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„RYBY MIGRUJÚ, TAK MUSÍME AJ MY“: VZŤAH MEDZI MEDZINÁRODNOU A INTERNOU ENVIRONMENTÁLNOU MOBILITOU V SENEGALSKEJ RYBÁRSKEJ KOMUNITE

„THE FISH MIGRATE AND SO MUST WE“: THE RELATIONSHIP BETWEEN INTERNATIONAL AND INTERNAL ENVIRONMENTAL MOBILITY IN A SENEGALESE FISHING COMMUNITY

Caroline Zickgraf¹

V roku 2008 OSN označila Saint-Louis za „mesto najviac ohrozené rastúcou hladinou morí v celej Afrike.“ Ľudia z Guet Ndar, husto obývanej rybárskej štvrti, sa vyrovnávajú s environmentálnymi výzvami na dvoch frontoch. Prvým je erózia pobrežia, ktorá spolu so silnými búrkami zničila pobrežné obydľia. Druhým problémom je nadmerný rybolov a negatívny vplyv námornej dopravy. Z týchto dôvodov sa miestny rybolov stal menej vhodný pre živobytie. Článok skúma migráciu v Guet Ndar ako adaptačnú reakciu na environmentálne riziká a zmeny klímy: 1) zintenzívnením rybolovnej migrácii do Mauritánie a 2) výstavbou obydľí na pevnine, ďalej od mora. Hoci migráciou populácia reaguje na rozličné environmentálne problémy, identifikuje tento článok ich prepojenie. Okrem toho článok integruje túto migračnú tendenciu do sociálno-ekonomického kontextu a aplikuje mobilitu obyvateľstva a nadnárodné paradigmy na environmentálne ohrozené oblasti.² Kľúčové slová: klimatické zmeny, vnútorná migrácia, vonkajšia migrácia, Senegal

In 2008, the UN designated Saint-Louis “the city most threatened by rising sea levels in the whole of Africa”. The people of Guet Ndar, a densely populated fishing quarter, are coping with environmental challenges on two fronts: 1) coastal erosion and intensifying storms have destroyed sea-front homes, and, 2) overfishing and climate change’s maritime impacts are making local fishing less feasible as a livelihood strategy. Based on a local

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² This paper was written within the framework of the EDGE project, which received funding from the European Union’s Horizon 2020 Research and Innovation Program under the grant agreement no. 692413.

fieldwork, this paper examines Guet Ndarian migration as an adaptive response to environmental risks and more specifically climate change: 1) through the intensification of fishing migration to Mauritania, and 2) through home construction on the mainland away from the encroaching sea. Although these population movements respond to different environmental challenges, this paper identifies their enmeshment as the former facilitates the latter. Furthermore, it embeds these migratory dynamics in their socio-economic context and applies mobility and transnational paradigms to environmentally vulnerable areas.

Key words: climate change, internal migration, external migration, Senegal

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1 INTRODUCTION

One of the most frequently discussed human aspects of climate change is its potential for massive human displacement and what has been termed ‘climate refugees’ (McTegart et al. 1990; Myers 2002; Stern 2007). Estimates of the people at risk of displacement in the future, although widely debated and challenged in academic circles, proliferate in public and political discourse (Gemenne 2011). Often population movements in developing countries instigated to some degree by climate change and other forms of environmental transformations are framed in terms of victimization and/or as posing security threats to developed countries. Firstly, this belies the fact that much human mobility related to environmental degradation involves labor migration due to decreasing livelihood sustainability. Migration can therefore act as a means of adaptation to climate change through diversifying household livelihood strategies, decreasing pressure on local resources, or facilitating social remittances (Barnett & Webber 2010; Black et al. 2011), much like other forms of voluntary migration, even if numerous obstacles may impede it from reaching its full potential (McLeman & Smit 2006).

Secondly, much environmental degradation results in South-South mobility, rather than movements from the Global South to the Global North (Schellnhuber 2010). The waves of ‘climate refugees’ threatening European and other Western countries’ security portrayed in the media do not account for the fact that migration requires some degree of capital (human, social, and financial), especially for traversing long distances across national borders. Moreover, in regions such as West Africa, intra-regional mobility (environmental or otherwise) is much more statistically significant than intercontinental migration. Examining environmental mobility between South-South countries is therefore necessary to understand current migratory dynamics associated with areas affected by environmental changes as well as for projecting future scenarios of climate change-related mobility.

Thirdly, the importance of internal mobility within affected countries has not been adequately depicted in public discourse, even as disaster displacement is often

confined within the borders of the affected nation-state. While migration and refugee studies often focus on international impacts, such as the Nansen Initiative's focus on disaster-induced cross-border displacement, internal mobility responses to environmental degradation must equally be considered if one is to adequately understand the impact of environmental changes, slow-onset or sudden disasters, on population dynamics within a nation-state and to create appropriate policies including integrating environmental mobility within National Adaptation Plans for Action (NAPAs).

Lastly, focusing on either internal or international migratory responses to climate change and other forms of environmental degradation can obscure the relationships between the two – including how one may facilitate the other. Adaptation to climate change is often considered in terms of the benefits for migrants themselves and, to a lesser extent, for the families 'left behind' in the community of origin. This separation between the study of internal and international mobility is reflective of a gap in migration studies more generally, whose empirical and theoretical frameworks tend to only analyze one form of migration without simultaneous acknowledgment of the other (King & Skeldon 2010).

In recognition of these tendencies and gaps, the goals of the following paper are to examine international South-South labor movements related to environmental change in the highly mobile region of West Africa, and also to demonstrate how international migration impacts internal movements in the Saint-Louis region of Senegal. Rather than taking a victimization approach or strictly examining human displacement, this case study integrates international labor migration from Saint-Louis to Mauritania with the associated internal relocation of households within Saint-Louis. In doing so, it therefore calls for future theoretical and empirical frameworks that incorporate both international and internal mobility, assess the transnational impacts of environmental migration on the country of origin including their potential to facilitate local adaptation, and that do not attempt to isolate environmental changes from other drivers of migration (economic, social, demographic and political) (Black et al. 2011).

2 ENVIRONMENTAL CHANGES AS A DRIVER IN SENEGAL

West Africa has the highest number of mobile peoples of any region in the world. According to the bilateral migration matrix developed by the World Bank (2010a), over 58% of migration flows take place within the region. The importance of intra-regional migration in West Africa can be partly attributed to the establishment in the late 1970s of an area of free movement of people within the Economic Community of African States West (ECOWAS). Immigration in West African countries is mostly from neighboring countries (World Bank 2010b). In fact, it is the only region of Africa where intra-regional migration is greater than outward migration (34.5%, mainly to

Europe) (Ndiaye & Robin 2010). With some 8.4 million people, West Africa also has the largest stock of migrants of any sub-region in the world (UN DESA 2009). In addition to its high intra-regional mobility rates, West Africa is one of the most pertinent regions in which to examine the mobility impacts of climate change. From the Sahel to its coasts, it faces sea level rise, soil salinization, floods, drought, desertification, intensifying winds and heat waves (IPCC 2014; DARA 2013).

The country of Senegal is no exception: the Senegalese population has a long history of internal and international migration of varying sorts, especially marked by movement for labor and economic reasons (Diatta & Mbow 1999). Senegalese people have come to constitute significant migrant populations in a number of European countries, including Spain and Italy, as regular and irregular labor migrants, students, professionals, etc. However, many Senegalese mobility patterns are also intimately intertwined with transformations to the natural environment in various regions of the country, from drought and desertification to flooding and coastal erosion. While it is difficult if not impossible to neatly isolate the influence of slow-onset environmental changes from political, economic, social and demographic factors (Black et al. 2011), the expected changes to the physical environment due to climate change will certainly play an increasing role in shaping migratory dynamics in the decades to come. Senegal's vast experience with man-made and climate change-related environmental degradation and projected impacts in tandem with its history of inter-continental, intra-regional and internal migration makes it an ideal site for the study of environmental mobility patterns and their impacts on adaptation.

Environmental migration can be witnessed across Senegal, from displacement due to flooding and in migration patterns associated with slow-onset changes. The Senegalese coastline is threatened by climate change impacts of coastal erosion, sea level rise, flooding, soil salinization, and increasing storm surges (Salem 2013). These environmental changes threaten the livelihoods of the approximately 600,000 people directly or indirectly working in the Senegalese fishing industry (FAO 2008), augmenting and diversifying existing mobility patterns, yet fishing communities have received scant attention. Although many regions provide useful contexts of study, this case study specifically targets the city of Saint-Louis. The Saint-Louis region of Senegal is one of the most environmentally fragile in the country. In 2008, UN-Habitat designated the Saint-Louis the "the city most threatened by rising sea levels in the whole of Africa" (BBC 2008). The Langue de Barbarie on the northwest coast of the country faces concomitant sea level rise, coastal erosion, soil salinization, maritime storms and depletion of fish stocks and biodiversity (IPCC 2014). Additionally, the opening of a breach in 2003 had disastrous effects for rural villages in the southern part of the Langue de Barbarie, with many villages being destroyed. While entire rural communities were displaced because of this government initiative (Tacoli 2011),

which was amplified due to climate change, the northern urban portion of the island experiences the most directly visible impacts of climate change. Saint-Louis consists of three primary geographical sites, the western-most being home to its fishing industry and also the most threatened by concomitant economic, demographic and environmental pressures. In terms of the environment, the people of Guet Ndar, a busy, densely populated fishing quarter, are coping with environmental challenges on two fronts: on one hand, coastal erosion and storms have destroyed sea-front homes, displacing locals, and, on the other, overfishing and climate change's maritime impacts are making local artisanal fishing, the main source of income for the population, more difficult as a livelihood strategy. Compounding local vulnerability, the quarter is one of the most densely populated districts in all of West Africa, with more than 25,000 inhabitants occupying an area of 1 km long and 300 m wide according to regional statistics (CLUVA 2013; Ateliers 2010). These various stressors have resulted in both international and internal mobility out of Guet Ndar. As we shall see, some of these mobility patterns reflect and have intensified longstanding migration routes while others have been created in response to the local population's increasing vulnerability on a number of fronts.

Map 1: Map of Saint-Louis



Source: Google Earth

3 DATA AND METHODOLOGY

In order to investigate the relationship between international and internal mobility related to environmental drivers and particularly climate change (without dismissing the importance of other factors), a qualitative case study was performed over a five-week fieldwork during the summer of 2014 in and around Saint-Louis, Senegal.³ Data was collected in the L'Ange de Barbarie in both rural and urban locations, however the majority of fieldwork was concentrated in the urban fishing quarter of Guet Ndar and its neighboring quarters of Santhiaba and Goxum Bacc. These quarters were selected over rural environments in the southern part of the island after initial investigation based on their more visible struggles with climate change, rather than the aforementioned breach opening in 2003. The study targeted these areas not only for their location on the frontlines of coastal erosion, but also because of their economic reliance on natural resources, specifically the maritime environment. Along with an extensive literature review and document analysis of existing evidence on West African mobility, the primary tools of investigation were 40 qualitative, in-depth interviews⁴ as well as focus groups with fishermen (migrant and non-migrant) and women working in the local fishing industry. Additional interviews and consultations were conducted with researchers, NGO representatives and community and association leaders in Saint-Louis and with experts based in Dakar.⁵

Semi-structured interviews covered themes of local challenges (environmental or otherwise) facing the people of Guet Ndar and its surrounding neighborhoods, their causes and the coping strategies currently implemented by households; migration histories, intentions and motivations; and the relationships between mobile and immobile members of households. This qualitative data was then complemented with local geographers' assessments of environmental transformations and future threats.

4 INTERNATIONAL AND INTERNAL MOBILITY RESPONSES TO ENVIRONMENTAL DEGRADATION IN SENEGAL

Differentiated vulnerability and migratory responses. Although Guet Ndar accounts for a relatively small geographical portion of the city of Saint-Louis, and it has a homogenous economy in that nearly all residents rely directly and/or indirectly

³ The research leading to these results has received funding from the European Union Seventh Framework Programme FP7/2007-2013 under grant agreement no. 603864. For more on this project visit www.helixclimate.eu

⁴ Interviews with experts were conducted in French while interviews with local populations were conducted with the help of a local Wolof translator.

⁵ The USAID project COMFISH operating in Guet Ndar and the GERM laboratory of the University of Gaston-Berger led by Prof. Aly Tandian were vital in providing access and information in the conduct of fieldwork.

on the fishing sector, Guet Ndarians have differentiated vulnerability to the impacts of climate change and migration capacities. Several variables affected individual and household vulnerability levels, including proximity to the coast, age, gender, and socio-economic status. In turn, these factors contributed to different mobility responses.

In terms of geography, households located nearest to the ocean were clearly more vulnerable to storm surges and coastal erosion. Many of these homes have been either partially or entirely destroyed in the past few years. These respondents also perceived coastal erosion to be a more imminent threat in contrast to their neighbors in the central and eastern parts of the island, who were more concerned by the economic impacts of diminished local fish stocks than coastal erosion. These perceptions of vulnerability were crucial for migratory responses and intentions in that coastal homes, if not already in the process of relocating or building a second home elsewhere, felt an urgent need to move. One respondent's home – in which dozens of family members of multiple generations resided – had already been partially destroyed and thus reported losing sleep because of the waves crashing against the remaining portions of the family home (See Figure 1 below).

Figure 2: Partially destroyed home in Guet Ndar, Saint-Louis



Source: author's photo

Aside from the geographical location of households, age also affected vulnerability and migratory responses. As has been established elsewhere (Patwardhan et al. 2007), the elderly are often amongst the most vulnerable populations to

environmental changes because of their limited physical capacity to move for example, but also to directly support their households as wage-earners when confronted with the economic impacts of environmental degradation. Retired fishermen often depended exclusively on their sons' and wives' incomes (women's retirement occurred often much later in life than their men's), even if it was they who in fact own their pirogues (fishing boats). Even those older but active fishermen were limited in their ability to garner livelihoods from fishing. The physical capacity necessary to navigate rough seas and perform sea-based fishing over long periods meant that oceanic fishing was considered the task of the young. As fishermen aged, they transitioned to river fishing and eventually retiring by their early 50s. On the other hand, young boys started fishing locally around nine to ten years old, with some fishing internationally already by age 13 or 14.

Gender-wise, men were much more mobile than their female counterparts, leaving women more vulnerable to local impacts of climate change than their spouses and other male relatives. While it is indeed true that many women were immobile thanks to their positions as the managers of the family home and guardians to young children, many Guet Ndarian women are active in the local fishing sector. The two primary occupations of women are first as 'transformatrices'⁶ (the women who process fish by salting, curing or smoking) and as 'mareyeuses' (fish vendors in the local market). With coastal erosion exacerbating an already overcrowded district, women's local workplaces continue to shrink. Because of their land-based occupations in tandem with their household responsibilities, the women of Guet Ndar are highly vulnerable to the effects of climate change economically as well as residentially. Unlike their male fishermen counterparts, most do not see migration as a viable option to improve their livelihoods.⁷ Many women as well as the elderly thus rely on the remittances sent by their active male household members to constitute or supplement household income.

International migration. As the elderly and women were typically less able to leave Guet Ndar even for short periods to engage in labor migration, international migrants were almost exclusively active, young fishermen. The fishermen of Guet Ndar have long-been a highly mobile people, moving seasonally along the coasts of West Africa in pursuit of the best catches to maximize household income. Retired fishermen frequently reported having worked in Mauritania, Guinea-Bissau, Guinea, The Gambia, Sierra Leone and Liberia in addition to other parts of Senegal throughout their careers. Most fishermen however migrated seasonally and returned to Guet Ndar to fish locally for at least part of the year, taking the summer months off (during the

⁶ This profession is almost exclusively female.

⁷ There were a few reported instances of women migrating with their husbands to Mauritania to either manage large houses of Guet Ndarian migrants or to process fish.

reproductive season for fish). Labor migration from Guet Ndar has therefore always been intimately intertwined with the patterns and changes in West Africa's maritime environment. However, accelerated environmental degradation has transformed and exacerbated fishermen's migration patterns and extended their duration significantly, with very few active people living in Guet Ndar year-round. A decline in local fish stocks and a decrease in maritime bio-diversity around Saint-Louis has pushed artisanal fishermen farther out into the ocean (increasing the dangers with rougher seas), but especially northward up the Mauritanian coast. On one hand, the diminishment of local livelihood sustainability has been caused by overfishing in Senegalese waters, with local fishermen affected by the harmful practices of licensed and irregular foreign vessels that arrive from places such as the EU⁸ (LaFraniere 2008), Russia and Korea, whose trawling often indiscriminately picks up fish that are traditionally left in the waters, for example by catching fish before full maturity and therefore harming reproduction (Sall & Morand 2008). On the other hand, changes in maritime currents and temperatures have also affected available fish stocks and diversity, with attainable fish being of lower value such as sardines rather than the more lucrative White Grouper (*Thiof*) previously more widely available in Senegalese waters. Together, these environmental transformations make it less and less feasible for fishermen to stay and work in Guet Ndar even seasonally.

Relying on their sector's historical mobility, Guet Ndarian fishermen engage in international migration southward to Guinea-Bissau but the vastly dominant migration trajectory is northward to Mauritania, especially in the last ten years (Sall & Morand 2008). Mauritania, without a strong traditional fishing history of its own, has seen a swell in the sector, including the establishment of factories in Nouakchott and Nouadhibou. Without skilled national fishermen, it relies on its more experienced neighbors to the south to provide its labor force.⁹ The location of these factories in Nouakchott and Nouadibou makes these cities the primary destinations for Guet Ndarians and other Senegalese (See Map 2).

⁸ S. Lafranière, "Europe takes Africa's fish, and boatloads of migrants follow", *New York Times*, 14 January 2008.
http://www.nytimes.com/2008/01/14/world/africa/14fishing.html?pagewanted=all&_r=0

⁹ At least one Mauritanian is required on each fishing boat, but respondents reported that they were rarely involved in fishing and only present on the boat to satisfy authorities.

Map 2: Senegal-Mauritania map with key migration destinations



Source: Google Earth

The primary migration path amongst Guet Ndarians is to work with such Mauritanian factories through contract-based labor. Representatives from the factories are sent to recruit in fishing communities, especially Guet Ndar, relatively nearby and well known for its skilled fishermen. Local fishermen easily obtain contracts with the factories, which also provide upfront costs for equipment such as nets and motors – a great incentive for Guet Ndarians who struggle to obtain financial credit in Senegal for such equipment because of their unreliable income and high interest rates. However, as they are paid based on their catches, which cannot be guaranteed, many artisanal fishermen quickly become heavily indebted to the factories and then must work off their debt before seeing much, if any, profit and extending the duration of their migration often far beyond initial expectations.

The preferred migration pattern is in fact to obtain one of 300 licenses granted to Senegalese fishermen each year (recently increased to 400 in December 2014), who after a period of 15 days fishing for Mauritania are allowed to bring back their catches

to sell in Senegal.¹⁰ These licenses, however, are hard to come by, especially considering the high demand and boom in the number of Senegalese and other West African *pirogues* in recent decades (Sall and Morand 2008). Some fishermen who were unable to obtain one of the licenses cross into Mauritanian waters illegally and bring fish back to Guet Ndar. This migration, however, is a dangerous one, especially considering the history of conflict between the two countries (Parker 1991). Even fishermen granted licenses reported abuse and corruption among the fervent Mauritanian coast guard, but those caught without licenses reported being beaten, jailed, heavily fined and having their materials confiscated. These abuses caused some fishermen to stay in Guet Ndar, preferring to cut their household expenditures including food for their families rather than to risk their safety in Mauritania. However, most respondents and relatives of respondents, unable to support their large families locally, unable to get licenses for circular migration, and unwilling to risk life, limb and income to fish irregularly, saw long-term migration to Mauritania through contract labor as their best option. This type of migration, a rarity in the past, has become the new normal among Guet Ndarian men. While some men moved to Mauritania for three weeks to three months at a time (especially to the closer destination of Nouakchott), most respondents would travel to Nouakchott and Nouadhibou with their male relatives working the same pirogues or in pairs of pirogues, live in fishermen's camps or rented homes with dozens of other Guet Ndarians, work for factories for anywhere from ten to eleven months, and then return to their families only for Muslim holidays of Korité and Tabaski, when able. Despite the longer term nature of migration to Mauritania, Senegalese respondents and their kin in Guet Ndar did not report investing in homes in Mauritania. Although vacation was the only time many returned to their home city, migrants themselves conceived of their migration as temporary rather than permanent.

Internal migration. Environment-related human mobility amongst Guet Ndarians is not, however, limited to male-dominated international labor migration. At the same time that local livelihoods are threatened by fish stock degradation, the very land that comprises Guet Ndar is subjected to coastal erosion and storm surges. To the east, Guet Ndar is limited by the Senegal River, while to the west it borders the Atlantic Ocean. The oceanic coastline has progressively retreated over the past years, and now rubble where front-line homes once stood lines the shores. Some households in this area of Saint-Louis are partially protected by an old colonial French seawall, but further north, newer neighborhoods such as Goxum Bacc have no such protection, increasing their vulnerability to the impacts of climate change and man-made erosion. Without government assistance, families build makeshift barriers in front of their

¹⁰ Under the latest agreements, Senegalese crews are allowed to capture up to 50,000 tons each year. 12 tons must stay in Mauritania.

homes consisting of sand bags, netting, and remnants of destroyed structures. Although sand is no longer allowed to be taken for building projects elsewhere in the island because of the recognized exacerbation of erosion, without alternatives families living on the ‘front lines’ continue to quarry sand to stabilize their homes with sand bags despite the environmental harm (see Figure 2 below).

Figure 2: Sand bag barriers stabilized with old fish netting. Goxum Bacc, Saint-Louis, Senegal



Source: author's photo

However they perceived the imminence of the threat to their own households, nearly all respondents recognized that sooner or later the sea ‘would arrive’. As one woman reported, “One thing is certain, in forty or fifty years, the sea will meet the river and Guet Ndar will disappear”. Historically, however, leaving Guet Ndar permanently was out-of-the-question culturally. Most of Guet Ndar consists of traditional family homes that house multiple generations with up to 30 people living in one place. These ancestral homes are passed down and it is considered essential that they are maintained. Therefore, it was taboo for people to move out of Guet Ndar, even with the extreme and growing demographic pressures. Moreover, the seaside location of the neighborhood is practically and culturally significant. A community defined by its links to the sea, moving away from the ocean, storing boats out of sight, and living on the mainland seemed unfathomable to many in the past. As their cultural attachment to their land is strong, so too is their attachment to fishing. Few moved out of the fishing industry, especially after the 2008 crisis when fishermen reported that at least

in fishing their children would be able to eat. However, while attachments to land remain strong, the recognition of potential displacement has shifted local mentalities towards relocation. Without giving up their traditional homes, many respondents had either completed or begun the process of building another ‘back up’ home outside of Guet Ndar in response to both overcrowding (exacerbated by coastal erosion) and the encroaching sea. This relocation was often to Hydrobase, south of Guet Ndar on the Langue de Barbarie, or to neighborhoods on the mainland, a 10-minute drive to the ocean.¹¹

International labor migration provided livelihood diversification and income maximization in response to local fish stock depletion whereas internal relocation was motivated by coastal erosion, but the former was deeply connected to the latter. Some Guet Ndarians were able to fund their home-building projects outside of their neighborhood thanks to their higher levels of financial capital: those who, for example, had made significant profits as owners of local businesses, the proprietors of boat fleets who did not themselves need to migrate but rather benefited from the fishing of others or from their facilitation of Mauritanian recruitment contracts. Mauritanian recruiters, in fact, required local go-betweens to locate fishermen and negotiate their contracts because of their social connections. These middlemen were often trusted, older community members. Earning money from local businesses or from this practice gave them enough income to build their second homes outside of Guet Ndar. Income earned locally directly from fishing was rarely significant enough to fund building projects. International labor migration was therefore crucial because of its remittance potential to facilitate internal household relocation.

The ability to utilize remittances for adaptation to environmental transformations in the form of relocation, however, was far from homogenous. “All fishermen are not equal,” reported one person. In fact, it was those fishermen who already had significant capital that benefited the most from remittances. These men were the owners of the largest fishing pirogues (25m), typically two or more that fished in tandem. Some owned multiple ‘fishing teams’ consisting of their male relatives but also who hired non-kin to work their boats. The size of the pirogues and their fishing techniques allowed them to bring in much larger catches than their smaller counterparts. This, in turn, boosted their earnings, and therefore their remittances. These men were the first to leave Guet Ndar and their housing projects were completed in the shortest timeframe.

