 m) the ground water cannot be rebuilt from the surface waters (from the rivers) this is only possible from rainwater sources.

### *Climate vulnerability based on the analysis of biomass production*

In the course of our investigations of biomass we analysed the vegetation dynamics of the main forest types (black pine and black locust) mainly in the areas affected by the most significant decrease of ground water level (all sample areas can be seen on Figure 1) on the

basis of 13 years data. Forests have been also chosen as control areas where the decrease of the ground water level is less significant, thus, the ground water is more easily accessible for the trees. Our results show that the areas with deeply decreased ground water level (where the more demanding tree vegetation dried out in several places) and the annual biomass quantity of the forests correlate strongly with the spring and summer precipitation. In contrast, the control forests are rather depend on the winter period or the combination of the winter and vegetation periods. Which means they depend on the ground water significantly, because the precipitation of the winter period is the main supply for the ground water. It was recorded that in the areas with a significant decrease of ground water level in the Danube–Tisza Interfluve, trees are less dependent on the ground water (since its water demand is ensured from other source) and more exposed to the capricious rainfall pattern (Figure 4).

In the next phase of our research we analysed the vegetation index data of agricul-

tural areas too. We selected mostly arable land in 12 sample areas, however, local soils represent different types and have varied morphological status and fertility.

Determining the biomass production of our sample areas and comparing them to the Pálfi aridity index, we found especially strong correlation with dry years. In the case of the highest biomass production we did not gain such a clear picture. It could be expected that the rainiest year of 2010 is the most productive, but it is true only in some cases. In almost half of the areas the year of 2004 showed the highest productivity. This duality has straightforward reasons. On the one hand, too much precipitation could be harmful, as there is inland water coverage at that time, on the other hand, the temporal distribution of the precipitation is very important for the crops, and in 2004 the growing period months had rains evenly, ensuring the optimal growth of plants.

In our research it was a little bit surprising that the biomass production of the arable lands (please note that this is not the quantity of the harvested crops) almost uniformly depends on the rainfall even where irrigation is available. These results suggest that in a drying climate, irrigation does not necessarily solve the problem of crop yield stability, since the atmospheric drought has a great influence on the growth of plants.

#### *Climate vulnerability of the local economy and society*

According to our socio-economic climate vulnerability index above-average sensitive settlements in the Southern Great Plain were delimited in larger groups only in Bács-Kiskun County, lying in the South-western direction from Kecskemét to the Serbian border. Contrary to this in Csongrád and Békés counties only 2-3 settlements formed „hot spots”. They are located basically on the border between Bács-Kiskun and Csongrád counties, and in the neighbouring regions of Csongrád and Békés, which can be labelled

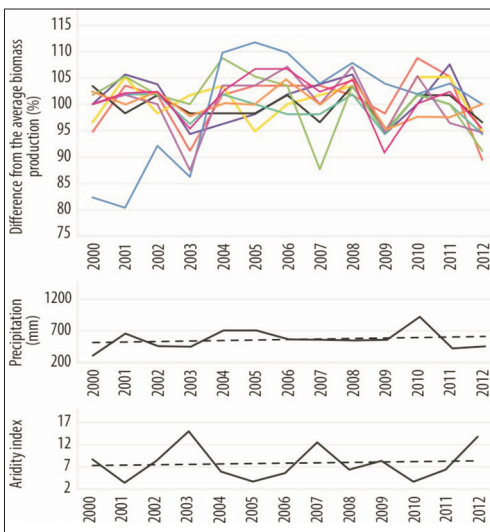


Fig. 4. Changes in biomass production of forest sample areas related to annual PÁLFI aridity index and precipitation

as inner peripheries. In addition to this, vulnerable areas at the micro-region scale can be found along the southern border of Hungary (outer peripheries) (Figure 5). These results confirm that climate vulnerability is spatially highly differentiated, and it is worth investigating also the settlement size resolution.

In addition to the regional pattern we have examined climate vulnerability according to settlement size categories. We used the following categories: 1<sup>st</sup> category: below 2,000 inhabitants (small villages), 2<sup>nd</sup> category: 2,000-10,000 inhabitants (villages and small towns), 3<sup>rd</sup> category: 10,000-50,000 inhabitants (towns); and 4<sup>th</sup> category: above 50,000 inhabitants (county seats). Figure 6. shows that there are significant differences between these settlement categories especially related to the adaptation capacity.

Examining the differences, we can see that the settlements of the 1<sup>st</sup> and 2<sup>nd</sup> categories are only slightly different from each other.

The only exception is the adaptation capacity which means that the population size of a settlement greatly influences the ability of resilience in the economic sensitivity and in the before mentioned adaptation capacity. These two categories can be characterised by the relative importance of agricultural sector and its dominance in local economy and employment. This goes together with lower incomes, less educated and aging population, especially in the settlements of the 1<sup>st</sup> category.

The climate vulnerability of the 3<sup>rd</sup> category is slightly better than the previous ones, according to our results. This is because their socio-economic conditions are more advantageous and consequently their adaptation capacity is also significantly higher and their exposure is only slightly bigger. According to our results the towns and the county seats (3<sup>rd</sup> and 4<sup>th</sup> categories) are the least sensitive to climate change as their economies have been shifted most intensely to the service

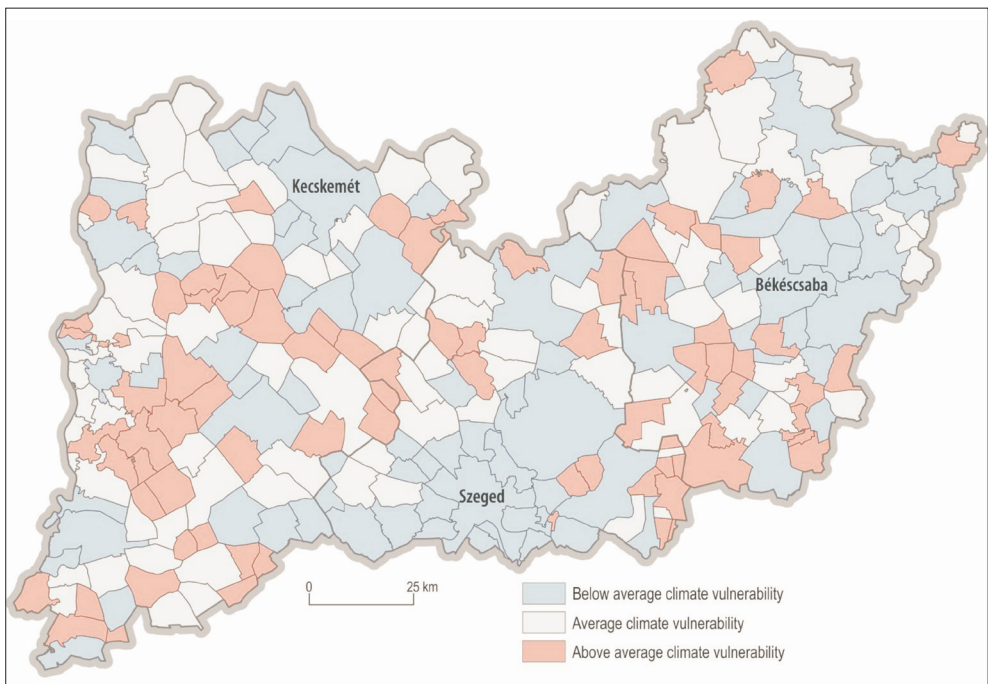


Fig. 5. Socio-economic climate vulnerability



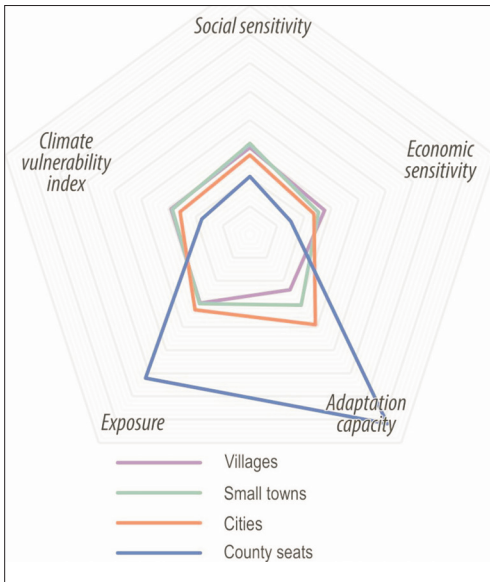


Fig. 6. Socio-economic vulnerability by settlement types

sector, thus, the potential effects of climate change is less pronounced in this case. In both groups the average age of population is younger, their health status is better, the proportions of scientific, technical enterprises and the graduates are higher and the per capita income is also higher which as a whole compensate the significantly larger exposure according to our assessments.

Our findings clearly demonstrate that the larger the number of the population of a settlement is, its exposure to the effects of climate change is also larger (in line with the international literature), however, its adaptation capacity is also stronger, thus, bigger towns are less vulnerable than the smaller settlements. It should be highlighted that certain shortages – e.g. shortage of water – cannot be substituted by other resources. So the instability in precipitation and the significant decrease of water flow in the Danube and Tisza rivers could raise serious issues for larger settlements.

To sum up it can be stated that our socio-economic climate vulnerability index is not

suitable for particular numerical comparison of the vulnerability of settlements, but it allows to designate those settlements in the Southern Great Plain which have to pay more attention to the possible effects of climate change due to their economic and social characteristics.

#### *Comparison of the CVI with the results of the physical geographical findings*

In our research, we could not directly aggregate all aspects of sensitivity into one single vulnerability index. While it would have been technically possible by GIS, but legal problems concerning the ownership of the various datasets prevented such an analysis. To solve this problem, we compared only the final maps of the two analyses (Figure 7). Circles show the areas where climate vulnerability is connected with negative climatic and/or anthropogenic effects, which means mainly water extraction for agricultural, or industrial and communal needs. Results of our analysis further support that water scarcity is the main factor of climate vulnerability in the Southern Great Plain. The overlaps in the environmental and socio-economic analysis are strengthening our assumption that climate vulnerability must be investigated in a complex way and with high spatial resolution because of its variability within a small area. The examined regions should be paid more attention by the researchers and regional planners, because these can be the primary sample areas of future researches due to their vulnerability, thus, climate adaptation strategies must be prioritised in their cases.

#### **Conclusions**

In this paper, a comprehensive analysis of the climate vulnerability of the Southern Great Plain Region in Hungary was provided. To begin with we reviewed the various global climate vulnerability indices and the concepts behind them. In general, it can be

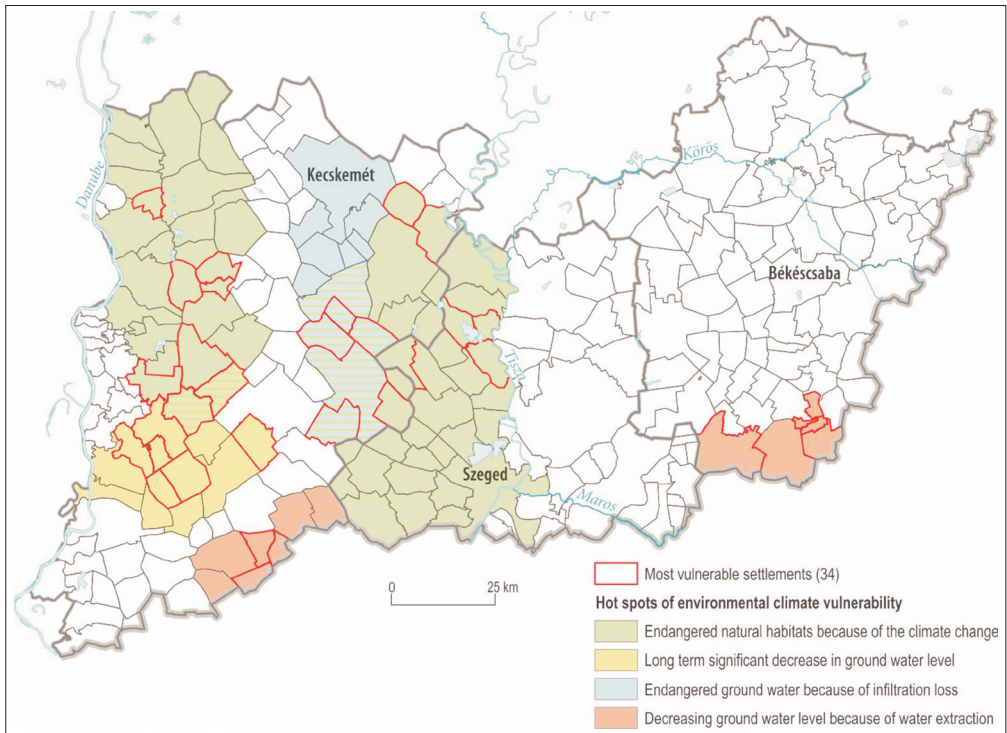


Fig. 7. Geographical overlap among the climatically most vulnerable settlements and the environmental “hot spots” of the Southern Great Plain

concluded that they focus mainly on larger geographical areas (continents and countries) and usually their output is a rank score/list which shows the vulnerability of various countries. The problem of these rankings is that they use very different indicators and the position of a given country can shift significantly. Another important feature of them is that they put the emphasis on the factors that affect well-being. Thus, they tend to forget about the ecosystem which provide ecosystem-services to humans, meanwhile these direct and indirect goods and services are essential for our everyday living as our case study showed. Also their spatial resolutions are low and show significant differences between the vulnerability of neighbouring countries. This fact indicates that analyses with higher spatial resolution are needed.

Our findings show that the concept of vulnerability is applicable on regional level. This is important because it can be used as a framework in the planning of adaptation and the related measures which must be carried out on the local level. Nowadays, climate strategies on the county level are required in Hungary, and this activity is in progress. Our analysis can be a methodological step forward for the elaboration of climate strategies. HOLSTEN, A. and KROPP, J.P. (2012) made a similar analysis in the North Rhine-Westphalia Region. They identified spatial “hot spots” too, which will have to deal with the highest burdens and, therefore, have the highest need for adaptation. Yet, little known about the relationship between climate impacts and adaptive capacity, therefore, we need more and more vulnerability investigations on regional/local scale.

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- <https://maplecroft.com/about/news/ccvi.html>

## The evaluation and application of an urban land cover map with image data fusion and laboratory measurements

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### Abstract

High spatial and spectral resolution aerial images make it possible to develop detailed and large-scale (about 1:5,000) urban land cover maps. The main objectives of this study are (1) to evaluate the correlation between laboratory and hyperspectral image spectra to select proper bands and training samples for classification; (2) to develop a classification process to combine the spectral and spatial information of multispectral and hyperspectral images and make an urban land cover map for the study area in Szeged, Hungary; and (3) to examine the effect of different roof types on the modification of surface temperature. Reference materials were collected from the training area and their spectral characteristics were measured by a laboratory spectrometer. The hyperspectral image and laboratory spectral data between 500–800 nm showed a very strong correlation, the correlation coefficient was 0.99. The urban land cover map was produced by the combination of segmentation procedure and Spectral Angle Mapper (SAM) method using the spatial information derived from multispectral image and the spectral information of the hyperspectral image. Eight land cover classes were identified as impervious surfaces (asphalt, 4 types of tiled roof), water, and green vegetation. The overall accuracy of urban land cover map was 87.9 per cent. According to the results, an accurate large-scale urban land cover map can be generated from the fusion of multispectral and hyperspectral images. We presented that certain roof types have significant effect on surface temperature, which is strongly connected to the urban heat island phenomenon, and influences population health.

