

## ENVIRONMENTAL REFUGEES – INTRODUCTION

Robert Stojanov

Department of Geography, Natural Science Faculty, Palacký University, Olomouc,  
Svobody 26, Czech Republic - [iguana@prfnw.upol.cz](mailto:iguana@prfnw.upol.cz)  
Head of Department: Ass. Prof. Dr. Miroslav Vysoudil

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### Abstract

**This paper provides a short report about subject environmental refugees as a significant group of migrants and gives essential information for understanding this topic. Main reasons for fleeing the people from their houses and homelands and their situation in the field of international law are another topics of this article together with predicting number of environmental refugees and principal motivations for researching the phenomenon.**

**KEY WORDS:** environmental refugees, global issues, climate changes, environment

### 1. PREFACE

According to annual report of United Nations Populations Fund „migration is a barometer of changing social, economic and political circumstances, at the national and international levels“ (UNFPA, 15). But report does not refer to environmental conditions which contribute to migration. In the news we can see people sitting on the roofs of their houses trying to escape rising water; people beside ruins their houses after an earthquake; people who had to leave their houses and fields due to deficiency of water or nuclear disaster. They are refugees too, but not accepted by international law.

The debate about issue of “environmental refugees (migrants)” is becoming more frequent in scientific as well as humanitarian field. Many articles and studies have emerged since 1990s and first years of this century, including studies for principal organizations and agencies which are responsible for matters of migration or refugees or prestigious scientific institutions and workplaces of universities.<sup>1</sup>

<sup>1</sup> Comparing results of advanced searching by Google (23.2.2004) we can find 8,180 references in English and only 2 references in Czech for exact phrase “environmental refugees – environmentální uprchlíci”; 320 references in English and 13 references in Czech for the exact phrase “environmental migration – environmentální migrace”.

### 2. DEFINITIONS

The term “environmental refugees” was popularized first time by Lester Brown from the Worldwatch Institute in the 1970s, but first, who most paid attention on the subject were Essam El-Hinnawi and Jodi Jacobson (Black, 2001, 1). El-Hinnawi defines the concept of environmental refugees in 1985 in the report for United Nations Environment Program and calls these refugees as people “who have been forced to leave their traditional habitat, temporarily or permanently, because of a marked environmental disruption (natural and/or triggered by people) that jeopardized their existence and/or seriously affected the quality of their life. By ‘environmental disruption’ is meant any physical, chemical and/or biological changes in ecosystem (or the resources base) that render it temporarily or permanently, unsuitable to support human life” (LiSER).

According to Norman Myers (1994, 2001) environmental refugees are people who can no longer gain a secure livelihood in their homelands because of drought, soil erosion, desertification and other environmental problems, together with the associated problems of population pressures and profound poverty. In their desperation, these people feel they have no alternative but to seek sanctuary elsewhere, however hazardous the attempt. Not all of them have fled their countries, many being ‘internally displaced’. But all have abandoned their homelands with little hope of foreseeable return.

LiSER Foundation, which is specialized on this issue, simply defines environmental refugees on their web sides like a “people getting in trouble because their livelihoods have been damaged due to natural or human causes” (LiSER).

### 3. MAIN REASONS OF DISPLACEMENTS

There is a typology of the most frequently mentioned reasons for worsening environment because of the people become (or would become) refugees (compare with Lonergan, 1998; Rábelová, 2000; Blaikie, 2001).