As the size of the boats decreased, so too did the remittance potential of migrants. For migrants with lower levels of capital, money sourced from Mauritanian migration was sent back to households in Guet Ndar, and depending on the sum, would

¹¹ Commuting experiences in Mauritania lessened the cultural aversion to commuting to the sea amongst migrant fishermen.

be saved until a plot could be purchased, after which homes were slowly built over a period of years through the accumulation of migrant remittances. Even still, this was only attainable for the middle- to upper- earning fishermen. Those with smaller boats and/or without ownership were often those with the lowest socio-economic status to begin with. Migration for these fishermen could still result in remittances to their families in Guet Ndar, but remittances were rarely enough to put towards home construction. The first priority for these men was to provide for the immediate security of their households – including their wives, children, as well as their parents and other extended kin – in the form of food, water, and other basic expenditures. Remittances were used to cope with the economic struggles of their families because of diminished returns in Guet Ndar, but were not able to cover the purchasing of plots, construction materials or labor costs despite a desire to move elsewhere. In addition to their limited profits (if any depending on their catches), incomes earned in Mauritania had to be exchanged into local currency in Senegal (CFA). Respondents complained that their low wages in Mauritania (some referring to it as a form of slave labor or indentured servitude by Mauritania factories, in which they could never escape their accumulated debts) were further diminished by the unfavorable exchange rate. Those fishermen able to obtain licenses to fish in Mauritania and then return with catches to Senegal, moreover, battled with corruption and abuse by the Mauritanian coast guard. Even as the ‘lucky few’ who were licensed, the fines and confiscation of fishing equipment could wipe out any profit made during circular migration.

In effect, while remittances gained through labor migration could increase the adaptation capacity of households in the country of origin by enabling internal mobility, this was only the case for the wealthiest of non-migrant and migrant households. Although some benefitted from the migration industry either as migrants or as non-migrant middlemen, for the most vulnerable Guet Ndarians migration could increase the resilience of local households to environmental degradation only as an immediate coping strategy but not as one that could create long-term protection from coastal erosion. Without government assistance to mitigate local effects of climate change or to protect migrants from abuses and exploitation, international migration in response to environmental and economic pressures will not facilitate internal mobility for the poorest and most vulnerable households but will rather benefit the wealthiest and least vulnerable.

5 CONCLUSIONS

Driven by concomitant residential destruction due to coastal erosion and economic strife caused by maritime resource degradation, urban fishermen and their families are highly vulnerable to the current impacts of climate change, which will only augment migratory pressures in the future. In order to protect these coastal

populations, firstly local and national governments must intervene to mitigate the effects of climate change insofar as possible and to help communities adapt, whether in situ or through internal and international mobility. As is, outside of makeshift barriers, departure is often seen as the only solution for those who have the capacities to do so. Environmental degradation is already significantly influencing both internal and international mobility patterns in Saint-Louis, especially among fishermen along the coast. However, Guet Ndarian households' vulnerability varies and so does their capacity for migration and resilience. Even within local populations affected by the same climatic threats, their vulnerability and likelihood to migrate is affected by their socio-economic status (with those having some form of financial and social capital more able to adapt locally and/or through migration), their dependence on natural resources, and their demographic characteristics (age, gender, etc.). Active fishermen are able (if not always willing because of precarious conditions) to move up the coast in order to sustain their livelihoods, while those who are retired, elderly, whose occupations are land-based and women are less able to enact migration as an adaptation strategy and therefore rely on household members' labor migration to provide or supplement household income.

But while most fishermen are able to embark on international labor migration in one form or another (whether with contracts, with licenses or irregularly), only the most successful fishermen are currently able to relocate their families within Senegal. These migrants, however, are already classed among the richest households in Guet Ndar in terms of human, social and economic capital. The case of Guet Ndarians therefore demonstrates the importance of integrating livelihood strategies and socio-economic status variations into vulnerability and resilience assessments and local, national and intra-regional adaptation plans, but also in examining the potential of migration to increase the adaptive capacities of households in the countries of origin. Policies and government initiatives must also make relocation available to the most vulnerable households, those in imminent danger of displacement, and those without the capital to move out of harm's way.

Lastly, the enmeshment of internal and international mobility patterns exposes the importance of addressing environment-related population movements holistically and integrating local and regional solutions. Climate change's effects on West African mobility cannot be isolated to a singular outcome. Environmental degradation, whether resulting from slow-onset changes or sudden shocks, affects populations' vulnerability and resilience capacities in complex manners. As demonstrated by empirical investigation, these mobility responses are highly interrelated, and therefore call for cooperation among different levels of government and other key stakeholders. Despite its challenges and differentiated outcomes, migration's *potential* to increase adaptive capacity (here exemplified by financial remittances but also in terms of social

remittances) should be considered as it benefits migrants themselves, their families in the communities of origin, but also as labor mobility may facilitate other types of environmental mobility.

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KOMPLEXNOSŤ ENVIRONMENTÁLNEJ MIGRÁCIE: PRÍPAD NAVRÁTENÝCH CHOVATEĽOV NÁRODNOSTI FULANI Z OBLASTI BOUNA Z POBREŽIA SLONOVINY DO PROVINIE NOUMBIEL V BURKINA FASO

THE COMPLEXITY OF ENVIRONMENTAL MIGRATION: CASE OF THE RETURNED BURKINABE FULANI BREEDERS FROM BOUNA DEPARTMENT IN IVORY COAST TO NOUMBIEL PROVINCE IN BURKINA FASO

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Problémom environmentálnej migrácie sa začína zaoberať rastúci počet akademikov i tvorcov politik na celom svete. Degradácia životného prostredia nie je zvyčajne jediným dôvodom, pre ktorý ľudia migrujú, ale ide ruka v ruku s ďalšími politickými a socioekonomickými faktormi. V marci 2016 sa vyostril konflikt medzi komunitami Lobi farmárov a Fulani pastierov z Burkina Faso, ktorí sa usídlili v regióne Bouna na severovýchode Pobrežia slonoviny po tom, čo opustili Burkina Faso počas veľkého sucha v 70. rokoch predošlého storočia. Tento konflikt, ktorý začal, ako sa zdá, banálne – pošliapaním Lobi farmárskych polí dobytkom Fulani pastierov, mal vážne dôsledky: obeť na životoch, viacero ranených, zničený majetok a ekonomické straty. Konflikt nakoniec viedol k presídleniu niekoľko tisíc ľudí do provincie Nombiel v Burkina Faso. Analýza príčin tohto masívneho presídlenia poukazuje na rastúci lokálny dopyt po prírodných zdrojoch a na manažment poľnohospodárskej pôdy, čo sa vyostrilo na pozadí pretrvávajúcich náčelníckych sporov medzi etnickými skupinami v regióne Bouna. Nárast rozsahu poľnohospodárskej pôdy viedol k obmedzeniu pastvín a degradácii lesných porastov, čím boli poškodené záujmy pastierov. I keď

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konflikty medzi pastiermi a poľnohospodármi existovali v okolí po dlhé roky, toto bol prvý prípad, ktorý vyeskaloval až k vysídleniu obyvateľstva. I keď možno presídlené obyvateľstvo považovať za návratilcov do svojej pôvodnej krajiny, roky strávené v Pobreží slonoviny mali za následok stratu ekonomických i sociálnych väzieb v ich pôvodnej krajine. Ich situácia vyústila do stavu humanitárnej krízy s obmedzeným prístupom k podpore OSN, keďže status presídleného obyvateľstva nebolo možné kvalifikovať ako utečenecký. Podpora bola poskytnutá lokálnou vládou a mimovládnyimi organizáciami v Burkina Faso.⁵

Kľúčové slova: environmentálna migrácia, sucho, poľnohospodárska pôda, interkomunálny konflikt, návratilci, reintegrácia

The issue of environmental migration starts to involve growing number of scholars and policymakers all around the world. Conventionally, environmental degradation is not a sole reason that drives people to move but rather it goes hand-in-hand with other political and socio-economic factors. In March 2016, an inter-communal conflict arose between Lobi farmers and Burkinabe Fulani herders who had settled in Bouna department in the north-east of Ivory Coast after leaving Burkina Faso following the great drought in 1970s. This conflict that appears to be born along a banal fact of pillaging the Lobi farmers' fields by the cattle of Burkinabe Fulani herders had serious consequences: numerous injuries, several casualties, capital destruction, and economic losses. Eventually, the conflict led to displacement of few thousand people to the province of Nounbiel in Burkina Faso. The analysis of the roots of this massive displacement points to the growing local demand for natural resources and to the management of agricultural lands what got aggravated along social issues of chieftaincy among different ethnic groups in the Bouna area. The increase in the area of agricultural land has led to shrinkages in the area of rangelands and the degradation of forest resources, thus reducing pasture acreage of cattle herds. Although clashes between stockbreeders and agriculturists had been taking place in the neighbourhood for many years, the situation appeared to escalate up to the point of prompting people to move for the first time. Even though the displaced people in this case are considered returnees to their home country, the years of staying in Ivory Coast destroyed almost all social and economic linkages in their home country. The situation led to humanitarian crisis marked by limited access to UN support since the status of returnees did not qualify for refugee. The support was provided by local Burkinabe government and NGOs.

Key words: environmental migration, drought, agricultural land, intercommunal conflict, returnees, reintegration

JEL: Q54, F22

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1 CONTEXT NAD JUSTIFICATION

One in seven people in the world is mobile (IOM, 2016) but this mobility takes several forms depending on the causes related to these mobilities or the destination of migrants. People may decide to change location either voluntarily for reasons such as studies, tourism, research, work assignment or retirement. They can be however forced to flee the area following wars, social conflicts, natural and/or technological disasters, large-scale development projects, or gradually deteriorating environment. In the Sahel area, people have been facing the unfavourable effects of desertification, continuous rainfall shortages and increasing anthropogenic demand for natural resources for over decades now. The drought of the 1970s and 1980s in West Africa (De Longueville et al., 2016; Ozer & Perrin, 2014; Ozer et al., 2017; Spinoni et al., 2013) forced large number of residents to relocate to the areas least affected by the drought (Gemenne et al., 2017). In Burkina Faso, massive displacement of people occurred not only within the country – searching more fertile agricultural areas, but also outside the country towards neighbouring coastal countries such as Côte d'Ivoire, Ghana, Togo, and Benin.

Although most coastal countries in West Africa do have a pre-record of hosting environmental migrants, the case of Burkinabè relocated to Ivory Coast in 2016 was accentuated by the economic growth of Ivory Coast as well as the productivity of agricultural land with respect to cash crops (Blion & Bredeloup, 1997). Large role apparently was played also by local policies towards migrants dated way back to the 1970s. Sub-regional agreements on the free movement of people, the right of residence and settlement amongst the countries of the Economic Community of West African States (1979) and the West African Economic and Monetary Union (1994) as well as the bilateral agreement between the Republic of Upper Volta (former name of Burkina Faso) and the Convention on the Conditions of Employment and Employment of Voltaic Workers in Ivory Coast enforced in the 1960s laid the foundations for Burkinabe to facilitate the relocation to Côte d'Ivoire. The years of relocations materialised in growing presence of Burkinabè in the economic life of Côte d'Ivoire, particularly in the activities of coffee and cocoa plantations, but also in livestock farming across the Peule community.

A number of Burkinabè Fulani settled in 1973 in the town of Bouna, in the Bounkani region in north-eastern Côte d'Ivoire. The Fulani community was made up of herders whose way of life requires to have access to natural resources, namely land and water. Clearly, indigenous communities of Ivory Coast were less in favour to share their riches. Grazing and agricultural land has soon become subject to ethnic disputes which cumulated significantly over the almost three decades (Yoman et al., 2016). In March 2016, an inter-communal conflict between the Fulani and indigenous population escalated leading to a massive displacement of 2194 people of Fulani community in Ivory Coast to the province of Nounbiel in Burkina Faso (SP / CONASUR, 2016).

This article attempts to explore the direct and indirect causes of these massive displacements of Burkinabe Fulani, to record the dynamics of reception, assistance, integration and community restoration back in the territory of Burkina Faso. The structure of the paper is as follows: The following section describes data and methods employed in the paper. The third section explores causes standing behind the case study, the fourth section follows the reception of relocated Burkinabe. Sections five through seven point to the issues related to integration and community restoration in the Nounbiel province. The concluding section eight summarizes key findings of the paper.

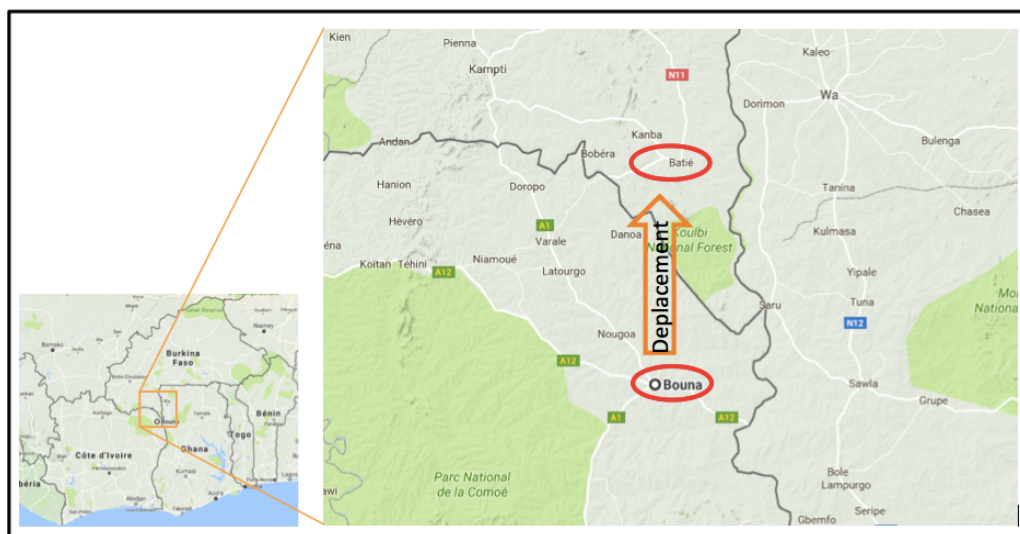
2 DATA AND METHODS

Data on the identity of relocated individuals used in this paper comes from various databanks in Burkina Faso and Côte d'Ivoire, reports released by the Government of Burkina Faso or by relevant humanitarian non-governmental organizations (NGOs), as well as from primary data collections as part of the fieldwork.

The paper relates to the information collected through individual and semi-structured interviews with 12 Fulani households that returned to Burkina Faso and settled in Nounbiel province in 2016. The interviews were set up to understand the causes of their displacements as well as their post-relocation situation, foremost the support they received by local Burkinabe authorities. The responses were matched against print and online articles which were scouted through in order to check the external validity of the data collected. In addition, interviews with humanitarian organizations that had been involved in the management of these relocated people allowed the data to be cross-referenced with the information collected in the press and through the fieldwork. Many interviews were conducted via phone or skype what served the cost efficiency claims.

Ivory Coast and Burkina Faso are two neighbouring countries in West Africa. Our migration study tracks the flow of people from Bouna, a town located on the Ivorian territory where the intercommunal conflict between Peuls and Lobi up to the communes of Batié, Kpouéré and Boussoukoulou located approximately 155 km up north. The communes are part of the Burkina Faso territory however geographically are half-way between Ivory Coast and Ghana territory (Figure 1). The people in question are entirely former Burkinabe Fulani herders who once settled in Ivory Coast and engaged in the inter-community conflict.

Figure 1: Origins and destination of the displaced Fulani breeders.



Source: author's, Google Maps

Both the origins and destination locations of the commuting Fulani breeders in this case share many characteristics. The Bouna neighbourhood in Ivory Coast holds great potential for extensive breeding. The climate there is close to that of Sudan and more importantly, to that of Nounbiel province which Fulani breeders originally came from in the 1970s and thus were well-accustomed to. Both locations – Batié as well as Bouna – share the same market structure: the most traded commodities come from agricultural sector with livestock having the second largest market share. Both locations are privileged to have large natural forest reserves at proximity. The Comoé National Park in Ivory Coast is close to the starting point (Bouna) and the Koulbi National Forest in Burkina Faso is close to the host community (Nounbiel) of the displaced herders. These parks are classified as natural reserves however respective authorities fall short to protect them and stop communities living nearby from exploiting them to their personal needs. The climate and the biomass potential of the Bouna area appear to be what attracted Sahelian breeders in the first place.

3 ANALYSIS OF THE CAUSES OF DISPLACEMENT OF BURINABE FULANI LIVING IN IVORY COAST TO BURKINA FASO

After severe droughts in 1973, Fulani communities, mostly transhumant pastoralists, settled in the town of Bouna in Côte d'Ivoire. The location is long considered to provide great conditions for breeding livestock. According to several press sources (Lefaso.net, 2016; Koaci.com, 2016), the moving Fulani breeders own some of the livestock they raise but also take care of the livestock of the Koulango and

Malinké populations who have taken up the fight for the Fulani in this intercommunal conflict. On the other hand, the Lobi "dozo" - who are for the most part hunters - lent their support to their Lobi community of farmers living in the Bouna area. The clashes on March 24, 2016 left 33 dead and 52 wounded (connectionivoirienne.net, 2016). Press reported also cases of kidnapping, stores pillaged and burnt down, business crippled, fields ransacked, homes vandalized, destroyed and looted (Lefaso.net, 2016). Figure 2 shows the pitiful state of a village burnt down in the conflict. Various sources reported an estimate on the displaced of at least 2000 up to 3000 people. Officially, the Government of Burkina Faso reported to host 2194 displaced Fulani breeders.

Figure 2: Village of Bouna Department set on fire during inter-communal conflict



Source: Lefaso.net, 2016

Since their establishment within the Ivorian territory, the increase in cultivable areas, deforestation, and bush fires led to a decrease in pasture areas for animals of Fulani herders who became sedentary and settled in a very dispersed way in the area of Bouna. Lobi farmers have loosely established fields for cash and food crops, even on cattle tracks and grazing areas. The increase in livestock inventory in Ivory Coast reported at that time of 3% on average for cattle and 7% for small ruminants (Kouablé Bie & Tré Bi, 2014) together with faltering vigilance in surveillance over Fulani herders and their pasturing flocks frequently led to looting the fields of Lobi growers. The disputes were often required to be settled by local authorities. The scarcity of resources however continued to fuel the disputes making their settlements more troublesome. The originally individual disputes over insufficient arable and pasture land and land security reached eventually a stage of an intercommunal conflict. According to a study published by the online press (Africa1.com, 2016), only 4% of agricultural land is properly entered and registered with a land title in Ivory Coast and

yet agriculture is the backbone of the country's economy. According to World Bank data, currently 64.8% of the Ivorian land is agricultural providing employment for two thirds of the population which get 55% of their national income from exports of cocoa and coffee. The deep deficit of securing agricultural land, accentuated by the land scarcity led to most severe clashes ending in killings and consecutive land grabbing.

The search for new arable land led farmers to destroy the forests for their extensive agriculture. In addition, accelerated urbanization led to continued deforestation of classified forests. In Côte d'Ivoire, this continuous deforestation has reduced the forest by 80% (Chatelain et al., 2004). These human actions on forests have apparently massive impact on the environmental targets of the country as well as local quality of life. With such significant shrinkage in forest area the capacity to regulate air polluting carbon dioxide is deteriorated and local communities face changes in their local climate in the long run. The environmental vulnerability faced by the communities of Bouna is one of the root causes of this intercommunity conflict between the Lobi and Fulani communities.

It is noteworthy that this environmental vulnerability comes however coupled with social tensions that had been present between communities already for a long time. According to the monograph of Bouna (AIP, 2012), the structure of the settlement covers three major indigenous ethnic groups: the Koulango, the Malinké and the Lobi. The Koulango's ancestors are the Lochons who had first occupied the region for 2000 years. The Koulango are therefore the first indigenous people in the area and remain the customary landowners of the Bouna Department. They are royalty holders and exclusive landowners. The Koulango were animists but gradually converted to Islam under the influence of the Malinke culture (Dioula). Malinké, meanwhile, arrived to the Bouna area in several successive waves from various directions. Most of them are shopkeepers and live mainly in urban areas in the most populated districts of Bouna. They live in perfect agreement with the Koulango.

The Lobi are the last community having arrived to Bouna area also in several successive waves. Demographically, the Lobi represent the largest and the most important ethnic group in terms of headcount within the Bouna department. They are characterized by their high residential mobility and have settled in Côte d'Ivoire, Ghana and Burkina Faso. The Lobi are farmers but also stockbreeders. Cohabitation with the first two ethnic groups is in general peaceful even though disputes over the land and its employment come usually as no surprise. The Lobi have a very strong workforce to quickly expand their cultivable area for yam and cash crops. This displeases the Koulango community, which in return plants cashew nuts on agricultural land in order to limit the expansion of the Lobi. The accumulation of the disputes aggravated the social tensions over the years and made people even more protective of the land (Chaleard, 1998).

In addition to these three indigenous ethnic groups, the area became more culturally diverse with incoming foreign communities such as that of Fulani breeders coming from Burkina Faso in the 1970s. Being chiefs of the land, the Koulango community authorized the installation of the Peuls in the Bouna area. The Koulango were thus considered guardians of the Peuls.

Moreover, in order to better control the lands, the Koulango installed their power over the land in the area by securing their chieftaincy in the villages that were resided mostly by Lobi farmers. This foundation of power clearly did not make the Lobi happy. Being known for their individualistic nature the Lobi decided to organize themselves and to get representation of their community in chieftaincy. According to the Office of the High Commissioner for Refugees in Ivory Coast (Le Monde, 2016), the chieftaincy conflict between the Koulango and the Lobi is very old. The Lobi, attacking the Fulani, thus might do so only to take their revenge on the Koulango. This old leadership conflict fuelled the atrocity and aggravated this inter-communal conflict between Lobi and Fulani. Traditional chieftaincy is also a factor that explains the support links that occurred during the conflict. This inter-communal conflict, born of a commonplace act of looting Lobi farmers' fields by Burkinabe Fulani animals, is a combination of immediate causes (farmer-rancher confrontation, inter-community conflict) and older ongoing and deeper causes (deforestation, lack of grazing space, anarchic soil occupation for crops, conflict of chieftaincies, interweaving of economic interests between the Peuls who raise some of the herds of Malinke and Koulango cattle). In addition, it seems appropriate to highlight that the conflict zone was for several months confronted with extremely high water stress as the water scarcity in the Bouna region reached a critical level in December 2015 (infoduzanzan.com, 2016). It is likely that this missing access to water put additional stress and aggravation of the conflict.

Displaced Burkinabè Fulani from Bouna are the product of a slow environmental catastrophe combined with social, cultural, climatic and economic factors.

4 MEASURES TAKEN BY THE BURKINA AUTHORITIES TO TAKE CARE OF THE DISPLACED IN BOUNA

Already with the outbreak of violence during the intercommunal conflict, more than 2,000 people living in villages around the city of Bouna moved to seek refuge at the prefect of Bouna and in the United Nations mission camps based in Bouna (france24.com, 2016). The Ivorian government dispatched 500 troops of Republican forces in Côte d'Ivoire, 250 gendarmes and 140 policemen to maintain order and contain the conflict (abidjan.net, 2016). These security measures helped to calm the situation down a bit allowing thus some Fulani to flee the conflict area towards

Burkina Faso. According to the testimonies received on the ground, some Peuls decided to stay and claimed lack of financial means and/or physical capacity to move. They became hostages of the conflict in Bouna and known to literature as a case of trapped population.

The communes of Kpouéré, Batié and Boussoukoula of Nounbiel province served as host communities for the displaced with their animals. The displaced got settled in the reception camps (Figure 3) or in the host families. According to the Joint Evaluation Report of the Government and Humanitarian NGOs (SP / CONASUR, 2016), among 2194 displaced authorities registered 1,074 children and 511 women with 14,432 cattle and 634 small ruminants. The report described the "displaced" as "returned". Breeders did not move with all their livestock. The report noted that 13,737 cattle and 378 small ruminants of Peul herders stayed in Ivory Coast. On average, one person settled in a camp with 7 animals. The animals, in addition to already existing animals in the host community, increase the demand for water and pasture at least. Both these resources around the host centres in Ivory Coast were under heavy pressure already – from indigenous peoples. That propels our fears that the resource-driven conflict between farmers and ranchers will breed again. The conflict in Burkina Faso might have got relieved through Peuls moving out but in fact, the risk of conflict might have only shifted cross-border. The solution lies within institutions that would mitigate the risk of conflict.