**Keywords:** urban remote sensing, hyperspectral image, spectral library, surface temperature, land cover classes

### Introduction

The object of geography is to study the dynamically changing relationship between people and their environment in space and time. Cities are key factors in this relational system since 54 per cent of the Earth's population (World Urbanization Prospects, 2014) lives in urban areas. Increasing urbanization generates the dynamic transformation of land cover (LC) and land use (LU) types. The population concentrated in a small area extremely stresses its surrounding environment (MUCSI, L. *et al.* 2008). Increasing energy consumption, heat emission, traffic and waste generation of

cities are important factors at global level, and studying their environment-modifying effect is necessary (SMALL, C. 2003).

The mapping of changing urban land cover, especially the continuously increasing built-up density, is important both on local and global scale. The spatial pattern and intensity of urban heat island (UHI) is strongly connected to the density of impervious surfaces (GÁL, T. *et al.* 2016; HERBEL, I. *et al.* 2016; HENITS, L. *et al.* 2017). The primary aim of this study is to create an accurate land cover map based on the combination of multi- and hyperspectral images, field observations, and laboratory measurements. Imaging spectrom-

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etry has been used for more than 30 years in numerous researches, and has gone through considerable methodical development. By the improvement of technology, these systems (AISA, DAIS, HyMap) are able to cover the electromagnetic spectrum in the range of 400–2,500 nm and in the spectral resolution of 1–10 nm (PLAZA, A. *et al.* 2009). Several studies focused on the mapping of minerals (KRUSE, F.A. 2012) and soil surfaces (LAGACHERIE, P. *et al.* 2008), studying water depth and quality (JAY, S. and GUILLAUME, M. 2014), snow, ice, and tree species (GOETZ, A.F.H. 2009) in the last fifteen years. As for urban applications, for example, the mapping of asbestos-containing roofs, BASSANI, C. *et al.* (2007) and SZABÓ, Sz. *et al.* (2014) should be mentioned. SEGL, K. *et al.* (2003) made statements about the separation of different artificial materials by using laboratory and field measurements. They highlighted that the application of hyperspectral images in contrast with time-consuming field validation is promising for ecological urban planning. However, a relatively small number of spectral libraries are available for urban land cover (BASSANI, C. *et al.* 2007) and the commonly used materials have different spectral characteristics in different regions.

The derivation of spectral curves can be implemented by different methods: they can be established by using the mean reflectance curve of training samples extracted from hyperspectral images, or by field or laboratory measurements (VAN DER MEER, F. *et al.* 2001). As outer physical effects influence aerial survey, the spectrum is slightly different from the spectrum obtained in laboratory circumstances (HEIDEN, U. *et al.* 2007). The settings of the measurements are device specific and depend on the demands of the users (JUNG, A. *et al.* 2012). The laboratory measurements can be applied in the processing of images acquired by different sensors at different time. Because roof angles, illumination effects, shadows and various land cover make the selection of training samples difficult and subjective in the image, we collected laboratory spectra from the study area. Furthermore, the analysis of spectra is necessary to decrease the number

of bands used in the classification procedure, which makes the method capable to apply for bigger city parts. Only the necessary bands or band ranges should be applied (HEROLD, M. and ROBERTS, D.A. 2010; WU, B. *et al.* 2013).

In urban studies the objects in the available hyperspectral aerial image are not easily separable, additional information (high resolution multispectral aerial photo) is needed to define the geometry of objects. Numerous researches were performed data fusion using multispectral data with radar (CHEN, C.M. *et al.* 2003), with Light Detection and Ranging (LIDAR: ALONZO, M. *et al.* 2014), with population census data (JIN, H. and MOUNTRAKIS, G. 2013), and hyperspectral images (GEVAERT, C.M. *et al.* 2014). Our solution is a consecutive segmentation and Spectral Angle Mapper Classification with the combined use of aerial photos (both multi- and hyperspectral) and laboratory measurements.

Segmentation is a well-known solution to derive the borders of certain objects from high resolution images. Object Based Image Analysis (OBIA) was used previously to map forests (CHUBEX, M.S. *et al.* 2006), natural catastrophes (effects of an earthquake: GUSELLA, L. *et al.* 2005) and cities as well (CHEN, Y. *et al.* 2007). It has been established that under appropriate conditions OBIA could be more accurate than pixel-based methods (AL KHUHAIRY, D.H. *et al.* 2005). The OBIA method emphasizes the spatial relation between neighbouring pixels. As a result, pixels being closer in space are more likely to be classified into the same class (BLASCHKE, T. 2010). It should be mentioned that perfect parameters cannot be defined for segmentation. RÄSÄNEN, A. *et al.* (2013) tested more than 200 segmentation results using different input parameters. They assumed that the best result should be determined by the suitability of the application. The segmentation method was supplemented by Spectral Angle Mapper (SAM), which is the most appropriate method for the application of laboratory measurements in the classification since it allows the comparison of two spectra (KRUSE, F.A. *et al.* 1993).

Numerous studies have been carried out to investigate the relationship between land cover and surface temperature. Most of the researches used low and medium resolution images, e.g. Landsat and MODIS images (ZHOU, W. 2014). Only a few studies applied high resolution thermal imagery for this purpose (BITELLI, G. et al. 2015). Previously, for example ROMAN, K.K. et al. (2016) described the temperature modification effects of roofs. Since our goal was to make recommendations for the mitigation of the effects of urbanization, we used a thermal aerial photo and our land cover map to analyse the differences between temperature values of the land cover types.

The main objectives of our study were (1) to evaluate the correlation between laboratory and the hyperspectral image spectra to predict the value of laboratory measurements in the classification procedure (dimensionality reduction, training sample selection); (2) to use a multispectral and a hyperspectral image to perform an accurate land-cover classification using the spectral information of hyperspectral and the spatial information of multispectral image; and (3) to analyse the land surface temperature (LST) of different land cover classes.

## Study area

Szeged is the third largest city in Hungary (165,000 inhabitants – Hungarian Central Statistical Office, 2016), and the administrative area of city is 281 km<sup>2</sup>. 95 per cent of the city buildings were destroyed by the flood in 1879, therefore a new structure with boulevards and avenues was built in Szeged (LECHNER, L. 1891). The reconstruction was carried out by using a complex urban planning design based on the work of Lajos LECHNER. This radio-concentric structure of the city has remained unchanged in the last 135 years.

The built-up density of Szeged varied from densely built-up areas (City Centre) through suburban areas to housing estates with blocks of flats and industrial areas. Green areas (forests on the riverbanks) and parks are located among the built-up areas (Mucsi, L. 1996).

In our study, a representative part of this functional unit was selected, which can also be found in other small- and middle-sized Hungarian towns.

In the last 130 years, the characteristics of buildings have significantly changed. Original buildings (houses with the sun-beam motif) can only be found in some cases. Today newly-built detached houses and condominiums are located on most of the lots, and the density of built-up areas has significantly increased. Two blocks of houses, which proved to be appropriate for land cover mapping, were chosen for our study. During field survey and sampling of reference data we found that the selected blocks represented the suburban-like built-up density well (*Figure 1*).

## Data

### *Hyperspectral aerial surveys*

Hyperspectral aerial surveys were carried out several times using an AISA DUAL hyperspectral instrument (359 spectral bands in the range of 400–2,500 nm, and in 2.3 and 5.8 nm bandwidths, *Table 1*). The chosen hyperspectral image was acquired in September, 2010 with a spatial resolution of 1.5 m. Pixel values were converted to reflectance values using radiometric and atmospheric correction procedures (Mucsi, L. et al. 2008) using field reflectance measurements at the time of image acquisition.

### *Multispectral aerial image*

In addition, a high spatial resolution (< 1 m) natural-colour aerial photo (*Table 1*) was used to improve the classification results because it has higher spatial resolution, and it provides more detailed object border than the hyperspectral image. The image was acquired within the framework of the national aerial survey in August, 2011, and it has a spatial resolution of 0.4 m.



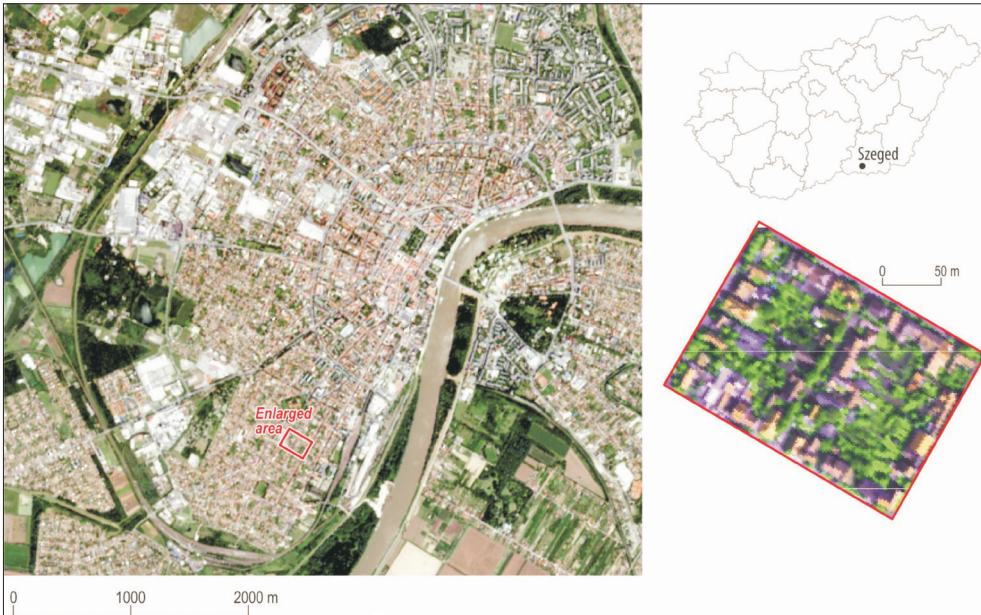


Fig. 1. Study area

### Laboratory measurements

Land cover samples were collected for the laboratory measurements during field survey. The laboratory measurements were performed by an Avantes DH2000 spectrometer at the Department of Medical Physics and Informatics, University of Szeged (Figure 2, Table 1). The device provides data in two ranges: between 350–850 nm (master) and 530–1,150 nm (slave). The bandwidth of the spectrometer varies between 0.27–0.37 nm and the number

of bands is above 2,000. The reflectance values were calculated as averages of 25 sampling.

### Thermal aerial image

For the environmental application, we used thermal images, which were obtained by the thermal camera of Lower Tisza District Water Directorate (ATIVIZIG) and were acquired on 12 and 14 August 2008 (Table 1). The sensor can record data in the range between

Table 1. Summary of the data used in this study

	Spectral resolution	Spatial resolution	Spectral resolution		
Multispectral aerial image	Autumn, 2011	0.4 m	3 bands (true color)		
Hyperspectral aerial image	September, 2010	1.5 m	359 bands (400–2,500 nm)		
Thermal aerial image	August, 2008	2.5 m	1 band, -40 °C– 500 °C		
Laboratory measurements	2013–2014	–	Master	350–850 nm	>2,000 bands
			Slave	525–1,165 nm	>2,000 bands

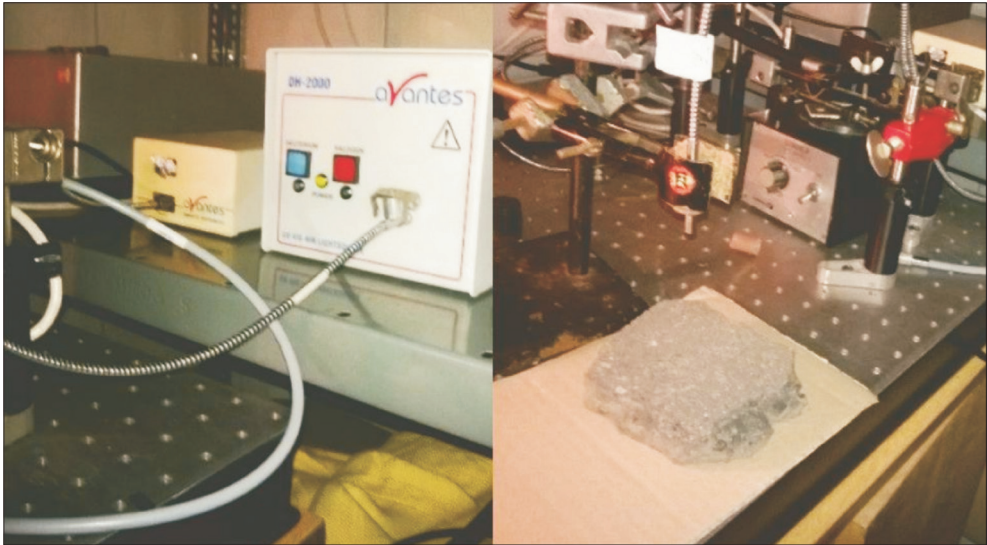


Fig. 2. Avantes spectrometer and sampling

-40–500 °C and the image has a spatial resolution of 2.5 m. More information about the calibration was presented by UNGER, J. *et al.* (2010).

## Methods

### *Spectral Libraries: training samples and dimension reduction*

The following main land cover materials were collected for laboratory measurement: red clay roof tiles, asphalt, and vegetation. Other roof types were examined (e.g. purple clay roof, claret concrete tile, plastic tiles) but only the red clay tile is explained in more detail, because this is the most common roof type in the study area.

Firstly, we analysed the proper settings of spectrometer and the correlation between laboratory and hyperspectral image. Measurements of all samples were implemented in the aforementioned two partially overlapping ranges (master and slave). These two ranges provided total reflectance curves

from the visible light to the mid-infrared for each material. The standard deviation of the data was high at the edges of relatively wide ranges. In addition, the bandwidth of these two ranges is different and switching between the channels makes the implementation of the measurements difficult.

The geographic coordinates of the collected samples were recorded during the field surveys. Corresponding image pixels were determined on the geo-corrected hyperspectral image using GPS coordinates. The laboratory reflectance spectra of collected samples and the reflectance values derived from pixel values were compared. We determined the widest possible spectral range in which the correlation between laboratory spectrum and hyperspectral data is the highest.

After that we analysed the correlation between laboratory and image spectra. It is an important step, since the laboratory spectra should be used as training sample for Spectral Angle Mapper Classification, instead of selecting pure pixels in the image. The flowchart of the entire data processing is shown in *Figure 3*.

