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MINING-INDUCED DISPLACEMENT AND RESETTLEMENT: SOCIAL PROBLEM AND
HUMAN RIGHTS ISSUE (A GLOBAL PERSPECTIVE)

Mining-Induced Displacement and Resettlement: Social Problem and Human Rights Issue (A global perspective)

Bogumil Terminski

Abstract:

The object of this paper is to present mining-induced displacement and resettlement as a highly diverse global socioeconomic issue occurring in all regions of the world, as a human rights issue, and as a source of challenges to public international law and institutions providing humanitarian assistance. Development-induced displacement is primarily an socioeconomic issue associated with loss or significant reduction of access to basic resources on which communities depend. Physical abandonment of the existing residence shall therefore be secondary to the loss of access to material resources such as land, pastures, forests and clean water as well as intangible resources such as socio-economic ties. More in-depth analysis has been preceded by an introduction which draws attention to the specific nature of MIDR as one of the categories of internal displacement. Mining is currently not a statistically significant category of development-induced displacement and resettlement (DIDR). Nevertheless, the social costs of exploitation are great, and that is why the topic is worthy of a wider and more profound scientific analysis. The first displacement caused by mining dates back to the late nineteenth century. As pointed out by Walter Fernandes, in India alone, mining has led to the displacement of more than 1,5 million people over the last fifty years (particularly in Jharkhand region). Other sources estimated the scale of mining-caused displacement in India at more than 2,55 million people between 1950 and 1990. Contrary to the opinions of some specialists, the problem of mining-induced displacement and resettlement is a global problem, occurring on all continents. Countries with particularly large-scale MIDR include: India, China, many African countries (e.g. Ghana, Mali, Zimbabwe) and even Indonesia and Papua New Guinea. The problem of compulsory resettlement is also a consequence of open-pit coal mining in European countries like Germany and Poland. Although mining-induced displacement is a global phenomenon, problems experienced by the displacees in many parts of the world differ greatly. The largest portion of the displacement is caused by open-pit mining (associated with the extraction of gold, copper, lignite, and diamonds).

Keywords: mining, development policy, resettlement, environment, economics, development, relocation, development policy, social problems, internal displacement, human rights, sustainable development

1. Introduction

The mining industry is frequently associated with decisions that have enormous social consequences. One of the most negative effects of mining today is the forcing of thousands of people to abandon their current places of residence. Gold mines in Tarkwa, open-cast copper mines in Papua New Guinea, coal mines in Jharkhand (India), lignite mines in Germany, and diamond mines in Zimbabwe are just a few examples of activities leading to the displacement of large numbers of people worldwide. Today, mining-induced displacement constitutes a major social problem and a challenge for human rights. As pointed out by Theodore E. Downing only in India mining development displaced more than 2.55 million people between 1950 and 1990.¹ It is therefore of great importance to conduct its profound analysis as well as inspire broad public debate. According to the WBED report (published in 1994), the thermal projects including mining was the cause of about 10,3 percent of the development-induced displacement caused by World Bank-financed projects (active in 1993).²

This report does not pretend to provide a comprehensive in-depth analysis. Its purpose is to highlight the problems encountered by displaced people in various parts of the world and complement already existing literature in this area. Contemporary literature on development-induced displacement (Cernea, De Wet, McDowell, Penz, etc.) focuses mostly on the consequences of dam construction, irrigation projects, and artificial reservoirs. The literature of Mining-Induced Displacement and Resettlement (MIDR) is rather small and limited to the well-known cases of contemporary India and a few African states. Specialists rarely look into the subject of mining-induced displacement and its social consequences. However, some instructive examples do exist. One particularly valuable and detailed study worth mentioning is entitled, *Avoiding New Poverty: Mining-Induced Displacement and Resettlement*, published in 2002 by professor Theodore E. Downing.³ Another equally important book concerning this issue is the report, *Dirty Materials: Mining, communities and environment*, prepared in 2004 by Oxfam America Earthworks.⁴ My publication concentrates—to a much greater extent—on the issues of human rights and the

¹ T.E. Downing, *Avoiding New Poverty: Mining-Induced Displacement and Resettlement*, IIED and WBCSD, London, 2002, Research Paper No. 58, pp. 3; S. Somayaji, S. Talwar (eds.), *Development-induced Displacement, Rehabilitation and Resettlement in India*, Routledge, 2011, pp. 94.

² A. Rew, E. Fisher, B. Padney, *Addressing Policy Constraints and Improving Outcomes in Development-Induced Displacement and Resettlement Projects* (Final Report), Refugee Studies Centre, University of Oxford, January 2000.

³ T.E. Downing, *Avoiding New Poverty: Mining-Induced Displacement and Resettlement*, IIED and WBCSD, London, 2002, Research Paper No. 58.

⁴ *Dirty Metals: Mining, Communities and the Environment*, A Report by Earthworks and Oxfam America, Oxfam America, 2004.

theoretical conceptualization of the subject. It also underlines the global nature of MIDR. As I argue here, the problem should not be limited to developing countries in Asia and Africa. Instead, this work intends to cast more light on the following themes:

1. Section one theoretically conceptualizes and encompasses mining-induced displacement and resettlement as a specific category of development-induced displacement and resettlement (DIDR). MIDR is a fairly obvious a subcategory of DIDR and a part of its global context, yet there are some crucial differences that ought to be indicated in order to show that it is a very diverse issue indeed. In particular, I will try to analyze the mining branches and techniques which are socially detrimental. Among them, we can distinguish the open-pit mining of several resources: coal, lignite, silver, copper, gold, diamonds, and, on a limited scale, also crude oil.
2. Section two depicts mining-induced displacement and resettlement in terms of a global social problem occurring in many countries around the world. The mining sector is an important factor in resettlement on all continents, so we cannot treat MIDR as the sole pitfall of underdeveloped/developing countries. Even in highly developed countries like Germany, resettlement caused by mining activity was an important social problem. On the other hand, it must certainly be admitted that in countries with a tradition of enlightened individualism, strong protection of property rights, and citizen participation in government, problems of this kind are uncommon and much less spectacular than anywhere else.
3. Section three presents the most well-known examples of displacement caused by mining. Detailed case studies were used as the basis for exposing general features of the issue. For these, I gathered the most interesting examples of resettlement (India, Ghana, China, and Papua New Guinea). Additionally, a unique part of this paper covers an analysis of mining-induced resettlement in Europe. According to estimates over the past 60 years, lignite mining in Germany has consequently led to compulsory resettlement of more than 100,000 people⁵. The effects of mining also pose a real challenge in Central and Eastern Europe. This publication takes the form of a handbook: a kind of 'guide' through the most famous cases of mining-induced displacement worldwide.
4. Section four emphasizes the social dimension of mining expansion and the

⁵ J.H. Michel, *Status and Impacts of the German Lignite Industry*, The Swedish NGO Secretariat on Acid Rain, 2008, pp. 17.

importance of MIDR as a human rights issue. The most important piece of work encompasses reflections on the impact of resettlement on the sphere of human rights. The implementation of mining-caused resettlement generally reflects the national standards for other categories of development-induced displacement and resettlement. Inappropriate standards of displacement take place mostly in poor and undemocratic developing countries. Usually, resettlements are carried out randomly, with no specific plans. Displaced persons face many problems in the new places of residence. Authorities are not active enough in integrating displaced people into local communities. Various categories of indigenous and tribal people (for example in India, Papua and Brazil) are particularly affected by the consequences of relocation. Mining-induced displacement leads to a violation of many individual and collective human rights. Problems of people displaced by development are increasingly becoming the focus of human rights organizations (especially in India, Brazil, and some african countries). The advantage of this paper is its stronger orientation towards human rights and the social dimension of MIDR than previous works. The publication draws attention to the scale of mining-induced displacements in diverse countries as well as the social consequences of this phenomenon. Its primary purpose is a focus on political circles, decision makers, and human rights activists and the social effects of mining. Analyses of development-induced displacement are often reduced to the consequences of dam building in China and India, and thus they miss the point. The development of mining areas also contributes to social change, such as the epic scale of resulting resettlement. Indigenous and tribal peoples are particularly at risk for negative consequences; these groups do not have adequate mechanisms for adaptation to the new situation. Given the link between resource extraction and the overall development of mining industries with the subsequent degradation of the areas in which they occur, it is obvious that the balance of economic benefits and social costs are worth considering. Alternative energy sources are, however, expensive, and the chances of their use in developing countries are still relatively low.

2. Mining-induced displacement and resettlement: A specific category of development-induced displacement and resettlement

Scientific publications regularly enumerate four causes of involuntary displacements: conflicts, natural disasters, long-term environmental changes, and the consequences of economic

development. Although useful, these categories do not exhaust all the possibilities that are likely to occur. In many cases, such as in discrimination against minorities, the reliable categorization of casual factors behind displacement is simply unachievable. It is difficult to say today whether ‘displacement’ should be treated as a homogenous notion or rather an atomized one. Although many types of displacements have much in common, there are sharp differences between them as well.

Development-induced displacement and resettlement is probably the second largest category of displacement worldwide after disaster-induced displacement.⁶ Each year, approximately fifteen million people are displaced as a consequence of large development projects (Cernea, 2006).⁷ The problem was exposed in the mid-fifties during the construction of large dams in Africa. It is worth mentioning here the long-lasting research conducted by American applied anthropologists Elizabeth Colson and Thayer Scudder concerning displacement during the construction of the Kariba dam on Zambezi river. During the sixties the first attempts to develop conceptual models of this phenomenon were observed. In 1969 Robert Chambers proposed a three-stages model based on voluntary settlement in Africa. In 1982 Elizabeth Colson and Thayer Scudder proposed the so-called four-stage model, the aim of which was to analyze how people and socioeconomic systems respond to resettlement. The model was originally created for the analysis of voluntary resettlement, but has also been applied in studies of more compulsory types. The four stages mentioned in this model are: 1. labelled recruitment, 2. transition, 3. potential development, and 4. handing over/incorporation⁸. Thus, the scientific understanding of ‘development-induced displacement and resettlement’ was shaped by the effects of building large dams, not by any social consequences of mining.

We can discern many causes of development-induced displacement. Among them, eight are the most substantial: 1. the construction of dams, hydroplants, and large irrigation projects (e.g. Three Gorges Dam, Sardar Sarovar complex on the river Narmada); 2. the building of roads, highways, bridges, and railroad networks; 3. urbanization and social services (e.g. urban transport, water supply); 4. the development of agriculture (e.g. creation of monoculture plantations); 5. exploitation and transportation of mineral resources, 6. conservation of nature (the establishment of national parks, reserves, or other protected areas); 7. population redistribution schemes; and 8. other causes.

⁶ The most dynamic category of internal displacement is disaster-induced displacement: 42 million people were displaced by natural hazards in 2010, 14,9 million in 2011, and 32,4 million in 2012 according to the Internal Displacement Monitoring Centre (IDMC) report.

⁷ M.M. Cernea, "Development-induced and conflict-induced IDPs: bridging the research divide", *Forced Migration Review*, Special Issue, December 2006, pp. 25-27.

⁸ T. Scudder, E. Colson, "From welfare to development: A conceptual framework for the analysis of dislocated people" In: A. Hansen, A. Oliver-Smith (eds.), *Involuntary migration and resettlement*, Westview Press, Boulder Colorado, 1982.

The table below shows distribution of displaced by cause of displacement in World Bank projects (active in 1993) with resettlement:

Cause of displacement	Projects	Percentage	People	Percentage
Dams, irrigation, canals	46	31,50%	1,304,000	66,4
Urban infrastructure, water supply, transportation	66	45,2	443.000	22,6
Thermal, including mining	15	10,3	94.000	4,8
Other causes	19	13	122.000	6,2
Total	146	100	1,963,000	100

Source: A.Rew, E. Fisher, B. Pandey, *Addressing Policy Constraints and Improving Outcomes in Development-Induced Displacement and Resettlement Projects* (Final Report), Refugee Studies Centre, University of Oxford, January 2000; B. Terminski, *Przesiedlenia inwestycyjne. Nowa kategoria przymusowych migracji*, Oficyna Wydawnicza Łośgraf, Warszawa, 2012.

