

Development-induced Displacement and Sustainable Development: The Case Study of Slezská Harta Dam in the Czech Republic

Wymuszone przesiedlenia a rozwój zrównoważony: przypadek zapory Slezská Harta w Republice Czeskiej

Zuzana Cahliková, Robert Stojanov

*Department for Adaptation Strategies Research, Global Change Research Centre, Academy of Sciences of the Czech Republic, v.v.i., Belidla 986/4a, 603 00 Brno, Czech Republic
E-mail: zuzana.cahlikova@gmail.com, stojanov@centrum.cz*

Abstract

The main aim of this paper is to provide an overview of the issue of development-induced displacement in the context of sustainable development. We examine causes and spatial distribution of development-induced displacement and its impacts on social and economic situation of displaced persons (displacees) and affected communities. We focus on the issue also in the context of political and societal transformation in the Czech Republic (and Czechoslovakia before 1989). The discussion will rely both on a literature review and on a case study analysing the development-induced displacement linked to the construction of dam Slezská Harta in the Czech Republic in late 1980s and early 1990s. An analysis of available documents and other written sources (e.g. chronicles of villages) and semi-structured in-depth interviews with displacees and other affected people were carried out. Adverse processes, which ultimately lead to the deterioration of living standards of displaced people, often accompany development-induced displacement. The case of the displacement caused by the construction of Slezská Harta dam is not the exception, although the impact on the displaced persons must be perceived individually. Negative consequences of development-induced displacement could be mitigated by using the principle of sustainable development during planning and the implementation of a development project.

Key words: development-induced displacement, sustainable development, Czech Republic, Slezská Harta Dam, environmentally induced migration

Streszczenie

Celem niniejszej pracy jest omówienie zjawiska wymuszonych przesiedleń spowodowanych ekspansją ludzkiej infrastruktury – w kontekście rozwoju zrównoważonego. Przeanalizowano rozkład przestrzenny przesiedleń i ich wpływ na społeczną i ekonomiczną sytuację osób i przesiedlonych grup społecznych. Szczególną uwagę zwrócono na kontekst konsekwencji politycznej i społecznej transformacji dokonanej w Republice Czeskiej (przed 1989 r. Czechosłowacji). Dyskusja zostanie oparta zarówno na przeglądzie literaturowym jak i na konkretnym przykładzie przesiedleń związanych z budową zapory Slezská Harta przeprowadzonej na przełomie lat 80/90. Analiza uwzględnia dostępne oficjalne dokumenty i inne źródła, takie jak wiejskie kroniki oraz wywiady przeprowadzone z przesiedlonymi. Zaobserwowano niekorzystny proces związany z pogarszaniem się warunków życia osób dotkniętych przesiedleniem, choć każdą przesiedloną osobę należy traktować indywidualnie. Należy podkreślić, że obserwowane negatywne skutki przesiedleń są możliwe do zminimalizowania, o ile już na etapie planowania danej inwestycji kierować się będziemy zasadą zrównoważonego rozwoju.

Słowa kluczowe: przesiedlenia rozwojowe, rozwój zrównoważony, Republika Czeska, Slezská Harta Dam, migracja środowiskowa

1. Introduction

Development-induced displacement represents one type of forced migration. People usually have no choice but to accept the decision of a public body (agency, ministry, state owned company) and to relocate. Displaced persons (displacees) usually migrate within the borders of their home state, so they should be considered as internally displaced persons (IDPs), but not refugees (Birkeland, Jennings, Rushing, 2011). Development-induced displacement occurs when a political representation decides that an inhabited territory should be used in a different way, such as for an implementation of a development project that requests physical change of the landscape. The change of the landscape together with the displacement of people (and its consequences) creates a link to the concept of sustainable development.

Sustainable development has three main dimensions: ecological, social and economic (Tuziak, 2010) and it is researched from many perspectives. Ehrlich, Kareiva and Daily (2012) define the current and future challenges for sustainable development on the global level. They explore prospects for transformative change in three critical areas of sustainable development: achieving a sustainable population size and securing vital natural capital, both in part through reducing inequity, and strengthening the societal leadership of academia. Udo and Jansson (2009) indicate that global hierarchy of Maslow's needs in nations that are struggling to survive are less concerned with environmental sustainability than advanced and stable nations. These observations seem to lead to the conclusion that simultaneous social sustainability and technological sustainability will inevitably facilitate environmental sustainability, in the long run assuming good governance and infrastructure management capacities.

Environmental changes (degradation) or conflicts related to the lack of natural resources reveal also the social degradation (Piatek in Fiut, 2012). We identify development-induced displacement as one of the example. It is generally associated with official decision of the (local) governments and thus public (state) administration is responsible for the displacement and for its consequences. Nevertheless, undesirable processes that ultimately lead to deterioration of living standards of displacees often occur during and after the displacement (Cernea, 1995). The situation is not only caused by worsened economic situation of the displacees, but also by their social disintegration, stress and decrease in health status (Scudder, Colson, 1982).