1. Natural Disasters
  - a) floods
  - b) earthquakes

- c) volcanic eruptions
- d) landslides
- e) severe coastal storms (include tropical cyclones)

They are usually characterized by a rapid onset, and their devastating effect is a function of the number of vulnerable people in the region rather than the severity of the disaster. "Poor people in developing countries are the most affected because they are the most vulnerable" (Loneran, 1998, 50)

## 2. Cumulative (Slow-Onset) Changes

- a) desertification
- b) soil degradation and erosion
- c) droughts and deficiency of safe water
- d) climate changes (global warming)
- e) sea-level rise
- f) famine

Cumulative changes are, in general, natural processes existing at a slower rate which are interacted and advanced by human activities. Loneran (1998, 50-52) claim that "human induced soil degradation is one factor which directly affects economic sufficiency in rural areas to water availability is another factor that may affect sustainable livelihoods... Do factors like water scarcity and human-induced soil degradation in and of themselves cause population displacement? The linkage is much more indirect; in most cases, one or more of rapid population growth, economic decline, inequitable distribution of resources, lack of institutional support and political repression are also present". But in the event of validity of the theory human impacts on climate changes we are not capable to precisely recognize what is the clear natural causality (except, of course, volcanic eruptions and earthquakes<sup>2</sup>) and what is natural hazards or disasters influenced by humans (such as floods, drought, hurricanes due to global warming, etc). There are combinations of human and natural factors very often.

## 3. Involuntarily Cause Accidents and Industrial Accidents

- a) nuclear accidents
- b) disasters of industrial (e.g. chemical) factories
- c) environmental pollution

This category includes chemical factories, transport, nuclear reactor accidents and environmental pollution (air, land, water). The two most obvious examples are the nuclear accident at Chernobyl, in Ukraine (former USSR) in 1986, and the Union Carbide accident in Bhopal, India, in 1987. „Between 1986 and 1992, there were more than 75

major chemical accidents which killed almost 4,000 persons worldwide, injured another 62,000, and displaced more than 2 million. Most of the displacements, however, were temporary. In the case of the accident at Bhopal, despite the death of 2,800 people and illnesses to 200,000 more, there was virtually no mass movement of population out of the region" (Loneran, 1998, 52).

## 4. "Development" Projects

- a) construction of river dams
- b) irrigation canals
- c) mining (extracting) natural resources

It has been estimated that development projects in India forced over 20 million persons to leave their habitats in the past three decades. The Three Gorges Dam project in China—expected to displace 1 million persons probably (Loneran, 1998, 52).

## 5. Conflicts and warfare

- a) biological warfare
- b) destruction of environment
- c) wars due to natural resources

Environmental degradation is considered by many authors to cause and effect of armed conflict, the evidence of wars being fought over the environment are conflicts over land and natural resources. Loneran (1998, 53-58) claims that "there is an increasing use of the environment as a "weapon" of war or strategic tool". He states examples the threat by Turkey to restrict the flow of the Euphrates to Syria and Iraq in order to pressure Syria to discontinue its support of Kurdish separatists in Turkey, the purposeful discharge of oil into the Persian Gulf during the Gulf War (1990-1991) and the destruction of irrigation systems during conflicts in Somalia. Such activities have similar consequences as the slow-onset changes noted above. "But in these cases, it seems clear that the "environment" is merely a symptom of a larger conflict, and the root cause of any population movement is the conflict itself, and the reasons behind it" (Loneran, 1998, 53-55).

In a similar way report of CIA "Global Trends 2015" (CIA, 2000, 28) estimates that "nearly one-half of the world's land surface consists of river basins shared by more than one country, and more than 30 nations receive more than one-third of their water from outside their borders". And as soon as countries reach the highest limits of available water resources, the possibility of conflict will increase.

## 4. TYPOLOGY

El-Hinnawi and Jacobson created typology of environmental refugees to three sub-categories (Black. 2001, 2; see LiSER).

<sup>2</sup> For human impacts on earthquakes see BUZEK, Ladislav (1997): *Základy geoekologie*. Ostravská univerzita, Ostrava, p.22-23.

a) Temporary displacement people

After the disasters like floods, earthquakes, volcanic eruptions people can return to their habitats and start rehabilitation livelihoods and reconstruction their houses. These events can happen periodically. For instance alone hurricane Mitch displaced 1,2 million people in Central America, floods in Peru (in 1998) and in Mexico (in 1999) displaced in both countries 500,000 people (McGirk, 2000).

b) Permanent displacement people

Permanent displacement created by the disasters like an effect of "development projects" (e.g. large dams, industrial events, mining etc). Potentially the refugees affected by rise of sea-level due to climate changes will belong to this group in the future.