At least five percent of development-induced displacement is caused by mining. It seems obvious, then, that mining-induced displacement and resettlement should be recognized as a fully autonomous category of development-induced displacement and resettlement. Lack of any national data and a small degree of interest within international institutions makes it difficult to circumscribe the approximate scale of the phenomenon. Yet, when we take into account the alarming reports from non-governmental organizations, we can, with a high dose of certainty, define it as a crucial social problem at least in several countries in the world. Furthermore, we may speak about the presence of people displaced by mining in several dozen countries—people highly prone to many specific threats.

The first cases of displacement resulting from mining activity can be dated back to 19th-century India (and the practices of British colonists) or the United States. Actions of this kind were undertaken in Africa, which was divided at that time among the colonial empires as well as against Indians, due to the gold rush that had broken out in America. In the majority of cases, the natives became the victims, a situation which has not changed to the present day. The rapid development of technology in the 20th century has transformed mines into large industrial facilities. Big companies exploiting open-pit mines rarely pay attention to the situation of local communities. The internationalization of capital flow, along with the conduction of extraction by transnational corporations, make it difficult to determine who is really responsible for the social problems triggered by mining. By exploiting mines in developing countries, Western and Chinese companies occasionally commit practices that are ambiguous as regards the environment and society.

Mining-induced resettlement is not limited to poor and developing countries. Problems of this kind also take place in European countries like Germany, Serbia, and Poland. Nevertheless, the high

standards of rights-protection institutions and the responsiveness of business to public opinion hold back such negative practices there. Unlike in the cases of Africa and Asia, homelessness, unemployment, social marginalization, or health problems are not ordinarily the result of resettlement in the developed world. Redress is mostly paid with surplus, which means it covers the economic and social costs of relocation. MIDR constitutes a real problem where the division between North and South is particularly perceptible. When analyzing development issues in Africa and Asia, it is worth referring to previous European experiences.

Mining-induced displacement is present in many countries worldwide. In several of them, however, it constitutes a visible and burning social issue that poses a threat to human rights. These countries are India, Ghana, and Mali. There is less interest in the scale of the phenomenon in China. Admittedly, the whole body of literature on this subject is exceptionally small. So let us draw attention to the fact that MIDR is present in countries in which we observe other forms of development-induced displacement. Ghana is a country with an extremely interesting peculiarity of displacements. Environmentally-induced displacement (migration from North to South) is accompanied by various causes of DIDR (mining, the construction of the Akosombo dam). Development-induced displacement is equally heterogeneous in India and China.

The problems of people resettled due to mining development are analogous to those with which other categories of people displaced by development struggle. We might mention here the problems of indigenous and tribal people, or the environmental after-effects of mining. We observe at least a few specific processes at play. One of them is the issue of whether local communities are sharing in the profits from the exploitation of resources. If a person is forced to leave his/her residence located in an area with potentially big profits, he/she should receive concrete gratifications. Compensation for lost land meaningfully exceeds indemnification for land abandoned for other reasons, whereas struggle for the ultimate quotas is always very fierce. Long-lasting negotiations lead to signing detailed “displacement agreements” between corporations and populations. Big firms often agree to various forms of compensation, such as, for instance, the promise of employing displacees in mines. The social consequences of mining-induced displacement are an intensely complex and relevant issue which is rather poorly described in the literature. Due to the long period of implementation of several development projects, the resulting relocations are usually of a slow-onset character. Physical relocation from the current place of residence to another is often not associated with significant human security risks. The decline in human security is thus not the reason but the consequence of relocation caused by development projects. If a change of residence is accompanied by earlier plans, adequate compensation, taking into account the material and nonmaterial losses

associated with displacement, mechanisms aimed at proper functioning, and help with adaptation and integration in the new place of residence, relocations may not lead to a significant reduction in the level of human security.

Mining-induced displacement and resettlement phenomena do not represent the sole physical change of residence. In other words, the amount of remaining people affected by the environmental effects of mining regularly exceeds the amount of displaced people. The pollution of ground water, a decrease in agricultural efficiency, the proliferation of diseases, and psychological effects are just some of the problems mentioned by experts⁹. Awareness of the irreversible nature of some features of the displacement can hinder adaptation and produce alienation in the new environment, together with a sense of the meaninglessness of life, which can lead to psychological trauma. These problems are compounded by other negative consequences of displacement such as joblessness, various forms of economic marginalization, and social disarticulation. On the one hand, awareness of the impossibility of returning to their homes can facilitate adaptation to the new territory and integration with its inhabitants. On the other hand, the lack of hope of change in a negative situation may create psychological problems. Unfortunately, we still observe a lack of studies examining the impact of DIDR in the form of psychological problems for those affected. This subject seems to be an underexplored area of research by clinical and social psychologists¹⁰. As pointed out by Dr Walter Fernandes, "The enormously high rates of depression, suicide, alcohol addiction, demoralisation and ill health which continue today on many American Indian reservations in the US and Canada is a stark reminder that we know all too well how severe are the mental health effects of involuntary resettlement and that effects are likely to persist for many generations"¹¹.

Any scientific analysis of MIDR should distinguish between various categories of resettlement and displacement. Mining-induced displacement and resettlement is not only an issue of development-induced displacement, but also of ethnic conflicts, the struggle for resources, access to land, indigenous rights, the question of self-determination of tribal people and local communities, and sustainable development. Environmental disruption caused by mining can also cause subsequent environmentally-induced displacement.

3. Mining-induced displacement and resettlement: A socioeconomic issue

⁹ K. P. Goessling, "Mining-Induced Displacement and Mental Health: A Call for Action", *International Journal for the Advancement of Counselling*, Vol. 32, Issue 3, September 2010, pp. 153-164.

¹⁰ Analizując problem oddziaływania mining-induced displacement na mental problem of women warto zwrócić uwagę na publikację: K.P. Goessling, "Mining Induced Displacement and Mental Health: A Call for Action", *International Journal for the Advancement of Counselling*, Vol. 32, Issue 3, September 2010, pp. 153-164.

¹¹ W. Fernandes, "Development Induced Displacement: Sharing In the project Benefits", see also: B.J. Good, "Mental Health Consequences of Displacement and Resettlement," *Economic and Political Weekly*, Vol. 31 No. 24, June 15, 1996, pp. 1504-1508.

Mining-induced displacement and resettlement is primarily an economic issue associated with loss or significant reduction of access to basic resources on which communities depend. Physical abandonment of the existing residence shall therefore secondary to the loss of access to material resources such as land, pastures, forests and clean water as well as intangible resources such as socio-economic ties. In most cases, the beneficiaries of extractive projects are big corporations and – to a lesser degree – public national administration. The extraction of resources in developing countries very rarely contributes to an improvement in the situation of local communities. Profits are then transferred abroad (out of country, facilitated by exploitation) and do not raise the level of economic development in these regions. The growing number of displacees (DIDPs) or people permanently affected by the negative consequences of mining (PAPs) remain a particularly relevant issue here. Technological developments and the necessity for highly-qualified workers mean that inhabitants of economically underdeveloped rural regions have less and less opportunities for employment in the mining sector. Low compensation for lost property is of equally great concern. Mining-induced environmental devastation increasingly affects inhabitants as well. The private sector is concerned with fast gains above all, and not with establishing any long-term mechanisms of local development. All of the above factors make mining-induced displacement an even greater problem for developing countries. The negative socioeconomic consequences of DIDR were precisely described in Operational Policy 4.12 adopted by the World Bank in 2011. According to this document:

“Bank experience indicates that involuntary resettlement under development projects, if unmitigated, often gives rise to severe economic, social and environmental risks: productive systems are dismantled; people face impoverishment when their productive assets or income sources are lost; people are relocated to environments where their productive skills may be less applicable and the competition for resources greater; community institutions and social networks are weakened; kin groups are dispersed; and cultural identity, traditional authority, and the potential for mutual help are diminished or lost.”

The scale and consequences of mining-induced displacement are especially affected by the following factors:

1. *Economic globalization*: The expanding network of economic ties is making extraction in distant countries much easier than ever before.¹² Poor African countries cannot afford to develop their mining sectors based only on their own budgets. Therefore, they strive to bring in foreign capital (e.g. direct foreign investments), and do not interfere with the character of the investment and with

¹²W. Fernandes, “Mines, Mining and Displacement in India”. In Singh, Gurdeep, Laurence, David and Kauntala Lahiri-Dutt (eds.). (2006). *Managing the Social and Environmental Consequences of Coal Mining in India*, The Indian School of Mines University, Dhanbad, pp. 333-344.

potential resettlements that may result. Administrative control or supervision of these foreign companies is purely a formality, or is not even put into practice at all. Extraction of resources frequently takes place on the basis of cooperation between foreign corporations and local companies. Public administration and local communities participate in profits infinitesimally. The lion's share is transferred to the investors' countries of origin so it does not support local development, whilst administration, hoping to get one of the shares, turns a blind eye to mounting environmental degradation and violations of the economic rights of local communities. In many underdeveloped countries, corporations do not adhere to the principles of sustainable development. Western public opinion is rarely informed about the negative consequences of such mining projects.

2. *Territorial expansion of mining areas*: The growing demand for resources forces the construction of new mines or the expansion of existing ones. According to Walter Fernandes' estimates, the average size of coal mines in India in the last 50 years has augmented almost ten times (from 150 to 1500 acres).¹³ Creation of new open-cast mines leads to the resettlement of a growing number of inhabitants in many regions of the world. We have witnessed the evolution of mining sector from underground to opencast mines, which require more land and displaced more people. The automation of extraction means that merely a limited number of people has the chance to be employed. Corporations free from external control neglect the effects of their actions on the environment. Worsening conditions frequently force nearby inhabitants to migrate.

3. *Abusive practices of the private sector in the mining industry*: A lack of controls encourages the private sector to carry on with unjust practices. Displaced people regularly receive inadequately low compensations for their lost properties. Companies do not implement the promised programs of aid and support in finding alternative jobs. The resistance of local communities often ends in failure. They do not possess sufficient financial power or the opportunity to protect and defend their rights and interests in court.

4. *Little interest of local public administration in the situation of displaced persons*: Extraction of resources frequently occurs in poorly-developed areas which are located far from urban centres. Hence, the administration's capacity to control the environmental and social consequences of such activities is limited. National authorities tolerate abuses on the part of extractive companies, the reason being that they are afraid to lose foreign capital. Mining projects are in large part located in countries with poorly established democracy and low standards of human rights protection. The development of mining in India, which has caused the landlessness and increasing marginalization of tribal peoples, is one of the examples most clearly illustrating this problem.

Just like other DIDR categories, mining-induced displacement leads to mass infringements upon

¹³ Ibidem

human rights. This stems from asymmetric capacities of local communities vis-à-vis big corporations that have money at their disposal, contacts in power circles, and a huge legal backroom. The engagement of entire communities and non-governmental organizations is a necessary condition for protecting local interests. However, in many parts of the world community organizational responses to mining show interesting signs of a revitalization of indigenous identity.

Indigenous people who are integrated with the land are particularly endangered by the consequences of displacement. For them, land performs not only the function of economic and social networks, but also their cultural point of reference. They agree to be displaced only with reluctance, because apart from a loss of sovereignty it means atomization and social marginalization. According to Janssens et al. (2008) the most negative consequences of contemporary mining are land and water contamination, disruption or displacement of communities, clashes between citizens and state forces, and the involuntary migration of rural people to cities.¹⁴

Among the effects of resettlements affecting indigenous people, Theodore Downing distinguishes: “suffering a loss of land, short and long-term health risks, loss of access to common resources, homelessness, loss of income, social disarticulation, food insecurity, loss of civil and human rights, and spiritual uncertainty.”¹⁵ Walter Fernandes, who studied the impact of investment projects on tribal people in India, also points to similar problems¹⁶. It seems that the reconciliation of economic development directives with the realization of the well-being of tribal people is currently impossible.