The main idea of the sustainable development approach is that we can meet the needs of the present generation without compromising the ability of future generations to meet their own needs (WCED, 1987; Roznowska, 2011). In fact, the purpose of

some environmental changes intentionally caused by humans (urbanisation, construction of infrastructure and dams, mining) is current local economic development without deep long term cost/benefits analysis from the perspective of future generations in the region. The construction of many big river dams is used as the example of confrontation between long-term sustainable development approach and the strategy of fast/short-term economic growth (Stojanov, 2008). In this way Wai-Yin and Shu-Yun (2004) call attention to the fact that development in China may not be sustainable, since the major concern of its development policy is focused on sustainable *economic* development rather than sustainable development. Similarly Germond-Duret (2012) discusses why the particular project¹ did not meet the expectations in terms of sustainable development. She confirms that is because economic objectives still prevail over other considerations.

Development projects bring economic development and improvement of living standards of the population from broader region (or country). For example dams improve quality of life by the supply of water, electricity or by flood protection. There are about 45,000 dams in the world and 12% of them provide drinking water and 19% electricity (Nuera, 2005). In addition, 30-40% of irrigated land is irrigated thanks to dams. So one could say dams successfully contribute to food production as well (Nuera, 2005). However, construction of dams (or implementation of other development projects) has not only economic impact, but also environmental and social impacts. And the displacement of people is the most serious and most obvious negative social impact of the implementation of a development project.

According to the principle of sustainable development, environmental, economic and social impact has to be assessed during the planning of implementation of every (so-called) development projects. Furthermore, these impacts have to be assessed not only for present generation, but also taking consideration of future generations. The assessment of impacts should be done on several levels – for different groups of people based on their social, economic, ethnic or gender status. This is because although benefits coming from the implementation of development projects (e.g. construction of dams) are indisputable, the distribution of these benefits across different groups is not equal. In this way the benefits of dam projects (and services they provide) often use another people (industrial companies, people in cities) than people who bear social and environmental costs (WCD 2000). Local rural population, self-supplier, indigenous population, ethnic minorities and women are among the social groups which are often disadvan-

¹ In the context of Chad-Cameroon pipeline supported by World Bank.

taged (WCD, 2000). This is because they often depend on natural resources which are destroyed by the implementation of the development project.

2. Environmental change and migration

The development-induced displacement should be considered as a separate type of migration. However, it could be put in the context with other concepts and theories as well. One of them is the concept of sustainable development (see above), but it can be viewed as a part of the concept of environmentally-induced migration too.

Migration of the population can be perceived as a *coping strategy* in the sense that it is a reaction to the loss of employment or reduction in yields. Alternatively, it can be viewed as a long-term *adaptation strategy*, caused for example by a significant environmental change in climate variability (e.g. change of precipitation, extreme drought, etc.).

Households or community often send their members to bigger cities or abroad in order to ensure additional sources of income or to increase their skills (Stojanov et al., 2011). Therefore, for many people migration represents the path that allows them to escape from economic and social poverty, or the way of their own personal (Stojanov et al., 2013).

The discussions focusing on the complex relationship between human migration and environmental degradation have not received considerable attention until mid-1990s, when a group of geographers and environmental researchers presented their studies² concerning a significant number of migrants who are forced to leave their habitats involuntarily due to environmental change – that is natural or anthropogenic, or a combination of both. The scholars' debate is still continuing, despite the fact that it has become apparent that environmental change, including climate change and resource depletion, plays a contributing role in affecting population relocation processes, particularly on the regional level.

In this way Stojanov and Kavanová (2009) identified three categories of environmentally induced migration: 1. *Environmentally motivated migrants* (people who chose to move relatively voluntarily from their usual place of residence primarily due to relatively serious environmental concerns such as environmental pollution, natural or human disasters risks); 2. *Environmental displacees* (people who are forced to leave their usual place of residence, because their lives, livelihoods and welfare have been at serious risk as a result of adverse environmental processes and natural disasters. These are people who were displaced by both slow onset and rapid

onset environmental process and natural events such as natural disasters, land degradation, water or other natural resources deficiency and sea-level rise, industrial disasters). The category can be divided into two subgroups: *slow-onset or rapid-onset environmental displacees* – based on the speed of departure; 3. *Development-induced displacees* (people are relocated due to a planned land use change and economic development, for details see below). This type of displacement includes people who are displaced due to development-induced programmes (projects) such as river dam construction, irrigation canals building, transport infrastructure development, as well as nature/wildlife conservation projects. This kind of displacement differs greatly from the two previously mentioned categories since the displacement of environmentally motivated migrants and environmental displacees is unplanned and unintended.

3. Social and economic impacts of development-induced displacement

The development-induced displacement involves an aspect, which is not involved in other types of migration, a physical change of the place of origin, due to which displacees can never come back, not even to visit the place. This fact, together with the nature of forced migration, when the individual must submit to the decision of a third party and has no ability to defend itself, leads to some typical reactions of displacees and to processes typically accompanying the displacement.

A principal one is social disintegration, which is characterized by separating social ties in the community and loss of social capital through dismantling the community life. An individual must make significant effort to build new social networks after the resettlement (Cernea, 1996). Adaptation to new environmental and social conditions and to the new way of life can be very difficult especially for elderly people. According to Scudder and Colson (1982), extreme stress is accompanied by trauma, depression, grief over the loss of home and higher rate of morbidity and mortality. Disruption of a way of life and routines can cause feelings of chaos, unpredictability and futility (Downing, 1996).