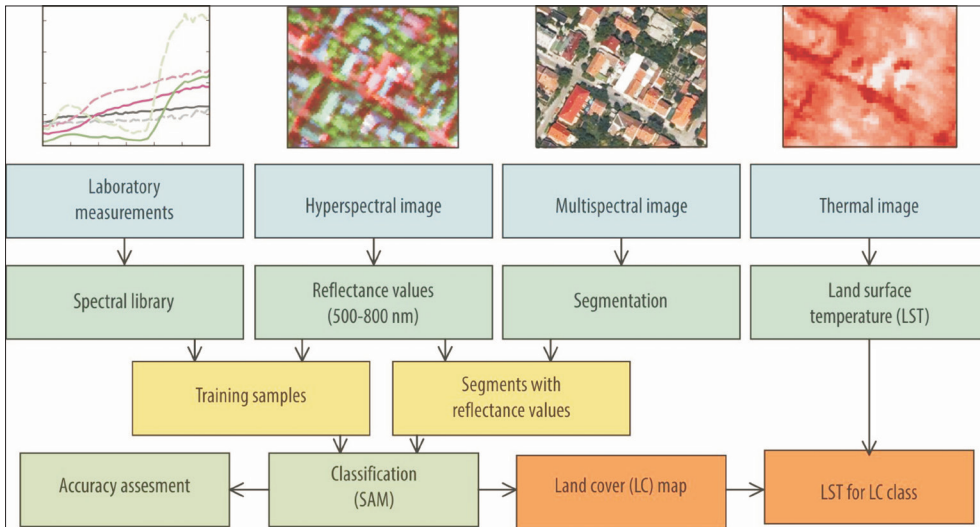


Fig. 3. Flowchart of data processing and analysis

### Segmentation and data fusion

Geometric transformation was performed to align the two images: multi- and hyperspectral images with different spatial resolution. We transformed the natural-colour aerial photo with Ground Control Points (GCPs), and the Root Mean Square Error (RMSE) was lower than 0.5 pixel.

The segmentation module of ERDAS Imagine was applied to the multispectral aerial image. The segmentation parameters were selected with a trial-and-error method approach based on the compute settings parameters function in ERDAS Imagine until satisfactory results were achieved. Edge detection was performed on the multispectral image, and the minimum segment size was set to 25 pixels (4 m<sup>2</sup>). The minimum spectral distance and the variance factor values were modified to extract separate segments. Higher minimum spectral distance value results in the smaller number of segments. When the spectral distance between neighbouring pixels are less than the selected value, pixels are assigned to the same segment. Variance is a very important parameter

because larger variance increases the heterogeneity within the segment. Larger variance reduces the number of segments (ERDAS Field Guide, 2013).

During the data fusion process, the multispectral image was segmented, and average reflectance values derived from the hyperspectral image bands were assigned to each segment separately. As a result the spectral parameters of the hyperspectral image were assigned to the spatial objects of multispectral image (Figure 4). Finally, an image segment containing a lot of pixels has only one average reflectance curve, which makes the classification process faster.

### Classification: Spectral Angle Mapper (SAM)

After the average reflectance curves were computed for each segments, we applied the SAM method to classify segments to the proper class based on the similarity of curves of the segments to laboratory curves. By using this method, pixels can be set in an  $n$ -dimensional space ( $n$  is the number of bands). The algorithm selects those pixels which are

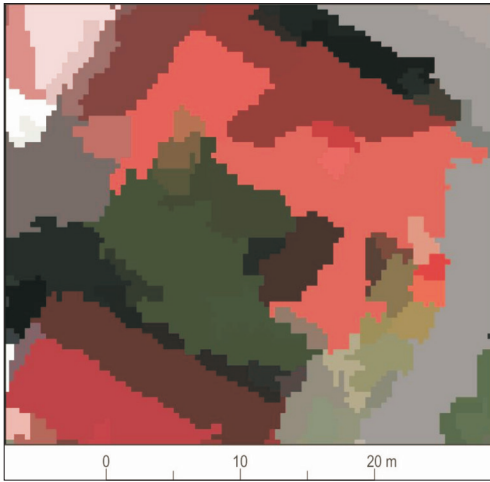


Fig. 4. Result of segmentation and data assignment (RGB: 50,24,12)

within the user-defined deviation range of vectors. A great advantage of this method is that it is only sensitive to the direction of the vector and not to the length of the vector (KRUSE, F.A. et al. 1993).

## Results and discussion

### *Correlation of laboratory measurements and hyperspectral image spectra*

The influence of the distance between the sensor and the material sample was tested at the beginning of laboratory measurements. It was observed that increasing distance increased the deviation in the range of shorter and longer wavelengths. Therefore, we used 2 cm subject distance to measure the reflectance for all samples.

The analysis of the total spectra of master and slave channels showed that high correlation coefficient occurred only in the master channel for clay roof tile and vegetation ( $R=0.98$ ), while this relationship was not so strong ( $R=0.52$ ) for asphalt (Table 2). Significantly smaller values were obtained in the slave channel for each land cover material. The values of the correlation coefficients increased by narrowing the spectral range. High and significant relationship was calculated in the overlapping bands of the master and slave channels between 525–800 nm for each material. Since the reflectance curves of each material were quite similar at 525 nm, we chose the spectral range between 500–800 nm which was a wider range but it gave a slightly lower value for asphalt. In addition, the reflectance value of the vegetation was the lowest in the range between 500–525 nm and at 525 nm it exceeded the reflectance value of red clay roof tiles and asphalt.

The shape of the reflectance curve derived from selected ranges provided important information about the features of the materials. The reflectance curve of red clay roof tile was monotonically increasing in the range between 500–800 nm (Figure 5). As opposed to this, the curve of the asphalt showed a constant value. The characteristics of the vegetation curve were the most distinct. It had a local maximum at 550 nm (there are two minimums at 450–680 nm because of chlorophyll absorption), and the red edge band could be observed at 775 nm after a decrease of the values. Plant species can be differentiated by determining the inflection point of the reflectance curve in this range (VANE, G. and GOETZ, A.F.H. 1988).

Lots of land cover types can be found in the study area, especially the roof types are

Table 2. Correlation between the sample and the corresponding pixel in different spectral ranges

Wavelength (nm)	Master			Slave	
	350–850	500–800	525–800	525–1,165	525–800
Red clay roof tiles	0.987	0.991	0.990	-0.240	0.982
Vegetation	0.983	0.988	0.988	0.642	0.993
Asphalt	0.519	0.857	0.885	0.303	0.950

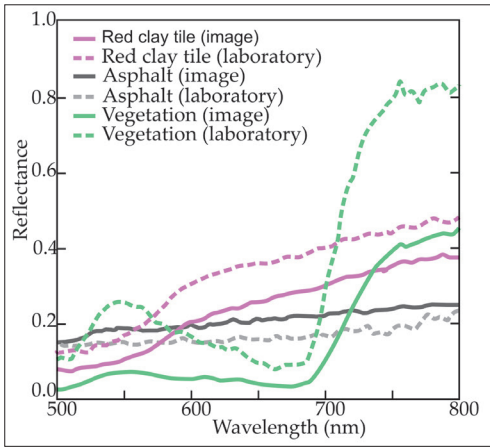


Fig. 5. Reflectance curves of laboratory measurements and derived from the hyperspectral image

heterogeneous. The classes are not separated well in the multispectral images, thus additional information is required for precise classification. Using hyperspectral data, spectral differences between the vegetation and artificial surfaces are so specific that misclassification is mostly expected only between different roof types or other artificial surfaces (e.g. asphalt, greenhouses).

Strong relationship between laboratory and survey spectra is shown in Figure 5. The spectral features determined by laboratory measurements are represented in the hyperspectral image as well, with smaller shifts caused by the aforementioned effects. The local maximum of the vegetation appears at 550 nm both in the image and the laboratory spectra, but the laboratory spectrum is slighter and the inflection point in the red edge range can also be observed. The increasing reflectance values of clay roof tiles and the nearly identical values of asphalt are represented both in laboratory measurements and in hyperspectral image spectra.

After comparing the laboratory and hyperspectral image data, the spectral bands between 500–800 nm were selected for the separation of the main land cover classes. 67 bands can be found in this range on the hyperspectral image.

### Evaluation of built-up map

The urban land cover map was created based on the result of SAM classification (Figure 6). A high spatial resolution aerial photo obtained from the Department of Physical Geography and Geoinformatics, University of Szeged, was used for the accuracy assessment procedure. The natural-colour aerial photo was acquired in March, 2012, and has 0.1 m spatial resolution. We used Google Earth images to classify uncertain reference points because the acquisition date of the reference image differs from the hyperspectral image (due to different vegetation period). We selected a total of 380 points for the study area using stratified random sampling method (Table 3). The accuracy assessment showed that the overall accuracy of the land cover map was high (87.9%). The accuracy value of the least accurate class (asphalt) was 67.2 per cent. Five different roof types, water bodies, roads, and vegetation were separated. Some segments remained unclassified due to the shadow effect and the mixture of different land cover types within the pixels.

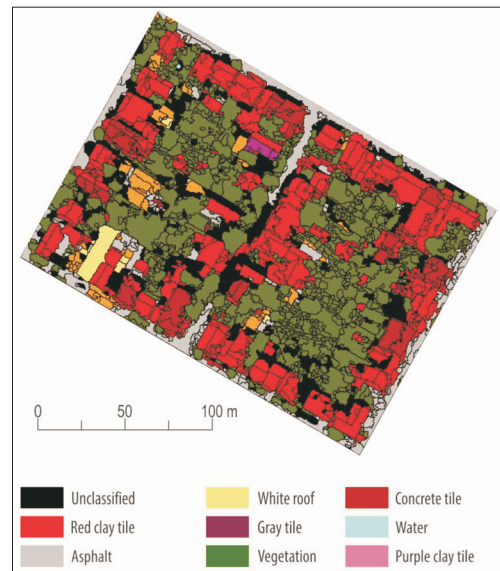


Fig. 6. Land cover map of the study area

Table 3. Stratified random accuracy assessment

Class	Reference points	Classified points	Correctly classified	Producer's accuracy, %	User's accuracy, %
Red clay tile	78	104	72	92.3	69.2
Asphalt	61	45	41	67.2	91.1
White roof	16	14	14	87.5	100.0
Gray tile	18	17	14	77.8	82.4
Vegetation	166	157	154	92.8	98.1
Red concrete tile	27	30	26	96.3	86.7
Water	2	2	2	100.0	100.0
Purple clay tile	12	11	11	91.7	100.0
Sum	380	380	334		

Overall accuracy: 87.9%. Overall Kappa Statistics = 0.84

The vegetation class had high producer's (92.8%) and user's accuracy (98.1%). The producer's and user's accuracy of water was 100 per cent. White roof, red concrete tile, purple clay tile had high producer's accuracies ranging from 87.5 to 96.3 per cent and high user's accuracies ranging from 86.7 to almost 100 per cent. Gray tile had lower producer's (77.8%) and user's accuracy (82.4%). Red clay tile had low user's accuracy (69.2%)

#### Comparison of land cover classes and surface temperature

First, the differences between the temperature of the start and the end point of the flight track were adjusted. Because of the strong correlation between the two images acquired on different dates, we chose the image acquired on 14 August, because this image had higher contrasts. The statistical parameters of surface temperature were calculated for all land cover classes and the results were summarized in a box plot diagram (Figure 7). The figure shows that the surface temperature of roads was remarkably high, and the median value was over 30 °C. The surface temperature of the vegetation class was not as low as we expected. Since the pixels of the canopy partly cover the roads, the vegetation class had higher mean temperature. The difference

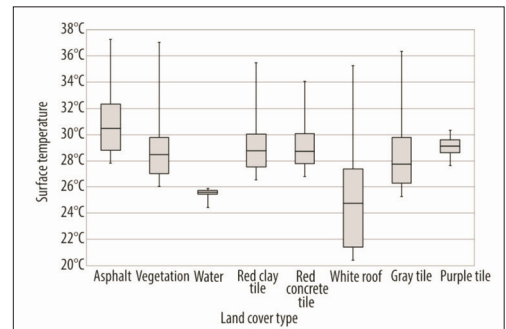


Fig. 7. Comparison of land cover classes and surface temperature on a boxplot diagram

between the temperatures of white roof and other roof types originated from the different material and the function of the building (e.g. the white roof belongs to a cold store). The gray tile had the second lowest mean temperature value. The lower deviation value for water class is originated from the lower number of water pixels in the study area.

#### Conclusions

Hyperspectral data processing is a complex task, which provides unique solution to determine material quality in scientific research. In this study we successfully deter-

mined the extent of built-up area and distinguished 8 land cover types for the study area using laboratory spectra and Spectral Angle Mapper classification method.

Our results provide evidence for the efficiency of laboratory spectra in the selection of training samples based on the high correlation with image spectra. The features of reflectance curves derived from different artificial materials were successfully analysed to determine the most suitable spectral ranges for their separation in feature space. Similar spectral range (580–800 nm) were found with different approach in SZABÓ, Sz. et al. (2014).

In our research two images were used to utilize both the spatial and spectral information of land cover and to improve classification accuracy. Segmentation method was used to gain the geometry of objects from the multispectral image, and Spectral Angle Mapper method was applied for classification based on the divergence of laboratory spectra and hyperspectral data of segments. The methodology proved to be efficient in the image classification of urban area and the overall accuracy was 87.9 per cent. The study of GREIWE, A. and EHLERS, M. (2005) similarly compared single image classification against the joint use of hyperspectral data and high resolution multispectral image. They also used segmentation and SAM scores, and the overall accuracy is significantly increased with the combined use of the RGB image, nDSM (normalized Difference Surface Model) and SAM scores, and the use of SAM scores resulted in almost 20 per cent increase of accuracy. The combination of spectral and spatial classifiers was tested in the mapping of urban land cover using DAIS data in DELL'ACQUA, F. et al. (2004). They stated that higher accuracy can be expected by using spatially connected data, the accuracy of the roof class was 96.4 per cent. Our study also highlighted the importance of spatial scale of urban reflectance, and proved that the high resolution hyperspectral images combined with very high resolution multispectral image can improve urban land cover classification on parcel size. We presented that certain land cover types

have significant effect on surface temperature, which is strongly connected to the urban heat island phenomenon, and influences population health. Most of the citizens cannot afford the green and cool roof types – the advantages are in KOLOKOTSA, D. et al. (2013) –, but can choose from a lot of cheaper roof types, which have preferable temperature properties. Based on our results, the application of certain roof material can be recommended to population which can lead to lower surface temperature locally. Similar temperature modifying effects of roof types were found in ROMAN, K.K. et al. (2016). Further work is needed to consider the effects of the differences in roof angle, texture and age. Consideration should also be given to the mapping of different tree species as the shading capacity of the trees and the modification of microclimate may be different (TAKÁCS, Á. et al. 2016).

The limiting factors of the study were the number of thermal measurements, the small area coverage of hyperspectral data and the narrow range of laboratory measured spectrum. In future research the number of land cover types can be increased by selecting a more heterogeneous study area. The spatial extension of the study can support urban planning programs and provides more detailed information about built-up areas for decision makers.