Loss of land appears to be the main threat caused by mining. It leads not only to economic problems but also to the loosening of economic ties. The decrease in the level of economic security which affect displacees is a consequence of several factors, the most important of which include the following: 1. loss of access to to previously used resources on which they depend (water, agricultural land, common resources such as pastures, forests, common agricultural land, rivers), 2. inappropriately small compensation which does not take account of the non-material losses associated with the displacement, 3. the negative consequences of change or modification of the

¹⁴ D. Janssens (et al.). (2008). *Blinkt alle goud? Mijnbouw, ecologie en mensenrechten*.
http://www.mo.be/fileadmin/pdf/MO-paper_Mijnbouw.pdf.

¹⁵ T.E. Downing, J. Moles, I. McIntosh, C. Garcia-Downing, *Indigenous Peoples and Mining Encounters: Strategies and Tactics*, International Institute for Environment and Development-World Business Council for Sustainable Development, Working Paper no. 57, April 2002, pp. 20.

¹⁶ On the development and tribal issues in India see: S.K. Mishra Development, Displacement and Rehabilitation of Tribal People: A Case Study of Orissa”, *Journal of Social Sciences*, vol. 6, no. 3, 2002, pp. 187-208; R. Meher, “Globalization, Displacement and the Livelihood Issues of Tribal and Agriculture Dependent Poor People. The Case of Mineral-based Industries in India”, *Journal of Developing Societies*, vol. 25, no. 4, October-December 2009, pp. 457-480.

previous economic model (especially the involuntary transition from a land-based to a cash-based economy), 4. deterioration of economic and environmental conditions in the new place of residence, 5. the economic consequences of disarticulation of larger communities and loss of existing community, neighbourhood or family ties. Temporary financial compensations seem inadequate in relation to the long-term social, environmental, and economic costs of mining activity. Thus establishing durable mechanisms of welfare is of substantial concern for the prevention of unemployment and housing problems, and for the equalization of educational opportunities. Another important issue is the granting of land rights to local communities and, through this, of a share in any profits from the exploitation of resources.

As noted by van Criekinge, mining is an unstable and not very promising source of income. The average period of open-pit exploitation is 10-40 years. Then, any work, money, and social benefits provided by corporations disappear.

Development of the mining sector should be based upon the principles of sustainable development. Mining ought to contribute not only to the maximization of profits for big corporations but also to the prosperity of local communities. It often leads not to the economic progress of the region but to its long-lasting collapse. Unemployment increases and the environment deteriorates, forcing people to migrate.

Beyond economic and social rights, the environmental rights of local communities are endangered as well. The effect of mining on health is as big a problem as the displacement itself. The deforestation of large areas of forest causes irreversible disturbances in local habitat. As research shows, the environmental consequences of open-pit mines are noticeable by inhabitants of places even several dozen km removed.

For the analysis of people displaced by mining, we can refer to the Improvement Risks and Reconstruction (IRR) model developed by Michael M. Cernea during nineties. Among the negative effects of displacements, he distinguishes: 1. landlessness; 2. joblessness; 3. homelessness; 4. marginalization; 5. increased morbidity and mortality; 6. educational losses; 7. food security issues; 8. loss of common property, and; 9. social disarticulation and community breakdowns.¹⁷ Each of the above-mentioned problems may constitute the consequences of MIDR.

¹⁷ M.M. Cernea, Risks, Safeguards and Reconstruction: A Model for Population Displacement and Resettlement”, *Economic and Political Weekly*, vol. 35, no. 41, October 7-13, 2000, pp. 3659-3678; see also: A. Chakrabarti, A. Dhar, *Dislocation and Resettlement in Development. From third world to the world of the third*, Routledge, New York, 2009, pp. 61.

In 2004, the Earthworks-Mineral Policy Center and Oxfam America launched a “No Dirty Gold” campaign to change unsavoury practices in gold mining. Citizens of the West who buy golden jewellery often do not realize that, in many African states, gold mining is associated with violations of human rights, persecution of human rights activists, protests against displacement or environmental degradation, and even violent conflicts. An important part of the “No Dirty Gold” campaign was the preparation of a report entitled, *Dirty Metals: Mining, Communities and the Environment*, which details environmental and social problems caused by gold mining.¹⁸ The target of this campaign was to curtail the sale of ‘dirty gold’, that is, “gold that comes from areas of conflict and harms both humans and the environment.”¹⁹

Mining-induced displacement also causes the violation of women’s rights. According to some specialists, women tend to be much more affected in the aftermath of displacement. They lose land needed for crop production, which is an important part of maintaining the family. Women displaced in Ghana following the development of mining emphasize that land loss is the worst problem affecting their normal functioning. Women are particularly vulnerable to the negative consequences of DIDR. Displacements observed in developing countries lead to the lowering of their already strongly marginalized social and economic position. DIDR stabilizes or even increases the economically and traditionally conditioned discrimination that they face. The key factor in the marginalization of women is the economic outcome of displacement. Landlessness and difficult access to common property resources (pastures, rivers, lakes) means that women cannot continue with their customary economic activity, such as collecting wood or providing part of the family's food supply. Development-caused displacement thus contributes to a reduction of women’s economic function and concomitant importance in the family. Due to their low level of education, women usually lack the opportunity to obtain other jobs. A frequent consequence of displacement is therefore the abolition of women’s economic functions and their complete dependency on their husbands' earnings. Recently conducted research also shows that women, more than men, are affected by the negative health consequences of the implementation of development projects. Mining activities lead to the deterioration of the economic status of women, along with malnutrition, health problems, lack of access to basic resources, etc.²⁰ A common consequences of involuntary resettlement is gaining access to safe potable water, which increased diarrhea, epidemic infections and dysentery.

¹⁸ The phenomena of conflict minerals and blood diamonds are of a similar nature.

¹⁹ "Target Pledges Not to Sell Dirty Gold," see:<http://www.care2.com>

²⁰ *Contesting Women’s Rights Within the Political Economy of Mining in India*, Dhaatri Resource Centre for Women and Children, Secunderabad, Andhra Pradesh, India, 2010, pp. 58-59.

It is necessary to strengthen adaptation and rehabilitation programs for displaced families. Such families should have the possibility of continuing the existing conditions of life in their new places of residence. Any attempts to transfer populations to excessively different neighborhoods fail. It thus becomes necessary to resettle people into territories fitting the previous economic model and allowing the continuation of customary activities. Those displaced from rural areas should have access to pasture and other facilities necessary to them. Rehabilitation programs are a common form of assistance to tribal people in India, but in many regions of the world they are not used at all. NGOs can play a significant role in the planning, negotiation, implementation and monitoring of resettlement and its consequences. It is therefore necessary to strengthen NGOs in developing countries.

Companies that respect the principles of sustainable development in one country often commit human rights violations in another. It is therefore important to publicize negative practices in the media of developed countries. Only western public opinion can have a real impact on these adverse practices. Corporations operating in poor countries in Africa usually do not count with the local communities. The central and local authorities do not enjoy high credibility and are often corrupt. Tribal leaders and other persons endowed with the authority of the community can be important in encouraging people to resettlement.

It is important to engage as many partners as possible in the stage of negotiations and the creation of resettlement programs. Negotiation and signing of a Public Infrastructure Agreement, ensuring access to infrastructure and social services, should be an indispensable element of the resettlement program, ensuring access to infrastructure and social services. Public Infrastructure Agreements should be very detailed in nature. One valuable example of appropriate resettlement practices is the displacement associated with the formation of a diamond mine in Murowa. Mechanisms of social support provided to those resettled should be long-term in nature and should not end within a year or two after resettlement.

4. Economic and Environmental Consequences of Mining-Induced Displacement and Resettlement

Economy The decrease in the level of economic security which affect displacees is a consequence of several factors, the most important of which include the following: 1. loss of access to to previously used resources on which they depend (water, agricultural land, common resources such as pastures, forests, common agricultural land, lakes), 2. inappropriately small compensation which does not take account of the non-material losses associated with the displacement, 3. the negative consequences of change or modification of the previous economic model (especially the involuntary

transition from a land-based to a cash-based economy), 4. deterioration of economic and environmental conditions in the new place of residence, 5. the economic consequences of disarticulation of larger communities and loss of existing community, neighbourhood or family ties. Recently conducted research on DIDR, as well as earlier publications, are focused on the fundamental impact of resettled people's economic situation on their prospects for successful functioning in the new place of residence. The forms of economic support for displaced people should not be limited to relocation to a similar area, or to economic or financial compensation, but should also include long-term economic support in the new place of residence. In contrast to the consequences of armed conflict or natural disasters, involuntary relocation caused by development projects is not usually associated with fundamental problems of human existence such as threats to life. Economic security is thus essential to establish the pillars of development-caused displaced people's functioning and to minimize their problems in the new place of residence. Land is a vital resource which enables resettled people to maintain their previous economic activities in the new territory. The consequences of development projects consist not only of physical relocation to another territory but also of significant reduction of the inhabited area. Loss of land or its drastic reduction puts communities characterized by a land-based, hunting-gathering economy, with low occupational flexibility, at risk of multigenerational economic marginalization. Joblessness caused by loss of land, which affects both women and men, not only leads to a deterioration in their economic situation but also creates pathologies such as alcoholism and mental problems.

In addition, loss of land significantly affects other categories of security such as food security. It thus becomes necessary to resettle people into territories fitting the previous economic model and allowing the continuation of customary activities. Compensation payments in cash can lead to expenditure for other purposes, possibly resulting in subsequent landlessness and homelessness. Another problem leading to a reduction in the level of economic security is inadequate or totally absent compensation for the displaced. In many regions of the world, indigenous communities who do not have formal rights to the land they inhabit do not receive any compensation for displacement. Another significant problem is a practice, common in many countries, of population resettlement into areas characterized by much worse living conditions than the areas abandoned, leading to deterioration of the people's economic situation. A common problem, for example, is displacement of fishing communities into areas of heavily contaminated water or of agricultural communities onto land of much poorer quality for cultivation. In highly developed democratic countries, the compensation received by the displaced is often greater than the value of the property left behind. In addition to compensating for lost property, it aims at compensating for the negative social costs of displacement. Even in European countries, however, we can observe many examples

of deliberate undervaluation by experts of property belonging to resettled people, and compensation well below the actual value of the lost goods. In most developing states the goal of compensation is primarily to allow the displaced to continue functioning in another territory. The value of compensation is therefore not always equal to the real economic losses. Lack of support and inadequate compensation accompanying displacement may lead not only to landlessness but also to homelessness.

While analyzing the risks affecting displaced people it is worth pointing out at least a few other issues. Another factor contributing to the reduction in the level of economic security is resettlement of DPs in areas characterized by economic models significantly different from those abandoned. The consequence of the creation of the Three Gorges Dam in China was the resettlement of several thousand rural people in the outskirts of large cities. For a community characterized by a static economic model, such resettlement raises long-term adaptation problems. Its common result is a decrease in the activity of women and their consequent dependence on their husbands' earnings. Those responsible for resettlement projects should therefore take into account the need to resettle the population into a nearby territory characterized by an economic model similar to that of the abandoned territory. The other cause of the decrease in economic security is the effect of the development projects themselves on the affected people (PAPs). Among the negative consequences of dam construction can be mentioned, for example, water pollution and the decline in the number of fish in the rivers. These phenomena can substantially affect the economic stability of whole communities, not to mention the negative health consequences. Open-cast mining (and oil-induced displacement) is a cause of population resettlement which may have particularly negative environmental consequences. Investments of this kind can result in water, air and land pollution, which significantly decreases the level of economic security for affected people. Contemporary mining practices, based on advanced technology, require workers with high qualifications, so that local people often lack opportunities for employment in the mining industry. The progressive economic depletion of displaced and affected communities means that more and more family members are forced to work to ensure an adequate level of family existence. Deteriorating living standards thus force minors, sometimes very young children, to drop out of school and take full-time jobs to help parents. Given deteriorating economic conditions and lack of job opportunities, often the only solution for the locals is to migrate to the cities. The worsening economic condition of local residents, however, is largely a consequence of unemployment. The joblessness observed in displaced communities has two main causes: the economic consequences of landlessness, plus poor adaptation to the static economic model in the new place of residence.