A national law usually orders to pay compensation to people who lost their property. But there are cases, especially in developing countries, where only a small part of affected people is compensated (Cernea, 1996). Compensations usually exclude the poorest citizens who have a small property, but who are deeply dependent on natural resources such as water and land that are often damaged or completely destroyed by construction of the development project. The compensation is performed often in the form of one-time payment of cash, but it is often delayed and usually cannot cover lost livelihoods

² For instance see key works from the age (Myers, 1993; Hugo, 1996).

(WCD, 2000), construction of new houses, buying new land with the same quantity and quality. Other problems arise regarding the choice of places where people are resettled to. These are often areas poor in quality and quantity of resources or areas with disturbed environment close to the particular development project e.g. dam or mine. Sometimes basic care is not provided in places where resettlement is directed, there is a lack of hospitals and schools, lack of electricity supply or potable water (WCD, 2000). Resettlement to barren areas with little opportunities for livelihood, inadequate compensation or failure to provide basic services lead to the deterioration of living standards of displaced persons. According to a study prepared for the Asian Development Bank in 1998, 46 % of Chinese displacees were in extreme poverty and 75 % of Indian displacees got poorer (Nuera, 2005).

4. Causes and spatial distribution of development-induced displacement

Construction of dams, urbanization and construction of transport infrastructure, mining and timber industry are among the main causes of development-induced displacement. Accurate data on the number of displacees are not available, partially because state offices do not often publish these statistics. However, the number and spatial distribution of displacees around the world is determined by the extent of investment in infrastructure, rapid development of urban agglomerations and construction of dams. Number of displacees then depends on population density in the locality. From the foregoing information it is clear that displacees are found mainly in developing countries.

Urbanization and construction of transport infrastructure is currently considered as the main reason for development-induced displacement. It is estimated that 6 million people a year are displaced just because of urbanization and construction of transport infrastructure (Cernea, 1996). This number does not seem to be overestimated, for example the demolition of 90 000 dwellings in slums in 44 localities in the city of Mumbai led to the displacement of approximately 450 thousand people between November 2004 and April 2005 (Mahadevia, Narayanan 2008).

An estimate of the number of displacees due to the construction of dams is offered e.g. by the World Commission on Dams (WCD). According to WCD (2000), their total number ranges from 40 to 80 million. It is estimated that only in China and India 26 to 58 million people were displaced due to the construction of dams between 1950 and 1990. Tan, Chen, Hugo (2009) reported that only in China 24.4 million people were resettled between 1949 and 2006 and this number is constantly growing. In 2008 China completed sixteen-years displacement of 1.4 million people caused by the construction of

the Three Gorges Dam and its associated infrastructure. Given the fact that China has built almost half of the total number of dams in the world (Tan, Chen, Hugo, 2009), it is clear that China contributes largely to the total number of displacees. Dams that have caused the largest displacement of people are mainly located in Asia, Latin America and Sub-Saharan Africa.

In the context of Central Europe region, we can consider migration flows from *Black Triangle*³ in the past due to the combination of coal mining activities and heavy air pollution. *Black Triangle* was the name for strongly industrialized bordering parts of former communist states of East Germany, Czechoslovakia and Poland³.

5. Development-induced displacement in the Czech Republic

Although it seems that the problem of the development-induced displacement applies only to developing countries, this is not correct. Thousands dams and mines were built in Europe and North America in the past on the territories which had already been occupied. Nevertheless, the following text relates to the issue of resettlement in the Czech Republic and former Czechoslovakia, where development-induced displacement took place mainly due to mining and the construction of dams.

Development-induced displacement was accompanied by a number of failures in the territory of current Czech Republic. It was given also by the fact that most of the planned resettlement took place under the totalitarian regime⁴ where individuals and communities could not participate in any decisions and their potential protests were not taken into account. Mining and construction of dams has been conceived as a public interest and interests of individuals or groups had to retreat. Displaced persons were not properly compensated in many cases. For example, when planning the construction of Slapy Dam in 1950s, people were told that *state would not proceed harshly, but all displaced persons must realize that they must bring a sacrifice, because the financial situation of the state is not the best* (Kouba, 2007). Displacees usually received cash compensation but it was not always sufficient to provide replacement for their lost properties (Kouba, 2007). After 1989, there have been so far three cases of the development-induced displacement in the Czech Republic. But decisions about these projects were made before 1989.

Surface coal mining and some activities associated with it, such as the creation of dumps in Northern

³ The situation was improved after 1989 when new technologies were introduced and pollution levels were significantly decreased. The improvement is a good example of international cooperation for the common good.

⁴ The former Czechoslovakia was under communist rule in 1948-1989.

Bohemia struck an area of approximately 250 km² and caused destruction of 116 villages and town parts since 1960s. About 90,000 people were resettled from destructed villages (Farský, Zahálka, 2008) to prefabricated housing estates in towns or other villages. Destruction of many villages and town parts, including the historic centre of Most town, and the resettlement was conceived as a public interest before 1989. Ecological or social damage was not taken into account in that time. So in that time we could not talk about sustainable development, only economic impacts of the projects (for present generation) were considered.