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## Studentification, diversity and social cohesion in post-socialist Budapest

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### Abstract

In the literature studentification is closely associated with gentrification. Many authors consider the mass invasion of students to inner-city neighbourhoods as a type of gentrification, some of them even use the two terms interchangeably. Regardless of theoretical considerations, it seems that there is a consensus on the significance of studentification in contemporary urban transformations. Recent studies demonstrate that the appearance of students as ‘transient’ inhabitants in inner-city neighbourhoods, accompanied by growing differences in lifestyles and socio-cultural attitudes weakens social cohesion in the affected neighbourhoods HAASE, A. *et al.* 2012). This study focuses on the interplay between studentification, socio-cultural diversity and social cohesion in an inner-city district of Budapest, Józsefváros. The district has been characterised by several waves of urban rehabilitation and subsequent gentrification since the transition of 1989–1990. Studentification has also become dominant phenomenon in the area due to the settling of new higher education institutions, the concomitant influx of students, as well as low rent and dwelling prices providing a niche for the spontaneous movements of a new generation of urbanites (GRABKOWSKA, M. 2011; BERNT, M. *et al.* 2015). The main research questions we intend to answer in this paper are as follows. Firstly, what is the relationship between studentification and gentrification in Józsefváros? Secondly, what kinds of effects has the influx of students on the social cohesion of the district? According to our findings, studentification in Józsefváros is not the pioneer phase of gentrification, but – especially in the rehabilitation areas – it runs more or less parallel with it. Most of the students use the place as a springboard in their career, and after graduation most of them leave. The attitude of students is, however, very much resembles those of the young, highly educated newcomers, i.e. early gentrifiers. The impacts of studentification on the social milieu of Józsefváros are contradictory. On the one hand, the inflow of students and young intellectuals increases the socio-cultural diversity of the district, contributing to the recognition of diversity in a post-socialist context, and fostering tolerance and the acceptance of different cultures and lifestyles. On the other hand, it seems that the ongoing population change hampers the establishment of strong social ties at the neighbourhood level and leads to certain conflicts.

**Key words:** studentification, gentrification, social diversity, social cohesion, post-socialist city

### Introduction

The global expansion of higher education, the unprecedented growth in the number of students and their growing impacts on urban space have attracted increasing attention in the literature. Areas with distinct socio-cultural, economic and physical features are emerging in our cities due to the growing

presence of students, and the concomitant rise of specific, student-oriented services (e.g. housing, retail, leisure, etc.) (SMITH, D.P. 2002; RUGG, J. and RHODES, D. 2003; ALLINSON, J. 2006; HUBBARD, P. 2009; COULTER, R. *et al.* 2015). In the literature this process has been widely recognised and labelled as ‘studentification’. This is a contradictory process with costs and benefits varying from one locality

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to another. The presence of students has several beneficial effects on neighbourhoods, however, this can also be a source of conflicts (RUSO, A.P. *et al.* 2003; SMITH, D.P. 2008). As the British HMO Lobby (2008) interpreted: studentification is the ‘substitution of a local community by a student community’, which can also be called as ‘student ghetto’ because of the strong isolation of student areas from the rests of the cities (SMITH, D.P. 2002; HUBBARD, P. 2008).

As for our context, it is important to emphasize that studentification has evolved in *post-socialist countries* differently from the West because of historical legacies and path dependencies (GRABKOWSKA, M. 2011; GENTILE, M. *et al.* 2012; HAASE, A. *et al.* 2012; GÓRCZYŃSKA, M. 2014, 2017; JAKÓBCZYK-GRYSZKIEWICZ, J. *et al.* 2014; BERNT, M. *et al.* 2015). Due to the elitist nature of state-socialist policy on higher education the number and relative weight of students remained low in these societies. The systemic changes of 1989–1990 meant an abrupt change also in this field. Since 1989–1990 the number of students enrolled in higher education has rapidly expanded, existing universities have been enlarged, new higher education institutions have been established all over Central and Eastern Europe. All these changes gave rise to a substantial pool of potential student-gentrifiers, i.e. students who seek inner-city locations close to their universities and other typically student facilities (KRIŠJĀNE, Z. and BĒRZIŅŠ, M. 2014; BERNT, M. *et al.* 2015; KĀHRIK, A. *et al.* 2016).

The growing body of literature on gentrification and studentification in post-socialist cities has highlighted so far, that compared to the West, students in post-socialist cities are more dispersed throughout the whole city; they concentrate not only in close to inner-city locations, but they also tend to reside at large housing estates with good location and transport connections (GRABKOWSKA, M. 2011; GRABKOWSKA, M. and FRANKOWSKI, J. 2016). Moreover, leisure spaces of students and local residents are not always separated from each other. Instead, an overlap among

the activity spaces of students, local residents and tourists can be observed, which lowers the level of segregation and decreases the chances of conflicts between students and other social groups (MURZYN-KUPIŚ, M. and SZMYTKOWSKA, M. 2015). In this respect it is an intriguing question how studentification under post-socialist conditions can contribute to urban diversity and what the general perceptions of the process are among local residents and policy-makers.

In this paper we intend to focus on the interplay between studentification, urban diversity and social cohesion on the example of Józsefváros, Budapest. Budapest (1.7 million inhabitants) is the capital city and the main higher education centre of Hungary, with high concentration of higher education institutions (HEI) where the number of enrolled students exceeded 136 thousand in 2014 [1]. Within Budapest Józsefváros has become the target of urban regeneration activities coupled with large-scale university development programmes after the late 1990s. The local society has been permanently changing due to the arrival of a variety of social groups, including students. The gradual upgrading of the district and the growing diversity of the local society brings us to the following research questions:

- What is the relationship between studentification and gentrification in Józsefváros? Is studentification the initial phase of gentrification as implied in the literature or gentrification and studentification are taking place side by side?
- How does the influx of students and other young people affect the social cohesion the local society? What types of potential conflicts emerge due to their mass arrival?

### Theoretical background

Studentification is often discussed in the literature in relation to gentrification (e.g. SMITH, D.P. 2004, 2005; SMITH, D.P. and HOLT, L. 2007). Can studentification be con-

sidered as a first step to gentrification? Are students the future gentrifiers who learn and practice the culture of gentrification when living in student neighbourhoods? These are fundamental questions from the perspective of the present study. Studentification, similarly to gentrification often leads to the displacement of long-term residents and the increase of property prices. In some analyses, students are considered as ‘apprentice’ gentrifiers, who contribute to the rising prestige of neighbourhoods through enhancing their aesthetic and cultural capital (SMITH, D.P. 2002, 2005; SMITH, D.P. and HOLT, L. 2007; DAVIDSON, D. 2009; MURZYN-KUPISZ, M. and SZMYTKOWSKA, M. 2015). Thus, similarly to artists, students are also often considered to be the pioneers of gentrification (ZUKIN, S. 1989; LEY, D. 2003).

However, as opposed to gentrification, studentification does not necessarily lead to a long-term upgrading of neighbourhoods; the initial upgrading process can often be followed by downgrading. Moreover, studentification can further reinforce marginality and the negative image of a neighbourhood, strengthening already existing problems (SAGE, J. et al. 2012a). The motivations of the actors of gentrification and studentification are also different; students’ housing decisions are normally based on consumption and leisure preferences rather than the exploitation of rent gap. Therefore, studentification also often takes place in better-off, middle-class neighbourhoods and not only in downgraded quarters (MURZYN-KUPISZ, M. and SZMYTKOWSKA, M. 2015).

According to SMITH (2002) and SMITH and HOLT (2007) changes generated by studentification have four basic dimensions: economic, social, cultural and physical. The economic dimension refers to changes like the revalorisation of the housing stock, the growing significance of renter-occupancy or – since short-term rental becomes dominant on the housing market instead of long-term rental – the emergence of speculative investments (RUGG, J. et al. 2002; SMITH, D.P. 2008).

The social dimension includes, for example, changes in age structure, household and family composition, social stratification (class structure) and dominant lifestyles (SAGE, J. et al. 2012b; SMITH, D.P. and HUBBARD, P. 2014). Changes in the third dimension (cultural) are mostly the results of different consumption practices of students. As a result, certain types of retail and services appear in the neighbourhood creating new or transformed spaces of consumption. Finally, regarding the physical dimensions, it is often argued that studentification leads to an initial upgrading of the urban environment because of the investment of landlords, local authorities and other actors. However, this upgrading is usually followed by a downgrading process because of the lack of further investment which is often reflected by the decline of property prices (KENYON, E.L. 1997; HUBBARD, P. 2009).

For the sake of analysis regarding the relationship between community cohesion and studentification, in our paper we try to match the above mentioned four dimensions of studentification with FORREST and KEARNS’ (2001) categorisation which identifies five domains of social cohesion: (1) common values and a civic culture; (2) social order and social control; (3) social solidarity and reductions in wealth disparities; (4) social networks and social capital; (5) place attachment and identity (Table 1).

Regarding the first domain, most of the relevant literature emphasise that in the process of studentification in-migrant young people represent *lifestyles and cultural values* which are distinctly different from those of the long-term residents. Such differences can easily become subjects of tensions and conflicts between the two social groups. Common moral principles and codes of behaviour, for example, are of key importance to a cohesive community, and established inhabitants often report on activities of students (e.g. the noise of night-time parties) which generate conflicts in the affected neighbourhoods. It is evident, therefore, that differences in behav-

Table 1. *The five domains of social cohesion\**

Domain	Description
Common values and a civic culture	Common aims and objectives; common moral principles and codes of behaviour; support for political institutions and participation in politics.
Social order and social control	Absence of general conflict and threats to the existing order; absence of incivility; effective informal social control; tolerance; respect for difference; intergroup co-operation.
Social solidarity and reductions in wealth disparities	Harmonious economic and social development and common standards; redistribution of public finances and of opportunities; equal access to services and welfare benefits; ready acknowledgement of social obligations and willingness to assist others.
Social networks and social capital	High degree of social interaction within communities and families; civic engagement and associational activity; easy resolution of collective action problems.
Place attachment and identity	Strong attachment to place; intertwining of personal and place identity.

\*According to FORREST, R. and KEARNS, A. 2001.

our of students and host communities can result in a hostile attitude between the two main groups (HUBBARD, P. 2008; SMITH, D.P. 2011; COCHRANE, A. and WILLIAMS, R. 2013).

Within the second domain, social conflicts and threats to existing *social order* and their management are in the focus. The increasing concentration of students can intensify the problems of noise, environmental disorder and pollution (COCHRANE, A. and WILLIAMS, R. 2013). In addition, factors like changes in the local housing tenure system and property market pressure on established residents (especially the less affluent) often foster a general dissatisfaction among members of the local community. These effects can cause conflicts between students and long-term residents, leading to an emergence of anti-studentification movements and the decline of tolerance towards students (KENYON, E.L. 1997; HUBBARD, P. 2006; National HMO Lobby, 2008; SAGE, J. et al. 2012b). At the same time, the seasonal occupancy of flats often attracts burglars to student concentrations, increasing crime rates and making such neighbourhoods high-risk areas (KENYON, E.L. 1997; ALLINSON, J. 2006).

As for the third domain of social cohesion, the mass influx of students to a neighbourhood can diminish *social solidarity* and also

increase wealth disparities in the area. As we pointed out earlier, studentification – often part of a gentrification process – frequently leads to the relocation of old residents from the affected areas, resulting in the split of established local social ties (MACINTYRE, C. 2003; SMITH, D.P. 2004, 2005; ALLINSON, J. 2006; SMITH, D.P. and HOLT, L. 2007). Moreover, it can produce new forms of social exclusion, new patterns of segregation by lifestyle, life-cycle, tenure type, economic capital (SMITH, D.P. 2008; FINCHER, R. and SHAW, K. 2009; HUBBARD, P. 2009; CHATTERTON, P. 2010), or even by activity and consumption types (CHATTERTON, P. 1999; CHATTERTON, P. and HOLLANDS, R. 2002). On the other hand, it is also worth mentioning that students can significantly contribute to local communities. For example, the acknowledgment of social obligations and assisting others is an important factor within this domain, and volunteer work and charity are important elements of the activity spectrum in several student communities (ALLINSON, J. 2006; SMITH, D.P. and DENHOLM, J. 2006).

Within the fourth domain the quality of local *social networks*, *social capital*, *interactions and civic engagement* are to be analysed. It is important to stress that students as consumers can significantly contribute to the local

economy – and their effects can be more salient in smaller towns or towns with high percentage of students (STEINACKER, A. 2005). Most of the students have notable free time, purchasing power and a vibrant social life. Therefore, they ‘*can help create lively, mixed-community neighbourhoods with an attractive mix of uses, high levels of local services, and vibrant cultural activities*’ (MUNRO, M. et al. 2009, p. 1808; see also: MACINTYRE, C. 2003; ALLINSON, J. 2006). However, some services such as schools can disappear from the neighbourhood, because of the changing local needs caused by the departure of families. It is also a well-known phenomenon that in-migrant students establish relationships mainly with other students when they seek friendship or accommodation (SMITH, D.P. and HOLT, L. 2007; HUBBARD, P. 2009). As a consequence, several neighbourhoods witness the sharp separation of established residents and students. Lessons from European social mixing policies have significant relevance at this point: the mixing of different groups does not necessarily lead to a real community (KENYON, E.L. 1997; BOERSMA, K. et al. 2013). Nevertheless, according to ROGALY and TAYLOR (2015) permanent cohabitation can strengthen cohesion between students and established residents and produce new social ties among them.

Finally, the most serious barrier for students to embrace a strong place *attachment and identity* is the lack of time. First of all, student households have a temporary character, with residents spending only 6–9 months annually in the dwelling. Secondly, a large part of the students are transient inhabitants and after 3–5 years most of them continue their professional and housing career in other neighbourhoods or cities, and never come back. Thirdly, rapid turnover of renters in studentified areas seriously hampers the efforts to establish strong social ties with old residents (ALLINSON, J. 2006; MUNRO, M. et al. 2009). Such factors clearly work against a strong social cohesion at the neighbourhood level.

### Setting the scene: Józsefváros (Budapest) a ‘diverse neighbourhood’

Our research was carried out in Józsefváros, the 8<sup>th</sup> District of Budapest (Figure 1). The district had 76,250 inhabitants on the eve of the 2011 census, of whom the proportion of non-Hungarians was high with 11.9 per cent (compared to Budapest’s average of 4.8%). The Gypsy/Roma is the largest ethnic minority group in the district, in some pockets they comprise around 40–50 per cent of the local population. There are also sizeable communities of international migrants (especially those coming from South Eastern Asia and Africa) in the district and particularly its central neighbourhoods are popular destinations for foreign (e.g. Chinese, Vietnamese) immigrants. Józsefváros is culturally the most diverse district of Budapest which is also widely acknowledged by local residents, media and policy documents.

Józsefváros has a highly diversified housing stock as well, which is the outcome of the multi-layered building activities since the middle of the 19<sup>th</sup> century, and also the versatile regeneration activities having taken place since the late 1990s. The inner part of the district was built well before World War

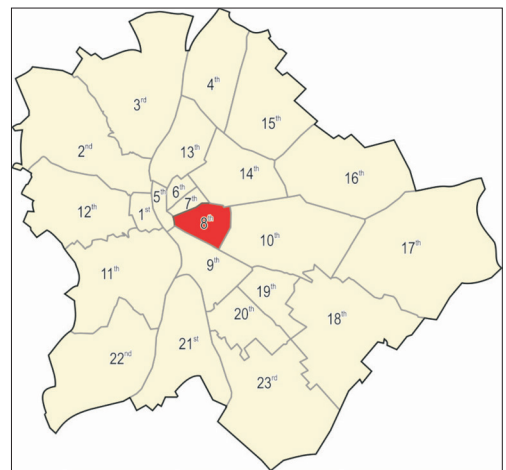


Fig. 1. Location of Józsefváros within Budapest

I, with 3–4 storey tenement buildings. As an outcome of the communist slum clearance programme of the 1970s, pre-fab high rise buildings appeared in the area replacing some parts of the old dilapidated housing stock. From the late 1990s a large-scale slum clearance programme was launched, and the renovation of rundown buildings as well as the construction of new ones speeded up considerably (*Photo 1*).