The social disintegration caused by displacement strongly contributes to deteriorating economic

conditions. In many indigenous, tribal and rural communities, which are not based on money, neighbourhood ties and barter within the community play an immeasurable economic role. Resettlement can lead not only to impairment of physical conditions but even to the total disintegration of community links. Atomization of communities based on various forms of non-cash exchange can lead to a very severe decline in economic security.

Environment Environmental contamination caused by implementation of development projects lead to long-term deterioration in the security of whole communities. The contamination of the Niger Delta and a few other regions on the world shows us how huge may be the impact of environmental problems for the functioning of many people living in the immediate vicinity. Land, water and air pollution becomes a factor in long-term health problems. In many cases, the only way to maximize the level of security is forced migration from the area negatively affected by development projects to another location. Persons who had been previously displaced are therefore forced into another, "secondary", migration.

The environmental problem observed inter alia in the aftermath of the Lesotho Highlands Water Project was significant depletion of the local ecosystem. The affected people complained about the felling of a large amount of forest in the course of the project, creating difficulties in access to firewood. Megaprojects can seriously decrease local environmental security. For local communities strongly dependent on resources found in a project's immediate vicinity, its implementation can greatly affect their economic situation.

5. Case studies:

5.1 Asia and Pacific:

Among the countries of the region with a significant scale of MIDR, five should be mentioned: India, China, Indonesia, Papua New Guinea, and the Philippines. The Grasberg (Freeport) gold mine in Indonesia caused the displacement of more than 15,000 people. According to cautious estimations, the development of coal mining in India displaced more than 2-2,5 million people between 1950 and 2000 (particularly in Jharkhand). As Walter Fernandes noted, mining-related resettlement is a part of the general context of displacement in this country. In China, coal mining has degraded the quality of land of an estimated 3.2 mln hectares (according to a 2004 estimate) and displaced thousands of people. Mining-induced displacement and resettlement is also highly visible in Papua New Guinea and the Philippines. The expansion of OK Tedi mine in Papua New Guinea as well as environmental damage in surrounding areas has forced 4,000 people to relocate. Foreign mining projects in the Philippines continue to displace indigenous people and harm the environment

under President Aquino's term. There is also the danger of massive mining-induced resettlement in Bangladesh. According to some sources, the open-pit coal mine in Phulbari (Bangladesh) could displace hundreds of thousands of indigenous peoples and cause serious violations of human rights. The situation of the resettled is much worse than in Europe and even some African states. Much attention is paid to the loss of land by tribal people, marginalization, the situation of women and children, malnutrition, and poor health care.

India

We ought not to reduce the development-induced displacement in India to the consequences of the construction of dams and irrigation projects, initiated during the colonial period and continued by Nehru.²¹ Mining-induced displacement is currently one of the major risks for stable and sustainable development here. It is estimated that the development of mining displaced between 1,5 and 2,5 million people between 1950 and 2000. The main problem in India seems to be antagonism between local administrations and tribal peoples regarding land ownership. Land inhabited by many generations is the most significant area of economic, social, and cultural reference. The fusion of human and land is highly visible in the case of indigenous and tribal people who have limited adaptive mechanisms to the new reality. As Theodore E. Downing (et al.) noted:

Mining can empower indigenous peoples, but previous encounters have stripped them of their sovereignty, their traditional wealth, and posed multiple impoverishment risks. The public has indicted the industry for tragic and unnecessary forced relocations, violations of human rights, under-compensation for damages, and lack of benefit sharing. Sustainable mining is not possible if indigenous cultures—that are the prototypes of persistent peoples on this planet—are rendered unsustainable” [...] One of the primary causes of indigenous resistance to mining is the potential loss of sovereignty. Mining frequently disrupts indigenous lifeways and institutions, undercutting their capacity to sustain themselves as a community. Indigenous peoples throughout the world pursue their sovereign rights as coequal members of the community of nations.²²

Among the most important determinants of MIDR in India, we can mention: coal, copper, bauxite, and uranium mining in Orissa, Jharkhand, West Bengal, and Andhra Pradesh.²³ According to Prajna Paramita Mishra and M. Gopinath Reddy, between 1981 and 1986 major Indian coal companies have displaced more than 32,700 families (the estimates of displaced persons in Singrauli I-II alone is about 49,000). As Areparampil noted, the development of mining in Jharkhand was associated

²¹ Nehru called large dams ‘temples of modern India’ in the sense that he was affirming a commitment to modernisation and socialism in post-Independence India. On the broad context of development-induced displacement in India see: S. Somayaji, S. Talwar (eds.), *Development-induced Displacement, Rehabilitation and Resettlement in India: Current issues and challenges*, Routledge, New York, 2011.

²² T.E. Downing, J. Moles, I. McIntosh and C. Garcia-Downing, *Indigenous Peoples and Mining Encounters: Strategies and Tactics*, International Institute for Environment and Development-World Business Council for Sustainable Development, 2002, p. 3.

²³ M. Areparampil, “Displacement Due to Mining in Jharkhand”, *Economic and Political Weekly*, vol. 31, no. 24, pp. 1524-1528.

with large-scale deforestation and environmental devastation. The development of aluminum mining in the region of Andhra Pradesh is another well-known case of MIDR.²⁴ The development of the NALCO Refinery Plant in Damanjodi has led to the displacement of fifteen settlements with about 597 families. Literature highlights the problems of the most vulnerable groups— indigenous people, illegal settlers, women and children displaced by mining. Potential risks affecting displaced persons are similar to those of other categories of DIDR. Among them we can mention: unemployment, homelessness (and housing problems), social marginalization, alienation, health and social security risks, erosion of social ties, violations of fundamental human rights, lack of access to safe drinking water, and lack of access to education and social services.

THE SCALE OF MINING-INDUCED DISPLACEMENT AND RESETTLEMENT IN INDIA
ACCORDING TO ‘MODERATE’ ESTIMATIONS:

Region	Years	Total number of displaced	Source
Andhra Pradesh	1980-1995	100,54	Fernandes et. al (2001)
Assam	1980-2000	41,2	Fernandes and Bharali
Goa	1980-1990	4740	Fernandes and Naik (2001)
Gujarat	1980-2000	4128	Lobo and Kumar (2007)
Jharkhand	1980-1995	402282	Ekka and Asif (2000)
Orissa	1960-1995	300000	Fernandes and Asif (1997)
Kerala	1990-1999	78	Muricken et al. (2003)
West Bengal	1960-2000	418061	Fernandes et al. (2006)
Total		1571630	

Source: Fernandes, Walter (2006). “Mines, Mining and Displacement in India” [in] Singh, Gurdeep, Laurence, David and Kauntala Lahiri-Dutt (eds.). (2006). *Managing the Social and Environmental Consequences of Coal Mining in India*, The Indian School of Mines University, Dhanbad, pp. 333-344.

Indonesia

The Grasberg Mine, situated in the Papua province of Indonesia near Puncak Jaya (New Guinea), is the largest gold mine and one of the largest copper mines in the world.²⁵ The development of the Grasberg copper and gold mine (Freeport mine) has caused the displacement of more than 15,000 people, mostly indigenous (Hyndman, 1988, 1994)²⁶. According to Roberts (1996), “Freeport has

²⁴ P. Paramita Mishra, M. Gopinath Reddy, “Mining-induced displacement Case of aluminium refinery in Andhra Pradesh”. In S. Somayaji and S. Talwar (eds.), *Development-induced Displacement, Rehabilitation and Resettlement in India. Current issues and challenges*, Routledge, 2011.

²⁵ Three large open-pit mines are located in the Island of Papua: Grasberg (Freeport) Mine (Indonesia), Tedi Mine (Papua New Guinea) and Porgera Mine (Papua New Guinea).

²⁶ D. Hyndman, *Ancestral Rain Forests and the Mountain of Gold. Indigenous People and Mining in New Guinea*, Westview Press Boulder, Colorado, 1994.

not paid any mining royalties (or any other compensation) to the roughly 4,000 Amungme indigenous people displaced by the growing mine's concession area of 9,266 square miles since strip mining began there in 1972. Many of the displaced people have moved to the lowlands, where malaria and other diseases have killed several hundred of them."²⁷ It is estimated that the exploitation of environment led in Grasberg area, for more than 30 years, has damaged 30,000 hectares of rainforest as well as the Kopi and Ajkwa rivers. The risk of displacement of the population also affects the region of East Kalimantan in Indonesia.

China

There is not much literature on mining-induced displacement in China. Available publications, however, draw attention to the dangers of resettlement associated with the exploration of new coal-rich areas in China, such as Xinjiang province. Various Uighur communities living in this area are particularly vulnerable to this problem.²⁸

Bangladesh

Until recently, mining-induced displacement was not a well-known social problem in Bangladesh. However, the planned construction of an open-pit coal mine in the Phulbari area of Northwest Bangladesh could displace or impoverish hundreds of thousands of people and jeopardize their basic needs. The project involves the development of an open-pit coal mine in Northwestern Bangladesh along with the construction of a 500-MW power plant. The case of the Phulbari mine drew the attention of the world media in February 2012. A group of independent UN experts noted that the opening of such a mine would immediately displace 50,000-130,000 people and potentially affect 220,000. The coal mine's development could destroy 5900-12,000 hectares of agricultural land. In addition, the project would reportedly extract 572 million tons of coal over the next 36 years from a site. The project would force entire villages (such as Santal, Munda, Mahili, and Pahan, inhabited by indigenous people) to resettle. Project-induced environmental destruction (e.g. water toxification and deterioration in the quality of agricultural crops) could also end up forcing large-scale migration. According to International Accountability Project, the expansion of mining in Phulbari may lead to various environmental consequences:

- Risk of impoverishment of many thousands of people;
- Outbursts of conflict in the project area;

²⁷ B.E. Johansen, "Irian Jaya/Papua New Guinea". In *Indigenous Peoples and Environmental Issues: An Encyclopedia*, see: http://www.ratical.org/ratville/IPEIE/IJ_PNG.html.

²⁸ See: A.M. Dwyer, *The Xinjiang Conflict: Uyghur Identity, Language, Policy and Political Discourse*, Policy Studies Discourse Working Paper no. 15, East-West Center, Washington, 2005.

- Endangered food security in Bangladesh.²⁹

According to the Office of the High Commissioner for Human Rights statements from 2012 "The Government of Bangladesh must ensure that any policy concerning open-pit coal mining includes robust safeguards to protect human rights. In the interim, the Phulbari coal mine should not be allowed to proceed because of the massive disruptions it is expected to cause".

Philippines

Mining in the Philippines is the cause of massive displacement of indigenous peoples from their ancestral lands. As Brawner Baguilat pointed out, the expansion of mining here leads to many negative consequences for indigenous populations:

- Loss of ownership, management, and control of land and resources (the material base of the peoples' identity, culture, and survival), and denial of the peoples' resource-management systems;
- Massive loss of livelihood and destruction of local economies causing numerous threats to food, health and water security;
- Dislocation of settlements and villages and weakening of socio-cultural systems;
- Destruction of bio-diversity, pollution and degradation of the environment;
- Loss of traditional knowledge and systems of resource management.³⁰

As in other regions of the world, mining especially causes problems for indigenous people³¹. Among the communities most threatened by forced displacement, we can mention B'laan, Kasibu, Nueva, Vizcaya, and Igorot.