Announcement of regional ecological limits for mines and dumps in 1991 has led to restriction of development-induced displacement. These limits define the boundaries through which the mining or waste disposal must not intervene. They are defined in order to protect the individual municipalities, calculated with the minimum sanitary zone around these villages or towns (Farský, Ritschelová, 2006). They protect e.g. the village of Horní Jiřetín with more than 2,000 inhabitants, which would be completely destroyed by mining, or the town of Litvínov. In the case of breaking the ecological limits, the mining would approach at a distance of only 500 m to Litvínov. This would mean real ecological problems for the region and probably also a decrease in the health status of the inhabitants.

However these limits have been attacked many times by mining companies, Ministry of Industry and Trade as well as individual politicians since its announcement (Říha, 2011). Regional ecological limits for mining were threatened the most seriously during the discussing about the national energy policy in 2003-2004. Another threat is the announcement of the so-called policy of the raw materials in the Czech Republic in 2012. Nevertheless, limits are still in effect, they have many defenders among Ministry of Environment (e.g. new version of Strategic framework for the sustainable development was accepted in 2010), non-governmental organisations, municipalities, local politicians and citizens.

6. Case Study Slezská Harta

6.1 Methods

The Slezská Harta Dam was built in the 1980s and early 1990s. About 675 people were resettled during the process of its construction. It is one of the most recent cases of the development-induced displacement in the Czech Republic. The aim of this case study is to determine the consequences of this particular development-induced displacement on individuals (displaced persons) and communities (villages) and to find out how the whole process of displacement was carried out. Field research in Slezská Harta micro-region was held in September 2010. Research was limited by a long time interval

since the major wave of planned resettlement took place in 1989-1991. Still authors are convinced about the importance of this study which brings authentic memories of displaced persons. In our opinion, forced displacement represents an important (for some displacees turning) point in someone's lives and people tend to remember these moments very well. Because we conducted qualitative research, we cannot bring strong evidences. However, in our opinion, we could offer good general knowledge about the process of this particular displacement.

First, analysis of the available documents and other written sources was carried out. Chronicles of the affected villages were valuable sources, especially the chronicle of the village Leskovec nad Moravicí, which was partially flooded after the dam's construction. The construction of the dam and resettlement were described very properly in particular volumes of the chronicle. The resettlement was the main theme of the chronicles between 1984 and 1990. The other sources of data for this study were semi-structured in-depth interviews with displacees and other affected persons. The selection of respondents was conducted using snowball method. We found the name index of displaced people in one chronicle, who had to relocate from the Leskovec nad Moravicí due to the construction of the dam. Next thing we knew was that new housing estates were built (mainly) for displacees in the upper part of the village. New housing estates were also built in three locations in town Bruntál in the late 1980s and we found out from documents that displacees were also partly relocated to these addresses. Next we compared last names from the name index in the chronicle with names on door bells in these addresses. The majority of descendants of displacees lived in those flats, but we also found some of displacees. Then we used their advices where some others displacees lived. Further staff in public offices in affected villages was asked for addresses of displacees (but they did not have a list of displacees and did not want to answer because of the protection of personal data) as well as some people in shops or pubs. This method has obviously weak sides (does not lead to a representative sample) but it is appropriate for the case because members of the target population were difficult to locate. That was one of the main reasons why qualitative research was used (using semi-structured in-depth interviews). Quantitative research unsuitable in this case because of lack of data of number, names and current addresses of displaced persons and more than 20 years history of the resettlement.

Semi-structured interviews were conducted with 19 persons (14 women and 5 men) affected by the dam construction, mostly by displaced persons. At the time of research 10 respondents were in productive age (41- 60 years), and 9 respondent were retired

(62-90 years). Majority of them have been moved in 1988-1990 from flat (house) to flat within Leskovec nad Moravicí village or from Leskovec nad Moravicí to Bruntál, or from Karlovec to Bruntál.

The consequences of the planned relocation on villages (communities), which were partially flooded, are formulated from secondary data sources (see below) as well as interviews with officers of the villages and municipal authorities, Bruntál Registry Office, Department of Building and Planning in Bruntál, Chairman of the Slezská Harta microregion. Data on the number of displacees are unavailable, the estimation of the extent of the resettlement is derived from records in the *Historical Lexicon of Municipalities in the Czech Republic 1869-2005*, chronicles of the village Leskovec nad Moravicí and from information obtained during the interviews.

6.2 The consequences of dam construction and resettlement on communities and their development

Slezská Harta Dam is located in the Moravian-Silesian Region in the district of Bruntál town in Moravice river valley. Slezská Harta Dam is located at the land registry of nine villages, about 870 ha were flooded. The dam was originally planned as the water reservoir for the Ostrava agglomeration, now it serves mostly for the flood protection, production of hydroelectricity and for tourism.

The construction of dam was for the first time seriously discussed in 1964 (The chronicle of Leskovec nad Moravicí, 1980). The lengthy decision process affected the municipalities, which were expected to be affected by potential dam, because the building ban was announced for these villages in 1970s (Mezina, 2010). When it became clear that the construction of the dam will actually become reality, services and jobs were transferred out of the villages. Other problems arose after the dam began to be built. Some of these were the increased intensity of trucks, noise and dust.