The Burkinabè Fulani who fled inter-communal conflict in Ivory Coast are welcome by the Burkinabe government. The Permanent Secretariat of the National Emergency Relief and Rehabilitation Council (SP / CONASUR, 2016) is the national body in charge of coordinating social and humanitarian interventions in the event of disasters, including rehabilitation, training of actors, prevention and management of disasters and humanitarian crises, reception, assistance and socio-economic reintegration of displaced populations. This body has provided assistance to the displaced by offering shelter, living and sleeping arrangements (netafrique.net, 2016). The body set up a local crisis unit to better coordinate emergency and humanitarian actions in the assistance and care of Bouna returnees.

Figure 2: Reception camp for the returnees from Bouna to the Nounbiel province



Source: author's

Joint missions between the SP / CONASUR, the National Commission for Refugees (CONAREF) and external bodies such as International Organization for Migration (IOM), the Office of the United Nations High Commissioner for Refugees (UNHCR), the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), the United Nations Children's Fund (UNICEF), the United Nations Food and Agriculture Organization (FAO) and the United Nations NGO Oxfam made it possible to assess and address the needs of the displaced, foremost in terms of safety, health and nutrition, water and sanitation, food assistance, psychological assistance, identification and registration of displaced persons. Each organization is in charge of a component according to their area of expertise. The government and the Red Cross have regularly provided food assistance to those returned to their home site including those who are in host families. In addition, the NGO Oxfam has invested heavily in the field of water and sanitation through the construction of latrines, the supply of aquatabs tablets to make drinking water suitable for human consumption, the rehabilitation of boreholes and the fountains for the welfare of those returned.

There was also a project of emergency assistance in pastoralism that helped to advocate with the authorities of Burkina Faso and Ivory Coast for the return of agro pastoralists into the region of their departure in order to collect their possessions left behind in a hurry, especially the animals left in Ivory Coast and to facilitate their reintegration in Burkina Faso. Breeding is the primary source of income of the returnees and thus particular attention was given to health of their livestock, they received proper vaccination and examination in order to prevent diseases or isolate contagious animals.

The authorities took actions to integrate also the incoming children. They worked together to make parents aware of enrolling their children into the schools near host sites. All returned children were registered and started to attend classes in Burkina Faso. An issue emerged with pre-school children. Since there are no kindergartens or pre-school facilities close to reception sites for children between 3 and 5 years, Red Cross volunteers initiated an open-air class commonly known as "bissongon" for preschool kids. According to Oxfam (2016), more than 65 children in April 2016 attended these arranged classes before they got offered new teaching conditions.

Figure 4: Outdoor preschool class (bissongon) at the Batié site in April 2016



Source: Oxfam, 2016

In addition, the governments of Ivory Coast and Burkina Faso cooperated in terms of information-sharing as well as diplomacy to better manage these problems and to contain the distortions of the stakes of the inter-communal conflict or any shift of the problem on the political map. It should be recalled that the two countries experienced political crises and violence – Ivory Coast between 2002 and 2012, and Burkina Faso in 2014. These crises cooled the relations between the countries.

On the other hand, the management of this humanitarian crisis, the assistance and the care for the returnees was provided smoothly in the light of the constraints related to the mandates of some international organizations on the status granted to these returned Fulani from Burkina Faso and the state of mentality of Nounbiel populations similar to that of Bouna.

5 SOME PROBLEMS RELATED TO THE REINTEGRATION AND RECOVERY OF RETURNEES IN THE PROVINCE OF NOUMBIEL IN BURKINA FASO

The mobilization of the Burkina Faso government for the reception of Bouna returnees and the actions of some humanitarian NGOs on the emergency interventions went without any delays in the first hours of the arrival of these returnees but over time the management encountered difficulties, especially in relation to their reintegration in the province of Nounbiel.

The need to treat the reintegration of displaced populations received in accordance with the principles of the art of living together, equity and equality vis-à-vis local people is very important. Such treatment is solely potent to mitigate any social tensions. Local people living in conditions almost similar to those of the displaced will never accept that a foreign community is better treated than they are. Indeed, returnees wishing to settle in the province of Nounbiel have complained to the government about the need to grant them land to park their animals in a context when it was not appropriate to grant them land. In fact, in 2011, the government took a measure to suspend any land allocation process by a decree⁶ in order to better reorganize this sector of activity through an integrated planning process. On the other hand, the local populations have a strong need for land and are waiting for the lifting of the 2011 decree. Thus, the early allocation of land to returnees would lead directly to social tensions in the province of Nounbiel.

Pressure on existing farmland and natural resources in the province will be accentuated by the inclusion of these returnees. Field surveys show that Aboriginal people in this province are reluctant to live too long with these returnees in Nounbiel province. This province, already 70% occupied by forests classified according to the regional direction on animal resources of the South-West, risks overexploitation of grazing and increase of land disputes. Clashes between pastoralists and farmers may again emerge in the future and put Fulani people, who had previously settled in Bouna, in perpetual displacement in search of pasture for their animals. These returnees may be forced to migrate again in the future. Through the lens of the environmental problems that West Africa is experiencing, it appears likely that these migrations will become a strategy of continuous adaptation.

The protection of these returnees is under sole responsibility of the Burkinabe government. The returnees, although they were forced out of the area of their departure by multiple reasons fall under no legal refugee status and so are not entitled for any international protection. They are considered citizens of Burkina Faso who are back in their country but still benefit from state support to facilitate their reintegration. This

⁶ Decree No. 2011-0303/PRES/PM/MHU/MATDS/MEF of 28th May 2011 marked suspension of operations of allotment or land restructurations in Burkina Faso.

limits the work of some international organizations such as UNHCR and IOM to take emergency action in the situation.

Returned Fulani who settled in Ivory Coast no longer have social ties with their country of origin, Burkina Faso. They find themselves strangers in their own country. Their forced and unpredictable return places them in a vulnerable and difficult situation with respect to their country of origin. They have invested heavily in their life in Ivory Coast and have hardly invested in their home country. Having no strong family ties and goods in their country of origin, the reintegration of these displaced Fulani has become complex for the government of Burkina Faso.

6 PROTECTION OF PEOPLE FORCIBLY RETURNED TO THEIR OWN COUNTRY

The Burkinabe Fulani fleeing the inter-communal conflict in Ivory Coast find themselves in a situation leading them to their own country. Their return creates a humanitarian crisis because they no longer have a social attachment and are completely uprooted in their own country after a long period spent outside their country. The migration issue has brought out different types of people finding themselves in a situation of migration. The 1951 Geneva Convention relating to the Status of Refugees stipulates that a refugee must be outside his country of origin and must have a well-founded fear of persecution on account of his race, nationality, religion, belonging to a particular social group or holding certain political opinion. However, the return of a refugee to his country of origin must be organized peacefully and not forced. In view of this definition of refugees, Burkinabe Fulani returnees cannot be considered as refugees in their own country and thus cannot be protected by UNHCR. Only cases of persons without identification papers who are at risk of becoming stateless can benefit from the protection and assistance of UNHCR.

Moreover, these returnees cannot be considered internally displaced persons either because they crossed the border to find themselves in their own country. The Burkinabe Fulani returnees were at destination properly screened and cleared as Burkinabe nationals and thus can benefit solely from the protection of their country which must guarantee them the right to a dignified life and protection against violence and abuse. Burkina Faso, having ratified most of the regional and international rights instruments, has invested heavily in protecting these returnees. Non-governmental organizations, on the other hand, provide support to manage the humanitarian crisis that this displacement has caused.

7 THE PROSPECTS OF REINTEGRATION AND RECOVERY OF RETURNEES IN THEIR COUNTRY OF ORIGIN – BURKINA FASO

The returnees wish to be settled in the province of Nounbiel. The problem is that Nounbiel is not the province they left back in the 1970s heading for Ivory Coast. The desire for the settlement of this Fulani community with their animals leads the

government of Burkina Faso to find a solution for the integration of these returnees in the province of Nounbiel. Are indigeneous people in this province willing to accept their integration knowing that the acceptance will put their own demand for natural resources at risk? "It is obvious that cohabitation will not be smooth in the future" (confirms a resident of the province). The government has a duty to deal with this issue of environmental migration in a definitive way by the installation and reintegration of nationals who have returned to their own country to leave no room for any random solution, as it is evident in the management of environmentally displaced people worldwide.

It is essential that local authorities, local chieftaincies, as well as local populations are all involved in reaching the definitive resolution of the integration of displaced populations hosted in their own country. While analysing this migratory phenomenon, it appears that after a long time spent outside its initial environment, migrants have lost their roots and other dynamics have been created that do not facilitate their integration. They feel like they're new to their own country.

In addition, some returnees and most of the children of these returnees who do not have identification papers need to undergo a screening survey to clearly identify their nationality. A special procedure for the preparation of civil status records needs to be managed by the government of Burkina Faso to reduce the risks of statelessness. Provision of documents is essential to avoid statelessness and ensure both the future of these returnees and their successful reintegration.

In August 2016, the communication of SP / CONASUR, through the Departmental Emergency Relief and Rehabilitation Council (CODESUR), shows the situation of the returnees who remained on the reception sites waiting for their planned or voluntary outings: 702 people including 117 men, 155 women and 430 children still living on the sites. At the time of our field surveys in May 2017, only a few dozen households remained on the host sites. Most came out of these sites to join the host community. The government is continuing its efforts to facilitate the reintegration of these returnees in the province of Nounbiel and will invest in a close monitoring of these populations in the host community to prevent any possible inconvenience of cohabitation and ensure the effective application and coherent regulatory texts relating to pastoralism, forest preservation, rural land tenure and conflict prevention between farmers and pastoralists.

8 CONCLUSIONS

Environmental migration is nowadays complicated by various social, cultural and economic phenomena. The Burkinabe Fulani have never expressed the need, nor the wish to migrate, but have been forced to migrate following a combination of essentially environmental and climat-related factors. The scarcity of cultivable land led

to land grabbing. As demographics increase, natural resources appear under increasing pressure. Opting for migration as an adaptation strategy to land scarcity for both agriculture and grazing is one option that may fade in the future if all farmlands experience the same human pressures; which is a likely scenario to come. It is remarkable today that the main factor of forest degradation and deforestation is human action. In developing countries, especially in tropical climate areas, large-scale commercial agriculture and local subsistence agriculture contribute nearly 73% to deforestation. According to the FAO (2016) report on the state of the world's forests in 2016, between the years 2000 and 2010, the net loss of tropical forests is 7 million hectares a year against a net gain of arable land 6 million hectares a year. All forests in West Africa are under stress. In the absence of strong enforcement of forest protection regulations and the commitment of every people to preserve and protect forests, West African forests will disappear and the migration strategy as an adaptation measure to deforestation and forest degradation could result in forced sedentarism of pastoralists practicing extensive livestock farming. As long as the land is available ...

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AKTUÁLNE OTÁZKY GLOBÁLNEJ EKONOMIKY CURRENT ISSUES OF GLOBAL ECONOMY

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Európska únia je na križovatke ďalšieho vývoja. Musí uskutočniť vnútorné reformy a zároveň reagovať na vonkajšie geopolitické zmeny. Kľúčovými faktormi budú: Priemysel 4.0, migračná kríza, virtualizácia finančného sektora a obranné stratégie. Ďalšie významné faktory zahŕňajú zmenu prírodných podmienok a udržateľnosť sociálneho modelu. Kumulácia vývoja, koncentrácia v čase a dynamika zmien vyžadujú nové prístupy a riešenia, ktoré musia vychádzať z komplexnosti, interdisciplinarít a vzájomných súvislostí.²

Kľúčové slová: reformy EÚ, prírodné podmienky, technická revolúcia, finančný sektor

The European Union is at the crossroad of future development. It must implement internal reforms and at the same time react to external geopolitical changes. The key elements will be: Industry 4.0, migration crisis, virtualisation of financial sector and defence strategies. Other important factors include environmental changes and sustainability of the social model. Accumulation of development, time concentration and dynamic changes require new approaches and solutions. These solutions need to mirror complexity, interdisciplinarity and interdependency.

Key words: EU reforms, environmental changes, technical revolution, financial sector

JEL: F63, F68

1 INTRODUCTION

It is believed that the state of global economy is improving and it is entering into a more positive state. Stock market is increasing and even Dow Jones Index reached the value of more than 22,000, that is more than before the crisis in 2008.

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At the same time, economic growth of individual countries has been recorded at the level of few per cent (although the growth was slow) and it seems that the world economy has overcome the crisis and its impacts from the year 2008.

Nevertheless, as regards mortgage trends we can notice significant signals of a new mortgage bubble; and in the field of company shares it seems that the real value of shares is substantially lower than the value linked to the growth of capital and share markets. Today it is possible to say that the development of financial sector and financial markets is considerably different from the real development of the economy; and it creates the basis for a future crisis and its problems.

On the other hand, some experts are questioning the statement that regulations that were implemented to solve the crisis impacts were good enough, and if quantitative loosening in its essence might have had not created a situation that means getting over the crisis. At the same time, some say that economic growth (both long-term and sustainable) may start within the horizon of one or two years.

Let us have a look at the other side of this positive trend.

2 BASIC CHALLENGES OF THE EU FUTURE

The most important problem in the bank sector is the overall suspension of crash tests of the European Central Bank. We would like to point out that there are more than 6,300 banks in Europe (in which 1,250 are important banks, and the most important are 225 banks). But the crash tests related only to 70 banks that showed some positive results and the banks indicated getting over the impacts of the 2008 crisis. On the other hand, these results also indicate some problems, especially in the portfolio structure.

One of the very important warnings is the detection of extensive money laundering, especially in English and German banks; and also the state of financial transactions between individual bank institutions.

Besides, we can point to the high growth of a new phenomenon – investing capital sources of big transnational companies into the bank sector as investment into this sector. On the basis of this phenomenon we can say that the bank sector is in a dual conflicting situation. On the one hand, significant decrease of interest rates resulted in radical decrease of possible interest income; and also regulation mechanisms of central banks (in the fee policy) led to significant decrease of profit for the majority of banks. Besides, new directives that are being prepared by the European Union (such as D2SB, that should enter into force in the second half 2017) mean that banks will have to release their databases about their individual clients to financial providers and financial technical operators that may provide financial services as well.

It is very interesting, because all the parties are giving assurances that the data about clients are always in compliance with full technical security. Nevertheless, latest hacker attacks clearly show that the real level of data security represents a significant

problem. Despite this, the EU expects that this directive about releasing data to other operators will enter into force in the second half of the year 2017. It leads us to another paradox. Providing of financial resources for the development of municipal projects, providing of financial resources for development of mortgage expansion, and providing consumer mortgages in many economies as well (Slovakia is not an exception) has led to considerable increase of population debt. It is a point of discussion in many countries, whether it has resulted in significant strengthening of local consumption and whether this strengthening of local consumption may be the second pillar (except success in export). Due to these reasons we may suggest that especially in central Europe we are facing a new phenomenon – an extreme increase of population debt. According to the amount of statistical data, the debt of Slovak population was on the level of about 28-32 per cent of GDP before, at present it reaches the level of more than 41 per cent of GDP and it still continues to increase. At the same time, it is connected to the fact that if wages are not increasing, the mortgage load of population is increasing as well and we are very soon close to the situation similar to countries in western Europe before the financial crisis in the year 2008.

We believe that compensating overall increase of domestic consumption only by the increase of the debt of population at the wage freeze and trimming of social benefits and social state are the sure way to the future huge crisis that will threaten the functioning of majority of the countries. We must underline that the increase of population debt will be boosted by the impact of Industry 4.0 and overall changes in the field of wage reproduction and wage income.

It is expected that the demand for labour force will be gradually decreased in the economy and, at the same time, the wages of future professions will be differentiated at the great scale. We can say that the most of the new jobs will be offered at the lower wage. Only the small group of creative specialists or creative data analysts will be rewarded by high wages and will be guaranteed an increase in wage.

Processes and impacts of the Fourth Industrial Revolution, as well as impacts of gradual widening of open system economy, will be surely reflected not only in overall transformation of inner consumption, but also in overall change of wage development of individual labour force groups. It can be stated that the transformation into robotic technologies will lead to decrease of product prices despite the extreme increase of individualised production. This lower price of products will be only partially able to compensate the lack of wage increase or its stagnation. We can also detect a new phase of bank development that includes not only connecting of different types of activities in the financial sector (such as retail banking, investment banking, leasing, pension funds or insurance), but also integrated inter-connecting of large industrial corporations and the banking sector. Logically, all this results in specific mortgage policy and providing of financial resources to large corporations in the time of their expansion.

All the facts mentioned above are closely connected with another important phenomenon – the debts of individual countries. The majority of countries are still running on budget deficit. The pressure of the European Union to decrease budget deficit can be understood as a positive development, but on the other hand, most of the countries are still suffering from a contradiction between the need of sufficient financial resources and how to cover the necessary functions of the state.

We agree with experts that exclaim that it is necessary to decrease the number of state functions (generally under the term of “efficiency”), but we also have to point to the necessary reduction of many social functions of a state. The decrease of expenditure will cause a decrease of deficit and gradual balance of income and expenditure of the public sector.

On the other hand, many of the countries face the need of the increase of defence expenditure, increase of expenditure connected with the arm industry and the need of financing the projects of limiting the migration into the EU. As examples can be named the payment of 3.5 billion euro to Turkey and investments to north Africa – especially Libya. All this results in other expenditure of the public sector.

Moreover, the debt of the bank sector has decreased, but only because most of the bank sector debts were taken over by the state. A considerable increase of state debt is a direct result of overall redistribution of debts from the financial sector. It can be easily seen on overall development of debts of economic subjects on the planet, where the increase of overall debts of economic subjects of more than 59 billion was recorded between the years 2008 and 2016. Currently, the overall debt is at the level of 231 billion. All economic subjects, including the state, population and enterprises, increased their debts considerably. There was only one group of subjects that decreased their debts – banks. They decreased the level of their debts by the fact that the state took over these debts in many countries.

All the above indicates that the debts are not developing linearly with a constant sum within individual time sections. On the contrary, due to cumulation of numerous commitments, instalments, duties of states, etc., we can see a wide range of overall level of debts of individual countries. Because of high cumulation of debts in countries in the European Union we may see a similar situation as existed in 2008, when the majority of the EU countries faced an extreme increase of yearly debts.

A logical result of this development was the increase of pressure from financial investors on risk surcharge that countries like Germany and the Netherlands managed well. A very different situation was in countries such as Ireland, Spain and Portugal, where this led to a situation beyond control that was possible to manage only by redistribution of debts and overall change of installments. This does not mean that debts were forgotten, though. These debts were spread over differently, in different sums and different time periods. This leads to a possible risk of future accumulation of high sums of instalments and interest rates in European countries.

As we can see, this process of gradual extension of installments may be understood as positive from the short-term point of view (as it decreases the overall value of yearly debts in the nearest time period). On the other hand, from a long-term point of view and future liquidity of installments it may become a serious problem. All countries hope that overall improvement of the economy will be permanent, gradually increasing and creating bigger and bigger value of financial resources to solve future installments. This is the reason why many governments choose the way of redistribution and re-profiling of debts and state bonds (in such a way that the majority of them should be mid-term and long-term state bonds and a need of considerable installments within 2-3 years should be postponed).

As a warning, we can point to the fact that despite nearly zero interest rates, despite large investments, despite the fact that banks offer loans at very convenient conditions, many subjects (especially among companies) are afraid of taking more loans. The increase of population debt is common for central Europe and the new EU member states. The population of the EU founder states seems to be hesitant to increase their debts (which is understandable taking into consideration the value of their reached debts), but on the other hand it is a warning that something in the economic cycle is not functioning well, that population does not believe in future wage increase and is afraid of future risks. It seems that the majority of population understands the economic growth more like a 'wish' than as a real value of future development.

It can be easily understood that in this situation we can notice pessimism, especially from the long-term point of view. We can also state that the increase of population debt seems to dampen the alertness of population. On the other hand, overall demand for consumption (especially in 10 new member countries that entered the EU after 2004) corresponds to psychological moments of continual consumption even at the cost of consumption and other loans.

At the same time, we can point to the changing situation when the number of mortgages is decreasing and the consumption loans are increasing. It seems that the spiral of consumption is moving quicker and in the situation when the majority of wages are not increasing. The increase of wages among a small group of population will not be compensated and will not cover the large increase of overall debt through consumption loans that will be provided to the population. This is one of the key signals of future development as the increase of population debts will create a risk in the situation of financial shocks, or the possibilities of managing future challenges of the Fourth Industrial Revolution.

The industrial revolution itself is very fast. Although there are different opinions about its intensity, the majority of experts agree on the period of the closest decade. The closest decade means that the processes of overall adaptation as regards labour and other resources will face a very challenging period.

Taking this into consideration, the intuitive worries of the population as regards the results of the Fourth Industrial Revolution are reasonable. It is fairly difficult to project how the reproduction of jobs will be, but the significant reduction of overall demand for labour is expected.

It is questionable whether optimistic predictions about the increase of domestic consumption may ensure the long-term development and long-term use of production capacity. Heterogeneity of society within individual countries is strengthened by differences in regions. Basically, the usage of the Cohesion Fund should lead to elimination of difference between regions in the member states. Unfortunately, it turned out to be neither sufficient nor effective. The result of this development is an increase of difference between regions and the fact that metropolitan regions differ from overall economic level and their income level; while the rest of regions remain at the low income level. This means the deepening of income polarisation of economies and states. This process is increased also by deepening of polarisation between individual regions.

3 FUTURE RISK FACTORS

Let us focus on other risks of future trends, especially after Brexit and its influence on the functioning of the European Union. Generally, the focus is on the question of migration and the situation of people from central Europe working in England, etc. But the key question of Brexit is the change of financial management and budgeting. Even at the time when the budget for the period of 2014-2020 was discussed, there were discrepancies as the overall deficit of the European budget was at the level of more than 91 billion euro. Drop out of contribution that used to be provided by the United Kingdom into this budget will mean a burden of approximately 80-90 billion euro. As it is unreasonable to expect the UK to pay this lump of money, the absence of this contribution will lead to the need to extensive re-evaluation of structural funds. It means that the overall conditions will change, the importance of local resources will increase and the financial budget of the EU will be seen as a 'loan' that needs to be paid back. Projects will be merging together in such a way that their multiplication impacts will increase. Besides, it is expected that the majority of projects will focus on two main types: energetic strategy of the EU; and the strategy of development of Smart Cities.

Both these types are closely interlinked with multiplication effects. Development of energetic strategy of the European Union is a sure way to a similar effect as was caused by the decrease of gas prices for enterprises and households in the US after commencement of shale gas mining. This caused a decrease of gas prices about 38-40 per cent for both enterprises and households and, at the same time, led to creation of more than 1.2 million of jobs. Final effect was a significant decrease of household consumption and energy expenditure of enterprises. Moreover, this caused

the creation of extra financial resources to recover the consumption of American households and investments of American firms.

It is obvious that the European Union is openly considering such multiplication effects. It is expected that development and decrease of energy consumption in the field of housing may create 12-16 per cent of family energy expenditure. Financial resources gained this way could be used to increase consumption and to create more easily accessible consumption loans. It could also mean the increase of margin of manoeuvre and selection for European households; and finally it could lead to the increase of overall domestic consumption withing the EU.

The second project focusing on Smart Cities is an even more important multiplication project. It can create intelligent cities that include intelligent transport, energy, settlement structure, and optimal financial and energy needs. These intelligent cities are radically changing overall quality of life, are citizen-friendly, and are creating exactly such a quality of life that has been hoped for since the introduction of information technologies.

Development of these types of projects is extremely important also from the aspect of regionalization of the EU. The importance of the so called 'return back to the roots', the question of regional development and solving of existing disparities between individual regions is increasing. It can accelerate overall development because new energy resources mean significant regionalization of energy industries, shortening of the need of big distribution systems, decrease of energy losses (that are caused by long line transmission) by one third; and it can finally lead to considerable decrease of energy prices for the population and corporate sector.

Taking into consideration new technologies that are changing the very nature of energy consumption in all dimensions of human society, we can see that it may lead to considerable cut of costs connected with the function of energy systems.

If all the above stated is combined with overall development of quality of life and green technologies, while focusing on new types of transport (such as autonomy transport systems) it may decrease the costs of the present public sector.