Papua New Guinea

The problem in Papua New Guinea is the expansion of the two largest open-pit mines in the country: OK Tedi Mine and Porgera Mine. Particular attention was paid to human rights violations in the first project:

- Tedi Mine. More than 30,000 people have been displaced by pollution associated with the development of OK Tedi Gold Mine. According to some sources (Higgins, 1999)

²⁹ Phulbari Coal Project: *An Assessment of the Draft Resettlement Plan Prepared by Global Coal Management/Asia Energy Corporation*, Final Draft, International Accountability Project-Bank Information Center, San Francisco-Washington DC, August, 2008.

³⁰ B. Baguilat, "Philippines: Mining And Its Impacts To Indigenous Communities", http://indigenouspeoplesissues.com/index.php?option=com_content&view=article&id=11988:philippines-mining-and-its-impacts-to-indigenous-communities&catid=32&Itemid=65.

³¹ W. N. Holden, "Civil Society Opposition to Nonferrous Metals Mining in the Philippines", *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, Vol. 16, Issue 3, September 2005, pp. 223-249.

environmental damages have displaced 4,000 people. According to Sutoris over 40,000 Wopkaiman people has been displaced by the creation of Ok Tedi mine³².

- Porgera Mine. The Porgera Gold Mine is a large gold and silver mining operation in Enga province, located at the head of the Porgera Valley. During the development of the Porgera gold and silver mining operation, many people were relocated. Resettlement principles were identified in the Porgera Relocation Agreement (September 1988), the Tolukuma Compensation Agreement (November 1993), and the Lihir Integrated Benefits Package (April 1995).³³ There is no official statistics about the number of people resettled following its operation.

5.2 Africa

Nowadays, open-pit mining is a significant environmental and social problem in Africa. The mining of coal, copper, iron, gold, bauxites, and diamonds is a common cause of highly visible environmental degradation and development-induced displacement and resettlement. The district of Tarkwa located in Ghana, characterized by the presence of half of country's large mines, indicates the enormous environmental and social impacts of 'gold fever.' Mining in the Tarkwa region displaced about 30,000 people between 1990 and 1998, destroyed forest land and farms, and contaminated rivers. Among other countries with a particularly high scale of MIDR we can find: Mali, Namibia, Botswana, RSA, and Zimbabwe. It is also worth emphasizing the environmental devastation and concomitant mass displacement caused by oil extraction in the Niger Delta (known as the tragedy of the Ogoni people). The best-known mining projects implemented in recent years in Africa are: the Bulyanhulu gold mine in Tanzania, the Konkola copper mine project in Zambia, the development of gold mining in the Tarkwa region in Ghana, the Sadiola open-pit gold mine in Zimbabwe, the Dikulushi copper and silver mine in the Democratic Republic of Congo, and the Murowa diamond mine in Zimbabwe. According to the official report of the Southern African Development Community, "mining-induced displacement [...] was one of the most underreported causes of displacement in Africa, and one that was likely to increase, as mineral extraction remained a key economic driver in the whole region."³⁴

Ghana

³² P. Sutoris, "Social Justice, Environmental Sustainability and the Relocation of the Bikinians, 1946-1978", *World Outlook Journal of International Affairs*, Dartmouth College, 2011.

³³ "Resettlement and Mining in Papua New Guinea" (Chapter 7), see: <http://www.adb.org/documents/conference/resettlement/chap7.pdf>.

³⁴ See: J. Van Crieking, "Africa: Conflicts and mining-induced displacement", *The Broken Rifle*, vol. 77, 2001.

More than 30,000 people were displaced between 1990 and 1998 in the Tarkwa district of Ghana by gold mining operations³⁵. At least several hundred people each year are resettled in the region as a result of mining development.³⁶ Mining has destroyed 14 communities between 1990 and 1998. According to Akabzaa and Darimani, mass displacement has led to the large-scale migration of young people to urban centres (mostly Tarkwa). The second planned mining project in Ghana (the Akyem project) is likely to destroy surrounding habitat and move hundreds of people from their initial places of residence. One of the most controversial projects in Ghana is the Ahafo gold mine. Since its commencement in 2006, the mine has been faced with allegations of human rights abuses committed by the security forces protecting the mine, along with the displacement of 10,000 people, inadequate compensation, and environmental disruption (cyanide spill in October 2009). As Akabzaa and Darimani noted “Compensation policy also did not consider the tenant status of many local people. Several women who got displaced without compensation are now living in makeshift wattle structures on the fringes of Tarkwa. In interviews, many of them said they could not afford the rents in town. They make their living mainly by selling firewood from the forest or performing various jobs at galamsey sites.”³⁷

Mali

Displacement in Mali is the consequence of gold-mining development in three areas: Sadiola, Syama, and Morila:

- In the Sadiola region, 46 villages lost their space due to MIDR. Sadiola mine, which is in operation since 2011, is the largest gold extraction investment in Mali. Experts state that only in the area of three villages (Sadiola, Farabakouta, and Niamboulama) the development of mining has led to the displacement of more than 1,000 people;
- In the Forou region (near the Syama gold mines), 121 communities have lost their land because of mining³⁸.

According to Eyolf Jul-Larsen (et al.), the major social consequences of industrial gold mining in Ghana are: 1. the expropriation of living standards of affected populations; 2. land and displacement of villages; 3. a reduction in agricultural and pastoral activities; 4. environmental hazards; 5. ho-

³⁵ Over 22,000 people were resettled between 1996 and 2000 under so-called Tarkwa Resettlement Project.

³⁶ T. Akabzaa, Thomas, Darimani, Abdulai. (2001). *Impact of Mining Sector Investment in Ghana. A Study of the Tarkwa Mining Region*, A Draft Report Prepared for SAPRI.

³⁷ T. Akabzaa, A. Darimani, "Impact of Mining Sector Investment in Ghana: A Study of the Tarkwa Mining Region", Report prepared for SAPRI, January, 2001.

using bottlenecks; 6. social changes, unemployment, and inflation.³⁹ Lack of comprehensive statistical data makes it impossible to determine the scale of MIDR in Mali. According to Sonnenberg and Münster (2001): a) 2135 people from 85 households were resettled in Sadiola Hill (an open-pit gold mine opened in 1996 in Kayes Region of Mali; and b) 165 people from 8 households were resettled in Yatela (the expansion of the Yatela open-pit gold mine, opened in 2001, situated 25 km north of Sadiola). Beginning in mid 1996, AngloGold Ashanti worked to resettle the villages near the Sadiola mining area: Sadiola, Farabakouta, and the Niamboulama. Between April 1999 and October 2000, 1200 inhabitants of these villages were resettled.⁴⁰

South Africa

It is not possible to provide accurate statistics for the number of people resettled as a result of mining in South Africa. According to southern Africa MMSD regional report mining in South Africa “displaced 37,000 people over five years”.⁴¹ Sonnenberg and Münster claim that mining operations resettled 35,000 people in southern Africa during the nineties.⁴² However, this figure refers only to persons covered by resettlement plans. In fact, much of the resettlement was unrecorded and was not realized on the basis of resettlement plans.⁴³ The most famous example of MIDR in South Africa is that of the resettlements undertaken by Anglo Platinum near its Mogalakwena mine. Almost 10,000 people (957 households) from Ga-Pila and Motlhotlo were resettled.⁴⁴ Following many years of negotiations, 98% of Ga-Pila residents accepted the offer to move to the newly-built village. The program of relocation was voluntary and was realized with the strong support of local authorities and tribal leadership.

Zimbabwe

A particularly infamous example of MIDR in Zimbabwe is connected with the recent development of the Marange Diamond Fields. The Chiadzwa area, located in the eastern part of the country is

³⁹ E. Jul-Larsen, B. Kassibo, S. Lange, I. Samset, *Socio-Economic Effects of Gold Mining in Mali. A Study of Sadiola and Morila Mining Operations*, Chr. Michelsen Institute, Bergen, Report, no 4, 2006, pp. 27.

⁴⁰ 496 inhabitants of Sadiola were resettled July 8, 1999. 550 inhabitants of Farabakouta were resettled 22 April 1999. 105 residents of Niamboulama were resettled October 6, 2000.

⁴¹ T.E. Downing, *Avoiding New Poverty: Mining-Induced Displacement and Resettlement*, IIED, London 2002, p. 7; W. Courtland Robinson, "Risks and Rights: The Causes, Consequences, and Challenges of Development-Induced Displacement", SAIS-Brooking Institution, May 2003, p. 20.

⁴² D. Sonnenberg, F. Münster, *Mining Minerals Sustainable Development Southern Africa. Research Topic 3: Mining and Society. Involuntary Resettlement*, African Institute of Corporate Citizenship, Sandton, 2001, pp. 42.

⁴³ M. Hoadley, D. Limpitlaw, A. Weaver, "Mining, Minerals and Sustainable Development in southern Africa", The Report of the Regional MMSD Process, University of the Witwatersrand, 2002.

⁴⁴ According to Sonnenberg and Münster (2001) Anglo Platinum investments in Ga-Pila displaced 4500 people (770 households) before 2001.

considered the world's biggest diamond find in more than a century. In January 2009, the government announced its plans to resettle 4,700 Chiadzwa villagers to the 12,000 ha Arda Transau Farm, on the Odzi River. Resettlement plans provoked protests amongst Chiadzwa villagers.⁴⁵ Over 500 Manicaland families from Chiadzwa to date have been relocated to Arda Transau Relocation Village, 24 km from Mutare. The villagers moved into three-bedroom houses, built by a private contractor, which cost \$55,000 per unit.⁴⁶ Mbaba Diamonds, the company responsible for the exploration, promised to build schools and clinics and to provide residents with basic social services. This might be just the beginning of resettlement issues in Zimbabwe, as more and more diamond deposits are discovered in this country.⁴⁷ The development of mining can bring about a host of negative consequences for the rural population of Zimbabwe.

Rio Tinto's Murowa diamond mine in Zimbabwe is an example of ethical and appropriate resettlement. The Murowa is a diamond mine opened in 2004, located in southern central Zimbabwe, 350 km south-west of Harare. During the discovery phase, it was ascertained that the development of the project would require the relocation of 100 families. In June 2001, the initial resettlement mapping plan was completed, according to which 926 people from 142 families would be resettled. In May 2002, resettlement agreements were signed among the company, local authorities, and the resettled community. The preparation of mine facilities was completed in late 2004. These activities included the relocation of 926 people living in the immediate vicinity of the mine to 6 farms purchased by the government resettlement program. In 2005, the company relocated 142 families to Shahse, about 150 kilometres east of Murowa. A public infrastructure agreement was signed between the company and local authorities on access to social services and the construction of school and health facilities. A separate public agreement was associated with the relocation of 265 graves from the old settlement to the specially prepared new area. Additionally, after the initial resettlement plan, 224 families were relocated to Sashe.

According to Rio Tinto, the company then built new roads, a health centre, and a primary school, and implemented community development projects including micro-irrigation and agricultural and business training programmes, allowing the people to adapt to their new situation and the development of a local economy.⁴⁸ As Simon Nish and Sara Bice pointed out, each family received

⁴⁵ O. Katsaura, "Violence and the political economy of informal diamond mining in Chiadzwa, Zimbabwe", *Journal of Sustainable Development in Africa*, vol. 12, no. 6, 2010, pp. 340-353.

⁴⁶ Nqobile Bhebhe "Chiadzwa villagers relocated", <http://www.newsday.co.zw/article/2011-12-14-chiadzwa-villagers-relocated/>

⁴⁷ For example, recent discoveries in the Bikita region.