Six villages were partly located in the flood area of the dam. The construction of the dam had the biggest impact on the village of Karlovec, which was flooded completely. Only the church and cemetery are left on the banks of the dam. Forty seven houses including senior house, cinema and school were destroyed and approximately 255 people were displaced (Lexicon, 2007). The impact assessment of the dam's construction and resettlement for the other five villages, which are now located on the dam's bank, is more difficult to design because they were affected only partially and each of them in a different scale. Among these villages Leskovec nad Moravicí and Nová Pláň were affected the most. The number of houses declined from 32 to 10 between 1981 and 1991 in Nová Pláň, the population declined from 124 to 29 inhabitants in the same period (Lexicon, 2007). In Leskovec nad Moravicí

69 houses, 14 cottages, 53 residential units and approximately 10 other buildings (e.g. factory, health care center, two kindergartens) were destroyed (The chronicle..., 1985). About 300 people had to move from the flooded area of the village.

Construction of the dam and the subsequent resettlement of people had, in the short term, a negative impact on the affected communities. Besides the decline in population, the construction of dam had negative impact on job opportunities and on the scale of public services. This applies especially to the village Leskovec nad Moravicí, where many services (e.g. kindergartens) were located in the flood area, together with the factory where 260 persons were employed. Loss of job opportunities was also one of the causing factors of subsequent migration from un-flooded areas of the villages to the town of Bruntál in 1990s.

The impact of the dam on affected villages is ambiguous after twenty years since its construction. The dam has great potential to become a popular tourist destination, yet this potential remains untapped. Since the dam serves as a reservoir of drinking water, there are some limitations e.g. ships with an internal combustion engine are prohibited. There is a lack of tourist facilities such as accommodation and restaurants in the surroundings of the dam. However this situation could be changed in the future – first investments have already come into the micro-region of Slezská Harta (SHM, 2011). Piers were built in some villages and there is a plan for a construction of a large quay. The expected future development of tourism in this region could be a significant benefit for the villages and their inhabitants.

6.3 The consequences of development-induced displacement on displaced persons

The fact that the dam would be constructed was known for sure in 1984 when exploratory and preparatory work began. However, the conditions of resettlement were not clear. It was not known how the property of displacees will be purchased, where spare housing will be built or how compensation will be carried out. Communication with the investor of the project (state enterprise) was very bad, officers reported information with delay, equivocated on different facts and gave promises that they eventually did not fulfil. This contains e.g. the promise of payment of relocation costs or the special cash compensation for the fact that people are forced to flee their homes.

Compensation was provided only to displaced persons who owned land or building in the flood area of the dam. Compensation was paid in cash after the appraisal of property. Moreover these people had the opportunity to get a flat for rent in the newly built housing estates.

Problems and dissatisfaction of the displacees accompanied the appraisal of property. Some owners

reported that farm buildings or greenhouses were not taken into account during the appraisal of property or that amortization of the buildings was calculated unevenly. Contract for the redemption of the property was sent by mail. The attached letter threatened that if the owner will not sign the contract, the expropriation proceedings will start immediately (The chronicle..., 1987).

Respondents (displacees) answered the question: *how the purchase of their property was carried out and whether they were satisfied with it?*

The answers were as follows: *Well, it was terrible. (...) The first estimate was on 120 000, or 117 thousand crowns. And so we appealed, then another appraiser came and he increased the price to 170 thousand.*

Well, I tell it otherwise. No one can remember... My grandmother had a house there – it was a nice farmhouse with land, everything. And they (appraisers) came, they gave us the contract, no one ask anything. Here is 170 thousand crowns for your house and bye, the departure is on 15th.

Families, who lived in the flooded areas in rented flats, had the opportunity to get a flat for rent in the newly built housing estates. They received no other compensation, although they often invested money into rented flats (e.g. installation of heating) or they had small gardens or sheds (The chronicle..., 1987). On the other hand, they moved to newly built flats. This was considered by some respondents as a significant improvement in their living conditions. But the rent for the flat was much higher. Respondents answered diversely to the question *whether the movement improved or worsened their economic situation:*

Well, for sure it had an influence. Because here (note: in town Bruntál) everything was more expensive, yeah. It was cheaper in Leskovec. You know, there I paid rent less than 50 crowns, and after I moved here in 1989 I paid 600, 700 crowns. So this was quite a big increase. And in the village there was an advantage that we had a garden, we could have chickens, rabbits... It was better in the village in this aspect.

I improved my life! I improved it after movement! This was called boxes (note: the housing estate in the village) - not very good, no no.

The respondent who moved from the flooded area of the village Leskovec to un-flooded area in the same village perceives her economic situation in a broader context. According to her, her economic situation did not worsen, but the construction of the dam had an impact on her life by reducing services in the village. Another respondent perceives the problem similarly. She said that the construction of the dam meant the damage of the factory in the village and that it had negative effect on the number of customers in her shop.