The World Commission on Dams (WCD) published in 2000 report in which evaluated impacts of building the large dams in the second part of 20th century. The displacement is reported from 68 of the 123 dams (56 per cent), mainly in Asia, Africa and Latin America large dams like one of the form of displacement forced to leave from 40 – 80 million people from their livelihoods and homes, for example 10,2 million in China between 1950 and 1990 (34 per cent all development-related displacement including that due to urban constructions) according to official statistics. "But independent sources estimate that the actual number of dam-displaced people in China is much higher than the official figure" (WCD, 2000, 102-104). Large dams in India forced to leave 16-38 million people. But these numbers "do not include the millions displaced due to other aspects of the projects such as canals, powerhouses, project infrastructure ..." (WCD, 2000, 104). Unfortunately, "resettlement programmes have predominantly focused on the process of physical relocation rather than the economic and social development of the displaced and other negatively affected people. The result has been the impoverishment of a majority of resettlers ..." (WCD, 2000, 103).

c) Temporary or permanent displacement people

Sometimes – for instance after a period of drought – the displaced people indeed can go back to their original habits, but with uncertain future. For instance on September 2002 New Scientist on their web side (Pearce, 2002) published report written by team of geographers from Britain, Sweden and Denmark who had re-examined archive satellite images taken across the Sahel and found out that "vegetation seems to have increased significantly" in the past 15 years, with major regrowth across swathe of land stretching from southern Mauritania, northern Burkina, north-western Niger, central Chad, much of Sudan and parts of Eritrea, 6000

kilometres long. "Survey among farmers showed a 70 per cent increase in yields of local cereals (sorghum, millet) in one province in recent years", confirmed Chris Reij from the Free University, Amsterdam (Pearce, 2002). His colleague Kjeld Rasmussen from the University of Copenhagen "believes the main reason is increased rainfall since the great droughts of early 1970s and 1980s. But farmers have also been adopting better methods of keeping soil and water on their land." (Pearce, 2002)

## 5. THE RULE OF INTERNATIONAL LAW

The international refugee legislation likewise the main organization responsible for refugees on the world level – United Nations Commissioner for Refugees (UNHCR) – both were established more than fifty years ago and originally were meant for the huge number of displacement people after World War II. The Treaty of Geneva from 1951 calls refugees "as persons forced to flee across an international border because of a well-founded fear of persecution based on race, religion, nationality, political opinion or membership of particular social group". (UNHCR 1951; UNHCR, 2002) "The main conditions are that a person finds himself in a foreign country and does not have legal protection in the country of his nationality... people are on the move for other reasons than just war or violence" (LiSER).

Many critics argue that times have changed during the last few decades. There are, at least, two reasons for changing – categories persons called "internally displaced peoples" and "environmental refugees (migrants)" because of that at this moment the international law does not recognize them as refugees and they can not count with any material or juridical support of institutions like the UNHCR or government agencies (compare with Black, 2001, 1; LiSER; UNHCR, 2002;). There is one of the reasons why we have not enough information about exact numbers of environmental refugees. And there is another (ethical) question, "is it right that while some states are far more responsible for creating problems like climate change, all states should bear equal responsibility for dealing with its displaced people?" (UNHCR, 2002).