⁴⁸ S. Nish, S. Bice, "Community-based agreement making with land-connected peoples" [In] Vanclay F., Esteves A.M. (eds.), *New Directions in Social Impact Assessment. Conceptual and Methodological Advances*, Edward Elgar Publishing Limited, 2012, p. 71.

access to approximately 8 ha of arable land for their own purposes and access to 32 ha of common arable land.⁴⁹ The case of the Murowa diamond mines is a good example of broad public participation in resettlement schemes, negotiations significantly in advance of resettlement, and detailed public infrastructure agreements.

Botswana

Resettlement issues in Botswana are particularly connected with the rights of aboriginal people, cultural heritage, and the conservation of nature. The most well-known example of displacement is the forced relocation of two aboriginal San communities (the Gana and Gwi tribes) from the Central Kalahari Game Reserve. This action led to the violation of several human rights: indigenous people rights, water rights, and the right to land. The San people's case, among others, was undertaken by the Human Rights Commission of the United Nations in Geneva. Since the mid-nineties, there is also the subject of court battles in Botswana. The reasons for the relocation of aboriginal peoples are for the conservation of nature and for mining. According to Survival International, "In three big clearances, in 1997, 2002 and 2005, virtually all the Bushmen were forced out. Their homes were dismantled, their school and health posts were closed, their water supply was destroyed and the people were threatened and trucked away."

- In 1997 the government of Botswana decided to resettle hundreds of San people living in the Central Kalahari Game Reserve (CKGR). According to official statements, the aim of the operation was "proposed conservation and development" and to raise the functioning standards of the rest of the San living in the reserve.
- In July 2004, the authorities decided to resettle the next several hundred residents of the reserve because deposits of diamonds were discovered. This decision led to protests by 250 San people residing there. The world-renowned corporation De Beers expressed interest in the exploitation of diamond deposits in the reserve.
- Another attempt to remove San people from the Central Kalahari Game Reserve was in 2008. In 2009, a Botswana government official has admitted that the Kalahari Bushmen were evicted from their land to make way for diamond mining, and that authorities cut off the water supply to force Bushmen out of the Central Kalahari Game Reserve.⁵⁰ In 2009, about 1,000 San people were seeking to return to the Kalahari Reserve.

⁴⁹ Ibidem.

⁵⁰ Botswana admits bushmen were evicted for diamond mine", *Ecologists*, 19th August 2009. http://www.theecologist.org/News/news_round_up/305377/botswana_admits_bushmen_were_evicted_for_diamond_mine.html

The Central Kalahari Game Reserve is a disgraceful example of a place where mining and tourism development were more important than the rights of indigenous peoples.⁵¹

Democratic Republic of Congo

The Democratic Republic of Congo has Africa's largest mineral resources, but the vast majority of its people lives in deep poverty. The fight to control mining has been a major factor in the violent conflict which has raged in eastern Democratic Republic of Congo for at least 16 years. We see the problem of so-called blood diamonds, where the profits from the diamond trade are used to fund conflicts. Rebel forces control some of the diamond fields, extracting diamonds, then selling them and spending the earned money to continue the conflict.

In 2011, Randgold Resources announced plans to start mining Africa's largest undeveloped gold deposit in eastern DR Congo. The beginning of gold mining in Kibali will require the re-location of 15,000 people. The new Kibali gold project is located close to the Ugandan border in a corner of DR Congo. According to Randgold representatives, all people will be moved to a new village constructed by the company. In June 2011 the first of 14 affected villages started moving to the Kokiza resettlement village, which will include approximately 3700 newly built homes. Only two of 12 villages have already been resettled to date (February 2012).

Kenya

The development of titanium mining in Kenya's Kwale region led to the displacement of at least several thousand people. As per Sonnenberg and Münster in 2001, 3300-10,000 people (450 households) were resettled as a consequence of mining conducted by Tiomin Resources. In July 2004, the Kenyan government and Toronto-based Tiomin Resources signed a deal for a 21-year mine for titanium in Kwale. It was estimated that, by 2007, the mining project would displace 5,000-10,000 in the Kwale district. Many of them are indigenous people.

Zambia

Konkola Copper Mines is the biggest copper produced in Zambia. According to Sonnenberg and Munster (2001), 750 people from 143 households had been resettled at that time by mining

⁵¹ D. Chatty, M. Colchester (eds.), *Conservation and Mobile Indigenous Peoples. Displacement, Forced Settlement and Sustainable Development*, Berghahn Books, 2002, p. 189; M. Dowie, *Conservation Refugees. The Hundred-Year Conflict Between Global Conservation and Native People*, Massachusetts Institute of Technology, 2009, pp. 42.

operations. The affected people (67 households) were moved to Ming'omba village on 14 January, 2002. In February 2002, 74 households from Kawama were resettled. The resettlement plans were implemented in accordance with IFC Guidelines. Residents were given access to social services: schools, a health centre, water supply, sanitation, etc.⁵²

Tanzania

The Bulyanhulu Gold Mine, opened in 2001, forced the resettlement of 511 people from 56 households (Sonnenberg and Münster (2001). In 1996, the mine was the scene of one the most infamous cases of mine-related violence. Over 50 artisanal miners were buried alive by bulldozers used to construct new mine. About a thousand people were displaced due to development of the Buzwagi Gold Mine in the Kahama District. More than 30,000 artisan miners were resettled as a consequence of the construction of Geita and Nzega, two large-scale gold mines in Tanzania.⁵³

Mozambique

Resettlements in Mozambique are associated with the mining of titanium in its Chibuto District (Corridor Sands Titanium) and Moma District (Moma Sands Titanium). According to Sonnenberg and Münster (2001), 4200 people (840 households) were resettled in connection with the Corridor Sand Heavy Mineral Sand Project.

According to some sources the development of Vale's Moatize coal mine in Mozambique has displaced more than 2000 families. They were resettled to the Cateme area, located 60 kilometers from the mine zone. Problems they face include lack of access to water, electricity, and agricultural land.⁵⁴ In early 2012, 500 residents of Cateme, one of Vale's resettlement villages, took to the streets when cracks opened in their company-built houses only months after they moved in, crops failed and jobs at the mines dried up. In May 2013 Human Rights Watch accused Mozambique's government and foreign mining companies of "serious shortcomings" in resettling communities to make way for coal mines, leaving thousands without proper homes, food or sources of income. According to the report resettled families in the northwest province of Tete had faced "significant

⁵² See more: Assessment Report Complaint filed to the CAO regarding the Zambia Konkola Copper Mine (KCM) Project, Office of the Compliance Advisor/Ombudsman, Compliance Advisor Ombudsman, November 2003, <http://www.cao-ombudsman.org/cases/document-links/documents/Zambia-KCMFinalReport11-17-03.pdf>

⁵³ M. Curtius, T. Lissu, A Golden Opportunity? How Tanzania is Failing To Benefit From Gold Mining, October 2008.

⁵⁴ "Resettled Mozambique families protest against Brazil's Vale", <http://www.mineweb.com/mineweb/view/mineweb/en/page504?oid=142931&sn=Detail>.

and sustained disruptions in accessing food, water and work" since being resettled between 2009 and 2011.

Resettlement implemented by the Brazilian mining company Vale in the Moatize district, in the western province of Tete aroused the protests of affected people. Between November 2009 and April 2010, Vale resettled hundreds of people from the area of mining concession in Chipanga. About 717 households regarded as 'rural' were resettled in the locality of Cateme, about 35 kilometres from Moatize town. 288 households, regarded by mining company as 'semi-urban', were resettled in the neighbourhood within the town. 308 households refused to change their place of residence, and demanded monetary compensation instead. In Cateme 750 new houses were built and people have access to social services, an elementary school, a police station, a health center, and water and electrical infrastructures. Despite this fact, displaced people protested against a number of problems encountered.⁵⁵ According to some sources, 400 of the 750 houses had been poorly built and access to electricity, water, and agricultural land. On January 10, 2012, more than 400 families blocked the road and railway line in Tete to protest against poor living conditions and the failure of the resettlement programme. Vale has now promised to resolve all the problems at the Cateme resettlement area within half a year.⁵⁶

Republic of Congo

The expansion of the Zanaga iron ore project located in the Lekoumou district could lead to resettlement of ten villages, according to some sources.

5.3 South and Central America

Among the Southern and Central American countries experiencing this problem on a greater or lesser scale, we can mention: Peru, Venezuela, Colombia, Guyana, Argentina, Suriname, Chile, Honduras, and Venezuela. Thousands of people in Peru could be displaced because of the mining industry in this country. The most significant example of the problem is the situation of the inhabitants of Morococha town (a Chinese company plans to mine copper there) and the city of Cerro de Pasco (with the possible relocation of more than 11,000 people due to negative effects of

⁵⁵ More on situation in Cateme: C. Kabemba, C. Nhancale, *Coal versus Communities: Exposing poor practices by Vale and Rio Tinto in Mozambique*, Southern Africa Resource Watch, Policy Paper no. 2, 2011; "Protests against Vale coal mine relocations", <http://www.labournet.de/internationales/mz/hanlon193.pdf>

⁵⁶ In January 2012 Barclays and Vale mining company earned the annual Public Eye awards for the worst corporate misconduct.

mining). Despite some promises, the open-pit mining in this country could lead to huge environmental and social consequences. Just as in Asia, the situation of American indigenous people is becoming a relevant problem. In an interesting article, David Szablowski gives us some interesting examples of the cooperation of mining companies and local authorities on the issue of social and environmental rights of affected populations.⁵⁷

Peru

The most-cited example of mining-induced displacement in Peru is the relocation of Morococha. Over 1,300 families will have to be resettled to allow Chinalco Company to begin mining for copper and molybdenum in 2012.⁵⁸ The company will spend 40 million dollars to build 1,200 housing units in the New Morococha. In 1999, the Peruvian government and the Canadian mining company Manhattan Sechura S.A. signed an agreement granting the company the rights to mining expansion over 88,000 hectares of land around the town of Tambogrande (Piura Department) in Northern Peru. The opening up of a new open-pit mine will require approximately 25,000 people to be resettled, change the course of a river, and cause the destruction of the Prosopis (algarrobo) forests existing in this area.⁵⁹ Anthony Oliver-Smith draws attention to the case of Compania Minera Antamina, a mining project located in North-Central Andes. People displaced in its aftermath were deprived of access to the contents of the World Bank guidelines on resettlement.⁶⁰ As David Szablowski noted Compania Minera Antamina (CMA) did not inform local residents on complaint procedures available for them through Multilateral Investment Guarantee Agency (MIGA)

Chile

Displacements in Chile have resulted from copper-mining development in this country. The most notable case is the resettlement of over 3,000 families from the mining town of Chuiquicamata to the nearby city of Calama situated in Northern Chile. This operation and the building of 2,400 new homes in the Southern suburbs of Calama will cost the Codelco company more than 220 million

⁵⁷ D. Szablowski, "Mining, Displacement and the World Bank: A Case Analysis of Compania Minera Antamina's Operations in Peru", *Journal of Business Ethics*, Vol. 39, No. 3, 2002, pp. 247-273; see also: V. Parker, *Rio Tinto and Madagascar – is it equitable?*, London Metropolitan University, MBA Diploma in Business, 2008, p. 13; available at: <http://www.andrewleestrust.org/Reports/KitFer%20Minerals%20Madagascar.pdf>.

⁵⁸ M. Salazar, "A Mining Town's Woes", <http://ipsnews.net/news.asp?idnews=45319>.

⁵⁹ D. Szablowski, "Mining, Displacement and the World Bank: A Case Analysis of Compania Minera Antamina's Operations in Peru", *Journal of Business Ethics*, vol. 39, no. 3, p. 247-273.