To achieve these positive results, we must deal with grey and black economy as well. Despite all the measures to prevent tax paradise and operations avoiding the law, despite all directives against transfer pricing and directives for optimalization of financial flow within the EU, we are still detecting an increase of grey and black economy. On the contrary, by including grey and black economy into economic growth, by the definition according to directive ESO 2010, we are ignoring these negative occurrences because they enable us to show higher increase of GDP and although the real debt has not been decreased, we can show lower percentage of economy debt in individual countries.

This phenomenon is very risky due to the increase of grey and black economy, operations avoiding the law, in-house criminality, and corruption. The level of risk is

very high especially because the corruption itself does not mean only the transfer of financial resources, but also considerable increase of costs of state and public sectors. If costs are increasing and, at the same time, budget incomes are decreasing, we are facing a situation with a need to change the level of tax income. At present, the focus is on corporate tax, consumption tax or GDP. But we are overlooking the complexity of this problem. Firstly, we must answer the question of real profitability of European and world companies. The official profitability on the level of 2-4 per cent seems not realistic. As an example, we can mention the statement of Eurostat that due to in-house criminality the yearly losses of European companies are about 1.5 billion euro.

We must stress that the extent of EU corruption estimated few years ago was indicated on the level about 350-400 billion euro, but the real corruption in the year 2016 (according to Eurostat) is estimated at the level of 1 billion euro. This means that the public sectors of all member countries of the EU needlessly increased their costs (about 1 billion euro) while it was possible to provide the same services at a considerably lower price.

Next, public budgets will face other problems. For instance, the European Union accepted an obligation from the Paris Protocol to be a leader in the field of ecology and climate change; and, at the same time, the EU wishes to be one of the important leaders in the investment field. The investment of 1 billion dollar to fight climate changes represents a huge amount of financial resources. This leads us to the question how it will be financed. Will it be financed on a national level or from budgets of individual countries? Will it be financed on the level of the EU by either redirecting its eurofunds or will it force individual countries to provide resources to fight climate changes from their own budgets?

It is obvious that the question of solar energy or other alternative energy resources is only a small part of necessary investments connected with climate changes. We must underline the fact that the changes of our environment are gradually becoming one of the key fundamental factors that will influence our future development. Nevertheless, it is obvious that we are not talking only about the increase of the average temperature level. Let us have a look at the statistics: if average temperature rises by about 2.2-2.5 degrees, then in average it will result in a catastrophic situation.

We must realise that we are not talking only about an increase of average temperature, but also about a huge increase of temperature in the northern hemisphere and minimal increase on equator. The majority of population and countries are located in the northern hemisphere. And exactly this part of the world is facing a threat of gradual melting of the Arctic Ocean with all its negative impacts (such as creation of cold air flows over the North Pole, overall influence on ocean currents, huge increase of average temperature in summer connected with big droughts). As we can see, hydrology is becoming one of the key elements of future. For example, if the glaciers

in the Alps disappear within one decade, it will not only mean that people will not be able to ski there, but it will lead to a very serious problem of drinking water shortages for a big part of Italy, eastern France, eastern and central Germany, etc. This means that the extreme temperatures combined with hydrologic changes, changes of rainfall levels and its moving into different regions, and increase of new aggressive species may not only change the overall biodiversity of Europe, but it may also radically change the situation of drinking water as a strategic element.

An analysis done by the European Union shows that Spain, Portugal, Italy, eastern France, a part of Germany, but also Central Czech Plain, Danubian Plain, East Slovak Plain or southern Moravia will face a very serious situation as regards drinking water shortage (that will have a deep impact on food production, taking into account that these regions are the key regions in food production) within one decade.

To show the seriousness of this situation, let us have a look at the example of salinization of soils and drinking water resources in countries like Bangladesh or Pakistan. The process of salinization of soils and drinking water (not only these two countries, but also in a big part of Africa) will lead to a quick aggravation of situation as regards food and water. We must also take into account the fact that these are the countries with high demographic growth and the fact that these regions will not be able to sustain life in the future. All this will cause a huge crisis (not only immigration crisis, economic crisis, but also crisis connected with the bare survival).

All the mentioned above may easily cause serious international conflicts. This is the reason why the United Nations Organization (except fight against climate changes and others) is focusing on drinking water and food situation, as well as future problems of global migration. It is obvious that the majority of these problems are above the national level.

Taking into account these facts, it is probable that we will not be able to solve these problems within, let us say the European area, but within the group of African countries, etc. This calls for a necessary coordination of a new strategy (that will include changes in the environment) and will, unfortunately, require more financial resources.

At present, it is estimated that the costs of prevention of global warming are on the level of 1 billion euro (that is a big step forward comparing the costs estimated in 1990s on the level of 350-400 billion euro). Unfortunately, it does not seem to be sufficient as the costs on climate adaptation will be much higher. We know even today that the real costs will be highly above the suggested estimation.

4 EU REGIONAL DISPARITIES AND CHANGES OF ENVIRONMENTAL AND ECONOMIC CONDITIONS

The European Union itself will be under pressure of two processes. Firstly, regions like northern Italy, northern France or eastern Spain will be in need of big

financial resources to deal with climate changes impacts. Secondly, there will be a need to provide considerably more financial resources to deal with climate change in the regions such as northern Africa, etc. All these financial needs call for creation of sufficient financial reserves based not on the need to lower the budget of the public sector, but reserves based on the need to survive, management of migration, and life preservation within the EU member states.

As we can see, a new phenomenon has arisen: the climate change. This climate change should be understood not only as an average increase of temperature with slight changes within the year. It should be understood as a complex change of climate including biodiversity, water and hydrological systems, atmospheric changes, wind erosion of soils, considerable increase in dust particles in the atmosphere and also big smog storms (as we can see in China and that are threatening to appear also in the EU member states). These changes will naturally lead to the increase of costs in the health service sector. Many studies demonstrate the connection between the increase of micrometer particles in the air (which are the result of wind erosion) and significant increase of asthmatic health issues, oncological problems, and bagassosis, etc.

As the result of these changes, there will be a need to provide even more financial resources. Unfortunately, we will not be able to provide these resources by robotic type technologies or even technologies of Industry 4.0. The main problem is that although we can gradually decrease negative impacts of technologies on the environment, we are not able to manage the changes caused by climate change (especially temperature changes). All we can hope for is the adaptation process that may dampen some but not all the impacts.

At the moment, the majority of technical and technological projects is focusing on management of information society, digitalisation, creation of new application mechanisms, development of autonomic transportation, etc. But these technologies are based on the assumption that the human society is not interlinked to the environment, as if it was living in its own technology bubble and it was untouched by the changes in the environment.

To solve these problems, we should consider the development of warning systems, systems of complex water recycling (such as water recycling in Israel that is able to recycle 85 per cent of all the water), 100 per cent recycling of production waste, and optimalization of the real measure of consumption.

To reduce or reevaluate the consumption (that is another important phenomenon of global development), we must understand the causes of overall change, its structure and its volume.

The present production is characterised by mass production, in its essence the production aimed at anonymous customer. In reality, the robotic revolution of Industry 4.0 and the systems of digital society are able to radically change this key economic paradigm. This change will be based on individualised production and the change of

proportion between the hardware (product) and software (services connected to the product) while the key element is knowing the needs of individual customers. The individualised production also means the increase of product quality with longer durability and more in line with the customer's expectations. Although the robotic technology may seem to be expensive at the first sight, in reality it may lead to considerable drop of prices of such production.

Regarding the decrease of product prices, we must answer the question whether such decrease of prices of future products and individualised services will lead to the increase of consumption or the decrease of overall consumption. Generally, the decrease of prices causes the increase of consumption. Nevertheless, so called 'real margin of human society waste' on our planet will force us to considerably limit the amount of overall production.

We must not forget to mention new phenomena such as open system economy that lead to the decrease of overall consumption of goods and services. This decrease will be strengthened by the ageing of population and the change in consumer customs due to different generation waves. We will have to face other serious problems such as decrease of labour demand in the society that will cause the reevaluation of wages, social support, and overall changes in insurance systems. Should the population work similarly as the Uber or TRIVAGO employees, they may not contribute to pension or health insurance systems. In this case, how will society manage the social or health insurance of its members (especially taking into account the ageing of population and the constant increase of population aged 80-100)?

Regulation as the key element to solve the problems of security risks, financial risks, business risks, etc. will not be sufficient because we are not able to regulate all cumulative causes and results of individual development lines. From this point of view, regulation may dampen the negative impacts (but it is only one of many possibilities to do so).

To answer this question, we must ask first whether we are threatened by a new financial crisis or by a new economic crisis.

The answer to the first question is: yes. We are threatened by a new financial crisis. The only question is: when? In this aspect, experts have different opinions. Some believe that the crisis will strike within 5-7 years, some say that we are already in the crisis. The opinions differ also in the range of crisis impacts. Some experts state that it will be a crisis similar to the one in the year 2008, but many believe that the new crisis will be 10-20 times worse than the crisis in 2008. At this point we would like to point to the fact that even until today we have not identified the reasons that led to the crisis in 2008. On the contrary, even the implemented regulation measures did not guarantee the solving of crisis problems.

The development of regulation systems (such as Basel III), new tighter regulations of Transfer Pricing, and regulation to fight against tax paradise may spread

the problems over the longer time period. Nevertheless, we must underline the fact that these will not solve the key mechanisms that themselves are causing the problems. We will not be able to solve the problem of climate changes by another world summit (like Summit in Paris). The only way to solve it will be by the overall society transformation, especially as regards exploitation of natural resources and the waste volume that endanger the environment.

This situation will call for a new system of human society functioning and new financial management in the future.

Therefore, creating financial reserves is not a question of improving of budget policy, finding new financial income, decreasing the budget of the public sector (because it is necessary to decrease the expenditure of the public sector) any more. On the contrary, these reserves should increase adaptability of individual economies and thus the population adaptability on the entire planet.

The change of financial reserves management focusing on the strengthening of adaptability will be one of key structural maneuvers both in mid and long-term period. It is no longer aimed at decrease of a budget, but a creation of reserves to deal with climate changes for both the citizens of the member states and the entire world population.

Our present situation throws us into an interesting phase of duality. On the one hand, we should create financial resources (e.g. by implementation of ecological taxes) to deal with the necessary investments to ensure the survival of human society and the economy. On the other hand, the present trend is forcing us to increase product prices and by doing so, we will loose a big part of global consumption. The sensitivity ratio of the global economy (sensitivity to changes of income and changes of prices) is very high. It seems that it may lead to the improvement as regards poverty from the global point of view. The problem is not solved though, because these people are not moving from the level of 100 dollars to the level of 500 dollars, but they stay on the same level. And so, the real purchasing power of the majority of population remains still very low.

On the basis of these factors, we can assume that the income polarisation is a very important system factor. Perhaps, the polarisation itself could be managed by social projects, social diversification function of the state, state support, etc. But it will not be manageable in the situation of cumulation of income polarisation and increase of population debt, in the situation with a need of huge financial resources to manage ecological problems, or situation in which to survive (especially in countries of central, eastern and western Europe), or the need to support security as regards immigration will arise.

We must stress that the migration waves in years 2014 and 2015 were relatively small. It is expected that the new migration wave that will be a result of climate change will be about 40-60 millions of immigrants. It is obvious that such a huge extent of migration processes will not be manageable by present means. It may

create a significant aversion to immigrants among citizens and it may even cause a worsening of internal situation within the individual countries.

To deal with this situation, the best way to manage future migration waves from a long-term perspective seems to be a cooperation and direct involvement of countries from where potential immigrants are. It also calls for sufficient financial resources and ability to use these resources effectively in these countries. Unfortunately, in many of these countries (especially in northern Africa), their systems are corrupt and there is a very different structure of society. And so, all the ideas mentioned above must be reevaluated through the prism civilisation model of individual countries. It is obvious that the civilisation model of Asia, China, Malaysia, and Indonesia differs from the European model. The civilisation model of the United States is also different. It can be demonstrated on this example: all Eurostat reports show that for Europeans the key element is their leisure time and the quality of life. On the other hand, the key element for Americans is the income. The Chinese model is typical for its community responsibility, not individual egoism. The Arabic countries are based on a completely different principle of religious functioning and family background system.

The notion of forceful unification (e.g. budget and fiscal policy to decrease the deficit) may lead to considerable increase of anti system groups and to overall increase of distrust to elites that are directing the EU. This may change easily from an economic problem to a political problem with all its negative impacts on the future society.

7 CONCLUSIONS

Finally, the fundamental problem of all these tendencies is the interlinking and cumulation of these processes. If we manage risky individual processes to spread over a period of twenty years, we should be able to manage some of them. If these processes are not connected directly, we should be able to deal with them separately. But if there is a cumulation of these processes, it means the beginning of a civilisation change. This is the reason why the “Society 5.0” is becoming the key element of expert discussion. Society 5.0 is not similar to a society based on robotization, digitalization, or artificial intelligence. It is a society on a completely different level of functioning, with its own infrastructure, and its own society goals.

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RIEKY AKO RUKOJEMNÍCI OZBROJENÝCH KONFLIKTOV VO VÝCHODNEJ EURÓPE: PRÍPAD RIEK SIVERSKI DONETS, KALMIUS A DNIESTER

RIVERS AS HOSTAGES OF ARMED CONFLICTS IN EASTERN EUROPE: THE CASES OF SIVERSKI DONETS, KALMIUS AND DNIESTER RIVERS

Leonid Raneta¹, Mykhaylo Kunychka

Súčasný vývoj geopolitickej konfrontácie medzi jednotlivými subjektmi ohľadom ich sféry vplyvu viedol k vytvoreniu neuznaných štátov vo východnej Európe - oblasti konkurenčného boja medzi USA, Ruskom a EÚ. Autori sa pokúšajú chápať rieky Dniester, Kalmius a Siversky Donets ako príklady delimitujúcich línií bojujúcich strán a analyzovať environmentálny aspekt skutočnosti, že uvedené rieky sa prirodzene stali deliacimi hranicami konfliktov. Tento článok má za cieľ uskutočniť komparatívnu analýzu dvoch konfliktov vrátane už zmrazeného konfliktu medzi Moldavskom a Podnesterskou moldavskou republikou, ktorá preukázala neochotu uznať kolaps ZSSR. Krátkodobá vojna v Podnestersku sa odohrala medzi moldavskými vojenskými silami a ozbrojenými skupinami PMR a vyvrcholila v lete 1992 na rieke Dniester, kde sa dnes nachádzajú ruské mierové sily. V neposlednom rade sa zameriavame na východoukrajinský konflikt, kde Ruskom podporovaná tzv. Donecká a Luhanská národná republika bojujú proti národným ozbrojeným silám ústredných ukrajinských orgánov, a kde sa rieky Donets a Kalmius stali delimitujúcou líniou dvoch bojujúcich strán po vyhlásení dočasného prímeria.²

Kľúčové slová: ozbrojený konflikt, vodné zdroje, Ukrajina, Moldavská republika

Current development of the geopolitical confrontation between particular subjects for their spheres of influence has led to formation of the

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unrecognized states in Eastern Europe – the targeted region of competitive clash between the United States, Russia and the EU. The authors are trying to consider the Dniester, Kalmius and Siversky Donets rivers as examples of delimiting lines of the warring parties and to analyse the environmental aspect of the fact that the mentioned rivers have become naturally dividing frontiers of the conflicts. This paper led to conduct a comparative analysis of the two conflicts, including the already frozen conflict between Moldova and the Pridnestrovian Moldavian Republic, which has shown the reluctance to acknowledge the collapse of the USSR. Short-term Transnistrian war recouped between Moldovan forces and armed groups of the PMR and culminated in the summer of 1992 on the Dniester River, where Russian peacekeepers is located today. Last but not least, we are focusing on Eastern Ukrainian conflict where the so called Donetsk and Lugansk People's republics, supported by Russia, are combating the national armed forces of the central Ukrainian authorities, and where Donets and Kalmius became a frontline of two warring parties after the proclamation of temporary armistice.

Key words: armed conflict, water resources, Ukraine, Republic of Moldova

JEL: Q25, Q34

1 Introduction

The contemporary civilization has always praised the significance of rivers. In the Greek mythology, rivers played an important role in the geography of the underworld and had mystical powers. As the mystical river Styx gave Achilles his power, other rivers gave civilizations economic and defense advantages. In the past, rivers were vital infrastructure arteries and played a role of trade highways and important logistical connections. Rivers often divide nations and provide natural barriers during wars. Nowadays, some watercourses serve as border lines between states and nations. Some rivers historically separate cultures and civilizations. Their economic significance is stable in peaceful times, but changes in times of war, when the combatant parties focus their attention on rivers as powerful natural defense barriers.

Rivers and artificial waterways are vital sources of water that is essential to human survival and poor for substitutes. Furthermore, water resources respect no political borders and fluctuate in space and time (Wolf, 1998). River basins link riparian states (Dinar, 2009), as well as other political or military actors compel them to think over political, economic, social, and environmental issues together. In the context of these interdependencies, the room for cooperation and conflict dilemma appears. In the regions of arid and semi-arid zones, like the one of Eastern Ukraine, water availability is much more aggravated. In that case, water supply becomes an object of season fluctuations and puts the adjacent states in front of possible genesis of new or intensification of ongoing armed resistance.

Water is a vital resource for heap aspects of societal welfare, including the satisfaction of basic needs and development of economic life, therefore its scarcity can be a fundamental argument not only for conflict initiation, but for cooperation fostering, too. In other words, partnership within states sharing common aquifers becomes very significant when water scarcity enhances. Additionally, cooperation or conflict initiation is also an important issue when water pollution, fishery and navigation aspects are becoming the case of mutual relations in the framework of common river basins. Therein an important role is played by the theoretical representation of the interrelationships of two and more riparian states, embedded in a realistic and institutional theory of international relations. If typical scenario for realism school is acquiring a resource, such as water, for state interests through the use of military force, then institutionalism is characterized by a peaceful solution of the resource sharing between the riparian states with the help of establishing partnerships through the prism of common interests. Despite various theoretical views, the issues of water resources, environment and state interests are an inherent part of the problem of interaction between state and non-state actors of world and regional politics. As Gleick (1993) put on, water may play multiple roles in contributing to regional conflicts. He distinguished following categories that encompass the role of water resources in international conflicts. Water resources can be perceived as a military and political goal or as an instrument of war. The second category is frequently associated with hydropolitics (Waterbury, 1979) and weaponization (King, 2016) of water at that.

As for todays Europe, things have not changed so much in comparison with the past. There are still tension zones, new armed conflicts change borders and new quasi-states arise. There are two important unresolved conflicts in the Eastern Europe, which are tightly associated with the watercourses. First is the Dnestrian conflict, which erupted in the early nineties after the collapse of the Soviet Union in the Republic of Moldova, along the Dniester River that separates the combatants. The second one is in the eastern part of Ukraine and it is one of the most current conflicts in the region since the beginning of the millennium.

The history of Europe is mainly the history of armed conflicts of different intensity and implications for the future. During the biggest and the most important war of the past, the Second World War, rivers played a very important role. Battles and war operations for such rivers like Volga, Don, Southern Bug, Dniester, Vistula, and of course Elbe, marked by their toponyms important milestones of the war also underlining the importance of those rivers. The new millennium did not change those postulates and in modern conflicts rivers often act as important strategic objects. The most current and intense armed conflicts of the past decades were no exception, for example the strategic role of the Euphrates in the ongoing Syrian conflict was the main goal for all the implicated combatant parties: the Kurds aiming for the banks of the

Euphrates implicated the Turkish army to enter the Syrian territory, central government forces are also aiming to gain control over the west bank of the Euphrates and the ISIS capital is also situated on the Euphrates. Another similar situation occurred in the Eastern Europe in the Republic of Moldova, where an important river flow gave its toponym (Dniester) to an armed conflict (Transnistrian War) and to an unrecognized state Pridnestrovian Moldovan Republic also marking its strategic importance. Another example is the most latest and resonating conflict of the 21th century in Europe, where conflicting parties are divided by the Kalmius and the Northern Donets rivers. These rivers serve not only as separating lines of the combatant parties, but are also important infrastructure parts of a great social and ecological importance.

The purpose of the paper is to investigate the role of rivers in Eastern European armed conflict. We focus on issues of the Dniester river, Kalmius and Northern Donets rivers, which represent an important strategic object not only for military purposes, but for economic and social issues as well. Besides, environmental issues are studied. Could these rivers, as a source of water, be perceived as an aggravating factor of the ongoing and frozen conflict? Is it possible to polemize that these rivers are one of the instruments of war, or inversely, create a common base for conflict resolution as it gives way for a cooperative action?

2 CONFLICTS AND RIVERS ISSUES IN EASTERN EUROPE

The practice of international relations in recent years shows that the international community does not always manage to prevent or at least postpone armed conflicts, both domestic and international. Over the past decade we can observe the significant increasing of their intensity and quantity. Special attention is deserved to long run and fresh conflicts in Afghanistan, Libya, Syria, Yemen and, last but not least, the armed conflict in the Eastern part of Ukraine. The Uppsala Conflict Data Program recorded the high intensity of armed conflicts in 2014, and according to Petterson & Wallensteen (2015), this is the highest number of conflicts since the beginning of the new millennium. At the beginning of the new decade, there were no objective expectations that a conflict of such a scale could have erupted on the closer borders of the Western hemisphere.

Ukrainian crisis has not affected the domestic development of the country alone; on the contrary, it has major ramifications beyond Ukraine (Trenin, 2014). Ukrainian crisis, with all its specificity and global implication, has caused the cessation of generally cooperative phase and, at the same time, started a new era of aggravated contest in the U.S.-Russian relations.

The critically unstable situation in Ukraine began after President Viktor Yanukovich had announced the freezing of the idea of political and economic association with the European Union in November 2013, and had inversely accepted a

Russian 15 billion USD loan in combination with a 30% discount on natural gas supply. Such an opposite change in the Ukrainian foreign policy caused a storm of indignation in the camp of the opposition and a mass protest movement spread throughout the country. Enrage mass of protesters was highly dissatisfied with the socioeconomic reality formed during the era of president Yanukovych that from a certain degree can be associated with the upturn of economic inequality and prosperous corruption on all governmental levels, and the president's family was not an exception. In early January 2014, it spilled over into clashes between protesters and law enforcement agencies in Kiev (Skvrnda, 2015). As a result, hundred of opposition representatives were killed. Any attempt to make a mutual consent deal between the opposition and the president failed and during the night of February 22 Yanukovych fled to its closer associate (Mearsheimer, 2014). The new Western oriented government was formed in Kiev.

The development of the situation in Ukraine, which Moscow considers an inherent part of its political and economic interest, has not been indifferent to its eastern neighbor. The rise of the pro-Western political coalition with the inclusions of nationalistic ideology, the intentions of Ukraine's rapprochement with the NATO and the development of tendencies to suppress the linguistic and cultural rights of the Russian speaking population in Ukraine was an unacceptable scenario for revisionist Russian political elites. The main idea of Russia's strategic response was the retention of Ukraine outside the North Atlantic Alliance and its return to the ranks of the Russian satellites and its further incorporation to the Eastern integration community. Large number of the Russian-speaking population in the southeast and the presence of Russian military forces in the port of Sevastopol played a decisive role in the reaction of the Russian Federation to the events in Ukraine. Russian special forces took control over the local government along with the law enforcement agencies. Later, a local referendum was held on the accession of the Crimean peninsula to the Russian Federation and, in the second half of March 2014, the agreement was signed in Moscow. Supporting the eastern Russian speaking regions of Ukraine also began. Well-organized military units were formed and power in Donetsk and Luhansk was seized. After the occupation of the Crimean peninsula, an armed conflict in the southeast of Ukraine arose. Matthews (2014) and Peterson & Kuck (2014), for instance, define the Eastern Ukrainian armed conflict as civil war, on the contrary, Trenin (2014) operates with the broad definition 'Ukrainian crisis'. In the context of in-depth scientific literature, the situation in Ukraine can be also identified as 'war' (Petras 2014, Petro 2014) or by the relatively recent term 'hybrid war' (Hoffman, 2014). The Russian Federation in every possible way denies military assistance from its armed forces and officially does not recognize the self-proclaimed Donetsk and Lugansk People's Republics either. Moreover, the Ukrainian central government has

imposed a so-called antiterrorist operation (Trenin, 2014) aimed at liberating the eastern regions of the Donbas from self-proclaimed armed groups.