Between the last two censuses (2001–2011) about 5,000 new (mostly upmarket) dwellings were added to the local housing stock of approximately 33,000, which means a 12 per cent growth within a decade. This was one of the highest values among the 23 districts of Budapest during the period. The share of rental dwellings (both public and private) was 20.7 per cent in 2011, whereas it was only 10.6 per cent in Budapest. The weight of public housing was the highest here in the city with 11.5 per cent in 2011 (compared to the Budapest average of 5.0%).

Due to the extension of the housing stock and recent regeneration activities, above

average residential mobility was recorded in Józsefváros. In Budapest, on the eve of the 2011 census 45 per cent of the residents had moved to his/her dwelling in the previous ten years, this figure was 52 per cent in Józsefváros. High level residential mobility has also brought about demographic and socio-economic changes. Even though – similarly to Budapest – the demographic profile of Józsefváros shows clear signs of ageing, yet, the share of younger households (singles, families with or without children) is higher than the city's average.

Newcomers who moved to Józsefváros after the turn of the millennium have clearly contributed to growing social and cultural diversity. Furthermore, due to immigration, the social status of the area has been slowly growing but this is spatially an uneven process; in some parts of the district it is more pronounced and more visible than in others. The most intense changes took place in the neighbourhoods that were transformed by local government led urban regenerations (e.g. Corvin Quarter near the Grand Boulevard) where the old housing



*Photo 1.* Large-scale, local government initiated regeneration activities in the centre of Józsefváros  
(Photo by BOROS, L.)

stock has been completely replaced by newly built apartments (new-build gentrification) (*Photo 2*).

The district is very attractive for students who can benefit from the great variety of rental dwellings and the affordable prices. As the Józsefváros Integrated Development Strategy emphasises, the district is a higher education centre with national significance since 10 per cent of the students studying in Hungary are enrolled at Józsefváros-bound institutions. The concentration of HEIs is also outstanding here: 11 universities and colleges with 18 faculties are located in the area [2]. This is an important driving force of the studentification process which goes hand in hand with other more classical forms of gentrification. Józsefváros with a diversified housing stock and hospitality and leisure facilities offers an ideal place for students between the ‘boring’ outskirts and the ‘touristified’ city centre.

To sum up, the quality of the housing stock in Józsefváros has significantly improved over the last two decades. New constructions

and regeneration activities have brought about slow but steady influx of younger and partly higher-income households (Kovács, Z. et al. 2013). The previous negative image of Józsefváros has also improved as a result of urban regeneration activities, coupled with studentification and gentrification. The local government considers studentification as a useful tool for improving the reputation of the district and an essential element of urban rehabilitation – especially in the case of the new campus of the National University of Public Service (established in 2012) at the Orczy Quarter (*Photo 3*). Rising real estate prices can also partly be explained with the growing presence of students in the district (Czirfusz, M. et al. 2015; [1, 2, 3]).

### Research methods

This paper is based on a series of in-depth interviews conducted with national- and city-level policy makers, as well as residents and entrepreneurs of Józsefváros. The interviews



*Photo 2.* Corvin Promenade the epicentre of new-build gentrification in Józsefváros with upmarket dwellings and a new shopping mall (Photo by Kovács, Z.)





Photo 3. The new campus of the National University of Public Service accommodated in the 19<sup>th</sup> century classicist building of a former military school (Photo by Boros, L.)

were undertaken within DIVERCITIES, a 7<sup>th</sup> Framework Programme research project financed by the European Commission (full title: Governing Urban Diversity: Creating Social Cohesion, Social Mobility and Economic Performance in Today's Hyper-diversified Cities), between October 2013 and January 2016. Although DIVERCITIES was not specifically about studentification, yet, questions on the neighbourhood, the respondents' perceptions about the local society, their social ties and the role of local policies provided ample information on the topic.

For the sake of the study, a total of 109 in-depth interviews (19 with policy-makers, 50 with residents, 38 with entrepreneurs and 2 with other experts) were analysed. The interviewees were recruited through three main channels. First, several policy-makers and entrepreneurs were directly approached after they had been identified as relevant potential respondents (e.g. through web

search). Second, various institutions and key informants acted as entry points and mediated between us and the interviewees. For example, RÉV8 Plc.<sup>3</sup> had a crucial role in this process, since this company had developed a broad social network in Józsefváros because of former regeneration projects and the active cooperation with local residents. Third, 'snowball sampling' was applied in some cases, mobilising local social ties to contact potential respondents.

During the recruitment of interviewees our aim was to compose a diverse but balanced sample for three sub-groups. The group of *policy-makers* consists of officials of the Hungarian central government and Budapest municipality as well as associates of non-governmental organisations. In the selection of the 50 *residents* a healthy mix was

<sup>3</sup> RÉV8 is a company founded by the local government of Józsefváros. Its primary aim is to manage local urban renewal programmes.

achieved according to age, gender and educational attainment. As for their length of residence in Józsefváros, 26 persons moved to the district for twenty or more years (long-term residents), while 9 people moved there less than five years ago (newcomers – i.e. people moving to the area – have a vital role among the interviewees because of the ongoing gentrification process in Józsefváros). The group of *entrepreneurs* in our sample well reflects the heterogeneity of the economy of Józsefváros, including traditional handicraft shops (e.g. hat-maker), retailers (e.g. ethnic food stores), tourism and hospitality businesses (e.g. hotels, restaurants), consulting and engineering services (e.g. construction companies) and repair services (e.g. car mechanic).

### Main research findings

We analyse here the relationship between studentification and social cohesion according to the five dimensions set by FORREST and KEARNS (2001): (1) common values and a civic culture; (2) social order and social control; (3) social solidarity and reductions in wealth disparities; (4) social networks and social capital; (5) place attachment and identity. In doing so, our focus is mainly on how cohesion is manifested in these categories between students moving into Józsefváros and the long-term residents.

First of all, the *values of long-term residents and newcomers* are usually quite different in the district, however, their motivations to move or stay here is often similar: to exploit the good location of the district and the advantages provided by the reasonable rents and housing prices. This reflects to some extent the gateway function of the district which is beneficial for young people and students. But when it comes to goals, community development and possible initiatives, the opinion of newcomers and long-term residents differs – especially if we focus on the opinion of the most deprived social groups. The values and priorities of young people (including students) are very similar to

those of early gentrifiers; they highlight the importance of safe and clean public spaces and highly appreciate the results of urban regeneration programmes.

“The situation around Calvin Square is untenable, homeless destroy so much the nicely renovated environment. [...] I do not like top-down measures or autocratic attitude but this should be handled somehow because seeing that people use squares as toilet is very disturbing.” (Female, 29 years, teacher.)

On the other hand, long-term residents are more concerned about social issues, such as provision of public housing, job creation or social inequalities.

“There are a lot of empty apartments owned by investors or the local government while several people lost their homes due to loans and unpaid bills. In the house where my mother lives, there are four empty flats. Why not rent them to those who are trying to make their life better?” (Female, 30 years, street cleaner/public worker.)

Furthermore, in some cases, newcomers would like to see more changes or development, and get into conflict with established residents because of the alleged passivity of the latter group. This conflict can be manifested in a discourse characterised by dynamism-passivity dichotomy:

“I see the newcomers, the youngsters, who are motivated and dynamic but there are the elderly people who think differently. Obviously, they are another generation and their way of thinking is different.” (Female, 32 years, real estate agent/developer.)

Participation in politics and local affairs is also different between the students and long-term residents. Most of the younger and newcomer residents said that they did not know anything about local community programmes. As a 25-year-old interviewee (male, private entrepreneur) answered the question whether he had any information on public initiatives: “No, not really, and I do not see the meaning of these activities”. Older residents are not very active politically either, even though, they are more engaged in local affairs – there-

fore, shared visions, common political actions or initiatives are not manifested.

Regarding *social order and social control*, several conflicts are caused by the co-existence of various (sub)cultures and lifestyles in Józsefváros. The main conflicts caused by studentification are rooted in the generation gap in general and the conflicting needs of various age groups related to the use of public spaces in particular (BOROS, L. et al. 2016). Student lifestyle includes activities like engagement in noisy leisure programmes, consuming higher amount of alcohol or sport activities, resulting in tensions with elderly, and more moderate inhabitants. Such conflicts are concentrated primarily in the inner parts of the district (Palota Quarter and Corvin Quarter) wherein the rate of elderly people as well as the concentration of student dwellings are higher than in other parts of Józsefváros. The owner of a restaurant and a hotel, for instance, referred to the different lifestyles of students and other residents, which difference has an effect on his business:

“They [students] move in at the beginning of the semester, start partying, making lots of noise when playing their music instruments at the middle of the night. But then other tenants teach them how to behave, and they fit in soon.” (Male, 64 years, entrepreneur.)

In the district there are several initiatives that provide opportunities for intermixing for different social groups which might strengthen tolerance towards social difference. We mention here only two examples. The community garden of Leonardo (*Photo 4*), includes people with different age, gender, cultural background and qualifications e.g. brokers, foreigners, students, gypsy families, artists, pensioners, who get together for different activities in the summer season (BENDE, Cs. and NAGY, Gy. 2016). The Gólya ruin-bar, created by young intellectuals, is an important meeting point for young intellectuals, artist, and urban activists (*Photo 5*). Both examples (community gardening and ruin-bars) are relatively recent phenomena in Budapest, they became important part of

the local community and cultural life after 2000 (LUGOSI, P.D. et al. 2010). However, how these initiatives bring together local people, it remains a question.

Regarding the third domain of social cohesion, *social solidarity and reductions in wealth disparities*, we can conclude that the economic performance of Józsefváros has improved a lot in the last decade and studentification contributed to this process significantly. Similarly to the experiences in the West, the in-migration of young people (among them university students) to Józsefváros contributes positively to the economic performance of the area through the appearance of new consumption groups, the renewal of the physical and economic environment, or the expansion of the local housing market. Both city- and district-level policy documents emphasise the favourable effects of the expansion of educational institutions and the growing number of students, for example, regarding the development of local tourism or the creative and innovative economic sectors (EGEDY, T. and SMITH, M.K. 2016).

Moreover, for some local inhabitants one of the most positive results of the urban change is that the overall prestige of the area is rising. Therefore, these people welcome the influx of students and young families.

“Well, frankly I might see diversity rather positive because in the past the district was more homogeneous in a negative sense, but with the renewed blocks of flats and with the arrival of a wealthier, more qualified group the overall prestige of the neighbourhood has been rising. And from this point of view the growing social heterogeneity of the neighbourhood is a positive thing, I guess, because the former homogeneity was quite negative, and that meant mainly the presence of deprived, poor and criminal elements.” (Male, 36 years, journalist.)

The economy of the district, however, develops socially and spatially very unevenly. There are robust wealth disparities among the different quarters of Józsefváros and social exclusion and marginalisation of some groups (e.g. the homeless, the poor, the Roma) is still a serious problem.



Photo 4. Leonardo community garden in the run-down neighbourhood provides an important meeting place for people with various background (Photo by Boros, L.)



Photo 5. Gólya (it means stork in Hungarian) is the first “Communal House and Co-operative Presso” in Józsefváros organising concerts, literary nights, theatre workshops for young people (Photo by Boros, L.)

“I think the entire neighbourhood has become younger and more affluent, since poor people had to relocate as a result of this whole on-going [renewal] project. So all of those who had lived here before in low quality public housing, have moved towards outer areas. And now they cannot come back to buy the dwellings which are much more expensive nowadays.” (Female, 61 years, stylist/designer.)

We found weaker social cohesion within the district in neighbourhoods which have undergone intense regeneration such as the Corvin Quarter and other recently redeveloped residential areas where the population has changed dramatically. In these areas students and young professionals are important target group for the real estate developers:

“...what is really important factor (for investing here) is the vicinity of universities. [...] There is a high concentration of university buildings which is relatively unknown at this time. But within a few years the penetration of health care and IT professionals will be exceptional.” (Male, 38 years, real estate developer.)

The fluctuation of residents according to age and social status generates wider social differences as well as a polarisation within the society. It negatively affects the possibility of creating interactions among neighbours (horizontal connections) and among different social groups (vertical relations) as well.

“There are 14 apartments in our old building, but only nine of them are occupied. Half of the residents are elderly people and the rest are young – they are under 35 and have moved in during the past few years. The middle-aged are missing in the block ... I have very limited contact with my neighbours. If I welcome somebody or ask them ‘how are you?’, it already means a closer relationship.” (Male, 30 years, private entrepreneur: programmer/website designer.)

According to our findings, the consumption practices and patterns of students and long-term residents are quite different – which is a significant element of the parallel lives of various age/social groups (*Photo 6*).



*Photo 6.* Typical consumption spaces of students and young intellectuals in the inner-part of Józsefváros (Photo by FABULA, Sz.)

The separation of consumption decreases the chances of interaction and the development of personal relationships. In some cases, the different consumer base of businesses is a result of some kinds of ‘repositioning’ of enterprises (e.g. bars, restaurants, shops). The consumption gap between foreign students (with higher purchasing power) and locals is especially remarkable:

“... there are cafés with such high prices that I cannot imagine who can afford it among the locals, among Hungarians. Their consumers are the foreign students.” (Male, 51 years, entrepreneur.)

The on-going internationalisation of Hungarian higher education will most probably strengthen and make more visible these differences in the future. Several new enterprises (e.g. start-up ventures) aim to exploit the vicinity of universities and offer job opportunities for students or newly graduated career starters. Since the older, established residents cannot utilise these opportunities, the wealth and income disparities may widen between old and new residents.

“We chose this office because we can hire students, who can work here between classes and exams. [...] I think, Józsefváros is a promising area because of the vicinity of universities.” (Female, 39 years, start-up entrepreneur.)

Some of the literature on studentification point out, that the growing concentration of university students in a neighbourhood can lead to a general neglect of social obligations and the quality of the urban environment (see e.g. KENYON, E.L. 1997). Nevertheless, as one of the established residents, who has been living in Józsefváros for more than ten years, noted it is not necessarily the case:

“Many young people have moved in and honestly I am happy about that, because they pay the common fees of the building regularly and they take care about their environment more than the former residents.” (Female, 37 years, dispatcher.)

As far as the fourth dimension of social cohesion is concerned, we found that the pro-

cess of studentification has straightforward impacts on the *social networks* and social cohesion of the district. The personal networks of students and young newcomers are very much different from those of the older and long-term residents. Obviously, latter tend to have more and stronger local connections than newcomers – which confirms the findings of GUEST and WIERZBICKI (1999). Since the newcomers’ personal networks extend well outside the boundaries of Józsefváros they usually keep contacts and exchange help with people living outside the district.

Although family ties are the most important among personal networks, similar lifestyle and stage in the life-cycle increase the chance of developing bonds and providing mutual help among residents. This observation highlights the importance of differentiation between social, cultural and age groups when analysing social ties (FORREST, R. and KEARNS, A. 2001), since solidarity and mutual help is more likely to work within groups than between members of different social and cultural groups.

This is similar to the findings of VAN BECKHOVEN and VAN KEMPEN (2003): in most cases the residents mostly live along each other not together (‘parallel lives’). On the one hand, trust and support are manifested on the scale of the house or block. On the other hand, the spatiality of the personal networks (i.e. friends and family) has a significant role in developing and maintaining supportive relationships and these cannot be connected to a particular scale or neighbourhood.