## 6. ENVIRONMENTAL MIGRATION AS A GLOBAL PROBLEM

Some authors declare that number of incidents, that cause people to leave their houses from environmental problems, is increasing rapidly and they perceive this as a global serious issue, mainly for the future. Norman Myers is ranked among people interested in this phenomenon and he confided that "environmental refugees could

become one of the foremost human crises of our times” (Myers, 1994). Myers (1993, 1994) presented first reports about numbers of environmental refugees ten years ago, he estimated there was more than 25 million environmental refugees (10 million recognized, 15 million unrecognized) and it is greater than 18 million officially recognized refugees (political, religious, ethnic). “We can fairly assume, moreover, that the total is likely to swell rapidly as burgeoning numbers of impoverished people press ever harder on over-loaded environments.” (Myers, 1994)

Myers (1993, 1994) conservative estimate for 2050 is between 150 million and 200 million environmental refugees equates 1,5 per cent (respective 2 percent) of 2050’s predicted global human population (10 billion people) due to sea-level rise and agricultural distribution caused by global warming and climate changes mainly. He counts with 50 million globally displaced people due to climate change-induced famine. “Detailed analysis of the impact of climate change on agriculture suggests that by the year 2060 global warming may decrease cereal production in developing countries by 9-11 per cent” (Myers, 1993).

Egypt would lose 12-15 percent of its arable land and “given Egypt’s predicted population for 2050 it is realistic anticipate that sea-level rise may displace more than 14 million people”, as well as region of Shanghai, where government of China calculates that “30 million people may be displaced due to global warming impacts”. Sea-level rise coupled with increase of inland floods (from melting Himalayan glaciers) would affect estimating 142 million inhabitants of India’s coast living of flood zones and people from Bangladesh (see Table No.1). His “conservative” approximation is 30 million environmental refugees for India and 15 million for Bangladesh (see Figure: *Sea-level rise in Bangladesh*). Brown (2004) presents that “only” one meter rise in sea-level would inundate half of Bangladesh’s riceland and forcing the relocation of easily 40 million people. “Other delta areas at risk include Indonesia, Thailand, Pakistan, Mozambique, Gambia, Senegal and Suriname” (together 10 million estimated environmental refugees) as well as number of islands, such as Maldives, Kiribati, Tuvalu, the Marshalls and some small islands in the Caribbean (1 million). He also warns of safe water problems caused by pollution of sea salt water which would encourage mass migration (Myers, 1993, compare with Novák, 2004). And Brown is asked, how many countries would accept even one million of Bangladesh’s 40 million? (Brown, 2004)

Myers (2001b, 611) modified in May 2001 his own forecasts about total numbers of people at risk of

sea-level rise (not environmental refugees, you can see the change of style), “in Bangladesh could be 26million, in Egypt 12 million, in China 73 million,

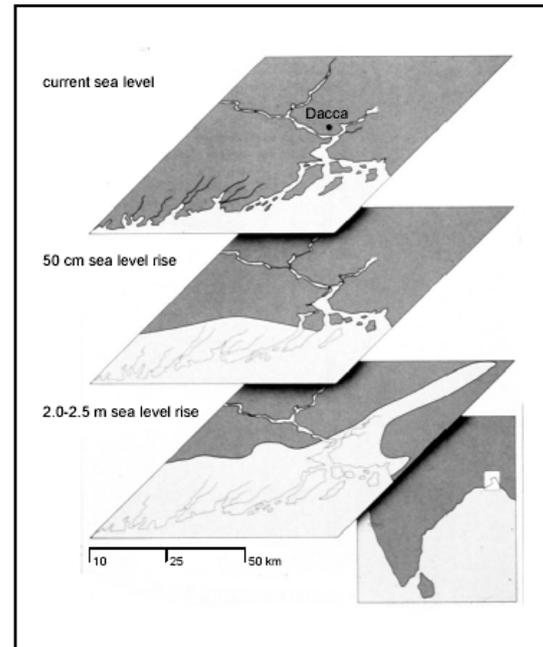


Figure: *Model of sea-level rise in Bangladesh*  
Source: Myers (2001a)

in India 20 million and elsewhere, including small island states, 31 million, making of total of 162 million. At the same time, at least 50 million people could be at severe risk through increased droughts and other climate dislocations”. But when you have lecture in Japan at occasion of his laureate of the Blue Planet Prize by The Asahi Glass Foundation at the same year he presented a little bit different numbers (Myers, 2001a). You can see Table: *People at risk in a globally-warmed world*. There is evidence of not clarify the definitions of names or methodology for determining of numbers.