The armed conflict in the Donbas resulted in a large number of side effects of the economic and humanitarian nature. In the context of the Eastern Ukrainian crisis, special attention should be paid to the humanitarian aspects and problems of the supply of water resources and electricity to the occupied regions. The unfolding of hostile actions had a negative impact on human rights and fundamental freedoms, including free access to suitable water resources. According to UNICEF, about 1.3 million children and adults in the Donetsk and Lugansk regions are suffering from serious water supply crisis due to damage or destruction of water supply networks. The problems of water supply and water resources condition in the war zone were discussed frequently within the framework of the Minsk Agreements. However, the OSCE Special Monitoring Mission in Ukraine reported on human rights violations related to the continuation of hostilities (OSCE, 2015), which had its effect on providing access to a sufficiently safe, acceptable and affordable drinking and industrial water. Numerical damages of water aqueducts during the armed clashes were recorded and targeted manipulation in water supply systems was also the case. Violation of supplies of vital water quantities for various reasons not only affected the deterioration of the humanitarian situation in the region, but also led to negative social and economic development and further exacerbation of so little relations between active belligerents. The complex system of natural and artificial waterways has become not only a field but also the shelling object of furious combats. Hostages of the acute conflict are the front-line rivers such as Siversky Donets or Kalmius rivers and the system of canals and pipelines that are a man-made adjacent part of these natural waterways.

During the first years of independence of the Republic of Moldova, a very similar separatist conflict erupted also in the eastern part of the country. The nationalistic processes that led to the creation of the Moldovan state also led to political divergence between the western and eastern regions of the country. The natural barrier in form of the Dniester river flow marked the division line between the separatist quasi-state Pridnestrovian Moldovan Republic. The logic of the confrontation in the case of Moldova was very similar to the current conflict in Ukraine. The discrimination of Russian language on the wave of nationalism, armed clashes resulting in human and material casualties, the strategic support of separatist region by the Russian Federation, western support of the central government and also the river flows that divide the conflicting parties – all these are similar characteristics of both conflicts. Another similar characteristics is that peace talks on the grounds of the OSCE transformed these conflicts from the state of war into ongoing frozen conflicts with different stages of intensity. In the case of Transnistrian conflict, these

stages of frozen conflicts varied from reintegration initiatives (the Kozak memorandum) to economic sanctions and transportation blockade. In the case of Ukraine, with the realization of Minsk II protocol, the conflict is on the track to becoming a frozen conflict, therefore the path is also very similar. Another similarity is based on water flows that separate these conflicting parties.

3 WATER SCARCITY IN WAR ZONES AND ENVIRONMENT

Wetlands of the Dniester are of a great international importance. The main problem today is the unsatisfactory quality of the Dniester water, including the quality of drinking water supply sources. The reduction of negative consequences for ecology of the flow requires joint, coordinated measures by riparian states. The improvement of the situation using international experience proposed by the international community, including the impact assessment of projects that may affect ecosystems under the jurisdiction of another country. The situation is complicated by the Transnistrian conflict, which hinders the effective cooperation of all interested parties. In this regard, it should be pointed out that the environmental issues of a transboundary river are related to humanitarian problems, which are usually decided by countries outside the context of conflicts between them.

The main problem in the environmental sphere, which is related to the state of the Dniester, is the ambitious policy of the Transnistrian authorities, which, as a result of the conflict, has created a structure of social and economic governance, without taking into account the real environmental problems of the region and without the focus on cooperation in this area of Moldova.

As follows from the above, the environmental problems of Transdnistria are common for the entire Dniester river basin. And although the necessary institutional and legal frameworks have been created in the region for a balanced joint policy to preserve the natural environment and increase the environmental potential in the region, its uncertain status and political ambitions of the administration impede effective cooperation both with the Moldovan authorities within the Transnistrian settlement framework and with international structures as part of confidence- and security-building measures. Unfortunately, even these measures, initiated with the aim of creating favourable conditions for the Transnistrian settlement process, did not yield the expected result and to date have not received any concrete incarnation (OSCE, 2003).

The situation in Transnistria, in many respects, has many similar points with the conflict, which has been going on for several years in the east of Ukraine. In general, we can say that the frozen conflicts have much in common.

Considering the issues of ecology, a similar problem of the safety of the water resources of the Donbass and Transnistria is that the rivers have become involuntary

hostages and conditional boundaries for the flow of armed confrontations. If the Dniester had become such a conventional border in the Transnistrian conflict, then the Seversky Donets and Kalmius rivers play the same dividing role between the Donbas and the central authorities of Ukraine.

Destruction of the water supply and sanitation infrastructure, chemical water pollution, as well as power outages in discharge facilities, poses a serious threat, both for water resources and ecosystem as a whole. As a result of the military actions, the Lugansk water canal was repeatedly on the verge of a sanitary disaster. Using military operations, Marauders were stealing cable lines and individual parts of pipes as well. As a result, a number of emergencies constantly arise in the water supply and sewerage network. Lugansk region dwellers use water mostly from aboveground sources that requires serious disinfection. Chlorine delivery routes often pass through the battlefields and for a long time there were no possible delivery options.

The consequences of water pollution can be unpredictable and extremely dangerous, however, it is simply impossible to provide the necessary control over the quality of drinking water in the zone of combat operations. According to samples of water from the Siversky Donets River and adjacent open water supply network, the concentration of sulphates exceeds the norm fivefold and nitrates almost twice.

The purposeful destruction of water pipes, as well as its accompanying damages as a result of hostilities, affect the functioning of water supply systems. The lack of access to water and its poor quality pose a threat to human health and sanitation and may lead to a significant limitation of food production. A negative impact on social and economic development and political stability can be also the case, which, in turn, will lead to further exacerbation of the ongoing Donbas conflict. The OSCE's comprehensive approach to security issues is aimed at reducing the risk that water will become a potential source of conflict, as well as using water resources as a tool for creating an atmosphere of trust and further cooperation (OSCE 2015).

Access to safe water in the territories of the Donbas region affected by the conflict remains an actual and acute problem nowadays. Frequent interruptions in water supply are due to following factors. Water supply networks are out of date heritage of communist era (Kunychka et al. 2017). Additionally, already out of date pipelines were damaged during the conduct of hostilities. A decrease in the functionality of important water pumping stations due to power outages caused by firing of power grids is also an important issue in the region. Access problems caused by the presence of armed groups, placement of mines or unexploded ordnance, and the poor condition of roads that prevents local residents from reaching the wells or receiving delivered water, as well as access problems related to reconstruction activities by water network operator. Legal restrictions of freedom of movement and supply of goods through the buffer line, which thus affects

the supply of water from settlements controlled by Ukrainian authorities to settlements that are under the management of separatists, is another cause of water supply shortages. Last but not least, frequent disconnections of water supply networks, which contributed to the deteriorations of so little relations between belligerents (Volkova 2014).

As a consequence, the risk of the spread of water-borne diseases and related health problems has increased, as the population is not able to safely store or transport sufficient amounts of water. There is also a threat to the quality of tap water due to the need to maintain regular supply of chlorine and other reagents needed in water treatment plants that create an increased risk of secondary infection. Such barriers to access to sufficient, safe, and affordable water pose a threat to the most vulnerable population categories, in particular children, people with disabilities or chronic diseases, elderly people living in inaccessible territories affected by the conflict. Due to geography and operational characteristics of water supply networks that were built after the World War II, water supply shortages is a more serious problem for eastern belligerent.

The state of the Kalmius river, which also turned out to be the water border of military operations, represents a great environmental problem of the Donbass region. It should be noted that from the point of view of economic activity, the Kalmius is one of the most important rivers in the Donetsk region. The Kalmius river is the primary source of water for industrial and agricultural purposes; likewise, its basin is polluted by more than 60% of wastewater originating from local enterprises. For the Donetsk region, the Kalmius basin plays a huge role and has important economic, social, historical, and recreational significance. Even before the outbreak of the armed conflict, the administrative authorities of the Donetsk region raised the issue of the environmentally critical state of the Kalmius river, while the problems of protecting the Kalmius river basin and rational use became increasingly acute with the important regional scope. Before and during the conflict, the water resources of the Kalmius river did not meet the requirements of the drinking water standard, furthermore, most pollutants exceed the norm by several times.

In the Kalmius riverbed, there are about seven reservoirs, and along its tributaries there are about 30 sewage water ponds. Industrial and municipal enterprises from local settlements discharge their wastewater directly into the river and its tributaries after insufficient cleaning or without it at all. As a result, the level of water pollution in the river exceeds all permissible standards by hundreds of times. Even before the armed clashes, 600,000 tons of salts were annually dumped into the Kalmius. The Kalmius is the most technogenically-loaded river in the region, especially in the upper reaches of the river. Only in summer the volume of sewage and mine waters is almost 10 times higher than the volume of natural runoff. Together with

the mine waters of only one mine, 600 kg of palladium was dumped annually into water bodies. Also, bacteriological contamination of mine waters that enter the river leads to significant changes in water quality. Furthermore, many areas of the river are covered with a multi-meter layer of silt, which mainly includes heavy metals. At the same time, today there are no economically rational methods for demineralizing these harmful deposits.

Nowadays, the environmental situation in the Kalmius river is significantly complicated by the fact that it has become an unwarranted boundary of military clashes between the armed groups of separatist authorities and Ukrainian armed forces. In addition to the previously unsolved environmental problems of pollution of the river with man-made waste, the river is on the verge of an ecological catastrophe due to the consequences of military operations.

Several years ago, local authorities attempted to implement cleaning activities of one of the Kalmius reservoirs located in the city limits of Donetsk city. However, these works were of a local nature and, according to environmentalists, were doomed to failure. After all, it is difficult to make certain local cleaning when there is an upstream discharge of wastewater from the mine. With such a variety and a large number of pollutants in the Kalmius river, the solution of the ecological problem is possible only with a comprehensive approach. Unfortunately, in view of the military actions in the territory of the Donetsk region, all planned measures to clean the sub-basin of the Kalmius river have not been implemented. Moreover, the state of the water sources in the Donetsk region was aggravated by the current bombardments and the water supply of the region was violated.

Unfortunately, given the fact that the situation at the estuary of the Kalmius river is not improving, and military operations are continuing, it is not necessary to predict the positive development of measures for water purification in the Kalmius river. The mutual relations between Russia, as a patron of the separatist regions, and Ukrainian government boils down to the fact that one side must give up to its own interests, and negotiations do not lead to a stabilization of the situation. Therefore, it can be with certainty said that in this situation the problems of water supply and environment of the Kalmius or Siversky Donets rivers remain practically beyond the attention of the legal authorities.

4 CONCLUSIONS

Thus, the analysis and study of theoretical and statistical material on a given topic makes it possible to draw the following conclusions. It is obvious that any armed conflict is not only the human losses, the destruction of the infrastructure of cities and territories engaged in military actions, but also a direct environmental threat to natural resources, and this problem is especially acute in the sphere of water resources and

water supply. Moreover, the environmental problem lies not only in the fact that the release of harmful substances into the atmosphere and water during explosions and bombardments leads to irreversible consequences and deterioration of the local environment, as well as the existing problems of contaminated industrial areas remain unresolved and in turn create a direct threat of ecological cataclysm.

The analysis of scientific works on the issue of background and the course of the Transnistrian conflict gives a certain basis for such conclusions about the reasons for its occurrence. The main reason for the armed conflict in Transdniestria is the cardinal change in the position of the party nomenclature in the system of political power in the period from 1989 to 1991. On the whole, there were several prerequisites for the emergence of the conflict: the ideological factor, language and political manipulation. Initially, the origin of the conflict occurred on ideological grounds - the nomenclature of Transdniestria was a supporter of the integrity of the USSR and propagandized by any means for preserving the integrity of the republic within the Soviet Union. In turn, the Chisinau authorities grouped around ethno-national ideas and promoted the idea of Moldova to join Romania. Consequently, the hostile party nomenclature of Transnistria reacted on intensification of ethnopolitization processes in Chisinau. In turn, the process of ethnopolitization took place quite quickly and not under the slogans of Moldovan patriotism, but under the slogans of Romanization, which also in turn contributed to aggravation of the opposition of the Moldovan society.

The next reason that played an important role in the escalation of the Transnistrian conflict was the language factor. Adoption of the language law, which enforced the Moldovan language identical to the Romanian language with the Latin alphabet, became the reason for the aggressive reaction of the Russian-speaking population of Transnistria, who perceived this law as a direct threat for themselves and their descendants. An important political prerequisite, which gave Transnistria the opportunity to determine its state status, and, consequently, made its participation in the conflict justified, was the problem of autonomy. In addition, the intention of the Transnistrian nomenclature to gain independence from Chisinau was also of an economic nature. Due to the fact that the Transnistrian economy accounted for about 40% of Moldova's total profits, the Transnistrian authorities tried to retain control over the territory and were interested in escalation of the conflict.

Thus, the peculiarities of the genesis of the conflict in Transnistria are following. Despite the fact that Transnistria makes about 12.2% of the territory of Moldova, historically it considered itself an equal subject with another part of the republic. The emergence of the conflict was largely due to the fact that the authorities in Chisinau and Transnistria turned out to be diametrically opposed in their ideological views. On the one hand, there were ultra-rightists, on the other hand, ultra-leftists. In

this situation, the nomenclature of Transnistria had no chance to be properly represented in the republican authorities. The direction of the actions of the political forces that took part in the conflict was not connected with the assertion of the sovereignty of Moldova, but on the contrary was subordinated to integration into foreign state entities and orientation to external factors, both from Chisinau and from Transnistria. Opposing external geopolitical orientations of Transnistria and Chisinau inspired their leadership with confidence in military assistance from these external forces. The rapid consolidation of the population of Transnistria around the local nomenclature was caused by the loss of linguistic communication and the cultural and information environment. The sharp escalation of armed confrontation in the conflict was due to the massive use of military forces on both sides and the presence of the 14th Russian army on the left bank of the Dniester river.

As for the environmental aspect of the problem, the Dniester river, which has become a natural boundary separating the conflicting parties of the conflict, has become a hostage to the current situation. Initially, before the outbreak of armed clashes, the state of the Dniester river required close attention and development of cleaning activities to ensure the safety wastewater level and industrial chemicals that are dumped into the river by local enterprises. Efforts to reduce the negative impact on the Dniester basin require joint efforts and coordinated measures, however, the conflict has essentially frozen most of the projects to improve the water conditions of the Dniester river. Despite the fact that both sides are currently trying to implement environmental projects to clean up the waters of the Dniester, the situation is still complicated by the Transnistrian conflict, which has not been fully resolved and hampers the effective cooperation of all stakeholders. In this regard, it should be pointed out that the environmental issues of a transboundary river are related to humanitarian problems that are usually resolved by countries outside the context of the conflict.

As for the armed conflict between eastern separatists and the National Army of Ukraine, in this case, there are a lot of common points with the frozen Transnistrian conflict. Just like the Transnistrian conflict, the war in the Donbas has ideological, political and linguistic preconditions. The main point of the similarity of the two conflicts is the unrecognized independence of the territories, although it is inherently conditional, since both satellites cannot exist without the support of the Russian Federation. Both territories also appealed for help to external forces, hence the US, the European Union and Russia are involved in the conflict. But for all the similarity of eastern European conflicts, there is as much a difference in principle in them as well. The conflict in the Donbas region prior to the events of the Maidan and the course of European integration was not so pronounced, and the language issue was not so acute. Analysing the events and agreeing with the opinion of some experts, it can be

concluded that the armed conflict between the separatist regions and Ukrainian armed forces has been created artificially and is the result of political manipulation by external stakeholders.

Thus, the war in the Donbas region became a source of environmental cataclysm, primarily in the water sector. Even before the conflict, the state of the Siversky Donets and Kalmius rivers was catastrophic because of the huge amount of wastewater that was discharged by the processing and extractive industries. At the present time, the situation has been aggravated by the fact that both rivers have become the natural boundary of the armed actions and bear the brunt of the environmental consequences of military operations.

Investigating both eastern European conflicts, it is obvious that environmental problems and management of water resources require certain counter measures. As for Transnistria, the best way out are the joint projects between Transnistrian authorities and Chisinau to protect the water resources of the Dniester river, which should, on the example of such situations, exclude political disputes in joint activities related to the protection of water resources and make joint efforts to implement them.

Taking into account the abovementioned issues, it is possible to formulate a number of recommendations for overcoming negative consequences and managing environmental risks in the framework of Donbas water resources. Foremost, comply with the set of measures for the implementation of the Minsk Agreements from the 12th of February 2015, including an immediate and complete ceasefire and the removal of heavy weapons. Refrain from placing military installations and positions near objects that pose a direct environmental threat. Furthermore, eschew attacks directed against civilian facilities necessary to ensure the functioning of water supply. Last but not least, fulfil responsibilities to ensure the protection of water resources as a matter of priority. Ensure the civilian population, including its most vulnerable groups, respects inalienable human rights and fundamental freedoms that include free access to water resources and the availability of safe drinking water.

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IOM A UNHCR MIMO ICH FUNKCIÍ: PRÁVNE A ADMINISTRATÍVNE FUNKCIE PRE OCHRANU ENVIRONMENTÁLNE VYSÍDLENÝCH OSÔB

IOM AND UNHCR BEYOND THEIR MANDATES: LEGAL AND ADMINISTRATIVE FUNCTIONS IN THE PROTECTION OF ENVIRONMENTALLY DISPLACED PEOPLE

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Predpokladá sa, že zmena klímy povedie k nárastu frekvencie prírodných katastrof. Zvýšenie takýchto extrémnych poveternostných udalostí môže viesť k nútenému presídľovaniu migrantov za účasti Vysokej komisie Organizácie Spojených národov pre utečencov a Medzinárodnej organizácie pre migráciu. Ako môžu medzinárodné organizácie ako UNHCR a IOM zaoberajúce sa humanitárnou a migračnou problematikou riešiť otázky spojené so zmenou klímy? Dostávajú sa nad rámec svojich funkcií? Dokázali ich nedávne humanitárne kroky na post-prírodných hrozbách na Srí Lanke, v Bangladéši a na Haiti vytvoriť „precedens“ v medzinárodnom verejnom práve, ktorý by mohol rozšíriť ich právomoc?²

Kľúčové slová: životné prostredie, migrácia, geopolitika klimatických zmien, klimatické negociácie

Climate change is predicted to lead to the increase and the frequency in natural disasters. The increase of such extreme weather events may lead to forced human displacements migrations, involving the United Nations High Commission for Refugees and the International Organization for Migration responsibilities' on the international scene. How are the UNHCR and IOM international organizations, both specialized in humanitarian and migrations fields, dealing with climate change? Are they moving beyond their original mandates? Do their recent humanitarian actions in Sri Lanka, Bangladesh and Haiti post-natural hazards may have created a “precedent” in international public law, which could enlarge their power of action?

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Key words: environment, migration, geopolitics of climate change, climate negotiations
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1 INTRODUCTION

This paper will challenge the implementation the UNHCR' and IOM' common agenda for the rights and protection of environmentally displaced people since the COP21 and the Paris Agreement. We will analyze the way UNHCR and IOM implemented the environmental criteria through their political discourse, their internal policies and among humanitarian operations they conducted. The use of this new criteria might have led to new dynamics of power and rivalries within the two structures and inside each of own institution. Indeed, the New York Declaration voted on 16 September 2016 strengthens global governance of migration and brings IOM the opportunity to join the United Nations as an international organization. This evolution might lead to new rivalries with the UNHCR and internal consequences in terms of recruitment, funding and expansions of their activities on the field.

UNHCR and IOM' both failures and limits to ensure legal protection of environmentally displaced people are often pointed out as a lack of action and political will. The UNHCR and IOM have both legal personality provided by the public international law structure and the law of international organizations (Hall, 2016). International organizations possess their own internal decision-making instruments and can enact their own legal resolutions. Despite this form of legal autonomy, international organizations still strongly depend on national political decisions and on Member States allocations. It should be noted that the financial and political commitment of the States to both institutions have strong influence on their effective legal actions (Maertens, 2012).

Firstly, we will go back to the definition of "refugee", "migrant" and "displaced people" concepts, in order to remind legal definitions provided by international public law and understand their legal implications (Cournil 2006, Mazzega 2006). This work of definition is essential to understand how the classification is built upon concepts of human persecution and legal categories corresponding. Indeed, the recognition of a specific status for environmental displaced people would raise some questions related to the authority and mandate of UNHCR and IOM to ensure a humanitarian and legal protection for environmental displaced people.

We will also study the UNHCR and IOM' mandates the legal compatibility with the international and regional legal texts including climate-change related relations. It will also be necessary to analyze international instruments based on soft law (Nansen Initiative, Global Compact for Migration), which, without necessarily

recognizing the migratory dimension, can be applied to natural disasters' victims (Tuitjier 2015, Chevalier 2015). An overview of international law instruments and climate negotiations legal frameworks will be conducted and we will pay particular attention to the UNHCR and IOM' legal recommendations and work of advocacy during the COP21.

2 UNHCR AND IOM POLITICAL POSITION TOWARDS ENVIRONMENTAL DISPLACED PEOPLE

The United Nations High Commission for Refugees is mandated to ensure legal and humanitarian protection of refugees under the 1951 Geneva Convention. The Geneva Convention relating to the Status of Refugees applies Resolution 429 (V) of the United Nations General Assembly of 14 December 1950. Adopted by the States Parties to the United Nations and signed in Geneva on 28th July 1951, this Convention use articles 13 and 14 of the Universal Declaration of Human Rights. *“Man of 1948”* 1. Everyone has the right to freedom of movement and to choose his residence within a State. 2. Everyone has the right to leave any country, including his own, and to return to his country “and” 1. In the face of persecution, everyone has the right to seek and enjoy asylum in other countries [...]

UNHCR has legally defined a refugee on the basis of these articles:

Article 1 - A. *For the purposes of this Convention, the term “refugee” shall apply to any person: (...) (2) Who, having a well-founded fear of persecution because of his race, religion, his nationality, his belonging to a certain social group or his political opinions, is outside the country of which he has the nationality and which cannot, or because of this fear, want to claim the protection of that country; or who, if he has no nationality and is outside the country in which he had his habitual residence, cannot, or because of that fear, refuse to return.*

Thus, the environmental factor is not included among legal criteria UNHCR provides to grant the refugee status under international refugee law. The international organization is limited in its appropriation of environmental issues within its legal and administrative services through its constitutive mandate (Mayer 2015, Prieur 2015).

The non-existence of a criteria of persecution caused by external environmental or climatic facts can be explained partly by a temporal factor (Maertens, 2012). The Geneva Convention was signed in 1949, before publication and dissemination of scientific reports highlighting this factor of influence. Governments signing the Geneva Convention have designed criteria of persecution, based on the human activities. Moreover, the recognition and amendment of a new criteria in the Geneva Convention raise sensitive questions regarding the political will and possibility

of States to modify or amend the Geneva Convention and include additional legal criteria (Cournil, 2006).

Going beyond the legal framework defined by the Geneva Convention to assist and provide legal protection to environmental displaced people would imply a significant internal process of justification, which could also jeopardize legal dispositions already acquired. Several lawyers point out the risk of a revision of the 1951 Geneva Convention, leading to counterproductive effects and the loss of legal provisions. Indeed, such a revision of the Geneva Convention would require the reopening of the Geneva Convention. Some conservative governments could see this legal reopening as an opportunity to discuss existing provisions and, finally, promote a restrictive mandate (Cournil, 2006).

Internally, the announcement of a debate on a possible intervention by UNHCR in the case of environmental displacement raised several fears regarding the existing mandate of the UNHCR. According to Erika Feller (2011), UNHCR did not agree on a specific definition related to “environmental migrants”, “climate refugees” or “environmental displaced people”. She believes that “the international community needs to find the right balance because the organization is working for the moment to fulfill its mandate for its main beneficiaries”.

The International Organization for Migration created in December 1951, is an international agency producing research, reports based on field data collecting and contributes to advocacy and public policies developed by States, related to migration. IOM's mandate was adopted on 19th October 1953 and came into force on 30 November 1954. This mandate states: “*Internally, the announcement of the debate on a possible intervention by UNHCR in the case of environmental displacement raised several fears, notably that of seeing the mandate of the UNHCR distorted and its legal expertise diminished*”. According to Feller (2011), UNHCR has still not decided on the exact terminology and definition of climate refugees, ecological refugees or displaced people due to natural disasters. Feller believes that “*the international community needs to find the right balance because the organization is working for the moment to fulfill its mandate for its main beneficiaries*”.

While IOM's executive mandate does not mention any humanitarian intervention in a natural disaster context, IOM stands out as a non-UN agency pioneering, conducting field research on the link between environment and displacements (Ionesco, 2015).