Regarding *place attachment and identity* we found that our case-study area (Józsefváros) is a typical inner-city district where historical traditions are well-perceived by local people, most of whom have a distinct ‘Józsefváros identity’. Within our sample clear distinction could be made between long-term residents and newcomers (i.e. students, young gentrifiers) in this respect. For the latter group increased mobility and lower level of place-attachment is a significant obstacle to more intense social contacts:

“Here a newcomer group settled in which had been targeted [by developers and real estate agents] so that new apartments would be purchased by young middle-class people; but in general they do not like the 8<sup>th</sup> District. They do not come here by real choice in most cases but because they can afford only these dwellings... Therefore, I do not think they really identify themselves with this neighbourhood.” (Female, 42 years, consular officer and interpreter.)

## Discussion and conclusions

The principal aim of this study was to examine the effects of studentification on urban diversity and social cohesion in the post-socialist Hungarian context. Our first research question was: how studentification is related to the gentrification in the case-study area of Józsefváros? According to our findings, studentification in Józsefváros is not the pioneer phase of gentrification, but – especially in the rehabilitation areas – it runs more or less parallel with it. In this respect it shows certain differences compared to other post-socialist and Western experiences.

Firstly, because physical upgrading in the originally dilapidated district has been taking place for quite a while (10–15 years). The built environment has gone through spectacular changes, the local economy substantially strengthened, new functions (i.e. higher education, shopping, leisure, hospitality industry) settled to the area. As a consequence, a lot of young people, among them students, discovered the district, and moved here. The spatial pattern of studentification has also changed accordingly. Earlier it had a dispersed spatial pattern like in other post-socialist cities (see MURZYN-KUPIŚ, M. and SZMYTKOWSKA, M. 2015), but due to the excessive urban rehabilitation programmes studentification (and also gentrification) has become geographically very much concentrated. The mushrooming of ruin-bars and other cultural and leisure facilities also strengthens the spatial concentration of students. Thus, the spatial separation of housing, education and leisure (nightlife) activities of students is not that strong in the Budapest case as in other post-socialist cities.

Secondly, since the district is subject of robust (state-led) regeneration activities, newcomers are coming mainly from outside the district and Budapest (partly from abroad). They have no place attachment at all, and consider their stay temporary and reside in the district as transitory urbanites (HAASE, A. et al. 2012). Most of the students use the place as a springboard in their career, and after graduation most of them leave. The attitude of students is, however, very much resembles those of the young, highly educated newcomers, i.e. early gentrifiers.

The second research question concerned the impacts of the influx of students on the social cohesion of Józsefváros. In the present stage of urban transformation studentification clearly contributes to the demographic, cultural, social and economic diversity of Józsefváros. However, its effects are perceived very differently by the local residents, depending on factors like location, social status and professions (i.e. ‘ordinary residents’ versus entrepreneurs). Residents living outside the core area of regeneration often mention the lack of interaction between newcomers and long-term residents, while also highlighting the role of different attitudes and lifestyles. At the same time residents of the renovated areas who are mostly new inhabitants do not perceive any weakening in social cohesion, since they have not got previous experiences regarding the local society. The interrelation between studentification, neighbourhood diversity and social cohesion is clear: those parts of Józsefváros which have not been affected by regeneration activities and notable student influx are more cohesive.

Our empirical research identified several factors that hamper the development of a cohesive society: the significant difference in lifestyles and values, high level of socio-spatial inequalities, intense population turnover and the exclusion of less-affluent residents, or the weak place attachment of the new residents.

Nevertheless, Józsefváros and its population can profit from other processes which can also foster cohesion in the area, e.g. ac-

knowledge of diversity and acceptance of otherness as a result of increasing social mix, the diversification of the housing stock, the contribution of students to the community's living costs and local developments.

Studentification has been used actively by the local government to improve the image of the district. The growing number of students and higher education institutions is portrayed as an asset of Józsefváros in local policy documents.

However, there are also factors that may hamper the future continuation of studentification. Once the value gap reaches a certain level and the area becomes simply overvalued by the market much harder forms of gentrification can sweep away the existing student enclaves. Or, some parts of the housing stock become utilised for other purposes e.g. tourism. Right now there are obvious signs of this phenomenon in the inner part of the district where relatively high share of dwellings is used for Airbnb purposes (DUDÁS, G. et al. 2016). These developments will threaten even more the social cohesion of Józsefváros than studentification.

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## BOOK REVIEW

**Davis, D.K.: *The Arid Lands: History, Power, Knowledge*. Cambridge–London, MIT Press, 2016. 296 p.**

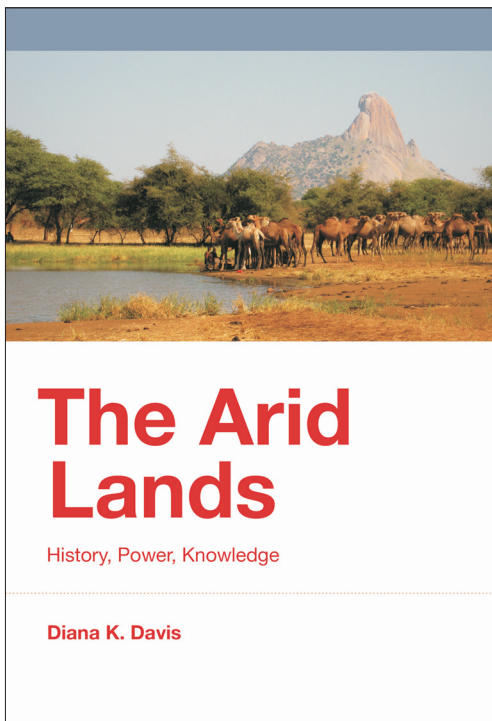
Arid lands, characterised by limited amounts of precipitation, cover substantial part of the Earth. They mainly occur in high pressure areas of the tropical zones or in the innermost parts of the continents. Arid lands and deserts are natural phenomena. Yet, debates about them are deeply embedded in culture and politics, as are related notions, such as the perception of deserts as ‘degraded wastelands’ that need to be reclaimed. Diana K. Davis’s book, uniquely, addresses the historicity of debates about arid lands, and gives an analysis of the discourse of desertification from a political ecology approach, arguing that the global environmental debate about desertification and the United Nations anti-desertification programmes were highly influenced by former colonial discourses.

The short-format and concise volume was published by the MIT Press in the series ‘History for a Sustainable Future’, and follows the line of influential volumes on environmentalism and political ecology. Diana K. Davis, geographer and veterinarian, is pro-

fessor at the Department of History, University of California at Davis. Davis has authored several publications in the field of political ecology and environmental history, including the award winning work ‘Resurrecting the Granary of Rome - Environmental History and French Colonial Expansion in North Africa’ (Davis, D.K. 2008). Her recent book keeps the goal of the previous one while bringing the emphasis from North Africa to a more global understanding of the topic.

The analysis follows a chronological order. The author argues that the perception of arid lands as ‘wasteland’ was not at all common in antiquity, nor in the medieval period. While this notion has its roots in Judeo-Christian thought, it gained significant ground only with the great early modern geographical (re)discoveries and 19<sup>th</sup>-century colonisation. Davis shows how colonial discourses, which blamed local populations for alleged destructive land-uses leading to desertification, permeated later in 20<sup>th</sup> century anti-desertification programmes including the UN anti-desertification project. In line with this chronology, after introducing the topic in Chapter 1, the book discusses Classical, Early Christian and Medieval understandings of arid lands (Chapter 2), then related concepts from the age of discoveries (Chapter 3), the rise of imperialism (Chapter 4), and the 20<sup>th</sup> century (Chapter 5), whereas the final section is devoted to the 21<sup>st</sup> century (Chapter 6).

The first and introductory chapter ‘Deserts, Dogma and Dryland Development Policy’ starts with a very practical question. There were several well-intentioned development programmes focusing on drylands as well as international projects aimed at combatting desertification, overgrazing and deforestation, and improving agriculture. Such programmes evoked much criticism for their outcomes, however. Irrigation caused salinisation in many places. Afforestation was often not satisfactory due to limited rainfall. Rangeland development projects also changed the situation to the worse in many cases for causing increased degradation. Davis argues that the core of these problems should be examined from an historical-political perspective. First of all, the eye-catching term ‘desertification’ has no universal definition. Recent academic research in quaternary science and ecology reveals that the extent of desertification was heavily overestimated in the 20<sup>th</sup> century in many places, and the high variability of precipitation is a more influential factor in the development of



arid lands than anthropogenic drivers. Blaming local populations for destructive land-use practices like burning, overgrazing and deforestation goes back to the colonial period, and still plays a significant role in more recent debates. Yet, management practices of the local, mainly nomadic, people actually adapted to the high variability of the drylands, and they were in fact being practiced sustainably for a long time. Anti-desertification programmes, however, have often led to the marginalisation of local populations, affecting them even more seriously than the desertification itself. The historical analysis in the next chapters helps better understand how perceptions of drylands have been changing over the *longue durée*.

The analysis starts with the ideas of the Greek historian HERODOTUS, who is said to be the author of one of the first descriptions of the Sahara. Written knowledge about deserted lands increased with the expansion of the ancient Greek civilisation, as for example ALEXANDER THE GREAT brought many writers to his campaigns to North Africa and Asia. These descriptions influenced many later scholars, including the geographer STRABO. The knowledge of arid lands in the Roman period came from both earlier Greek sources and first-hand experience with arid Roman provinces. In Greek and Roman texts deserts were depicted as naturally dry regions that hinder travel and are usually inhabited by nomadic peoples, but, in turn, offer many valuable products. The idea of environmental determinism, which claimed a decisive impact of climate on the life and characteristics of the inhabitants of a given land, was first expressed by HIPPOCRATES, then by ARISTOTLE. These early sources about the connection of climate and human traits had a strong influence on the way the inhabitants of arid lands were perceived by Europeans in the later centuries.

Christianity brought many changes in the evaluation of arid lands. In the Old Testament deserts are depicted as wilderness, places of chaos and temptation. Another negative picture of arid land is the Fall of Adam and Eve from the Garden of Eden to the unproductive deserted land, which could only be made productive with hard work. But there are some more positive Christian approaches as well, which presented the desert as site of protection and refuge, or as the locus of ascetic perfection for early monks called the Desert Fathers. After the early Muslim conquests Europeans had much less direct knowledge about deserts. Pilgrimages to the Holy Land experienced the landscape of the desert more from a spiritual aspect, and provided limited information about the environment.

The next chapter, entitled 'Exploration, Desiccation, and Improvement', is dedicated to significant shifts in the notion of the desert after the geographical discoveries. Knowledge of the habitable world was increasing. Yet, this did not lead to the rejection of

environmental determinism inherited from ancient Greek texts. Quite the contrary happened. For example, MONTESQUIEU claimed in his political writings that the arid and harsh climate of Asia has an influence on the despotic political culture of the region. The theory of desiccation, which states that deforestation causes aridification, was supported by the studies of prominent scholars of the Enlightenment on different aspects of the hydrological cycle and the link between forest cover and humidity (e.g. Edward HALLEY, John WOODWARD and Stephen HALES). This idea was then improved and spread mainly by French naturalists, physiocrats and politicians (such as Pierre POIVRE, François-Antoine RAUCH, George-Louis LECLERC, de Comte BUFFON and François-René DE CHATEAUBRIAND), who argued for solutions against aridification. The moral claim of land improvement was also fuelled by liberal economic thought, which blamed pre-capitalistic managements for inefficiency and causing degradation. The tools of land development programmes in France and England, such as the privatisation of common lands, the control of transhumant pastoralism, or the afforestation of the sand dunes in Gascony in Southwestern France, were later introduced to arid lands in newly colonised areas as well.

In the chapter 'Imperialism and Desert Blame Game' the author discusses how desiccation theory became even more popular with the rise of colonial expansion. The idea of desiccation by anthropogenic factors appeared in many writings, ranging from French authors to HUMBOLDT and the American George Perkins MARSCH. MARSCH for instance, similarly to his contemporaries, claimed that deserts are desiccated forests, which were destroyed by 'nomadic invaders' and by their animals like camels and goats. Perceiving deserts as degraded wastelands justified the 'redemption' of arid lands through 'civilising' projects under colonial control, just as the 'primitive' cultures of the colonised were often thought to be 'redeemed' by their Christian colonisers. French Algeria, which became a colony by the 1830s, was one of the first sites where colonial arid land development policies were implemented. Restrictive measures were introduced, which later became dominant in the management of arid lands in other regions as well. These included "sedentarizing nomads, controlling or eliminating grazing, suppressing fire, improving livestock, creating forest reserves and reforesting, and increasing agriculture, both irrigated and rain-fed" (p. 116). Similar policies were applied in the British colonies in South Africa and India. Local nomadic people were criminalised by new laws controlling forest use. Afforestation took place, and in the Thar Desert an irrigation canal system was constructed. These developments were often realised at the expense of food safety. A plausible example is the introduction of a fast-growing tree species, *Prosopis*

*julifolia*, in India, which still has detrimental effects on herding as it suppresses grass growth. Moreover, its fruit is not even edible for animals as opposed to those of native trees which it replaces invasively (ROBBINS, P. 2001).

‘The Twentieth Century: Desertification Comes of Age’ scrutinises how colonial dryland policies became globalised in the twentieth century. Although the underlying idea of ‘desertification’ was apparent even before, the term itself was coined by a French forester, Louis LAVANDEN, as late as 1927. Dryland management policies, restrictions and laws were spread and transposed to the new French colonies, French West Africa (in the Sahel region) and to British colonies as well. The dominant notion of the day, which interpreted vegetation dynamics as progressing towards a state of equilibrium, justified the theory of desertification. It implied that the scarce vegetation of the Sahel should be interpreted as remnant of a previous, arboreal condition of ‘climax’. In the 1930s droughts were experienced worldwide. The Dust Bowl in the United States led to the introduction of new soil conservation techniques, which were applied then in a number of regions as elements of a ‘universal’ dryland management package. After World War II several political changes took place, and new post-colonial states were emerging. The United Nations Arid Development Program, however, had no one to employ but former colonial dryland experts, who inevitably utilised the dryland development methods from the colonial period. The battle against deserts continued, and the idea of anthropogenic desertification was disseminated even more broadly.

The last chapter ‘Conclusion: Embracing Variability’ highlights the continuity of dryland development policies against desertification and offers some new aspects for the future. In the 1970s the Sahel region experienced serious droughts, which were followed by new anti-desertification projects of the UNESCO and FAO. In the last decades there has been an increasing amount of research revealing that the concept of desertification was exaggerated, and that climate variability is more influential a factor in such situations than anthropogenic drivers and arid lands should simply be understood as non-equilibrium environments. “It was not until 1994 UN Convention to Combat Desertification (UNCCD) that climate was added as a cause of desertification along with human activities.” (p. 160). The crisis narrative of desertification proved to be so powerful that it is applied in non-arid regions as well. The author finds worrisome, that in the 2014 UNCCD report ‘Desertification: the Invisible Front Line’ desertification was mentioned as a driver of resource wars and the rise of political extremism in arid lands, which she interprets as a new wave of environmental determinism. She argues that the ‘combat against de-

sertification’ narrative was used to accumulate power in postcolonial states and to delay democratisation projects. These developments often marginalised local populations, what, according to DAVIS, might have a lot more to do with conflicts in arid regions than the contested process of ‘desertification’. DAVIS looks for solutions by providing examples from Chad, Niger and the Syrian steppe. She offers the implementation of integrated dryland development, which is based on decentralisation, participation, recognition of indigenous knowledge, and the use of flexible management systems adapted to the variability of arid lands.