Table: *People at risk in a globally-warmed world*

PEOPLE AT RISK IN A GLOBALLY-WARMED WORLD	
Country/Region	Millions at risk
China	77
Bangladesh	28
India	23
Egypt	15
Island States	1
Drought areas	60
<b>Total</b>	<b>204</b>

Source: Myers (2001a)

Lester R. Brown presents “some 400 to 600 Mexicans leave rural areas every day, abandoning plots of land too small or too eroded to make a living. They either head for Mexican cities or try to cross illegally into the United States. Many perish in the punishing heat of the Arizona desert. Another flow of environmental refugees comes from Haiti, a widely recognized ecological disaster” (Brown, 2004). And he provides that in China, where the Gobi Desert is growing by 10,400 square kilometers a year the refugee stream is swelling. “Asian Development Bank preliminary assessment of desertification in Gansu province has identified 4,000 villages that face abandonment”. (Brown, 2004).

Environmental degradation, nuclear disaster, building of irrigations canals and about 700,000 environmental refugees, there are the reasons of policy of soviet leaders and one of the clearest examples of environmental migration (UNHCR, 1996; UNHCR 1997, Box 1.2). According the report of UNHCR (1997, Box 1.2) “much of the Central Asia is affected by problems such as soil degradation and desertification by decades of agricultural exploitation, industrial pollution and overgrazing. During the Soviet years, irrigations schemes were introduced throughout the region (Aral Sea area), so that cotton could be cultivated on an intensive and continuous basis. Poorly designed and badly managed these irrigations schemes (mainly on rivers Amu Darya and Syr Darya) led to the large-scale wastage of scarce water resources and the degradation of the land as a result of salinization”. Using massive amounts of chemicals makes contamination of water, land and food. Around 270,000 people in the region were displaced for such reason (UNHCR, 1997). More than 45,000 people have moved from the Semipalatinsk in Kazakstan to safer areas in the country since independence. Semipalatinsk was hosted one of the Soviet largest nuclear missile testing-sites (UNHCR, 1996).

The Chernobyl nuclear power plant explosion took place in 1986 and there are as many as 9 million people living in Ukraine, Belarus and the Russian Federation may have been directly or indirectly affected. “At least 375,000 people (150,000 million in both Ukraine and Belarus; 75,000 in Russian Federation) had to leave their homes in the immediate aftermath of the accident.” (UNHCR, 1996)

Miroslav Vaněk (1996, 48) presents in his study, with typical name “*Nedalo se tady dýchat*” (*The Breathing was impossible here*), that the North Bohemia region have left 50,000 people due to environmental pollution in 1960s. Communist functionaries were trying to prevent another flights by guarding of information about condition of pollution air, increasing of wages and social

benefits and also because of decision by government of Czech Socialist Republic<sup>3</sup> in 1984 there was prohibited employing of medics from North Bohemia outside this region (Vaněk, 1996, 63). Author characterized this situation like a “modern thralldom”. At the same time because of escalated mining of coals was induced destroying 116 villages in the previously described region (Vaněk, 1996, 60) – known as “Black Triangle”, together with parts from Poland and former German Democratic Republic.

## 7. CURRENT DISCUSSION

Is the issue of environmental refugees (migrants) new or old phenomenon? What does it indicate for present time?

Richard Black (2001, 6) argue (on the base of study by Glazovsky a Shestakov) that migration away from desertification areas “is not new, including as ‘desertification-induced migration’ such a movement as the migration of Mongolia tribe northwards in the second century B.C. due to drought...”