IOM started being interesting in the phenomenon of environmental migration in the years 80 and published a first scientific report “Migration and the environment in 1992”, followed by three other publications in 1996, 1997 and 1998 (Ionesco, 2015). This non-governmental agency intervened after the Hurricane Mitch, which killed

10 000 people and displaced more than thousands of people in Honduras. IOM provided humanitarian support and helped to build shelters (Ionesco, 2015).

The International Organization for Migration considers any people, displaced or fleeing from their country, should be recognized as refugees, independently on the natural or man-made disaster. IOM defines migration as “*displacement that results in a change of residence for a population, regardless of its cause, composition and duration. There are two types: international and internal, whether temporarily or permanently. They are differentiated by the crossing of an international border*”.

According to IOM, forced migrations are not based on a voluntary movement but on a movement caused by external factors such as war, famine, drought and natural disasters that may be related to human activities. IOM distinguishes people fleeing post natural disasters situations and does not classify them as refugees or displaced persons for economic, war and conflict reasons. As such, IOM regularly reports famine outbreaks triggered by long periods of drought, pointing out climate change as an aggravating factor of forced migrations (Ionesco, 2015).

3 UNHCR AND IOM APPROPRIATION OF NEXUS BETWEEN CLIMATE CHANGE AND ENVIRONMENTAL DISPLACED PEOPLE

The United Nations High Commission for Refugees (UNHCR) and the International Organization for Migration (IOM), through operational and humanitarian assistance they provided after sudden natural disasters, have been gradually invited to position themselves on the environmental displaced people protection issue (Maertens, 2012). Both of these organizations maintain proactive communication on climate change and post natural hazards forced displacements. Nevertheless, they struggle in finding funding and support to develop long-terms projects in the geographic areas the most vulnerable to climate change induced effects. Could they finally involve their responsibilities’ to ensure legal and administrative protection of environmental displaced people?

In 2004, the UNHCR’ exceptional post-tsunami humanitarian intervention in Sri Lanka was perceived as a trigger. UNHCR positioned itself as one of the first humanitarian actor on field, going beyond its original mandate restriction and competences (Maertens, 2012). This humanitarian intervention is depicted as interested and pragmatic: the UNHCR Protection Unit based in Geneva deployed important human, financial and material resources during one year and a half. As the International Organization Migration was also intervening and pooling their resources, this intervention shows the potential for multilateral collaboration and practical cooperation IOM and UNHCR on field, despite rivalries and disagreements between these two international organizations. Indeed, the UNHCR is an organization which

has to deal with a competitive environment in which intervention can be decisive for establishing the political legitimacy of the organization (Maertens, 2012).

Originally limited to the European geographical area, UNHCR and IOM mandates have evolved over the last sixty years. Pursuing a top-down approach, IOM and UNHCR Headquarters' are both based in Geneva and set up projects implemented, in a second time, in local offices. Limited in their framework of action and by restrictive mandates, they seize the opportunity to position themselves on a subject which put the international organizations in restlessness.

Among the various criteria defined in the 1951 Geneva Convention relating to the Status of Refugees, the environment, as a cause of persecution caused by external environmental or climatic effects does not exist. Following its exceptional and sudden humanitarian action in 2004 after the Sri-Lankan tsunami and the Kashmir earthquake in 2005, the UNHCR spoke for the first time out about climate refugees and the emergency to find a legal protection framework (UNHCR, 2015).

At the same time, internal voices spoke up and asked the UNHCR to consider the enlargement of its mandate, to integrate additional expertise and ensure the legal and humanitarian protection of environmental displaced people (Maertens, 2012). Such requests raise internal issues, as the willingness to maintain this new strategy of expansion and to establish a new field of activity. Indeed, the UNHCR was gradually internalizing public positions in favor of the enlargement of legal protection for environmental displaced people. Some sections were publishing several information reports, in collaboration with other non-governmental agencies.

In 2012, UNHCR set up the first Climate Change and Disaster Displacement Unit, dedicated to environmental issues (Franck, 2016). They published some reports and guidelines to measure the impact of environment on forced population movements. Today, this section contributes to intergovernmental initiatives such as the Nansen Initiative, coordinates and develops soft law instruments to improve environment displaced people protection. This structure has an operational branch dedicated to adaptation and capacity building to face the effects of climate change. For its part, IOM is developing a specific research section called "Migration, Environment and Climate Change" (Ionesco, 2015). Their main interest is to inform States and about the environmental pushing factor in forced migrations. Subsequently, IOM's nine regional offices develop a transversal approach on migration, environment and climate change into their respective strategies.

UNHCR's official position on climate change is an opportunistic one. In order not to lose "ground" in a competitive context, UNHCR has to establish a clear political position regarding the other international organizations such as the International Organization for Migration and the High Commission for Human Rights. While UNHCR has legal expertise in the case of forced migration, IOM is recognized as

competent to establish guidelines for voluntary migration. Indeed, IOM is also interested in working on forced migration linked to natural hazards or sudden environmental disasters. As a result, there are areas of overlap between IOM's field of action on the one hand, and UNHCR on the other (Gemenne, 2015). This overlap and the absence of clear guidelines about respective powers of action constitute the first obstacles to the effectiveness of actions.

In 2001, the UNHCR published a first report on the case of "environmental refugees", showing a willingness to include environmental criteria among the triggers of humanitarian crises (Maertens, 2015). UNHCR's approach is in line with IOM, which tends to become a key figure on the international scene. Indeed, IOM launched first reports on the link between migration and climate in the early 1990's. Then, the organization published regularly research reports, data collecting and feedback from conference around environmental migrations issues.

International organizations' approach on environmental migrations was firstly focused on the impact on migration and environment. IOM took the opposite view of this perspective and introduced the first influence of environmental degradation and climate change on human mobility. In fact, IOM published a first report in 2009, stating the existence of a link between climate change, environmental degradation and migration. IOM received 720 million USD between 2009 and 2013 to strengthen its humanitarian response to natural disasters in more than 30 countries and "*to provide immediate assistance, develop disaster reduction activities or manage risk the long term*" (Ionesco, 2015).

Dina Ionesco, Head of the IOM Environment section explains, "*IOM's current activities on migration, environment and climate change include research and awareness raising, legal protection thinking, strengthening actors' capacities, political dialogue and the development of partnerships. They also include field operations aimed at reducing people's vulnerability to environmental risks and assisting populations displaced by natural disasters and environmental change*".

IOM's operational and humanitarian response is partly explained by the UN's reform of the United Nations Humanitarian Organization in 2006 and the approval of the Inter Agency Standing Committee (IASC) in December 2005, which encouraged a common approach with the UNHCR. Dina Ionesco confirms: "*IOM is leading the coordination and management of temporary camps for people displaced by natural disasters worldwide*".

The approach of the UNHCR Climate Change section seems to echo the one IOM wants to assert as an actor of advocacy and policy making. However, if the International Organization for Migration claims to have built an expertise on environmental protection issues, UNHCR remains the only international organization with legal basements recognized by the General Assembly of the United Nations.

4 STATES OPPOSITION TO THE EXPANSION OF UNHCR AND IOM MANDATES

A State party to the Geneva Convention is legally bound to provide international protection to people who can be protected by their own States. So far, people displaced by natural or climatic disaster in their countries of origin cannot obtain the legal protection of UNHCR, as UNHCR cannot theoretically intervene on the ground on the basis of the principle of non-interference and respect for territorial integrity (UNHCR, 2015).

Jane McAdam identifies a form of fear among states parties, donors, but also some UN officials about UNHCR enlargement's mandate (Mc Adam, 2012). UNHCR's intervention oppose the question of respect for national sovereignty and a certain apprehension that the United Nations may interfere in the internal affairs of states concerned by internal displacement movements. Jane McAdam notes two points of opposition regarding a possible enlargement of the UNHCR's mandate. First, states could require a strict respect of the UNHCR original mandate and legal framework guaranteed by the Geneva Convention. Then, such an enlargement of the UNHCR's original mandate could divert the UNHCR from its primary objectives, spread budgets and mitigate its power of action.

Some states have publicly expressed their refusal to see the UNHCR developing a new framework for environmental displaced people. Russia and India expressed their willingness to maintain the current 1951 Geneva Convention and the 1967 Protocol, stressing the separation of asylum and migration, human environmental causal factors, including climate change (Hall, 2016).

In 2009, High Commissioner for Refugees Antonio Guterres face strong rejection during the 2009 ExCom Committee meeting, during which he discussed the issue of internal displacement related to climate change induced effects. The Bangladesh authorities mentioned their reservations regarding the potential broadening of the High Commissioner for Refugees' mandate, arguing that the UNHCR should better focus on its current mandate and the actions carried out (Hall, 2016). Such reservations coming from state authorities confirm fear that UNHCR would increase its activities on their territories and lead internal displaced people after natural hazards, raising the question of interference.

The expansion of International Organization for Migration's mandate was raised in the 1990s and received strong criticism in return. In 1995, IOM defended during an annual meeting its desire to enlarge its intervention's frame in order to provide humanitarian assistance to people in humanitarian emergent situations (Hall, 2016). Several States Parties were opposed to this new orientation, arguing the risk of a mandate overlapping with other United Nations agencies or NGO's specialized in

humanitarian intervention. These criticisms revealed a desire to keep the IOM's original policy framework and to limit the potential of an expansionist policy.

Limits and restrictions imposed by the States to the UNHCR and IOM, with regard to a potential expansion of mandate to ensure the protection of environmental displaced people refer to the hierarchical system of law in international organizations. Indeed, UNHCR and IOM are international organizations with legal personality and internal operating structures, defining their power of action. Both of these entities have structural functions very similar to those of the States: a very strong hierarchy of powers and responsibilities', a vertical allocation of powers (from Headquarters to local offices) and a discrepancy between political decisions and actions carried out on the field.

However, international organizations remain "creatures of their Member States", institutionalized and funded by them in order to facilitate cooperation (Sur, 2013). In fact, IOM and UNHCR's framework of intervention depend firstly on a good level of diplomatic relationships with their hosting States.

5 UNHCR AND IOM COLLABORATION WITHIN CLIMATE NEGOTIATIONS FRAMEWORK

During the 14th Conference of the Parties taking place in 2008, UNHCR and IOM sections organized a first side-event in common on the topic "Climate change, migration and forced displacement: the new humanitarian border". The goal of this joint side-event was to bring knowledge and evoke some guidelines related to migration, climate change, protection and adaptation. This event was an opportunity for both units to make a call for a bigger mobilization from the international community and confirm the existing link between migration, environment and climate change (Franck, 2016).

UNHCR and IOM were also invited to speak at the same event at the United Nations Conference on Sustainable Development in 2012. This conference focused on the vulnerability of migrants and refugees living in urban areas. On this occasion, UNHCR and IOM affirmed the "*need to strengthen disaster risk reduction efforts, including natural disasters and those related to environmental degradation and climate change pressures*". The presence at this event of the IOM Director General William Lacy Swing and High Commissioner for Refugees Antonio Guterres also showed their common political willingness to publish a consensual and similar political message.

During the COP21 negotiations, IOM and UNHCR were both taking part to a joint side event on Human Mobility and Climate Change. The importance of human mobility has been discussed in the UNFCCC process but did not include the nexus between environment, climate change and migration. Nevertheless, some exchanges

took place between UNHCR, IOM and the Norwegian Refugee Council through the creation of an informal Advisory Group during these negotiations.

In September 2016, the Italian and Sri Lankan governments jointly organized an event in preparation of the COP22 about health in a context migration. This event welcomed the World Health Organization, the IOM and UNHCR. This event echoed a United Nations Summit during which the health of refugees and migrants; including displaced people post natural disasters, was evoked for the first time.

UNHCR and IOM unanimously affirmed the necessity to share responsibilities' in promoting the health of refugees and migrants. Such a political cooperation between UNHCR and IOM at a high level of institutional cooperation appears to be fruitful but does not give elements about concrete common actions on field.

Also, UNHCR and IOM have diversified their initial activities to become pioneers and experts in soft policy and advocacy in the field of migration research related to the effects of climate change. These two international organizations produce regular institutional reports on the effects of climate change over migration and displacement since the late 1990s, collect and provide quantitative data to other international agencies (Maertens 2015, Hall 2016). However, the Geneva office working on climate change would not apply any internal communication policy and would not build any inclusion process with its local offices.

6 CONCRETE AND OPERATIONAL CAPACITIES FOR UNHCR AND IOM TO GO BEYOND THEIR MANDATES

The 1990s can be conceived as a turning point in the prevention of natural disasters and humanitarian assistance for people directly affected. The United Nations launched the World Food Program (WFP), which provides emergency food assistance in case of disaster relief operations. At the same time, the United Nations Assembly and Commissions met in Yokohama, Japan, in May 1994, and set up guidelines for the prevention of natural disasters in the frame of the UN Decade Program. International Convention on Disaster Reduction Strategy (Hardcastle & Chua, 1998).

This multilateral institutionalization of the humanitarian, in the frame of natural disasters, encouraged international organization to develop strategy and discourse of justification (Maertens, 2012). This institutionalization was first established in the soft policy field but was then diffused to concrete and operational framework of actions. In 1996, IOM, UNHCR and the Refugee Policy Group jointly organized a first conference to assess and establish measures to prevent and mitigate environmental degradation (Ionesco, 2015). From this point, environment started being perceived as a likely factor of aggravating forced displacements.

While UNHCR has legal expertise in the frame of forced migrations leading to refugee or statelessness cases, IOM is recognized competent to establish guidelines for voluntary migration (Hasegawa, 2016). This organization is also interested in working on forced migration, including environmental or climatic events. Nevertheless, the absence of clear guidelines regarding the power of action of each of the international organizations in the case of sudden human displaced due to natural hazards is an important obstacle in defining the effectiveness of common actions (Hasegawa, 2016).

The post-natural hazards humanitarian assistance provided to internally displaced people was progressively written on the agenda of the General Assemblies of the United Nations. On 8th December 1988, a resolution entitled Humanitarian assistance to victims of natural disasters and similar emergencies was voted by the United Nations. Therefore, the environmental and climatic factors are integrated into the humanitarian intervention strategy taken into account by the UN agencies (Resolution 43/131 Humanitarian assistance to victims of natural disasters and similar emergency situations).

In 2013, the International Organization for Migration (IOM) launched a first environmental migration portal that "aims to provide a single point of entry to promote new studies, information exchange and dialogue". The aim was to collect data, conduct research projects on the link between migration and environment. IOM then developed a panel of recommendations and advice to prevent national governments on the issues related to human displacements linked to an environmental or climatic factor (Mokhnacheva, 2016).

Beyond the operational tools at its disposal, IOM wishes to promote and "*facilitate the role of migration as a climate change adaptation strategy*". Between 2000 and 2009, 500 projects and expert reports have been funded to study various types of environmental migration (Ionesco, 2015).

At the same time, UNHCR conducted research and data collection expertise by producing a first report on environmental refugees in 2001. The choice to fund legal study reports or field data on environmental migration echoes UNHCR's awareness regarding its political position and its operational role in protecting people displaced by natural disasters (Maertens, 2015).

As IOM progressively intervenes at the operational level following population displacement caused by human, then natural and climatic factors, restrictive legal provisions included in the UNHCR's mandate could be conceived as a major obstacle (Ionesco, 2015). The important difference in the legal nature of IOM and UNHCR respective mandates can explain how these two international organizations develop various processes of communication and framework of actions about the environmental displaced people.

Thus, UNHCR recognizes the intricacy of environmental, security and humanitarian factors and considers a possible intervention legally possible in a case of a religious, social or political group disproportionately affected by a sudden or long-term catastrophe caused by third-party behavior (Mc Adam, 2012). Similarly the right of the UNHCR to provide humanitarian and legal assistance, in the case of a government using a natural disaster as a pressure tactic to persecute civilians or opponents, has been recognized.

If the UNHCR apprehends the environmental criteria as a new criteria in its own right justifying a new form of legal and humanitarian intervention, this approach could trigger a true expansionist policy of the UN agency in territories in which international action was non-existent or limited to the strict application of the Geneva Convention. Is this approach for this agency? Or would it require a more general legal framework that would support, legitimize, but especially finance such new operations?

5 CONCLUSIONS

On 19 September 2016, the United Nations General Assembly adopted the New York Declaration for Refugees and Migrants. Member States committed themselves to develop a comprehensive framework of action for refugees and migrants, with a view to ensure the adoption of a global compact for safe, orderly and regular migration in 2018. Initiated by IOM and monitored by the UNHCR and the World Labor Organization this approach is based on the desire to ensure better international governance of migration and the need to provide a framework of common principles and principles.

Heads of State and Government and several UN agencies met on 20th May 2017 in several panel discussions to discuss the impacts of global economic, security and environmental change on migration. Among the “pushing factors” of migration, the effects of climate change, natural disasters and resource conflicts were discussed. During discussions, the State of Bangladesh recognizes the existence of a direct link between migration and climate change and claimed climate change factor should be incorporated as the driving force of migration in the official text of the Global Compact.

The Global Compact seems to be a first level of discussion in order to prepare potential future negotiations around the topic of migration. Provisions included in the Global Compact text will have to comply with States’ obligations under international human rights law and existing labor standards. States already agreed on the future agenda coming: consultations will be organized by the United Nations Secretariat and the International Organization for Migration (IOM), as well as relevant United Nations agencies, such as the Office of the High Commissioner for Human Rights (OHCHR), the World Trade Organization (WTO) and some of the regional commissions of the

United Nations. This process of consultations could lead to some agreements regarding the implementation of a framework designed to ensure a better protection of the rights of migrants and refugees.

The Global Compact institutional and political framework also tends to conceptualize migration through criteria of prevention, adaptation and mitigation. If the Global Compact paves the way for new accountability and compensation mechanisms, climate change law could also become a new legal system in which the protection and compensation mechanisms could be provided to vulnerable people facing the effects of climate change.

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ENVIRONMENTÁLNE INOVÁCIE: PRÍLEŽITOSTI PRE EKONOMIKY

ENVIRONMENTAL INNOVATIONS: OPPORTUNITIES FOR THE ECONOMIES

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Predložený príspevok prispieva k lepšiemu pochopeniu podstaty ekologických inovácií a ich vplyvu na ekonomiky krajín. Článok vysvetľuje kľúčové definície ekologických inovácií. Preskúmanie úspešných prípadov v rozvinutých krajinách ukázalo, že ekologické projekty môžu výrazne prispieť k rastu zamestnanosti v zelenom a klasickom sektore ekonomiky, spusteniu inovačného procesu, zvýšeniu exportu a spôsobiť rôzne pozitívne environmentálne vplyvy. V článku bol zdôraznený vzájomný vzťah medzi prísnosťou environmentálnej politiky krajiny s rozvojom jej ekologických inovácií.⁴

Kľúčové slová: environmentálne inovácie, environmentálne tovary a služby

The present paper contributes to better understanding of the essence of eco-innovations and their influence on the countries' economies. The article explains the key definitions of eco-innovations. The review of successful cases in developed countries has shown that green projects can considerably contribute to employment growth both in green and non-green sector, trigger innovation process, increase export and cause various positive environmental impacts. In the article, the evidence of interrelationship between the stringency of environmental policy of the country with its eco-innovation development has been stressed.

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Key words: environmental innovations, environmental goods and services
JEL: O30, O44

1 INTRODUCTION

Economic theory considers innovations as a process aimed to improve the competitiveness of companies, with their potential to contribute to economic growth and hike the employment opportunities of a country. A definition of innovations commonly referred to is that of Schumpeter, according to which innovations represent „*the commercial or industrial application of something new – a new product, process or method of production; a new market or source of supply; a new form of commercial, business or financial organisation*“ (Schumpeter 2006). For most economists, innovations are thus first-time applications of newly acquired know-how, methods or products, new to the market or to the business itself, and can include non-technological aspects, such as changes in firm organisation or in the product design (OECD 2005).

The economic impacts of environmental degradation have become the focus of greater attention in recent decades. The aggravation of environmental problems associated with climate change and the possibility of depletion of basic natural resources has made both developed and developing countries seek (voluntarily or not) new ways to produce and consume. Furthermore, waste management should be improved.

In this scenario, the substitution or adaptation of current technological standards, towards EI, becomes an alternative to promote sustainable growth and to contribute to improvement of the quality of life of future generations.

The significance of EI is clearly being identified in the EU and worldwide. Eco-industries and EI increasingly draw attention of businesses and policymakers identically, as they assure economic, employment and environmental benefits. This is particularly important in a time of increasing economic and environmental pressures.

EI is not limited to a sector or only equated to environmental technologies, goods or services. This pervasive nature of EI makes the task of confirming its full scope more challenging using presently available statistical indicators. It also presents a particular challenge to policymakers engaged in support for EI in various policy areas.

2 ENVIRONMENTAL INNOVATIONS: DEFINITIONS

The concept of environmental innovations is relatively new. This could be the explanation for several distinct definitions of EI. Also, many different terms have been used to refer to it: eco-innovation, green innovation, environmental innovation and sustainable innovation are mostly used as synonyms (Schiederig et al. 2012).

According to Kemp and Pearson (2007), eco-innovation was the first term to appear in the literature in 1996, in the definition presented by Fussler and James: *“new products and processes which provide customer and business value but significantly decrease environmental impacts”* (Fussler & James 1996). Another definition of eco-innovation, presented by Kemp & Pearson (2007), is *“the production, assimilation or exploitation of a product, production process, service or management or business method that is novel to the organization (developing or adopting it) and which results, throughout its life cycle, in a reduction of environmental risk, pollution and other negative impacts of resources use (including energy use) compared to relevant alternatives”*. Related to green innovation, Driessen and Hillebrand propose that it *“does not have to be developed with the goal of reducing the environmental burden. It does however, yield significant environmental benefits”* (Driessen & Hillebrand, 2002).

Oltra and Saint Jean define environmental innovations *“as innovations that consist of new or modified processes, practices, systems and products which benefit the environment and so contribute to environmental sustainability”* (Oltra & Saint Jean, 2009). And finally, sustainable innovation can be understood as a broader concept, which includes social aspects such as higher satisfaction of human needs and higher quality of life (Schiederig et al. 2012).

In fact, the definition of environmental innovations is close to the conventional understanding of general innovation (or non-EI): *“implementation of new, or significantly improved, products, or processes, marketing methods, or organizational methods in business practices, workplace organization or external relations”* (OECD).

In the EU Eco-innovation Action Plan, eco-innovations (European Commission) are defined as, *“any form of innovation resulting in or aiming at significant and demonstrable progress towards the goal of sustainable development, through reducing impacts on the environment, enhancing resilience to environmental pressures, or achieving a more efficient and responsible use of natural resources”*.

The Eco-Innovation Observatory (EIO) determines eco-innovations as *“the introduction of any new or significantly improved product (good or service), process, organisational change or marketing solution that reduces the use of natural resources (including materials, energy, water and land) and decreases the release of harmful substances across the whole life-cycle”*. The EIO also identifies systemic eco-innovations, which can cause systemic changes in both social (attitudes, regulations, values, etc.) and technical (production processes, tools, technology, infrastructure, etc.) areas and, most notably, in the relationships between them.

The main difference between EI and general innovation is that EI is not an open-ended concept, in the sense that it is necessarily related to the reduction of

environmental damage, regardless of whether or not the EI was intentionally developed with environmental purposes.

Therefore, the definition of EI given in this paper is the definition suggested by the Organization for Economic Co-operation and Development (OECD) in 2009: *“the implementation of new, or significantly improved, products (goods and services), processes, marketing methods, organizational structures and institutional arrangements which — with or without intent — lead to environmental improvements compared to relevant alternatives”* (OECD 2009).

Indeed, the OECD uses the term eco-innovation instead of environmental innovations (OECD). But, again, as pointed out by Rennings (2000), eco-innovation is often used as shorthand for EI, and thus we understand that these two concepts can be used interchangeably.

The definition adopted emphasizes that EI not necessarily have to be developed intentionally to preserve the environment. Rather, it includes all innovations that produce some kind of environmental gain. Hence, all new processes that are more resource efficient can be considered to be environmental innovations.

According to the Oslo Manual (OECD), environmental innovations can be classified in technical environmental innovations and organizational environmental innovations. Technical environmental innovations can be distinguished between process and product (or services) environmental innovations, and organizational environmental innovations refer to new management practices focusing on environmental issues (e.g. environmental management systems). Specifically related to process environmental innovations, we distinguish between clean technologies and end-of-pipe technologies. End-of-pipe technologies reduce the emission of pollutants by adding supplementary measures to production processes, while clean technologies reduce the use of resources and/or reduce pollution generation through the use of cleaner inputs and cleaner production methods. We can understand end-of-pipe technologies as additive solutions and clean technologies as integrated and precautionary solutions.