There are several reasons why the vast majority of people from flooded areas of the dam Slezská Harta

moved to prefabricated housing estates. One is that the majority of displacees, who owned a house, was already older by that time. Some of them could welcome the possibility of a comfortable life in a flat:

We couldn't choose where to relocate. They gave us a flat in Bruntál – so what we could do... But we were already older, so we said to ourselves "older people belong to a flat". So we got a flat, we are very satisfied with it.

There were horrible conditions in the village after the construction of the dam had begun. So some people were looking forward to a movement to newly built flats in the town. There were many elderly people (note: among displacees), youngsters wanted to go to Bruntál.

But the main reason why displacees moved from houses to flats was that the compensation received was not enough for building a new house.

Question: whether she was satisfied with the appraisal of her house – *No, not at all. Because we couldn't buy anything for it. We wanted to buy a house, but they didn't gave us much money for our house...*

Why she moved to the village Razová? *I didn't want to move here, this village is so ugly... But we wanted to buy a house and we couldn't choose much. Everything was so expensive! So we bought this ruined house. We bought it with money we get for two houses – imagine!*

According to other respondent, displacees spent most of the money they got as a compensation to furnish their flats. The furniture they had in houses before the relocation did not fit to flats:

The displacees got money for their houses, yes, they had. But the irony is that when these people moved into the flat, they couldn't take with them furniture they had in cottages, houses. So basically the money they got as compensation spent to furnish their flats.

The statements of respondents indicated that displacees were satisfied (except of one respondent) with flats they got regardless of whether they wanted or did not want to move:

Oh yes, I was, I was. Everything was new!

I was content. The comfort, you know ... I was looking forward to moving.

Respondents answered differently to the question whether they could choose where to move. The fact is that displacees from Leskovec nad Moravicí had the opportunity to resettle within the village by moving to newly built housing estates in the village (The chronicle..., 1986, 1988). On the other hand, displacees from Karlovec or other affected village did not have this opportunity because spare construction of housing estates took place only in Leskovec nad Moravicí and Bruntál. Displacees could build their house in their village of origin, but compensation for lost property was not enough to do it.

Respondents claimed that they have contacts with some of their former neighbours, but they also admitted that they see them/visit them only occasionally. The fact that displacees were resettled mainly on three localities in Bruntál meant that social ties were not severed much.

Yeah, they (note: displacees) are here in this house. From Karlovec, from Leskovec. But lot of them died. And about my children – daughters moved to nearby villages.

Yes, they moved us together. There are about three main places where displacees were moved.

The elderly people with long-term relationship to the locality suffer worst from the development-induced displacement (Scudder, Colson 1982, Downing, 1996). The resettlement was accompanied by extreme stress. This is illustrated by the fact that one elderly woman from Leskovec nad Moravicí hanged herself in 1988. In a letter she wrote before her death it is stated: *Now, when I wanted to live the rest of my life in peace and calm, I have to move with a sense of injustice that was perpetrated upon us* (The chronicle..., 1988).

When respondents were asked whether the resettlement had negative influence on their health, majority of them answered negatively, although they said they miss the place as an afterthought.

No, no, no, I did not have these problems (note: health problems). But there were people (note: displacees) who had these problems, yes.

No no, but I miss it. (Note: he points from the window to the dam) There is where I lived, there is where I worked. I did not want to move, but I had to. Oh, it was...

No, we always have something to do. But it was terrible for the elderly - a lot of people were ill, they died quickly. What I can say to you? You know, it depressed me...

Several respondents said that they still have psychological problem and that they have not reconciled with the displacement.

Question: whether she got used to place where she lives now?

We are here so many years, since 1989. And I feel like a stranger here. It is (note: the displacement) the worst thing that could happen. And the worst thing about it is that nobody cared, nobody asked you whether you want to move or not. They forced us to leave, they turned off the water... They really did not ask, that's the worst.

Question: whether she got used to place where she lives now?

No, never. Everyone in the town lives for themselves. We used to talk with neighbours in the village, here you leave the house, you are on the pavement and you even can't find a place where to sit...

7. Conclusion

Poorly-led development-induced displacement is often accompanied by a number of failings. The most important is the decrease in the quality of life and impoverishment of some displacees. This is caused by the loss of access to the common property (Cernea, 1995), insufficient compensation, loss of job or land, social disintegration, stress and decrease in health status of the displacees. These processes break two basic aspects of the concept of sustainable development – social and economic. But the implementation of a development project itself often threatens also the ecological aspect of the concept of sustainable development.

However, these adverse processes could be mitigated or avoided by a well-planned resettlement, which would remember the principles of sustainable development. First, it is necessary to consider all project alternatives (one of them should be also not to implement the project at all) so that nature and inhabitants of the area would be affected as less as possible. The possibility of avoiding or reducing the number of displacees is also necessary to consider. Second, plans for further sustainable socio-economic development of displacees or a community in the new place of residence must be prepared in advance. Displacement must be properly compensated. In-kind compensation should be preferred to the cash compensation, especially in the case of loss of the land (e.g. equal size and quality). But also people without property and land ownership must receive assistance for improving their living standards after the displacement. Compensation for property losses must be concerned as the program for sustainable development of the population/community, including access to natural resources, public services and infrastructure (WB, 1990; Nuera, 2005; Cernea, 1997; Dawson, 2007).