There is not much to criticise in this excellent book. A minor concern might be that the chapters sometimes overlap, and the steady flow of biographies and names of influential people can be a bit confusing. The book is very efficient in the sense of connecting the history of desertification discourses to concrete places around the globe from North and South Africa to France, India and the USA. It also sheds light on the networks of knowledge and experts within anti-desertification programmes of the United Nations. Nonetheless, there may be some space left beyond the Anglo- and Francophone world for further investigation to reconstruct how the discourse became global and how it channelled local perceptions of ‘spreading drylands’. Arid territories and anti-desertification campaigns in China and Russia (or the Soviet Union) are mentioned several times in the text. Yet, the possible role of these countries in formulating the global desertification narrative is not examined directly. For example, while other authors like LINTON, J. (2004) successfully explore the influence of Soviet scientists in the ‘global water crisis’ discourse of the seventies, similar connections were not investigated in this volume.

From an Eastern Central European perspective it is interesting to ask how these discourses were translated and mobilised, and how they affected *our* understandings of arid lands and similar local environments. Unforgettably exotic pictures of the overgrazed Sahel, for instance, were present in all elementary school geography textbooks in Hungary when I went to school in the 1990s. Countries of Eastern and Central Europe were not involved directly in the colonisation of arid lands, and they do not have real deserts for their own climate is too humid. There are some places, however, especially sandy regions like the ‘Błędów Desert’ in Poland, the ‘Moravian Sahara’ in Czechia or the Kiskunság region in Hungary, which are often regarded as local equivalents of a desert. In the case of Hungary, which is the most prone to drought from these countries, ‘desertification’ was indeed a vivid topic in many periods. As a quick search in *Arcanum Digitheca*, an online collection of Hungarian printed sources, shows, the Hungarian version of the term desertification (‘elsivatagosodás’) was used as early as the 19<sup>th</sup> century, but I found the

first use of the term with regard to an area in Hungary in the 1930s, when Hungary, just like many other parts of the globe, experienced severe droughts. River regulation and deforestation were claimed to be the cause of ‘desertification’ on the Great Hungarian Plain. Extensive afforestation and irrigation programmes were meant to address these problems, especially in the Sovietised period, when they were influenced by similar projects in the Soviet Union (JANKÓ, F. 2013; BORVENDÉG, Z. and PALASIK, M. 2016).

As DAVIS puts it, “The power of stories of environmental change has been widely underestimated for too long.” (p. 175). In her book she analyses the powerful story of desertification in a powerful and inspiring way. This concise, well-written book offers a fascinating new understanding of drylands. It gives a great historical overview of perceptions of arid lands from the antiquity to recent years, and excavates the origins of the discourse of desertification. The use of clear language and well-chosen informative illustrations helps a lot in comprehending the narrative, whereas detailed notes and references are valuable tools for further investigation. The inherent power of the book lies in that it has a very clear message for the future of environmental management. It challenges the way of seeing the desert as an inherently degraded landscape and offers the approach of seeing them as diverse environments with a highly variable climate. Therefore, for DAVIS, they should not be ‘redeemed’ or ‘restored’, since they can be managed sustainably by understanding their variability and by taking into consideration local knowledge and management practices as well. This volume will certainly have a great impact on arid lands research and management. In addition, it employs methods and provides approaches that are highly applicable to various fields in political ecology, history of science and environmental management, well beyond the history of drylands.

NOÉMI UJHÁZY<sup>1</sup>

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Szirmai, V. (ed.): **“Artificial Towns” in the 21<sup>st</sup> Century: Social Polarisation in the New Town Regions of East-Central Europe**. Budapest, Hungarian Academy of Sciences, Centre for Social Sciences, Institute for Sociology, 2016. 501 p.

In different parts of the world, Artificial Towns, new towns and planned cities frequently represent materialised visions and utopian concepts of community. Due to the close relation between functional and architectural structures and societal ideals, this type of settlement is influenced by changes of the socio-economic system in a particular way. There is a requirement of adapting to new societal needs, and the question emerges how this adaptation affects socio-spatial relations in different contexts. This is the main focus of the book “Artificial Towns in the 21<sup>st</sup> Century”. It is dealing with characteristic processes of societal re-evaluation and considers the potentials and problems of fitting such towns to new social realities and needs.

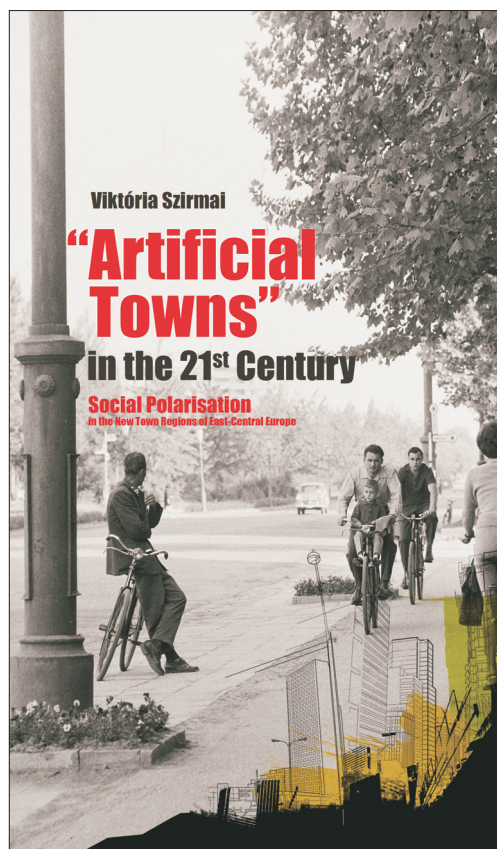
The 501-page-long edited volume is an outcome of the research project ‘Social Polarisation in the Hungarian and Eastern-Central European

“New Town” Regions. Impacts of Transition and Globalisation’. The leader of the project and editor of the volume, Viktória SZIRMAI, head of department at Kodolányi János University of Applied Sciences, proposes the main aim of the volume as follows: “The mission of this book ... is to present polarisation mechanisms, contemporary social structural relationships and their economic, political and architectural determination in new towns...” (p. 15). As the subtitle of the book indicates, the focus is the new towns that were developed in communist times in Central and Eastern Europe (CEE). However, at the beginning of the book, which introduces the characteristics that are inherent to this type of settlement and distinguish Artificial Towns e.g. from socialist high-rise housing estates, a clear definition of Artificial Towns would have been helpful for the reader.

New towns are usually interpreted as prototypes of the socialist way of life and, in some cases, nation-building projects, as well as a solution of the housing question without reproducing social inequality. Their development is associated with forced industrialisation in the communist regime. Hence, their economic base was often mining or heavy industry.

After the political changes in and after 1990, these economic sectors experienced a fundamental reassessment and devaluation. As a direct outcome of the shift new patterns and dynamics of regional economic development emerged, and socio-spatial polarisation began to increase in the whole of Central and Eastern Europe. These processes had a strong impact on the development of the new towns as well. Areas which were affected by the decline of traditional industries and which were not capable of developing a new economic basis often showed high and increasing dependencies on public transfer payments. This is, beyond others, reflected in the standard of housing and living conditions.

Many regional economies within CEE countries are severely challenged by asymmetric power relations in the globalised economy. Hence, socio-spatial disparities have been rising considerably in rural as well as urban contexts (see e.g. TSENKOVA, S. 2006; SMITH, A. 2007; BRADE, I. *et al.* 2009; SMITH, A. and TIMÁR, J. 2010; EHRLICH, K. *et al.* 2015). It is against this backdrop that large-scale high-rise housing estates and new towns from the communist times are frequently struggling with processes of downgrading and depopulation. As different chapters of the volume show, Artificial Towns established in state-socialist planned economies have managed to cope with the profound transformation of the social and economic framework after 1990 in different ways.





Although there are numerous studies on urban development after communism, most of them focus on capital cities (see e.g. STANILOV, K., 2007; BORÉN, T. and GENTILE, M. 2007; ANDRUSZ, G. *et al.* 2008; BRADE, I. *et al.* 2009), whereas in-depth analyses of new towns are rather scarce. The present book is bridging this gap to a certain extent in the field of post-socialist urban studies. The development of Artificial Towns is a prime example for how challenges of the transformation process take shape on the local and national levels, and how they influence the social well-being of the local population. Thus, investigating socio-spatial development of these towns seems a particularly relevant issue. Moreover, extensive empirical information on socio-spatial structures in case study towns mainly in Hungary but also in Poland and Slovakia, as well as the comprehensive comparison with other urban types, provide a sound basis for urban planning strategies.

Pierre MERLIN, professor of the Town and Regional Planning Institute of the University Paris-Sorbonne, emphasises in his recommendation to the book that the variety of the presented studies might help develop strategies to support that “the socialist towns of Central Europe” are turning to “successful old towns”, even if numerous factors have an impact on the process which are hard to predict (p. 13). Detailed description of the eleven new towns in Hungary and the specific local trajectories of selected case studies (also including architectural characteristics and urban structural features) provide a remarkable insight into urbanisation processes in the communist and post-communist periods. Still, it would have been a benefit for the book to better embed the results of these studies in contemporary discourses in international urban research.

The book consists of four major parts written by sociologists, economists, geographers, architects and urban planners. The first part discusses general theoretical considerations of the development of new towns in the 21<sup>st</sup> century. It scrutinises such diverse issues like the period when socialist new towns were established, general characteristics of CEE urbanisation, and national peculiarities in Hungary, Poland and Slovakia. In her introduction Viktória SZIRMAI juxtaposes the development of new towns in Eastern and Western Europe after World War II with the transition period after 1990, and even makes an outlook to new towns or planned settlements in the developing countries. Her main question while looking for signs of failure or successful renewal is “whether the development of new towns was the possibility of a new urban development model or an unfulfilled promise” (p. 38).

Chapter 2 focuses on the development of socialist new towns, its underlying doctrines of urbanism, as well as their dominant social and ideological mechanisms. SZIRMAI describes the impacts of the transformation during the 1990s on Central and Eastern

European (CEE) urbanisation, too. In the scientific literature, the identified processes have often been connected with the question if the urbanisation in communist and post-communist contexts represents a typical catch-up development or follows a specific trajectory (e.g. BRADE, I. *et al.* 2009). SZIRMAI takes a modern and global approach to urbanisation. For her, cities are shaped beyond global and transnational power relations “by each country’s specific historical features or regional power and political-social conditions” (p. 48).

The following chapters outline the impacts of communism, post-communist transformation and globalisation on urban development and urban socio-spatial structures in the national contexts of Hungary (SZIRMAI), Poland (Grzegorz WĘCŁAWOWICZ) and Slovakia (Péter GAJDOS). Here the authors provide detailed historical information on interdependencies between the change from socialist to post-socialist societies and socio-spatial differentiation on the local and regional levels. The focus is the complex connection of urban-rural relations against the backdrop of industrialisation and deindustrialisation.

The second part of the book gives an in-depth description of the historical development and social-spatial polarisation in selected new town regions, which were established in line with programmes of rapid industrialisation communist governments implemented in these countries. Out of the six new towns the authors of the book scrutinise four are located in Hungary. They include the regions of Tatabánya (analysed by Júlia SCHUCHMANN), Dunaujváros (Nóra BARANYAI), Komló (Levente HALÁSZ) and Kazincbarcika (Márton BERKI). A case study from Poland on Tychy by Grzegorz WĘCŁAWOWICZ and Dagmara MŁICZYŃSKA-HAJDA, and another study from Slovakia on the Nová Dubnica region by Péter GAJDOS and Katarína MORAVANSKÁ supplement the findings of the Hungarian case studies.

Beyond discussing historical considerations, the authors extensively analyse the impact of economic transition and social polarisation on the selected town regions. Descriptions are mainly based on census data, the results of in-depth interviews as well as local policy and planning documents. The authors point out key problems that are typical for most of the towns they investigate, like over-aging and depopulation due to declining birth rates and negative migration balances, and social problems, in particular unemployment. It would be interesting here to learn more about the personal living conditions of the inhabitants and about how they evaluate the quality of urban surroundings in the study areas. Socio-economic disparities, both between and within urban areas, also mirror the residents’ ability or inability of social participation, and determine their unequal access to social goods like health and education.

The third part of the book takes different comparative perspectives. It aims to identify and explain the ways new towns in Hungary responded to the economic crisis. Adrienne CSIZMADY and Zoltán FERENCZ investigate whether these towns have been experiencing a similar increase in socio-spatial differences as large towns in Hungary with more than 100,000 inhabitants, and juxtapose the two urban types along population statistics and questionnaire surveys. Beyond others, the authors consider migration plans of the residents and different structural zones within those city regions. They focus on changing centre-periphery relations and processes of social segregation. As their results reveal, the social structure of inner city areas in bigger traditional cities reflects the conventional Western trends with an increase of higher status groups, while this tendency does not apply to the new towns.

János RECHNITZER, Judit BERKES and Ádám PÁTHY investigate the position of post-communist new towns in the Hungarian urban network. They carry out a cluster analysis based on data concerning occupational structures, employment potential and social indicators like education. They demonstrate that industrial cities in the same cluster are struggling with similar difficulties. Nevertheless, some of them managed to cope with the challenges of transformation in a more successful way, while others failed. Adrienne CSIZMADY provides detailed explanation for such different urban perspectives through a long-term comparison of socio-economic development in the eleven Hungarian new towns, which are gradually becoming old towns. Relying mainly on economic and demographic indicators she distinguishes three types of development, namely advanced, stagnant and declining towns. Her finding that some cities managed to succeed by utilising their socialist heritage might be surprising on the one hand. On the other hand, it points to the crucial question of how the symbolic and ideological content of new town architecture can contribute to a new urban identity and therefore improve future development prospects.

Based on urban structure, the image of urban architecture and the location, function and composition of the city centre in the selected six towns Kornélia KISSFAZEKAS aims to confront planning ideas of communist times with current reality. In fact, she highlights the similarity of planning principles in various countries despite different national contexts due to the massive dominance of Soviet-modelled urban planning policy. However, peculiar historical, local and geopolitical trajectories resulted in some differences. An important finding is the need for a new view on communist new towns in light of the fall of communism, and the Westernisation of society. KISSFAZEKAS emphasises the reinterpretation and increasing attention to the architecture of socialist real-

ism as an important urban strategy. This idea opens up new perspectives regarding the potential of such new towns as loci of national or cultural heritage and social identity-making.

The concluding final part discusses the impact of the heritage of communist new towns for contemporary urban societies. This raises the question whether, and if yes, to what extent, the preservation of characteristic features inherited from the communist period provides some potential for future community life. The research presented in the frame of the volume made clear that, despite a considerable trend of social differentiation, the new towns are still workers' towns, where living conditions of the population are less favourable than the national average. Referring to the different degree of social and socio-spatial changes as well as changes in architecture since 1990 Viktória SZIRMAI finally puts the question whether Artificial Towns are sustainable environment for their residents or rather an unfulfilled dream of a new urban way of life.