Therefore, clean technologies are seen as superior, both in terms of reducing environmental impacts and in economic terms, when compared to end-of-pipe technologies. However, the adoption of clean technologies requires greater coordination, integrated measures and organizational support. Examples of end-of-pipe technologies are incineration plants, wastewater treatment plants, sound absorbers, exhaust-gas cleaning equipment and air quality control equipment. Examples of clean technologies are the use of recycled materials, environmentally friendly processes (e.g. replacing organic solvents with water), modification of the combustion chamber design (integrated process), among others.

Finally, product EI are products or services that give rise to low levels of environmental impact through its use and disposal, such as eco-houses, eco-buildings, phosphate-free detergents, water-based paints, environmental consulting, testing and engineering, etc.

3 ENVIRONMENTAL INNOVATIONS CONTRIBUTION TO THE COUNTRIES' ECONOMIES

The development of EI and eco-industries embodies a meaningful economic opportunity. There is an increasing evidence EI in companies lead to reduction in costs, promoted capacity to gain new growth opportunities, as well as opportunities to enhance corporate image in the eyes of consumers. Furthermore, EI appears to be progressively economically viable. Among the EU countries, there is a significant variety of examples reflecting great possibilities of EI to achieve both economic development and improvement of living conditions.

For instance, there is a good example of creating multi-functional climate buffers and “ecological hubs” in the Netherlands. The Netherlands is a delta country and as such is acutely aware of the impacts of climate change, wedged between a rising North Sea and swelling rivers. In a joint initiative, a number of Dutch conservation organisations and the state forest board have proposed the development of multi-functional natural climate buffers, which should increase the amount of space available in this densely populated country to deal with more water while at the same time providing opportunities for recreation and innovations in housing such as floating houses. Part of this initiative is a set of projects which will restore the connections between the Netherlands’ largest forest complex, the 100,000 hectares Veluwe. The other “ecological hubs” and important nature areas for the Netherlands are in the neighbouring countries of Germany and Belgium.

Over the last 20 years, eight green bridges have been constructed in the Netherlands, including the longest green bridge in the world (800 meters), with another 26 planned to be built by 2018. This has significantly increased the living space for wildlife such as red deer, wild boar, badgers, foxes and semi-wild cattle, thereby also increasing the attractiveness of the region for tourism (Raymant et al. 2009).

Another good example of the economic growth is the case of the development of eco-industry in Germany in terms of resource productivity, environmental tax reform and sustainable growth in Europe project (PETRE) (Table 1). In the course of the project, four selected cases of best practice of eco-efficient innovation in Germany were examined to illustrate the win-win potential and the role of policy intervention. The German eco tax has contributed to innovation and growth in the field of (1) low-energy buildings and (2) fuel-efficient diesel cars. In both cases, additional supporting instruments came into effect: Energy minimum

performance standards for buildings together with subsidies for energy-saving investments and a tax differentiation for new cars stimulating fuel-efficiency were additional instruments in the policy mix. (3) Recycling is dominated by regulation but in the case of industrial recycling the rapid increase of material prices has also stimulated more efficient solutions. The fourth case concerned (4) renewable energies, where monetary mechanisms – here subsidies as feed-in-tariffs – have stimulated rapid innovation. Again, a policy mix with additional instruments was relevant.

Table 1: Eco-industry: four German success stories

	<i>Fuel-efficient diesel cars</i>	<i>Low-energy buildings</i>	<i>Recycling</i>	<i>Renewable energies</i>
Taxes/price mechanism Other dominant instruments	Car tax, eco tax, Oil price	Eco tax, oil price Standards, subsidies	Raw material prices Regulation	Oil price Feed-in tariffs, subsidies
Growth employment	++	+	++	++
Innovation	+	+	++	++
Export	++	+	++	++
Environmental impacts	+	+	+	++

*+ = above average; ++ = far above average

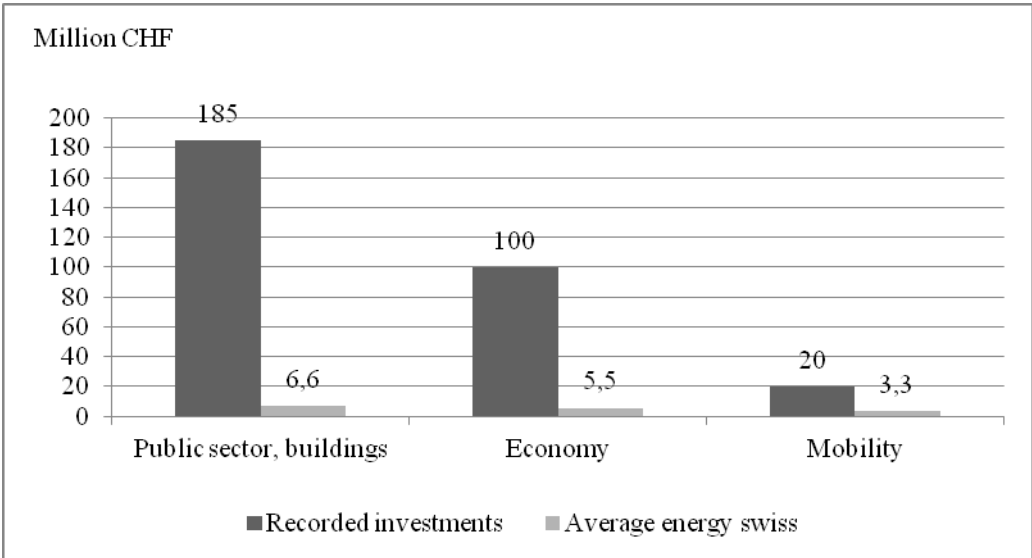
Source: Rayment et.al., 2009

Important project outcomes were:

- There is a multiple win-win potential of strict technology-based environmental policy. The cases show economic co-benefits of the growth, successful export and employment.
- Strict and calculable environmental policy measures can also stimulate innovation, especially the feed-back of the innovation cycle from diffusion to invention.
- Government intervention was essential, generally through a policy mix of different instruments. The combination of the price mechanism and regulation was crucial.
- Sustainable growth was not only policy-driven but also depended on an innovative type of industry, the resource management sector of the environmental industry.

One of the successful examples of the development of eco-industry in the non-EU member-states is also the case of Switzerland, in particular the country's success in terms of the project Energy Switzerland. Five key areas of intervention (buildings, renewable energies, energy-efficient appliances, rational use of energy and waste heat, mobility) were chosen. The programme has turned out to be a driving force for innovations in the Swiss economy. The results were impressive as in 2006, the allocation of CHF 39 billion by the Swiss Government and CHF 35 billion by the cantons triggered private investments of CHF 1065 billion in energy-related projects. Approximately CHF 315 billion were invested in energy-efficiency, mainly in the public authority and buildings sectors (Figure 1).

Figure 1: Energy Switzerland: operated investments in efficiency measures



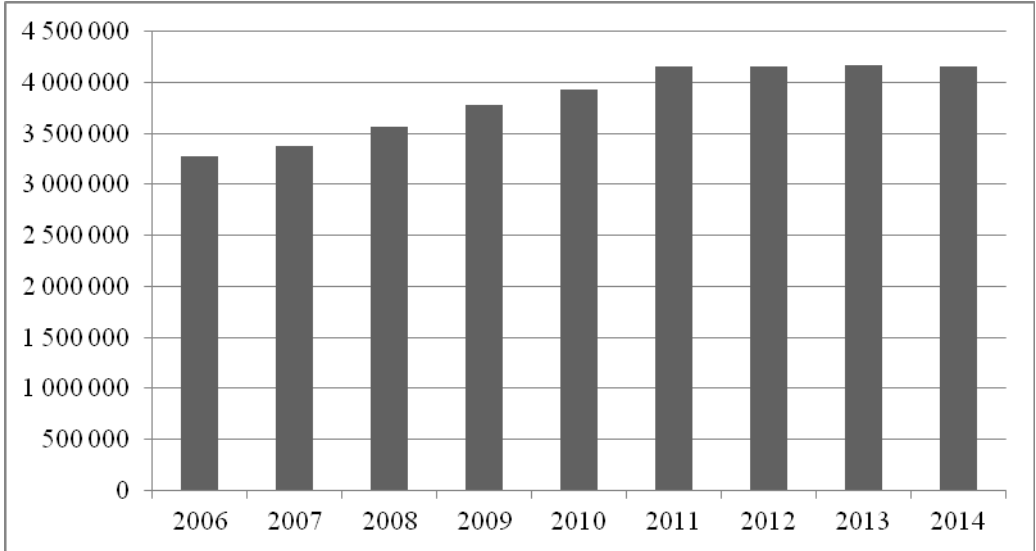
Source: Rayment et.al., 2009

The growth of the market of eco-innovative goods and services defines another broad category with an economic opportunity. There are expanding markets for environmental goods and services, as well as for cleaner production, technologies for pollution management, etc. In the EU countries, the increase in employment in the environmental goods and services sector (Figure 2), output of green sector and value added (Figure 4). Output of environmental goods and services in 2014 was assessed for EU-28 at EUR 710 billion (5.1% of EU-28 GDP) and the employment in green sector was 4.2 million full-time equivalents (FTEs).

Generally, in EU-28, a significant amount of the output in green sector – above 80% of the total – is sold on the market. A smaller proportion of green sector output is

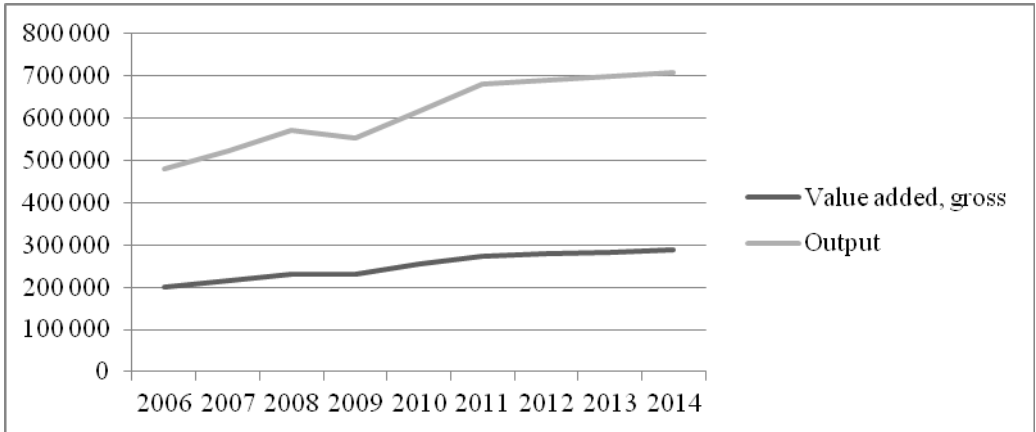
proposed for free or is provided at economically meaningless prices (as “non-market output”). Non-market output chiefly consists of environmental services supplied by general government, including supervision and regulating activities for managing natural resources (European Commission).

Figure 2: Employment in the environmental goods and services, in millions EUR



Source: Eurostat, 2017

Figure 3: Value added and output in green sector in the EU



Source: Eurostat, 2017

4 THE INTERACTION BETWEEN ENVIRONMENTAL POLICY AND ECO-INNOVATIONS

In order to assess the eco-innovation performance among the EU Member States, a composite index by the Eco-Innovation Observatory - Eco-Innovation Index

and Scoreboard has been developed. This index aims at covering the various aspects of eco-innovation by applying 16 indicators grouped into five areas.

- eco-innovation inputs contain investments (financial or human resources), which aim at generating eco-innovation activities;
- eco-innovation activities, representing to what extent companies in a selected country are active in eco-innovation;
- eco-innovation outputs, evaluating the outputs of eco-innovation activities in terms of patents, academic literature and media contributions;
- resource efficiency outcomes, putting eco-innovation performance in the context of a country's resource (material, energy, water) efficiency and GHG emission intensity;
- socio-economic outcomes, reflecting to what extent eco-innovation performance causes positive outcomes for social aspects (employment) and economic aspects (turnover, exports).

The indicators of Eco-Innovation Index are presented in the Table 2.

Table 2: Sub-indicators of Eco-Innovation Index 2016

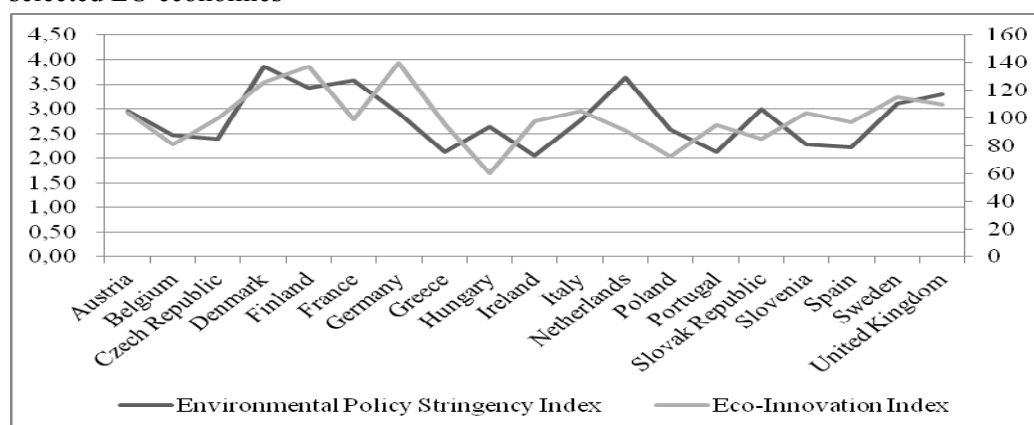
<i>Sub-indicators</i>	<i>Components</i>
Eco-innovation inputs	<ul style="list-style-type: none"> - Governments environmental and energy R&D appropriations and outlays (% of GDP) - Total R&D personnel and researchers (% of total employment) - Total value of green early stage investments (USD/capita)
Eco-innovation activities	<ul style="list-style-type: none"> - Firms declaring to have implemented innovation activities aiming at reduction of material input per unit output (% of total firms) - Firms declaring to have implemented innovation activities aiming at reduction of energy input per unit output (% of total firms) - ISO 14001 registered organisations (per mln population)
Eco-innovation outputs	<ul style="list-style-type: none"> - Eco-innovation related patents (per mln population) - Eco-innovation related academic publications (per mln population) - Eco-innovation related media coverage (per

	numbers of electronic media)
Resource efficiency outcomes	<ul style="list-style-type: none"> - Exports of products from eco-industries (% of total exports) - Employment in eco-industries and circular economy (% of total employment across all companies) - Revenue in eco-industries and circular economy (% of total revenue across all companies)
Socio-economic outcomes	<ul style="list-style-type: none"> - Material productivity (GDP/Domestic Material Consumption) - Water productivity (GDP/Water Footprint) - Energy productivity (GDP/gross inland energy consumption) - GHG emissions intensity (CO2e/GDP)

Source: authors by Eco-innovation Action Plan, 2018

For many years, it has been discussed whether environmental policy can contribute to innovation development of the countries, in particular, various results of testing Porter's hypothesis were received (Porter & Van der Linde, 1995). Generally, there is a strong evidence of positive influence of effective environmental policy of economic development of the countries. Environmental Policy Stringency Index developed by the OECD contributes considerably to evaluating this dependency (Figure 4).

Figure 4: Environmental Policy Stringency Index and Eco-Innovation Index in the selected EU economies



*the last available data

Source: developed by authors by the OECD and EIO 2017

As it can be seen from the Figure 5, the indicator of environmental policy stringency among the EU countries comes along with eco-innovation one, thus, environmental policy can trigger eco-innovations. Availability of such data considerably contributes to better understanding of these interactions, to which the further research will be devoted.

5 CONCLUSIONS

The present paper contributes to better understanding of the essence of eco-innovations and their influence on the countries' economies. Key definitions of eco-innovations were discussed. The review of successful cases in developed countries has shown that green projects can considerably contribute to employment growth both in green and non-green sector, trigger innovation process, increase export and cause various environmental impacts. The data demonstrate that green market is growing in the EU countries, as well as its value added.

The evidence of interrelationship between the stringency of environmental policy of the country with its eco-innovation development was stressed.

In the economic literature, the concept of EI is often vague. There is still no well-established definition of EI, as it often goes along with the quite numerous terms in the literature, like environmental innovations, green innovations, less-polluting innovations, sustainable innovations, etc., which often contribute to generating further confusion. But there are more and more developments in this research area, both in terms of theoretical foundations and practical findings. And nowadays it is certain that EI may contribute to sustainable pathways of development.

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UKRAJINSKA KRÍZA A JEJ VPLYV NA EURÓPSKE DEBATY O ENERGETIKE

THE UKRAINIAN CRISIS AND ITS IMPACT ON EUROPEAN ENERGY DEBATES

*Luka De Bruyckere*¹

Rusko-ukrajinské plynárenské spory z rokov 2006, 2009 a 2013-2014 vyvolali intenzívnu diskusiu o energetickej budúcnosti Európskej únie. Zatiaľ čo EÚ obhajuje pokles závislosti od Ruska, dovoz ruského plynu sa v skutočnosti zvyšuje. Niekoľko plánovaných projektov potrubia je nastavených tak, aby túto závislosť udržali. Napriek tomu sa skúma niekoľko spôsobov zvýšenia energetickej nezávislosti. Zatiaľ čo väčšina týchto možností vyžaduje čas, investície a politickú vôľu, politický vývoj dokazuje, že EÚ presadzuje predovšetkým úsilie o obnoviteľné zdroje energie a zlepšovanie energetickej účinnosti. Snaží sa tak zosúladiť program energetickej bezpečnosti s politikou v oblasti klímy. Zatiaľ čo to nie je možnosť, ktorú uprednostňujú členské štáty strednej a východnej Európy, ktoré sú pripravené obetovať klimatické opatrenia pre energetickú bezpečnosť, dominantný dopyt po plyne zo strany západných členských štátov dáva týmto krajinám väčší vplyv na európsku energetickú politiku.²
Kľúčové slová: energetika, európska politika, Ukrajina, klimatická politika EÚ

The Russian-Ukrainian gas disputes of 2006, 2009 and 2013-2014 sparked an intense debate about the European Union's energy future. While the EU advocates a decrease of its reliance on Russia, imports of Russian gas are in reality increasing. Several planned pipeline projects are set to perpetuate this dependence. Still, several ways to improve energy independence are explored. While most of these options require time, investments and political will, policy developments demonstrate that the EU is mainly pushing for

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renewable energy and energy efficiency improvements. It thereby attempts to align the energy security agenda with climate policy. While this is not the option preferred by Central and Eastern European member states, which are ready to sacrifice climate measures for energy security, the dominant gas demand of Western member states gives the latter greater leverage over the European energy policy framework.

Key words: energy, european policy, Ukraine, EU climate policy

JEL: P18, F50

1 INTRODUCTION

The European Union (EU) relies heavily on Russian oil and gas for its primary energy imports. Russia supplies nearly a third of all oil and gas consumed in the EU. Russian gas imports of certain Central and Eastern European (CEE) member states amount to more than 50% of all gas imports. Finland and the Baltic states even import all their gas from Russia (Larrabee et al. 2017). Currently, 50% of all gas supplied to the EU runs through Ukraine (Tsygankov 2015). While worries have been intensified by the current Russian-Ukrainian crisis, concerns about energy dependency are not new. In 2006 and 2009 gas delivery to Europe was interrupted due to gas disputes between Ukraine and Russia. While certain measures have been taken to diversify supply, the EU remains dependent on Russian gas. The severity of the current, ongoing tensions between Russia and Ukraine is continuing to fuel worries about energy security (Richter & Holz 2014).

This article addresses the influence of the recent Russian-Ukrainian crisis – which started in 2013 – on concrete measures as well as the debate about the future of European energy supply. Energy dependence is a structural issue that cannot be solved overnight. Measures aimed at changing countries' energy mix or switching the source of supply take time and can run into many practical and political difficulties. Concrete impacts of the Ukrainian crisis on the European energy mix thus materialize over large time scales. Therefore, the article focusses on the immediate European response, and the influence of the crisis on the emerging debates about Europe's energy future. Will the EU focus more on renewable energy to reduce its dependency on Russia, or will fossil fuels such as coal or shale gas be promoted?

An important policy framework for addressing this issue is the Energy Union Strategy that was proposed by the European Commission in February 2015. It prioritizes security-of-supply and climate measures within a liberal market perspective. Energy policy has been a difficult policy area throughout the Union's history as member states have diverging interests on the matter and generally intend to maintain national control of several important aspects. Juxtaposing Eastern and Western member states, the former states oppose European meddling in the choice of their energy mix, as they fear climate measures restricting the use of polluting fossil fuels. They do, however, argue for a unified European voice in negotiations with third

country suppliers, notably Russia. Western countries, on the other hand, push for climate measures but generally wish to retain control over bilateral negotiations with potential energy suppliers.

Although European renewable energy production is on the rise – attested by an increase of 66,6% between 2006 and 2016 (Eurostat, 2018b) – and despite the EU's intentions to diversify supply and lower demand, its reliance on Russian has increased. In 2005, the year before the first severe gas crisis the EU as a whole imported 34,6% of its natural gas from Russia. In 2016 this share stood at 39,5% (Eurostat, 2018a).

2 RUSSIAN-UKRAINIAN DISPUTES

During the 1990s several disputes about price setting, debts and transmission tariffs arose between the respective Russian and Ukrainian oil and gas companies, Gazprom and Naftogaz. These turned into geopolitical issues due to the strategic importance of gas to both the Ukrainian and Russian economies, and the role of Ukraine as transit country to Europe, as half of the gas Russia exports to the EU, flows through Europe (IEA 2015). The gas disputes of 2006 and 2009, outlined below, were more serious than the events in the 1990's. In 2009 Russia actually cut off the gas supply to Ukraine. As Ukraine can divert the gas meant for the European market, several EU countries were left in the cold, and even counted several deaths as a result (Austvik 2014).

When Russia halted supplies to Ukraine during the 2013-2014 dispute, gas continued to flow to EU countries continued (Stulberg 2015). However, the ongoing geopolitical crisis unfolding between Russia and Ukraine after the former annexed Crimea, is without a doubt more severe than previous disputes, which mainly revolved around gas. Generally, the underlying tensions revolve around the contradictory views of Russia and Ukraine on the way the energy sector should be governed. Russia, doesn't scare away of using the gas export for (geo)political purposes, by for instance offering lower or higher prices to achieve certain foreign policy goals or threatening to interrupt gas supplies (Malmlöf et al. 2014). Russia thus prefers direct government control over the energy sector. This conflicts with the Single Market rules advanced by the EU. Directly after the Cold War Russia had to accept the dictates of the EU. Since Putin is successfully reestablishing of Russia as a geopolitical stronghold, its state-monopolist version of capitalism, clashes more often with the European approach (Austvik 2014).

In order to understand European concerns and actions it is necessary to elaborate on the pre-crisis relations between Russia and Ukraine. Since the fall of the Soviet Union, Ukrainian presidents generally tried to resist Russian pressure and developed closer ties with the US, the EU and NATO. After some time, relationships with Russia normalized and the country managed to pursue a 'multivector' foreign

policy, directed both towards the West and Russia. The increasingly corrupt president Leonid Kuchma, however, found itself within Russia's orbit again by the end of his presidency in 2004 (Hedenskog 2014).

Ukraine is highly dependent on Russian oil and gas as half of its oil and two thirds³ of its gas imports are supplied by Russia ("Europe Counts Energy Cost" 2014). After Ukrainian independence in 1991, the energy relations of Russia and Ukraine moved along a certain pattern. Ukraine imported large amounts of Russian gas, which it was unable to pay in time. At times Russia reduced its gas export to Ukraine, forcing the payment of gas debts. During the 2006 and 2009 disputes, gas that was meant for European markets was diverted by Ukraine, which made these episodes into geopolitical issues affecting the European union (Stern 2006).

3 THE 2006 AND 2009 DISPUTES

In 2004 an agreement was put in place that seemed to settle the gas issues between Russia and Ukraine for several years. Gas delivery to Ukraine and Europe was ensured, as well as Ukrainian payment. However, several events changed the situation profoundly. A significant amount of Russian gas that was stored in Ukraine disappeared. It was unclear whether it was stolen or lost due to technical problems. Gazprom wanted to make up for the loss by transferring less transit payments⁴. In turn, Ukraine threatened to use gas that was meant for European countries for domestic use. This made Gazprom suggest that Ukraine would have to pay European prices for diverted gas (Stern 2006).