⁶⁰ Anthony Oliver-Smith, *Defying Displacement. Grassroots Resistance and the Critique of Development*, University Of Texas Press, 2010, pp. 88.

dollars.⁶¹

Bolivia

The most famous example of involuntary resettlement in Bolivia concerns the Ayllu Jesús de Machaca indigenous community in the La Paz Department (about 300 inhabitants in 2005). In 2005, Coeur d'Alene Mines Corporation resettled several families in this village in order to construct a tailings facility for its silver mine. Resettlement took place without the provisions of World Bank guidelines for the involuntary resettlement of indigenous people. The problem for indigenous peoples was particularly the privatization of pastoral lands they had previously used. In July 2008, affected people took to protests, demanding an independent evaluation of the environmental consequences of the project, protecting the rights of indigenous peoples to bigger participation in local development.

Guatemala

The Marlin gold mine in San Marcos, Guatemala, (owned by Goldcorp Inc. of Canada) has generated much controversy among Mayan indigenous communities. Open-pit mining has caused many problems including deforestation, water depletion, forced displacement, destruction of homes, water and air contamination, loss of access to farming land (through illegal land acquisition), and health problems. Environmental and social consequences of the project were the cause of large protests occurring in the region in 2007. In 2008, the impact of open-pit mining on local communities and the environment were examined by the Latin American Water Tribunal.⁶²

Colombia

According to the Colombian Institute of Geology and Mining (Instituto Colombiano de Geología y Minería) over 15,000 applications for mining operations were submitted between 2008 and 2010. Creation of open-pit gold mine (Marmato Project, located in the State of Caldas) has led to relocation of many Marmato residents⁶³.

⁶¹ Arne Kristoffer Bayer and Reik Michael Winkel, "Come to where the copper is – Modern ore mining in Chile", see: <http://www.imr.rwth-aachen.de/downloads/200411surfaceminingchileexkursion.pdf>; see: "Codelco's Chuquicamata resettlement to cost US\$ 200mn"; http://www.bnamericas.com/news/mining/Codelco's_Chquicamata_resettlement_to_cost_US*200mn.

⁶² J. van de Sandt, *Mining Conflicts and Indigenous Peoples in Guatemala*, Cordaid, September 2009, available at: http://www.ciel.org/Law_Communities/Guatemala/Cordaid%20Guatemala%20brochure%20UK-DEF.pdf

⁶³ <http://www.grancolombiagold.com/investors/press-Releases/press-releases-details/2012/Gran-Colombia-progressing-with-Marmato-resettlement1127857/default.aspx>

Mining-induced displacement in Colombia is also associated with involvement of illegal armed groups in artisanal gold mining⁶⁴.

5.4 North America

Parallel to other categories of DIDR (i.e. dam-induced displacement), the social consequences of mining are not a serious problem in the United States and Canada. The only significant displacement was the consequence of lignite mining expansion in the U.S. The tradition of individualism, effective courts, and well-established property rights can block resettlements that are socially detrimental. Any attempt to carry out this kind of investment may result in multiple trials ending with huge monetary compensations. The fear over consumers' opinion creates a situation where no American corporation can afford unpopular environmentally inappropriate practices and actions. This so-called corporate social responsibility (CSR) is a major breakthrough and a step forward from the pure, anti-social pursuit of money. In Mexico, mining-related displacements are conducted on a very limited scale. The much greater problem there is resettlement caused by dam construction (Miguel Aleman Dam) and exploitation of oil.

5.5. Europe

Resettlement caused by mining is the only major category of development-induced relocations observed in contemporary Europe. Particularly important are open-pit brown coal mines in Germany, Poland, and recently in Serbia and Kosovo. The best known example of population displacement involved the creation of the Garzweiler open-pit mine (Tagebau Garzweiler—operated by *Rheinisch-Westfälisches Elektrizitätswerk AG*) in the North-Rhine Westphalia.⁶⁵ Taking into account the amount of compensation and the effectiveness of legal institutions, resettlements in Europe are not a main social problem or a human rights issue. As elsewhere in the controversy raises the amount of compensation and social losses. Problems of the German and Polish energy sectors may still lead to the development of lignite mines, which will probably raise opposition from environmental organizations and many residents. Controversies of this kind are particularly visible in Germany—a country with a long tradition of ecological movements and strong political influence of the Green Party. Projects related to potential environmental hazards and social problems often encounter criticism from the institutions of the European Union.

⁶⁴ C. Vieira, "Displaced by Gold Mining in Colombia", available at: <http://www.ipsnews.net/2013/05/displaced-by-gold-mining-in-colombia/>

⁶⁵ More on resettlement caused by Garzweiler II open-pit mine see: C.M. Hall, S.J. Page, *The Geography of Tourism and Recreation. Environment, Place and Space* (Second Edition), Routledge, 2005, p. 293; G. Bhargava, *Environment and Its Global Implications*, Kalpaz Publication, 2002, p. 121.

Germany

Germany is currently the world leader in lignite production, which was estimated at about 169,4 million tonnes (52.3 Mtce) in 2010. The beginnings of industrial-scale lignite mining can be dated back to the mid-twenties of the last century. The lignite industry has developed both in the German Democratic Republic and the Federal Republic of Germany. Lignite mining was located in four main regions: 1. the Rhineland mining region (around Cologne, Aachen, and Mönchengladbach); 2. the Lusatian mining region (in South-Eastern Brandenburg and North-Eastern Saxony); 3. the Central German mining region (Southern and Eastern Saxony-Anhalt and Northwest Saxony); and 4. the Helmstedt mining region (Lower Saxony). The increasing scale of mining, caused by industrial development, came with huge social costs and irreversible environmental changes. According to Jeffrey H. Michel, the development of German lignite mining has already led to the destruction of more than 300 communities and the resettlement of about 100,000 people.⁶⁶

According to specialists, more than 25,000 inhabitants of Lusatia (Lausitz) have been forced to change their place of residence as a result of the lignite industry. The Green League (Grüne Liga), an ecological organization established in 1989 and located in Postdam, suggested that the development of Lusatian lignite mining has totally destroyed 81 communities and forced the relocation of over 25,000 people.⁶⁷ A particularly vital example of the struggle against resettlement were the protests of the inhabitants of Horno village. In 2005, they were resettled to Neu Horno, a newly built settlement located 10 km away.⁶⁸ Another well-known example of such practices was the village of Haidemühl which became the object of mining-induced resettlement of 650 inhabitants that took place between 1999 and 2006. According to other estimates (*Domowina*), since 1924 onwards 123 villages and smaller settlements in Lusatia have been destroyed by the development of open-cast mining during which 22,000 people were resettled.⁶⁹ Furthermore, the development of mining in the states of Brandenburg and Saxony could have led to additional subsequent forced displacement. Among the investments planned by 2015 we can mention open-cast mining in Jänschwalde-North (900 inhabitants), Nochten (1500 inhabitants), and Welzow (1000 inhabitants).⁷⁰

⁶⁶ J. H. Michel, *Status and Impacts of the German Lignite Industry*, the Swedish NGO Secretariat on Acid Rain, Göteborg, 2008, pp. 17; see also: "Resettlement in Lignite Mining" available at: <http://www.externe.info/oldvolumes/vol32c1012.pdf>.

⁶⁷ R. Schuster, "Lebensrecht für die Rotbauchunke", Grüne Liga, Postdam, June 2004.

⁶⁸ Lignite Mining in Lausitz: <http://www.johanbergstrom.com/smoke/about.html>; In 2005 also displaced the residents of Haidemühl community.

⁶⁹ Y. Jennerjahn, "Bald rollen die Bagger in Horno", Evangelische Pressedienst, Berlin, 2003;

⁷⁰ "Vattenfall's planned CCS demonstration plant is not a sustainable energy solution", <http://www.lausitzerbraunkohle.de/english.php>.

According to Bilkenroth and Snyder, mining has contributed to the destruction of 120 communities and the resettlement of 47,000 people in Middle Germany.⁷¹ In Southern Leipzig alone, 66 villages, farm communities, and settlements were destroyed and more than 23,000 people resettled since 1924.⁷²

Research conducted by the organization Friends of the Earth (Bund für Umwelt und Naturschutz Deutschland, or BUND) in the Rhineland indicated that more than 56 villages were destroyed by 1985 and 30,000 people were relocated (according to other sources, there were ‘only’ 25,000 displaced people)⁷³. By 2045, twenty villages (12,000 people) will be pushed elsewhere by the development of brown coal mining.⁷⁴ Much controversy has arisen over the prospect of mass resettlement in association with the development of the Garzweiler II open-pit mine, located in North-Rhine Westphalia. It is estimated that the development of Garzweiler II might displace 7,600-12,000 people by 2045. As Mark Cioc noted, “Since 1952, over fifty towns and villages have been moved, and nearly 30,000 humans displaced, to make room for new mines and power plants, including the towns of Bottenbroich, Berrenrath, Mödrath, Grefrath, Habelrath, Morken-Harff, Königshoven, Lich-Steinstrab and Garzweiler.”⁷⁵ The relocation of the inhabitants of Berrenrath in 1952 was another famous example of mining-induced displacement.

The development of lignite mining, ongoing in Germany for several years, has led to major environmental problems. Therefore, current ideas of switching to alternative energy sources, more eco-friendly and much less costly in social terms, is a good sign and a step forward. However, it is still not certain whether the foreseen shutdown of nuclear plants will be accompanied by limiting the development of brown coal open-cast mining. Brandenburg protests against the planned construction of a nuclear power plant in Poland are steeped in controversy, despite its claims of providing an energy source which is much safer, healthier, and less socially detrimental.

Poland

Poland is one of the world’s leading producers of brown coal (59.5 million tonnes as of 2001—sixth place in the world). For over 60 years, the emergence of open-cast sites has been associated with a massive compulsory relocation of local residents. Even an approximate explication of the problem

⁷¹ K-Dieter Bilkenroth, D.O. Snyder, *Der Mitteldeutsche Braunkohlenbergbau - Geschichte, Gegenwart und Zukunft*, Theißen, 1998, p. 29.

⁷² “Durch den Bergbau verlorene Orte südlich von Leipzig”, see: <http://www.heuersdorf.de/>.

⁷³ “Bund für Umwelt und Naturschutz Deutschland, Landesverband Nordrhein-Westfalen”, see: www.bund-nrw.de/braunkohle; see also: <http://www.mining-technology.com/projects/rhineland/>.

⁷⁴ See: “Waste Land (Otzenrather Sprung)”, http://www.maschafilm.de/en/waste_land.html.

⁷⁵ M. Cioc, *The Rhine. An Eco-Biography 1815-2000*, University of Washington Press, 2002, p. 101.

is impossible due to the absence of accurate statistics. It is, however, a well-known fact that between 1968 and 1984, the expansion of open-cast mining has led to the displacement of 28 large villages. Therefore, we estimate that in the last sixty years the mining of brown coal has resulted in the displacement of at least 30,000 people. Poland's lignite mining industry is located in four main areas: Konin, Turow-Bogatynia, Belchatow-Szczercow, and Sieniawa Lubuska. Poland has also the largest (and so far unexploited) lignite deposits in the world (in its Legnica-Prochowice-Scinawa region). Plans for future exploitation assume the resettlement of up to 20,000 people.

Poland's energy problems push political decision-makers to further diversification of energy sources; the planned construction of a nuclear power plant is aimed at balancing the exploitation of brown coal. According to experts, coal reserves in existing deposits may start to run out after 2022. This implies the establishment of new mines in the area of Legnica, which is likely to lead to the relocation of at least several thousand people. According to specialists, the resettlement of 3449 people and the demolishing of 1752 buildings will be necessary for the construction of a new lignite mine in Legnica.⁷⁶ Some forecasts contend that the emergence of a new basin will be much more costly in social terms, forcing over 20,000 people to relocate. The possibility of basing the economy upon alternative, renewable energy sources (like green energy) is in fact very limited. Government sources in Poland emphasize the role of brown coal in the energy economy of the country and the need for exploitation of new deposits in anticipation of the drastic 2025 drop projected in productivity in former mining areas.