Improvement of planned relocation is particularly difficult for developing countries with high population density, low GDP *per capita*, lack of resources and inexperienced institutions. However the situation has improved in many states during the last decade (e.g. in Brazil, China). However it is not possible to completely prevent all displacees from the negative consequences of the development-induced displacement (e.g. social or health) – that is why it should be endeavoured to avoid the displacement at all. For example, our research at Slezská Harta micro-region proved similar mechanisms reported in literature on the theoretical effects of extreme stress in the process of development-induced displacement (Scudder and Colson, 1982). Although the displacement took place twenty years ago, testimonies of some respondents were accompanied by negative emotions, sadness and sense of injustice.

Table 1. Aspects of the displacement due to the construction Slezská Harta Dam Source: Cahliková, 2011.

Legislative	<ul style="list-style-type: none"> The displacement took place under the totalitarian regime. Lack of legal framework - just a general regulation concerning the issue of compensation mechanism. Moreover this regulation was interpreted in various ways.
Organizational	<ul style="list-style-type: none"> Poor communication and cooperation with displacees and community representatives. Resettlement did not take place within a development program for affected villages, there was a termination of services and job opportunities in the communities.
Economic	<ul style="list-style-type: none"> Inadequate compensation for lost properties, only cash compensation (not "house for house"). Inadequate compensation of especially displacees who owned a house as the compensation did not suffice to buy or build a new house. There was not an increase in unemployment among displacees.
Social	<ul style="list-style-type: none"> Social ties did not get torn much. The majority of displacees was relocated to newly built housing estates.
Health	<ul style="list-style-type: none"> Stress and deterioration of health was manifested among some displacees, but this aspect must be assessed individually.
Geografic Environmental	<ul style="list-style-type: none"> The majority of displacees was relocated to three locations in town of Bruntál, which is about 5,5 km from the Slezská Harta. 870 ha of the valley of the river Moravice were flooded.

The displacement due to the construction of Slezská Harta Dam was accompanied by a number of failings, e.g. inadequate compensation. On the other hand, certain steps must be assessed positively, such as the fact that the majority of displacees were relocated only to three localities, which means that social ties did not get torn much. To sum up, the impact on local communities was negative. Decrease in number of inhabitants in affected villages led to lower investment, which meant the termination of services and job opportunities. The consequences on relocated persons should be assessed more individually. People who lived in their own houses were affected more negatively than people who lived in rented flats. Some respondents from second group claimed that they were happy to move to a new flat in town. Aspects of the displacement

due to the construction of the dam Slezská Harta are summarized in the Table 1.

Finally, similar failures to the ones described in literature dealing with development-induced displacement were found in the case of displacement due to the construction of the dam Slezská Harta. Generally it is assumed that these failures accompany displacement that occurs in developing or newly developed countries. However, it seems that these failures take place also in countries with non-democratic regimes where participation of displacees and local communities is not assured.

Acknowledgement

Authors acknowledge the support from projects No Cz.1.05/1.1.00/02.0073; No. Cz.1.07/2.4.00/31.00 56; No. LD 13032 and institutional support by RVO 6719843.

References

- BIRKELAND N. M., JENNINGS E., RUSHING, E. (eds.), *Global Overview 2011: People internally displaced by conflict and violence*, Internal Displacement Monitoring Centre, Norwegian Refugee Council 2011.
- CAHLÍKOVÁ Z., *Environmentální migrace v důsledku plánovaného využití území. Případová studie v mikroregionu Slezská Harta*, Diploma thesis, PřF UK, Praha 2010.
- CERNE M., 1997, *Hydropower Dams and Social Impacts: A Sociological Perspective*, in: *WB, Environment Department Papers, Social Assessment Series*, Paper no. 16.
- CERNEA M., *Bridging the Research Divide: studying refugees and development oustees*, in: *In Search of Cool Ground: War, Flight & Homecoming in Northeast Africa*, ed. Allen, T., UNRISD, Boston 1996, p. 293-317.
- CERNEA M., 1995, *Understanding and Preventing Impoverishment from Displacement: Reflections on the State of Knowledge*, in: *Journal on Refugee Studies*, vol. 8, no 3, p. 245-264.
- DAWSON J., *Dams and Development: relevant practices for improved decision – making.*, UNEP Dams and Development Project 2007.
- DOWNING T., *Mitigating Social Impoverishment when People are Involuntary Displaced*, in: McDowell, Ch (ed.): *Understanding Impoverishment: The Consequences of Development Induced Displacement*, ed. McDowell, C., Oxford Berghan Books, Oxford 1996, p. 33-48.
- EHRlich P. R.; KAREIVA P. M.; DAILY G. C., 2012, *Securing natural capital and expanding equity to rescale civilization*, in: *Nature*, vol. 486, p. 68-73.
- FARSKÝ M., RITSCHLOVÁ I., 2006, *Prolomení ekolimitů při těžbě hnědého uhlí v*