In the meantime the pro-European Victor Yushchenko became president as the outcome of the Orange revolution⁵. This had several implications for the Russian-Ukrainian gas relations. Yushchenko objected the debt settlement of the 2004 agreement and argued for higher market prices for transiting gas to Europe. This triggered higher prices for the Russian gas. Gazprom was seeking to impose market prices on its customers, ex-Soviet countries, currently enjoying discounted prices. The Ukrainian demand for market prices created a perfect occasion to push this longstanding goal (Stern 2006).

On January 1st 2006, when Ukraine refused to pay for higher prices, Gazprom lowered the volume of gas supplied to Ukraine. Hungary, Austria, Slovakia, Romania, France, Poland and Italy saw their Russian gas supply decrease, which indicated that Ukraine diverted gas in transit to Europe. As temperatures were mild that winter, gas

³ This already declined. Ukraine used to rely for 99% on Russian gas ("Europe Counts Energy Cost" 2014)

⁴ Ukraine is compensated for being a transit country, usually with certain amounts of free gas (Stern 2006)

⁵ After weeks of protests triggered by the fraudulent election of Viktor Yanukovych, fair re-elections made Viktor Yushchenko president (Hedenskog 2014).

reserves could make up for the decrease and no households were effectively cut off. To restore its reputation as a reliable gas supplier Gazprom pumped additional gas through the pipelines to supply Europe. Eventually an agreement was reached on a five-year contract between Ukraine and Gazprom and on January 4th, gas supplies were restored. However, questions regarding the security of Russian gas stored in Ukraine remained (Stern 2006).

In 2009 Russian gas export was cut off again, but this time for three weeks. Unlike the crisis of 2006, Europe was severely hit. The crisis started when Russia and Ukraine were unable to reach an agreement on the price of Russian gas and its transit to Europe. One of the reasons was again Ukraine's outstanding gas debt. Because of these quarrels the previous contract expired and gas exports to Ukraine were ended. Gas for the European market continued to flow but was diverted by Ukraine. This made Russia cut off all gas running through Ukraine, a radical step that was not taken in 2006 (Pirani et al. 2009).

European countries that were highly dependent on Russian gas, the Balkans and to a lesser extent also Hungary and Slovakia, were confronted by a humanitarian emergency as it happened in winter. Alternative fuels were more expensive and caused environmental damage and health problems due to the severe cold (Kovacevic, 2009). By reversing the flow, Ukraine supplied major industrial facilities and consumers in the East of the country with gas that was stored in the West. As a consequence, the network was unable to receive gas in transit to Europe (Pirani et al. 2009). As such, Ukraine demanded gas for itself in the event that Europe would be supplied again. Eventually both sides managed to negotiate a new 10-year contract and after 13 days without supply, gas returned to Ukraine and Europe (Pirani et al. 2009). Observers argued however that the agreement did not preclude payments to become an issue again (Pirani et al. 2009).

4 POLITICAL DISPUTES

The 2006 and especially 2009 crises damaged Gazprom's reputation as a reliable supplier. Since the Russian government controls Gazprom, using it as an economic and political tool (Pirani et al. 2009), many observers argue that the both crises were inspired by political motives. Russia's actions were "aimed at further destabilizing an already unstable Ukrainian economy and political system, and particularly the Ukrainian president for his pro-EU and NATO policies and support for Georgia in the August 2008 conflict" (Pirani et al. 2009).

The Kremlin influenced the process of switching to market prices and imposed different conditions on different countries. Countries with rather pro-Russian governments that allowed Gazprom to buy a share in their pipeline infrastructure would experience the price increases gradually on a much longer time scale. Countries

such as Georgia and Ukraine, where governments were less in favor of Moscow, had to pay higher prices much sooner (Pirani et al. 2009).

Both in 2006 and in 2009 Ukrainian elections were approaching. The Kremlin was suspected of using the crises to counter Yushchenko, in order to sway voters to favor a more Russian minded candidate. Whether Russian influence was at stake is difficult to determine. After the gas agreement in 2006 the Ukrainian parliament cast a no-confidence vote to the government arguing that the accord would hurt Ukraine (Stern 2006).

Other voices claim that economic concerns prevailed. Gazprom wants to maximize its profits so it pushes for market prices. Furthermore, stakes in the pipeline infrastructures are deemed essential for commercial success since it would ensure the gas supply to Europe which is Gazprom's main source of revenue (Pirani et al. 2009).

Important consequences of the crises are the damaged reputations of Russia as a supply country and Ukraine as a transit country, and the increased involvement of the EU in the gas transit dispute.

5 THE CURRENT RUSSIAN-UKRAINIAN CRISIS

Both crises pale in comparison to what is happening in Ukraine since the end of 2013. In early 2014 Russia annexed Crimea. Ever since Ukraine fears further Russian interventions in its Eastern regions. While the crises of 2006 and 2009 were never targeted at the EU, observers warn that this could change because of Europe's clear support for Kiev.

Victor Yanukovych was elected president in 2010. During his presidency Yanukovych endowed himself and his entourage with ever more power. In November 2013 his refusal to sign the Association Agreement (AA) and Deep & Comprehensive Free Trade Agreement with the EU triggered pro-European protest on Maidan, the Independence square in Kiev. When protestors persisted, even after several crack downs by the police, Yanukovych and his government were eventually removed from office.

The pro-European interim government abandoned a language law that granted the Russian language an official status in 13 Ukrainian states. The reversal of this move could not pacify emerging groups of pro-Russian rebels advocating autonomy from Kiev. The interim government as well as its Western allies accused Russia of fueling these separatist sentiments. The rebels started to occupy government buildings in Eastern parts of the country. Arguing that the Russian speaking parts of the Ukrainian population needed protection, Russia took advantage of the situation by occupying Crimea. After a referendum on joining Russia, fiercely contested by Kiev and the West, Russia annexed the peninsula. Pro-Russian rebels in mainland Ukraine continued to occupy official buildings and controlled several areas in the Donbas

region, proclaiming the Luhansk and Donetsk People's Republics. At this point Russia was accused of supporting the rebels even with military means (Hedenskog 2014). After Petro Poroshenko was elected president, Kiev started an anti-terrorist campaign against the rebels and gradually regained territory, which was again regained by the separatists before the Minsk ceasefire was signed in September 2014 ("Ukraine agrees ceasefire with rebels" 2014). The ceasefire was often violated as the region was further destabilized by warlords taking control over parts of the territory, before it collapsed in early 2015. There were several attempts to renew the Minsk agreement. However, while less intense, fighting continued up until this day. Increasing Russian military presence at the border with Ukraine keeps fueling fears of a Russian annexation of the Donbas (Hedenskog 2014).

The crisis had a profound impact on geopolitical relations between Russia and the West. The US and the EU imposed highly debated sanctions on Russia that were severed after rebels took down a passenger flight crossing Ukraine (Borger et al. 2014). The Russian president Putin responded with a ban on the import of agricultural products from countries that sanctioned Russia (Rankin 2014).

As the crisis dragged on, gas supplies were again a hot topic. At first, when Yanukovych refused to sign the AA, Russia lowered the gas price for Ukraine. This was reversed after Kiev was controlled again by pro-European political forces. As a consequence, gas prices increased with 44% and later with another 26% when Russia abolished the discount Ukraine was granted in return for allowing the Russian Black Sea Fleet to be stationed in Sevastopol, an important Crimean bay ("Europe Counts Energy Cost" 2014). In June 2014 Russia interrupted the gas supply to Ukraine, again citing unpaid debts as a reason. While only the gas used by Ukraine was cut off, Russia warned that Europe could be affected as a result of the dispute, thereby clearly using energy policy as a political tool. The EU brokered a deal between Ukraine and Russia in October. Ukraine agreed to pay its outstanding debt as well as to advance the payments for future supplies ("Cold self-interest" 2014). In February 2015, however, Russia claimed Ukraine failed to make these prepayments, which was disputed by Ukraine, that stated Russia was not supplying all gas it had paid for. Russia supplied the Eastern regions - which Ukraine had cut off earlier - and counted this towards the total supplied to Ukraine. This way Russia attempts to maintain control over the Eastern-Ukrainian regions while avoiding economic costs related to this (Herszenhorn 2015). After announcing it would not count the gas supply to the Eastern regions, the dispute was settled again (Boren 2015). Mid 2015 Ukraine stopped purchasing Russian gas, buying its gas from European countries such as Norway, Slovakia, Poland and Hungary at higher prices ("EU mediates Russia, Ukraine gas dispute talks" 2016).

During these disputes Russian gas supply to the EU was not interrupted, as Gazprom is keen not to harm its reputation as reliable supplier and Russia is highly

dependent on the gas revenues. However, since energy tensions erupt regularly against the background of the Russian-Ukrainian political tensions, energy security is again placed high on the European agenda.

6 RUSSIAN-EUROPEAN INTERDEPENDENCE

The European Union is highly dependent on Russian gas. After oil, gas is the second most important energy source in the EU of which Russia supplies more than a third. This dependence differs throughout the Union. The Baltic States, Finland and Bulgaria are a 100% dependent on Russia for their gas imports. Other countries that buy over 50% of their gas from Russia are Austria, Czech Republic, Slovakia, Slovenia, Hungary and Greece. In absolute terms Germany and Italy import the largest volumes. With 40% dependency, also Germany would be hit severely if Russia decides to interrupt supplies. Overall, half of Russia's gas supply to Europe runs through Ukraine, amounting for 15 % of total EU gas imports (Larrabee et al. 2017, "Europe Counts Energy Cost" 2014).

Russia on the other hand, is concerned about its reliance on Europe for energy revenues. 71% of its oil⁶ exports ("Europe Counts Energy Cost" 2014) and 70% of its gas exports go to Europe. Together these revenues account for half of the countries national budget (Malmlöf et al. 2014). In order to free itself from the constraints resulting from the dependence on European demand, Russia is building a pipeline through Siberia to export gas to China, which is planned to be operational by the end of 2018 ("Impact of Gazprom's China-Russia Gas Pipeline" 2018). However, the pipeline can export only half of what Russia transfers to Europe.

Since 2011, the Nord Stream pipeline, transferring gas from Russia to Germany through the Baltic Sea, diminished the gas flow through Ukraine from 65% to 50% (IEA 2015). Russia announced plans to entirely bypass Ukraine by 2019, while strengthening its position in the European gas market. To reach this objective Russia attempts to deliver gas to Germany and Czech Republic through the OPAL pipeline and plans the construction of the Nord Stream 2 pipeline, doubling the capacity of Nord Stream 1, and Turkish Stream pipeline, delivering Russian gas to Turkey and South and South-East Europe ("Gas supplies to bypass Ukraine from 2019" 2015). However, the OPAL and Nord Stream 2 pipeline options run into opposition of certain European member states, notably Poland, which fears to be bypassed as gas transit country (see below).

⁶ Oil dependence can be remedied more easily since oil is transported without much difficulties. Europe could thus count on global markets to make up for the loss. Gas on the other hand has to be transported by pipelines which makes the choice of supplier limited (Malmlöf et al. 2014).

7 THE IMPLEMENTATION OF THE EU'S THIRD ENERGY PACKAGE AND INTERNAL DISAGREEMENT

As outlined in above, the current crisis in Ukraine is not the first event that sparked debates on Europe's energy security. After the crisis in 2006 many proposals were voiced to diversify the European gas import but few concrete measures were taken. The severity of the 2009 crisis intensified efforts to become less dependent on future gas disputes and paved the way for the Third Energy Package (Pirani et al. 2009). This policy package is set to better integrate the EU energy sector, increase intra-EU trade and diversify the sources and suppliers of energy. It harmonized national emergency plans in case of a reduction in gas supply. Connections between pipelines of different member states have been improved and are capable to reverse the flow which means gas can be better allocated among different countries. However, apart from improved interconnectivity, implementation of the Third Energy Package has been slow, partly because European business interests are opposed to changes to the current energy situation (Malmlöf et al. 2014).

Due to the different degree of reliance on Russia among European member states, their evaluation of the importance of the gas crises and their view on energy policy in general varies considerably, as well as their perception of the issue as a security problem. These differences are also influenced by their historic relations with Russia. Ex-Soviet countries that rely on Soviet energy infrastructure are strong advocates of firm policies addressing the dependence on Russia. This leads to diverging positions regarding energy policy approaches among EU member states. Eastern member states argue for a unified European voice in negotiations with third country suppliers, notably Russia. Western countries, on the other hand, generally wish to retain control over bilateral negotiations with potential energy suppliers. They furthermore regard energy policy as an issue that requires more internal market integration, in addition to regulation aimed at emission reductions (Austvik 2016). These discrepancies are further amplified by country specific interests as gas transit hubs.

German (BASF/Wintershall, E.ON), Austrian (OMV), French (ENGIE and Dutch (Royal Dutch Shell) energy companies cooperate with Gazprom to construct the Nord Stream 2 pipeline. The pipeline bypasses Ukraine but also Poland, leaving both countries with reduced revenues as transit countries. Poland fiercely opposes the Nord Stream 2 pipeline as it views this as an existential threat. It argues that Nord Stream 2 will reinforce and perpetuate Europe's reliance on Russian gas, a position that is shared by the European Commission and other CEE countries (Golthau 2016). The Commission prefers members states to import gas from other countries, notably Nord-African states, but it has not found any legal grounds to actively oppose the Nord Stream 2 project (Gordon 2018). It is therefore attempting to regulate the pipeline by

extending the Third Energy Package to the Nord Stream 2 pipeline (Golthau, 2016). The package established the principle of “unbundling” which means that the ownership of transit infrastructure and gas supplies should be separated to avoid the dominance of gas suppliers over the gas infrastructure. As Gazprom owns most of Nord Stream 2 it could not be the main supplier using the pipeline.

Germany on the other hand, benefits from the Nord Stream 2 pipeline by becoming an important European gas transit and distribution hub for most of the Western European gas market. Germany thus favors a return to normal business relations with Russia, and is actively in favor of the project. It argues Nord Stream 2 is not a geopolitical but a purely commercial project that won't bear on European reliance on Russia (Cokop 2015). It will rather improve supply security as it bypasses Ukraine, and lower the gas prices throughout the EU (Gotev 2017). Responding to Poland's accusation of abandoning Ukraine, both financially as by endangering its energy security - by increasing the risk of gas cut offs as Gazprom no longer has an interest in maintaining some gas transfer to Ukraine to continue to supply the European gas market - Germany repeatedly mentioned that Russia would need to reassure supply to Ukraine if Nord Stream 2 were to be finalized (“Germany seeks to overcome opposition to Nord Stream 2” 2016).

The OPAL pipeline, running along Germany's Eastern border, has also been subject of intense debate among several EU member states, most fiercely again between Germany and Poland. According to the EU's Third Energy Package, monopolies should be weakened to open the energy market for competition and liberalize prices. Here again the principle of “unbundling” prevents Gazprom, that owns more than 50% of the pipeline, to use the full transit capacity of the pipeline. Upon the request of Gazprom to exclude the OPAL pipeline from the Third Energy Package rules, the European Commission waived this restriction. As Poland fears its gas imports to be endangered, as well as its position as transit country to erode, it legally challenged the Commission's move. A final decision is expected in 2019 (Chee 2017).

8 THE ENERGY UNION PACKAGE

Other important European policy responses materialized in the European Commission's proposal for an Energy Union Strategy.

Despite traditional Polish opposition to any interference in its national energy policy, Donald Tusk, current President of the European Council, in its capacity of Polish Prime Minister at the time, came up with the proposal for a European Energy Union. His proposal, included the provision to fully exploit domestic fossil fuels reserves to reduce the reliance on Russian gas. The Energy Union would furthermore overcome the troubles associated with fragmented national energy markets by

negotiating gas prices for all of its members at once. This would mitigate the Russian divide and rule strategy of applying different gas prices to different EU members.

Observers at the time (e.g. Mamlöf et al. 2014), did not believe the project would lower the EU's dependence on Russian gas. As an Energy Union would counter all market liberalizations the EU implemented, they conclude that it would never be adopted.

The eventual European Commission proposal for an Energy Union Package promotes “secure, affordable, and climate-friendly energy” (EU 2015), involving a variety of policy areas. Energy security should be improved by diversification of energy sources and suppliers, and more efficient use of domestic energy sources to reduce demand. The commission set a target for member states to achieve electricity interconnectivity between different national electricity networks of 10% by 2020 (Szulecki et al. 2015). The proposal also mentions a solidarity mechanism in case of supply disruptions as well as improvement of the internal energy market to facilitate the flow of energy across member states and improved LNG infrastructure and gas storage facilities.

Important climate measures include emission reductions, echoing the 2030 Climate and Energy Package commitment of a decrease of greenhouse gas reductions of at least 40% by 2030 compared to 2005 levels and a 30% improvement in energy efficiency. This should be achieved by “renewing the European emissions trading scheme and investing more in the development of renewable energy sources” (EU, 2015).

The main difference between Tusk's initial proposal and the version proposed by the Commissions revolves around the source of energy and its implications for the climate. Tusk explicitly excluded climate measures mentioning that “climate issues or environmental protection – also very important for us – cannot be ruining economic efficiency” (Tusk 2014b in Szulecki et al. 2015). The Commission, however, expanded his proposal to include climate measures and left the joint negotiation element out. As argued by Austvik (2016), the European Commission's proposal was written from an internal market perspective, which is mainly advanced by Western European countries and European institutions. Tusk's approach on the other hand, was mainly inspired by the predominant Eastern European policy concept of energy supply securitization, followed by CEE countries. As Western demand constitutes 80% of the European gas demand, these countries clearly set the priorities for the Union's policy approach in this area.

10 DIVERSIFICATION OF SUPPLY SOURCES

In order to effectively diversify Europe's gas imports away from Russia, several possibilities have been raised. Pipeline gas could be imported from Norway,

Algeria and the Caspian region, although building the necessary pipelines takes time, resources and political will (Richter & Holz 2014).

Increasing the import of LNG does not require additional pipelines and is thus an attractive option for policy makers. Recently, LNG imports from Qatar have been increasing, making Qatar the largest LNG exporter to Europe. In 2017, the first LNG imports from the US arrived in Poland and the Netherlands (Slav 2017). These imports are expected to increase due to the successful exploitation of shale gas in the US (Richter & Holz 2014).

However, the import of LNG poses several problems. The limited integration of the energy market as well as the significant state interference bothers exporters. Furthermore, Asian demand is growing while Asia is a more profitable market for LNG exports. Another obstacle is the European infrastructure which needs to be expanded considerably to be able to receive the gas (Goldthau & Boersma 2014). While the capacity to import LNG is expanding significantly – exemplified by the 15% increase between 2009 and 2015, with currently 16 additional LNG ports planned or considered throughout the EU, the EU's import capacity remains limited (Richter & Holz 2014, King & Spalding 2016).

Remarkably, despite the EU's strong intention to reduce its reliance on Russian gas, in 2017 it imported 8% more gas from Russia than in 2016. This is ascribed to the economic recovery, reduced domestic gas production (see below), cold winter and the improved competitiveness of gas compared to coal ("EU more dependent on Russian gas" 2018)

5 DOMESTIC ENERGY PRODUCTION

Apart from diverting imports, raising domestic energy production is advocated as an alternative to Russian gas. Overall, the EU's domestic production of gas has diminished due to the falling Dutch gas extraction that followed warning for increased risk of earthquakes ("No new tremor-tackling steps needed at Dutch gas field" 2018).

Arguing from the security of supply perspective, which favors energy security over climate measures, Eastern European countries opt to raise their coal production. Coal is a more polluting but cheaper energy source than gas. Between 2011 and 2013 Polish coal production has been rising, but ever since its production declined again in line with the negative (-1,6%) annual growth rate (British Petroleum 2017). Poland's rhetoric is thus not (yet) matched by an actual increase in coal production as old coal plants retire. Poland's energy minister announced that the country is not planning new investments in coal plants after three large new plants that are currently planned have been constructed. As Poland has to comply with the EU's climate regulations is moving towards nuclear power (Morgan 2017).

This trend is similar in Germany, which has been heavily criticized for its high share of coal consumption, while being a champion of renewable energy and climate measures. In line with its coal production, German coal consumption slightly increased between 2011-2013 (British Petroleum 2017). This has been linked to its decision to phase out its nuclear power plants.

Shale gas is debated fiercely within the EU. Some countries such as the UK are exploring shale gas as an alternative, while other EU members have rejected the option (Helm 2014). In light of the current Russian-Ukrainian crisis conservative commentators such as Richard Rahn argue that „*the eco-left's opposition to oil and gas use leaves Ukraine to the mercy of Russia*“ (Rahn 2014). According to him Europe has the resources to become independent from Russia. In contrast to the current sanctions that have a negative impact on the European economy, extracting shale gas and lowering gas demand would profoundly damage Russia while at the same time benefiting Europe. As such the environmental movement is blamed for the European dependency on Russian gas (Rahn 2014).

Most alternatives mentioned above continue to generate greenhouse gasses. From this perspective, the EU's climate and short term energy security objectives seem contradictory. However, renewable energy production is a top priority of the EU as exemplified by the 2030 Climate and Energy objectives, the Energy Union and the numerous related policy initiatives aiming at the advancement of the 2015 Paris Agreement. Efforts to align climate objectives with energy security emphasize the potential of energy efficiency and renewable energy (Ecofys 2009). The Energy Union is promising exactly due to this alignment of energy security concerns and its focus on renewables.

„Given a long enough time frame, energy security and climate change objectives are compatible as energy security can only be achieved in the long-term through sustainable resource use, that is to say renewable forms of energy.“ (Adelle, et al. 2009, p. 50).

As such, the Russian-Ukrainian crisis also inspires voices that see renewable energy as a solution (Hands 2014), and even an imperative:

„Change in the energy mix should be in accordance with climate mitigation targets and not involve the dirtier fossil fuels coal and oil. Rather, the increased deployment of renewable energies and the intensified improvement of energy efficiency represent the sustainable complement to secure natural gas supplies.“ (Richter & Holz 2014, p. 24)

As with shale gas and new pipelines, time is needed to develop renewable energy infrastructure. However, renewable energy production, both in the EU and globally, has been increasing at an impressive rate during the last decade. The EU is a global leader in terms of renewable energy production. In 2016, 86% of newly installed electricity-generating capacity came from renewable energy sources, while renewables accounted for 16,7% of its final energy use (EEA, 2017a). Supported by falling prices for solar and wind energy generation, the EU's renewable energy policy objective aiming at a 20% renewable energy share in 2020 will be achieved. However, the European Environmental Agency warns that continued effort is needed to fulfil the 2030 objective of 27% (EEA, 2017b).

5 CONCLUSIONS

Despite its intentions, Europe's dependence on Russian gas has not decreased and recently even deepened due to several factors such as a rising gas demand following the economic recovery and cold winters. If the planned but contested pipelines are eventually constructed, only the EU's reliance on Ukraine as a transit country will be lowered. Russian gas will continue to play an important role in the EU's energy mix.

Still, the Russian-Ukrainian gas disputes and Russia's willingness to use gas delivery as a strategic tool to further its interests have had a considerable impact on the debate about Europe's energy future. In this debate energy security is matched with climate measures despite the internal East-West divide. While CEE countries generally tend to prefer the exploitation of domestic fossil fuels and perceive energy security as a more important policy issues than climate change, the discussions demonstrate that climate policy has gained an increasingly important position among competing EU policy measures. While this might not have been expected at the outset when the internal EU debate started to be influenced by the first Russian-Ukrainian dispute, climate measures tend to be prioritized over domestic fossil fuel use. Furthermore, proposals to pool the EU's negotiating strength confronting Russia have not been picked up by actual policy making. Both policy outcomes can be explained by the fact that Western member states – who are generally more in favor of climate measures and Single Market development – import the largest amount of Russian gas. These countries thus eventually dictate the EU's gas and by extension energy policy framework.

Fossil fuels extraction, notably coal, is still a reality in CEE countries as the energy mix of EU member states remains a national competence. However, the coal production of the EU's most vocal advocate of domestic fossil fuel extraction – Poland – has been falling over the last decades. The CEE countries rhetoric is thus not (yet) matched by an increase in coal production. Europe's increasingly stringent climate

measures could be set to prevent a further increase in domestic European coal production.

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