Norman Myers (1994) claims that people have migrated in large numbers and proportions in the past mainly due to deficits of natural resources (e.g. land, famines). “But the present area is altogether different and environmental problems ahead could swiftly match all those of previous centuries combined. Countries such as Philipines, Ivory Coast and Mexico can lose bulk of their forests within half a human lifetime. Countries such as Ethiopia, Nepal and El Salvador can lose much if not most of their farmland topsoil within just a few decades. Countries such as Jordan, Egypt and Pakistan can find themselves suddenly suffering acute deficits of water ... Whole regions can find their protective ozone layer is critically depleted within a single generation. The entire Earth seems set to experience the rigours of global warming in what is, comparatively speaking, super-short order. Any of these environmental debacles can generate refugees in exceptionally large numbers.” (Myers, 1994)

Lester Brown (2004) adds that among the “new refugees” are people being forced to move because of aquifer depletion and wells running dry. Thus far the evacuations have been of villages, but eventually whole cities might have to be relocated, such as Sana’a, the capital of Yemen, where the water table is falling by 6 meters a year according the experts from World Bank; or Quetta, the capital

<sup>3</sup> Czechoslovakia was federal state with federal government and was divided into two parts – Czech Republic and Slovak Republic – under communist rule obligatory named as “Socialist”. Each of these republics had own regional government.

of Pakistan Baluchistan province, which was originally designed for 50,000 people and now has 1 million inhabitants and may have enough water for the rest of this decade like a Sana'a.

Richard Black (2001, 1) permits the environmental degradation and catastrophe may be important factors in the decision to migrate, but the "conceptualization as a primary cause of forced displacement is unhelpful and unsound intellectually, and unnecessary in practical terms". Similarly Homer-Dixon (1993) believes the term "environmental refugees" is misleading because "it implies that environmental scarcity will be the direct and sole cause of refugee flows. Usually it will be only one of large number of interacting physical and social factors that may together force people from their homelands. The term also does not distinguish between people who are fleeing due to genuine disaster or acute hardship and those who are migrants for a variety of less urgent reasons." (Homer-Dixon, 1993, 40-41) He suggests to use the term environmental refugees "only when there is a sudden and large environmental change" and presents example of "population displacement rising from environmental scarcity. Over the last three decades ... land scarcity has been a key factor causing the large-scale movement of people from Bangladesh to the Indian state Assam" (Homer-Dixon, 1993, 41-42).

Myers is aware of difficulties in making difference between refugees driven by environmental factors and those forced by economic problems but "people who migrate because they suffer outright poverty are frequently driven by root factors of environmental degradation". (Myers, 1994). At least environment conditions and natural resources are one of the most important direct factors determined economic development or impoverished.

Richard Black (2001) has just critical opinion for ways of presentation of numbers of environmental refugees, "the latter's estimate of 10 million environmental refugees has been repeated by numerous authors, albeit without independent verification of its accuracy" (2001, 1). "Despite the breadth of examples provided in literature, the strength of the academic case put forward is often depressingly weak." (Black, 2001, 2)

He also questioned desertification as one from the most frequently mentioned reasons of displacement, when he talks about "myths" of desertification. "Even if there is no secular trend of declining vegetation cover and land productivity in Sahel, ... it is possible that stress migration might result from a temporary decline in the productivity of agricultural and grazing land during drought periods. Yet, for such migrants to be termed "environmental refugees", it seems reasonable that

environmental decline should represent the main (if not only) reason for their flight" (Black, 2001, 4). And also the study by Sally Findley (Black, 2001, 7) about "emigration from the Senegal River Valley in Mali shows that during the drought of the mid-1980s, migration actually declined rather than increased". According Black (2001, 6) the situation appears similar in other semi-arid regions of the world allegedly prone to desertification and related migration.