- Ústeckém kraji: možnosti, rozhodování a důsledky, in: *Zpravodaj MŽP*, vol. 16, no 7, p. 20-24.
10. FARSKÝ M., ZAHÁLKA J., 2008, Severočeská hnědouhelná pánev: determinace a disparity vývoje krajiny, in: *Životné prostredie*, vol. 42, no 4, p. 212-216.
 11. FIUT S., 2012, Sustainable Development: the upcoming civilizational revolution?, in: *Problemy Ekorozvoju/Problems of Sustainable Development*, vol. 7, no 2, p. 43-50.
 12. GERMOND-DURET C., 2012, Extractive Industries and the Social Dimension of Sustainable Development: Reflection on the Chad-Cameroon Pipeline, in: *Sustainable Development*, doi: 10.1002/sd.1527.
 13. HUGO G., 1996, Environmental concerns and international migration, in: *International Migration Review*, vol. 30, no 1, p. 105-131.
 14. KOUBA *Stavba Orlické přehrady a její dopad na život lidí v zátopových oblastech*, Diploma Thesis, FF Jihočeské univerzity, České Budějovice 2007.
 15. LEXICON, *Historical Lexicon of Municipalities in the Czech Republic 1869 to 2005*, ČSÚ 2007.
 16. MAHADEVIA D., NARAYANAN H., Shangaing Mumbai: Politics of Evictions and Resistance in Slum Settlements, in: *Inside the Transforming Urban Asia: Processes, Policies and Public Actions*, ed. Mahadevia, D., New Delhi 2008, p. 549-589.
 17. MEZINA 2010, *Official site of the village Mezina*. Available via <http://www.mezina.cz/>. (8.02.2012).
 18. MYERS N., 1993, Environmental refugees in a globally warmed world, in: *BioScience*, vol. 43, no 11, p. 752-761.
 19. NUERA A., Dam's Impact and Effectiveness, in: *The Asian Development Bank and Dams*, ed. Nuera A., NGO Forum on ADB Guidebook Series 2005, p. 56-90.
 1. PAWŁOWSKI A., *Sustainable Development as a Civilizational Revolution. A Multi-disciplinary Approach to the Challenges of the 21st Century*, CRC Press/Balkema Book, Boca Raton, London, New York, Leiden 2011.
 20. ROZNOWSKA A., 2012, Subjective Areas of Life Quality for People in Different Situation in the Context of Sustainable Development, in: *Problemy Ekorozvoju/Problems of Sustainable Development*, vol. 6, no 1, p. 127-140.
 21. ŘÍHA M., *Územní ekologické limity těžby v SHP - „evergreen“ českých vlád od roku 1991*, O.s. Kořeny 2011.
 22. SCUDDER T. and COLSON E., From Welfare to Development: A conceptual framework for the Analysis of Dislocated People, in: *Involuntary Migration and Resettlement: the problems and responses of dislocated people*, eds. Hansen A., Oliver-Smith A., Boulder 1982, p. 267-287.
 23. SHM 2011, *Slezská Harta Microregion*, <http://www.slezskaharta.eu/> (20.02.2012).
 24. STOJANOV R., The Environmentally-Induced Migration in China, in: *Migration, Development and Environment: Migration Processes from the Perspective of Environmental Change and Development Approach at the Beginning of the 21st Century*, eds. Stojanov R., Novosák J., Newcastle upon Tyne: Cambridge Scholars Publishing, Cambridge 2008, p. 117-151.
 25. STOJANOV R., KAVANOVÁ K., 2009, El concepto de migrantes medioambientales, in: *Estudios Migratorios Latinoamericanos*, vol. 23, no 68, p. 39-54.
 26. STOJANOV R., STRIELKOWSKI W., DRBOHLAV D., 2011, Labour migration and Remittances: Current Trends in the Times of Economic Recession, in: *Geografie*, vol. 116, no 4, p. 375-400.
 27. STOJANOV R., STRIELKOWSKI W., KOWALSKA K., 2013, Migrants Remittances, Official Development Aid and Economic Growth in the Developing Countries, in: *Ekonomista*, vol. 73, no 1, p. 157-172.
 28. TAN Y., CHEN Y., HUGO G., 2009, Displacement and Economic Consequences of the Three Gorges Project: A Case Study of Resettlers in Sichuan Province, in: *Asian and Pacific Migration Journal*, vol. 18, no 4, p. 473-496.
 29. *The Chronicle of Leskovec nad Moravicí* (1980, 1985, 1986, 1987, 1988).
 30. TUZIÁK A., 2010, Socio-economic Aspects of Sustainable Development on Global and Local Level, in: *Problemy Ekorozvoju/ Problems of Sustainable Development*, vol. 5, no 2, p. 39-49.
 31. UDO V. E., JANSSON P. M., 2009, Bridging the gaps for global sustainable development: A quantitative analysis, in: *Journal of Environmental Management*, vol. 90, p. 3700-3707.
 32. WAI-YIN C., SHU-YUN M., 2004, Heritage Preservation and Sustainability of China's Development, in: *Sustainable Development*, vol. 12, n. 1, p.15-31.
 33. WCD, *Dams and Development: A New Framework for Decision-Making*. The Report of the World Commission on Dams, Earthscan Publications Ltd, London 2000.
 34. WCED, *Our Common Future*, Oxford University Press, Oxford 1987.
 35. WORLD BANK, Operational Directive on Involuntary Resettlement. *The World Bank Operational Manual*, Washington, D.C 1990.