The book does not claim to answer this and related queries finally. However, it sketches out a range of development opportunities and provides comprehensive information on new towns in CEE, mainly based on demographic, social and economic statistics. In contrast, little information is provided on how the inhabitants themselves perceive their environment and what they think about the future of their hometowns. I suppose it would be fascinating and important for further research in this field to learn more about the subjective perspectives of the inhabitants. It would require a stronger focus on qualitative approaches and methods, however, to reveal the significance of the structural heritage from communist times for the self-perception of the people and for their everyday lives.

In sum, the anthology is a very detailed and informative scientific contribution to a better understanding of social development in new towns of post-communist Central and Eastern Europe, but also of socio-spatial development in Hungary, Poland and Slovakia in general. All studies and chapters provide remarkable expert information and local knowledge. The analysis of different case studies clarifies that a comprehensive assessment of communist new towns is problematic for the variety of individual settings and development trajectories that are shaped by local impacts and general socio-economic processes in a globalising world. Notwithstanding, some reflections on how these findings on communist Artificial Towns could contribute to the international scientific debate and what we can learn from them for urban contexts around the world could increase the value of the volume.

The book contains 54 figures, 33 tables and 20 maps. The appendix with a number of informative photographs taken by the authors give excellent

impressions of architecture and the condition of the built environment in the new towns presented in the studies. The volume is warmly recommended to social scientists, architects and representatives of urban and regional planning as well as to university students interested in regional and urban development, especially in the Central and Eastern European context.

KARIN WIEST<sup>1</sup>

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**Akkerman, T., de Lange, S.L. and Rooduijn, M. (eds.): Radical Right-Wing Populist Parties in Western Europe. Into the mainstream?** London–New York, Routledge, 2016. 298 p.

Radicalism and the strengthening of the radical right parties have become dominant phenomena of recent political transformations. As a result, the topic of the transitions of radical right-wing parties has become a dynamically growing segment of political geography and political science literature. This book is an important theoretical contribution to the core issue along with the inclusion-moderation thesis, which holds that participation in democratic institutions and procedures will amend the radical nature and ideology of political parties. Authors of the volume analyse the ‘mainstreaming’ of various radical right-wing parties in several countries and different political situations in Western Europe, which is also a rather current process in Hungary if we consider the transition of the party *Jobbik*.

The authors provide us a description about the behaviour of radical right parties according to their goals and positions. In the 1990s, growing intolerance against immigrants and increasing populism gave the opportunity for many radical right-wing parties to escape from the margins. The French National Front

(*Front National*, FN), the Austrian Freedom Party (*Freiheitliche Partei Österreichs*, FPÖ), the Norwegian Progress Party (*Fremskrittspartiet*, Frp) and the Swiss People’s Party (*Schweizerische Volkspartei*, SVP) became supported by more than 10 per cent of the electorate as a result of increasing disappointments of voters. After the turn of the millennium the Danish People’s Party (*Dansk Folkeparti*, DF) and the Flemish Interest (*Vlaams Blok/Belang*, VB) also crossed the 10 per cent threshold and many other radical-right wing parties emerged on the scene so the upward trend continued for the radical right-wing party family. The average vote share of radical-right wing parties in national elections increased from 8.0 per cent in the 1990s to 12.5 per cent by nowadays.

Some of these radical right parties even entered governments, either as cabinet members or as support parties of minority governments. Every radical right-wing party had to face the dilemma between vote maximising and office-seeking. Participating in a minority government always comes with price and these parties had to give up their radical profile, but on the other hand, they could more likely achieve their political goals. In Austria, Switzerland, Italy, Norway, Finland and the Netherlands radical right-wing parties took up the responsibilities that come with holding office, while the Danish People’s Party and the Party for Freedom (*Partij voor de Vrijheid*, PVV) agreed to support minority governments without formally joining them. In total these radical right-wing parties participated in multiple coalitions, leading to the formation of 17 governments between 1990 and 2015. The main aim of this volume is to assess whether the described developments have induced radical right-wing parties to move into the mainstream.

The book consists of two major parts and contains altogether thirteen chapters. The first part of the book sets the conceptual framework in general and presents the explanatory model for mainstreaming. Tjitske AKKERMAN, Sarah L. de LANGE and Matthijs ROODUIJN address in a general and comparative way the question whether and in what ways radical right-wing parties have moved into the mainstream by use of expert surveys, comparative manifesto data analyses and their own measurements. They assess how radical right-wing parties mellowed programmatic positions, broadened their scope of issues and toned down populist stances, or how mainstream right-wing parties became more radical.

The term ‘mainstream’ is widely used in political science, but definitions are generally lacking. According to the authors the term has at least two different meanings. On the one hand, it refers most often



to centre-left and centre-right parties like Christian democratic, conservative, liberal and social democratic parties. So it denotes parties that have a centrist position on the classic left-right scale and attribute importance to socio-economic issues. In this sense, the term 'mainstream parties' is often used in contrast to 'radical parties' and 'niche parties' (including radical right-wing populist parties, green parties, left-libertarian parties and regionalist parties that exploit programmatic niches). On the other hand, the term 'mainstream parties' is used to describe established parties that are loyal to the political system and oppose anti-establishment and anti-political movements, which seek reforms to overthrow the existing political system, and the norms and values on which it is based. In this meaning the term 'mainstream' can encompass programmatic and positional centrism, the high salience of socio-economic issues, and behaviour and stances that show commitment to the principles of liberal democracy and to the formal and informal rules of the political game.

Radical right-wing parties potentially face high costs when they join the mainstream so it is a big question how to combine a populist stance with office after entering government. Many of their voters become disillusioned once they are in office. Government participation can have a moderating effect on radical right-wing parties' stance because it is difficult to maintain an anti-establishment profile, as governing parties are in many ways part of the establishment. In a minority government there might be more opportunities to maintain an anti-establishment profile than for radical right-wing parties that are member of a majority government. Mainstreaming can be a short-lived phenomenon, however, when it is only the coalition forcing them into the mainstream. When the government participation terminates, very often these parties return to opposition, and radicalise again. Thus, the phenomenon of mainstreaming is often not the result of internal change and may, therefore, be ephemeral. On the other hand, a radical (niche party) profile, and anti-establishment attitudes tend to be barriers to entering office but they can be rewarding electorally. Therefore, a vote-seeking strategy may be a disincentive for radical right-wing parties to move into the mainstream.

In the second chapter authors operationalise the three dimensions of mainstreaming and describe the data that they used to measure them. In addition, they analyse changes in party scores in order to discern general patterns of mainstreaming. They study whether the programmatic profiles of radical right-wing parties have changed over time, and if so, whether these changes signal that these parties have become more like mainstream parties. AKKERMAN, LANGE and ROODUYN measured radicalness, anti-establishment character and 'niceness' of radical right

parties. The most commonly used methods for the estimation of party positions and their salience are the analysis of election manifestos (manifesto based approach) or the analysis of actors' (e.g. party members, voters, experts) perceptions of parties' positions and their salience. While manifesto-based approaches give us more reliable estimates because they rely on an extensive, predetermined coding scheme, perception-based approaches produce more valid estimates because they tap more easily into a general notion of left and right, and other party attitudes.

Overall there is no indication that radical right-wing parties tend to become less radical. Only the Danish DF has been in office continuously since the turn of the millennium and it is the party that has become most clearly mainstreamed. But it is the only example that fully confirms a correlation between experience in a coalition government and mainstreaming. In contrast, the Swiss SVP has also been continuously in office, but this party has become more radical over time. Nevertheless, the Swiss case can be an exception because the seven members of the Swiss government are elected by the federal parliament and there is no real president or prime minister, and the coalition has never been based on a common legislature programme, so parties enjoy a considerable level of autonomy with respect to their representatives in government.

As the authors measured, from the early 2000s radical right-wing parties have on average begun to pay more attention to socio-economic issues, which could be taken as a sign of mainstreaming. However, mainstream parties also experienced a period around the millennium when they more emphasised these issues than before, which makes the changes in the agenda of radical right-wing parties less distinct. Moreover, radical right-wing parties have started to pay more attention to sociocultural issues in this period, which means that they reinforced their niche party profile. Authors could clearly distinguish the radicalisation of the Dutch Pim Fortuyn List (*Lijst Pim Fortuyn*, LPF) and the Belgian VB, and the mainstreaming of the Austrian Alliance for the Future of Austria (*Bündnis Zukunft Österreich*, BZÖ) and the Dutch PVV. This means that the first two parties gradually devoted more attention to sociocultural issues and less to socio-economic ones, while the latter two moved into the opposite direction. The comparative analysis also suggests that mainstreaming could indeed be related to the question of participation in government and, therefore, to shifts from vote- to office-seeking. For example, the mainstreaming of the DF, FPÖ and PVV occurred prior to the elections in which these parties assumed office or in which they started to support a minority government. Inversely, the Belgian VB radicalised after a period of exclusion through the cordon sanitaire. At the same time many radical

right-wing parties began to re-radicalise during or after their government participation. All in all, these observations indicate that being in office may have a temporary mainstreaming effect.

In the third chapter Matthijs ROODUIJN investigates whether voters for radical right-wing parties and mainstream parties have become increasingly alike over time. Many researchers argue that those who vote for radical right-wing parties tend to have lower socio-economic status and they can be considered as the 'losers of modernity' because they have to compete with immigrants for low-skilled jobs. ROODUIJN displays a mechanism which can also be observed in Hungarian political contexts. He claims that when mainstream parties are radicalising their message and use populist discourses they intend to convince voters who previously supported radical right-wing parties. On the other hand, radicalisation could also result that the more moderate voters leave the party. To assess the attitudes and sociodemographic characteristics of voters for the radical right-wing ROODUIJN applied the European Social Survey (ESS). For every variable of interest, he pointed out how regression coefficients have changed over time. He expected that radical right-wing voters do not differ significantly from mainstream voters. In general, from a socio-economic point of view, radical right-wing voters have not become increasingly similar to mainstream voters because they tend to have lower educational levels, and they belong to lower socio-economic classes which status has not changed in the last decade. But when attitudes towards the European integration were measured, the author observed that radical right-wing voters were significantly different from mainstream voters in 2004, 2006 and 2008, but not in 2012. It means that the gap between the two groups decreased considerably and according to his analysis this convergence is mainly the result of the radicalisation of the mainstream voters and not the 'mainstreaming' of the radical right-wing voters. Overall, since the beginning of the millennium there has been a distinct but decreasing gap between voters of the mainstream parties and voters of the radical right-wing parties, which is mainly due to the radicalisation of mainstream voters, for radical voters have not mainstreamed at all.

The second section of the book is the largest with nine case studies about Western European countries. They focus on electorally successful radical right-wing parties with stable party organisations. Authors of this section selected only those parties that have already gained an electoral breakthrough and for whom national office is at least in the longer term a realistic option. Most parties, except for the Flemish Interest, the French National Front and the UK Independence Party (UKIP), also had the opportunity to enter national office. Many of them

renewed their ideological profile just like the Swiss SVP and the Austrian FPÖ. The Finnish Finns Party (*Perussuomalaiset*, PS) did not have to start from scratch, partly because it was formed as a successor party of an agrarian populist party in 1995. The others are new parties that emerged in the 1970s or later, but not all of them started as radical right-wing parties. These parties managed electoral breakthroughs at one point or another, and gathered sufficient electoral support and attention through media coverage to be able to put pressure on the policy agendas of the political competitors. They can also be characterised by a blackmail potential in the sense that they have been able to politicise issues like immigration, European integration or law and order issues, which forced other parties to amend their policy agendas.

Majority system is a hard challenge for FN and UKIP to gain access to parliament and these parties have great difficulties also in gaining coalition potential, as some of them, like the Belgian VB and the FN, have been subjected to a cordon sanitaire by other parties. This political isolation and stigmatisation by the mainstream parties resulted in the prioritisation of vote-maximisation because it is the most realistic option for radical right-wing parties. Yet, most of the other radical right-wing parties dealt with in the book (e.g. FrP, PS, PVV, SVP, FPÖ) have managed to gain coalition potential at a certain point. The Danish DF and the Swiss SVP participated more than once in national office, the others have only a one-time experience which noted that coalition potential can be gained but also can be lost again. The former two parties have got the longest history of (semi-)inclusion into national office and continuous blackmail and coalition potential, while FrP, PS, FPÖ, PVV have got incidental or recent (semi-)inclusion into national office with substantial blackmail potential.

Nowadays, FN, which is commonly considered a model for the Western European radical right, is at a political crossroads ahead of the 2017 presidential elections. (*Manuscript was submitted on March 30<sup>th</sup>, 2017, before the French presidential elections took place. – The editor.*) The filtered political rhetoric and de-demonisation has allowed the party to broaden its electoral support and tap into new social groups such as women or younger voters. Presidential polls promise Marine Le Pen new electoral heights in the 2017 elections and public opinion polls suggest that the FN's negative views of immigration, Islam or the EU are currently shared by a large proportion of the French. According to Gilles IVALDI changes of the electoral market include a growing attitudinal convergence between the conservative and the radical right poles of the French electorate, which augments the potential for future coalitions. Although the FN seems to be gradually normalising in French politics, nonetheless a majority of the French still regard it as an extremist party with little governmental credibility.

This kind of incredibility towards the radical right-wing appeared in Dutch elections held earlier this year. Led by Geert Wilders, PVV has been the focus of international attention ahead of the general elections in the Netherlands because events there bear some similarities to what happened in recent US and British elections. But it has not happened in the same way. Although Prime Minister Mark Rutte (People's Party for Freedom and Democracy, *Volkspartij voor Vrijheid en Democratie*, VVD) lost 8 from 41 seats and Geert WILDERS gained 5 to 15 seats, the resounding success of radical right failed this time. The map of election results shows that the base areas of PVV are near to the German border, mainly in the southern Limburg province and in the northern Drenthe.

To sum up, contributions to this volume revealed that Western European radical right-wing parties have been mainstreaming to relatively small extent on the dimension of radicalness, but there has been partial or substantial mainstreaming in the other dimensions such as niche profile, anti-establishment ideology and extreme right reputation. These parties have overall remained radical in their positions on issues related to their nationalist ideology (immigration, authoritarianism, European integration). The inclusion-moderation thesis is partially inadequate in the case of radical right-wing parties because electoral competition generally has not pressured these parties to moderate. Exceptions to these findings are UKIP and FN, where plurality or majority systems had a moderating effect. The case studies showed that mainstreaming can be a successful strategy if the choice for office-seeking is internally supported by the party elite and activists. On the other hand, a radical profile, a niche party profile, and anti-establishment attitude tend to be barrier to entering office but they can be rewarding in votes. Therefore, a vote-seeking strategy may be a disincentive for radical right-wing parties to move into the mainstream and lose the voters as a result of the moderate turn. They have to choose between the short-term vote-seeker and the long-term office-seeker strategies.

These questions are also relevant for the Hungarian *Jobbik* (and other parties in East Central Europe with similar radical right-wing platforms), which seems to have chosen the long-term office-seeking strategy, but the effects of this mainstreaming will come to light only in the 2018 elections.

ZOLTÁN BERTUS<sup>1</sup>

## Errata

Hungarian Geographical Bulletin (2017) Volume 66 Number 1. p. 3: Affiliation of authors Emilio GONZALEZ and Paula TRIVINO is University of Cordoba, Spain.

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