## 8. CONCLUSIONS

For Lester Brown (2004) "the rising flow of environmental refugees is yet another indicator that our modern civilization is out of sync with the earth's natural support systems". Lonergan (1998, X-XI) and his team recommend implementing follows measures for reducing biophysical and social vulnerability to environmental changes having also significant impact on environmental migration:

- 1) Increase assistance in the field of family planning in developing countries where the population growth is a threat to the environment and to the economic livelihood of many people.
- 2) There must be greater focus on agricultural activities in developing countries. This should focus on reducing erosion and deforestation, and increasing the sustainability of small farms in marginal areas.
- 3) Greater effort should be made to improve education and awareness with respect to the environment. This includes care for the environment and sustainable resource use.
- 4) Sufficiency of freshwater is crucial. It is also imperative that treated water be recycled to agricultural uses. Inefficient use of water, water loss must be preventing.
- 5) Encourage of greater capacity building in the administration of environmental programs.

However, it is apparent that environmental degradation and resource depletion may play a contributing role in affecting population movement, often filtered through contexts of poverty and inequity. To develop a more concise policy agenda, it is imperative that further attention be given to the links among environment, population and poverty; to those groups that are most vulnerable to environmental change; and to identifying vulnerable regions and future "hot spots" of insecurity and potential migration/refugee pressure (Lonergan 1998, XI).

We can agree with Rábelová (2000, 7) that prognosis of scope for environmental migration are based on estimates more than significant evidences, in spite of this is essential do not underrate the

impacts of environmental changes and depletion of natural resources on movement of populations from the view of international security.

Partnership in projects covering research of indicators for building of warning systems before consequences of environmental stresses should be very important for Czech Republic from pragmatic and also ethical reasons. These indicators would be usable as a background for political decision-making as well as for deciding about directions for the best efficiency of Czech sustainable development assistance.

## SOUHRN

### ENVIRONMENTÁLNÍ UPCHLÍČI – ÚVOD DO PROBLEMATIKY

Role, kterou hraje životní prostředí v lidských dějinách a osudech, je nesmírně komplikovaná a téma migrace a uprchlictví je jednou z nich. Tato práce se omezuje jen na vymezení problematiky environmentálního uprchlictví (migrace) jako významné skupiny uprchlíků a podání základních informací o současné diskusi na toto téma.

Environmentálními uprchlíky jsou nazýváni lidé opouštějící své domovy kvůli tomu, že byli zbaveni svých způsobů obživy nebo byly zničeny jejich domovy či jsou ohroženi na svém zdraví nebo životech z důvodu náhlého či postupného zhoršení životního prostředí způsobeného přírodními či antropogenními faktory. Jejich situace je navíc komplikovaná nemožností získat azyl legálním způsobem v jiných zemích, včetně institucionální pomoci ze strany UNHCR vzhledem k zastaralé definici uprchlíka z roku 1951.

Ve většině případů je těžké odlišit environmentální uprchlíky od lidí, které z jejich domovů vyhnaly hospodářské či jiné důvody. Je ovšem nesporné, že změny životního prostředí ovlivňují socioekonomické podmínky, jejichž zhoršení může vyvolat migraci z postiženého území. Původní příčinou chudoby tak často bývají právě environmentální problémy, obvykle v kombinaci s dalšími socioekonomickými a politickými faktory. Vzhledem ke složitosti problematiky nemůže být hledání cest k prevenci a řešení environmentální migrace (potažmo environmentálních problémů) pouze věcí environmentální politiky, ale i politiky rozvojové a bezpečnostní, směřující ke snižování chudoby, posilování rovnoprávnosti jednotlivých společenských skupin, k demokratizaci.

Česká republika by měla mít z mnoha pragmatických i etických důvodů zájem účastnit se na projektech zkoumajících indikátory vytvářející systémy včasného varování před negativními

důsledky environmentálních stresů. Tyto indikátory by mohly být použitelné jako přímý podklad pro politické rozhodování, případně pro rozhodování při směřování české efektivní dlouhodobě udržitelné rozvojové pomoci.

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© Mgr. Robert Stojanov  
Palacký University, Olomouc,  
Natural Science Faculty  
Department of Geography  
Svobody 26  
771 46 Olomouc  
Czech republic

Reviewed:  
doc. RNDr. Tadeusz Siwek, CSc.