Kosovo

As Besnik Haziri noticed, lignite is the source of 97 percent of domestic energy production in Kosovo. Extraction of this resource is a key element of national energetic independence.⁷⁷ The major villages affected by potential displacement are: Hade, Lajthishte, Palaj, and Sibovc (approximately 5700 people in total).

Serbia

The annual production of lignite in Serbia in 2001 amounted to 35,5 million tonnes. By 2010, the development of open-cast mining in this country had affected 4 villages, inhabited by approximately 1,300 people.⁷⁸ The most famous example of mass resettlement was the relocation of

⁷⁶ See: http://gornictwo.wnp.pl/ilu-ludzi-trzeba-przesiedlic-aby-zbudowac-kopalnie-legnica,101323_1_0_0.html.

⁷⁷ See: B. Haziri, "The Resettlement Process in the Lignite Mining Areas of Kosovo", p. 13.

⁷⁸ See: B. Haziri, "The Resettlement Process in the Lignite Mining Areas of Kosovo", p. 6, <https://ritdml.rit.edu/bitstream/handle/1850/11809/BHaziriCapsProj02-23-2010.pdf?sequence=1>.

Vreoci (3210 inhabitants), caused by the expansion of the Kolubara lignite basin.⁷⁹ According to Zekovic and Vujosevic, potential expansion of Kolubara lignite requires the relocation of 1,920 households, with about 5,670 inhabitants, most of them in Vreoci (1,030 households), Zeoke (276 households), Medosevac (122 households), Little Borak (115 households), Radljevo (84 households), and Sarbane (83 households). The program for resettlement was written in 2008; however, it is not completely compatible with the World Bank directives on voluntary resettlement.⁸⁰

6. Conclusions and Recommendations

As Theodore E. Downing contends, MIDR is a problem that has been duly and thoroughly penetrated in the last 40 years. Yet this theme still remains marginal from the perspective of human rights. It is extremely seldom that it is undertaken on the agendas of international institutions and agencies like the UN or UNHCR. Let us note, however, the beginnings of broad interest in the subject at the international level. In February 2012, in the forum of the United Nations, much concern was expressed about the huge social and environmental impacts of the establishment of the Phulbari coal mine in Bangladesh.

Mining-induced displacement exists in several dozen countries around the world. Yet only in developing countries does it lead to numerous negative consequences. Thus, the effects of displacements should be given due consideration in order to avoid unemployment, homelessness, the decomposition of local structures, and the atrophy of national heritage. Below, I present a general outline of activities relevant to limiting impoverishment caused by mining. Their realization requires a systemic outlook and the cooperation of many actors: 1. national administration at the local and central level; 2. non-governmental organizations; 3. the business sector; 4. international agencies dealing with human rights and humanitarian issues; and finally 5. local communities. Among the actions aimed at mitigating negative consequences of MIDR the following should be undertaken:

1. Debate about MIDR must be internationalized. Connecting MIDR to human rights, humanitarian issues, environment protection, and sustainable development is a crucial matter. So far there has not been a serious and adequate discussion of this issue on the

⁷⁹ J. Petrić, "Residents' View on Resettlement Issue of Vreoci- Sustainability or Phrases", *Spatium*, 2005, p. 12-17.

⁸⁰ S. Zekovic, M. Vujosevic, "Impact of Risk and Uncertainty on Sustainable Development of Kolubara Lignite Basin", Proceedings of the 4th IASME / WSEAS International Conference on Energy and Environment, 2009; see also: T. Maričić, "Implementation of Strategic Environmental assessment in Serbia-Case of Spatial Plan of Kolubara Lignite Basin".

international forum. Research into development-induced displacement is reduced to the consequences of dam building, and MIDR is debated in the context of only a few countries.

2. The development of mining should generate profits for the widest group of beneficiaries. Much remains to be done to ensure that mining will contribute to the economic advancement of the whole region, for example, by a reduction in energy prices. Social development is another key element of the presented strategy, by which I mean education, new workplaces, and the substantial improvement of social services.
3. Displacement plans ought to be implemented in an exhaustive and proper manner. The business sector must bear adequate costs of their realization. They cannot be done chaotically, but should rather proceed according to the World Bank directives on involuntary resettlement.
4. Every effort should be made to integrate the displacees ('outsiders') with local communities ('insiders') in their new residences. Ethnic and cultural differences are a probable cause of conflict.
5. The social and economic situation of those resettled must be monitored long after the displacement. Mines ought to take responsibility for the fate of displacees, by, for instance, providing them with work.
6. Resettled people should be empowered to negotiate the terms of resettlement with administrative mining bodies. Their position during such discussions is plainly asymmetric and they have no real means enabling them to affect the final outcome. Greater symmetry can be achieved, however, by easier access to low-cost legal assistance and with the engagement of non-governmental organizations. The negotiation of economic principles according to which displacements proceed plays a key role in assuring their future situation. The total advantage of businesses in the resettlement processes may lead to the economic marginalization of displaced people.
7. Displacees should be informed about their rights, granted by the World Bank guidelines on involuntary resettlement.
8. Furthermore, they should be acquainted with potential economic and social risks. Predicting negative environmental phenomena becomes relevant as well. Mines and local authorities might mobilize people to participate in professional education programs in order to limit the risks associated with their situation after displacement.
9. Resource exploitation should be based upon the principles of sustainable development and be as eco-friendly as possible. Another important issue is the implementation of corporate social responsibility directives in the mining sector.

10. Financial compensation should contribute to the development of local areas. People must have the opportunity for (and be encouraged to) entrepreneurship so as to avoid emigration. Micro credits can play a crucial role too.
11. The business sector and local authorities ought to constantly control whether mining-caused displacement leads to homelessness and unemployment.

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Annexes

Annex A.

Selected municipalities displaced as a result of mining development:

Country	City
Ghana	Atuabo
	Abekoase
	Akontanse
	Bodwire Agya
	Damang
	Huniso
	Kojokrom
	Kyekyewere
	Mandekrom
	Nkwantakrom
	Sofo Mensakrom
	Tarkwa
	Teberebie
India	Baranj Mokasa
	Borua Tola
	Borwa Tola
	Budna Tola
	Chak Branj
	Chichordi
	Damanjodi
	Duru Muslim Tola
	Duru Kasmar
	Ganju Tola
	Jaduguda
	Jharna Tola
	Jogwa Tola
	Muslim Tola
	Sonora
Sonu Guttu	
Sukrigud	
Turi Tola	
Upper Dera Tola	
Germany	Berrenrath

	Garzweiler
	Grefrath
	Habbelrath
	Haidemühl
	Horno
	Konigshoven
	Lich-Steinstrab
	Morken-Harff
	Haidemühl
	Mödrath
China	Look Niu
	Korng Hak
	Kung Nim
	Mong Khamg
	Nam Arng
	Nam Par Moong
	Nam Poon
	Paeng
	Peng Oo
	Ta Sarm Poo
	Wan Parmg
	Farabakouta
	Niamboulama
Sadiola Hill	
Yatela	
Serbia	Vreoci
Sierra Leone	Foinda
Republic of South Africa	Ga-Pila
	Motlhotlo
Zimbabwe	Chiadzwa
Mozambique	Moatize
Philippines	Kasibu, Nueva, Vizcaya, Igorot
Bolivia	Ayllu Jesus de Machaca

Source: T.E. Downing, J. Moles, I. McIntosh Ian and C. Garcia-Downing, *Indigenous Peoples and Mining: Strategies and Tactics for Encounters*, International Institute for Environment and Development (IIED), London, 2002; T.E. Downing, *Avoiding New Poverty: Mining-Induced Displacement and Resettlement*, International Institute for Environment and Development (IIED), London, 2002.

Annex B.

The most well-known examples of mining-induced displacement and resettlement around the world:

Region/Country	Type of resource
Tarkwa region (Ghana)	Gold mining
Jharkhand, West Bengal and Orissa regions (India)	Coal and copper mining
Andhra Pradesh (India)	Bauxite industry

Grasberg Mine, Ok Tedi Mine, Porgera Mine (Papua Island)	Gold, silver and copper mining
Peru	Copper mining
Chile	Copper mining
Germany (100,000 people resettled over the last sixty years)	Lignite industry
Poland	Lignite mining
Philippines	Coal mining
Zimbabwe	Diamond mining
Mozambique	Coal mining
Mali	Gold mining
Namibia	Copper and gold mining

Extended summary

Contemporary economic development leads to a significantly greater scale of resettlement than just one or two decades ago. Over the last twenty years, the global scale of development-induced displacement and resettlement has grown to an estimated 200 million people. Over fifteen million people each year are forced to leave their homes following big development projects (dams, irrigation projects, highways, urbanization, water supply projects, mining, conservation of nature, population redistribution schemes, construction of pipelines, etc.). The annual scale of development-induced displacement greatly outnumber the other categories of internal displacement: conflict-induced displacement and environmentally-induced displacement associated with slow-onset environmental changes. There are at least eight main causes of DIDR: 1. the construction of dams, irrigation projects, the creation of artificial reservoirs; 2. the construction of communication networks (e.g. highways, roads, bridges, railways); 3. urbanization and transformation of urban space; 4. agricultural expansion (including the creation of large monoculture plantations); 5. conservation of nature (the creation of national parks, biosphere reserves, and other protected areas); 6. extraction and transportation of mineral resources (especially the creation of open-pit or open-cast mining); 7. population redistribution schemes, 8. other causes.

Mining is currently not a statistically significant category of development-induced displacement. Nevertheless, the social costs of exploitation are great, and that is why the topic is worthy of a wider and more profound scientific analysis. The first displacement caused by mining dates back to the late nineteenth century. As pointed out by T. Downing, in India alone, mining has led to the displacement of 2.55 million people between 1950 and 1990 (particularly in Jharkhand region). Contrary to the opinions of some specialists, the problem of mining-induced displacement and resettlement is a global problem, occurring on all continents. Countries with particularly large-scale MIDR include: India, China, many African countries (e.g. Ghana, Zimbabwe, Mozambique), and even Indonesia and Papua New Guinea. The problem of forced displacement is also a consequence of open-pit coal mining in European countries like Germany and Poland. Although mining-induced displacement is a global phenomenon, problems experienced by the displacees in many parts of the world differ greatly. The largest portion of the displacement is caused by open-pit mining (associated with the extraction of gold, copper, lignite and diamonds).

Social problems affecting displaced people are divergent depending on where they live. Resettlement caused by mining is a part of the broader context of development-induced displacement and resettlement. The poor situation of displacees may be the result of several factors such as inadequate compensation, chaotic plans of resettlement, and lack of systemic social support in the new place of residence. Wealthy western countries, with a democratic form of government and significant citizen participation in government, are characterized by much higher standards of resettlement than Asian or African countries.

Mining-induced displacement violates many human rights, especially those of an economic and social nature. Among the common problems we can find are: 1. inadequate compensation for lost property; 2. lack of participation of local communities in the division of profits from the exploitation of resources; 3. infringement of social and cultural rights (especially indigenous and tribal people); 4. cultural devastation caused by resettlement; 5. violation of housing rights; 6. violation of other rights such as economic, social, and cultural ones (e.g. lack of access to education in the new place of residence, lack of access to social facilities). Simultaneously, the problems of displaced people are linked to the typical consequences of development-induced displacement in other categories of problems (such as the right of local communities to share in the profits of the exploited resources). The social consequences of MIDR are an extremely important and highly underrated human rights issue.

Forced population resettlement is, in fact, not the only negative consequence of mining. An equally significant group of people are indirectly affected by its consequences. Among such negative effects are: mining damages; loss of quality of agricultural production; problems with water; health risks; and land pollution. Many of these problems indirectly force people to migrate.