

## NATURAL RESOURCES MANAGEMENT AND GLOBALIZATION

Valentina-Ofelia ROBESCU<sup>1</sup>, Aurelia Aurora DIACONEASA<sup>2</sup>,  
Nicoleta MANEA<sup>3</sup> Gabriela POPA<sup>2</sup>

**Rezumat:** Din 1972, principala forță motorie a presiunii asupra resurselor solului a fost producția crescândă de alimente. În 2002, e necesară hrană pentru a hrăni cu circa 2.220 milioane de oameni mai mult decât în 1972. Tendința din timpul deceniului 1985–1995 a arătat că creșterea populației a devansat cu mult producția de alimente în multe părți ale lumii. Deși irigația a avut o contribuție semnificativă la creșterea producției agricole, planurile ineficiente de irigare pot produce inundarea, salinizarea sau alcalinizarea solurilor. În anii 1980 s-a estimat că, anual, circa 10 milioane de hectare de teren irigat erau abandonate. Activitățile umane care contribuie la degradarea solului cuprind folosirea terenurilor necorespunzătoare pentru agricultură, tehnici ineficiente de administrare a solului și apei, despădurirea, eliminarea vegetației naturale, utilizarea frecventă a utilajelor grele, pășunatul excesiv, asolamente necorespunzătoare și irigare ineficientă. Summitul Pământului din 1992 a făcut un pas înainte în centrarea atenției asupra problemelor asociate cu resursele solului. Această analiză identifică amenințările la adresa siguranței alimentare globale viitoare, care reies din problematica resurselor naturale.

**Abstract:** Since 1972, the main driving force leading to pressure on land resources has been the increasing food production. In 2002, food was needed for about 2,220 million more people than in 1972. The trend during the decade 1985–95 showed that the population growth exceeded by far food production in many parts of the world. While irrigation has made an important contribution to agricultural production, inefficient irrigation schemes can lead to floods, salinization and alkalization of soils. In the 1980s, it was estimated that about 10 million ha of irrigated land were abandoned annually. Human activities contributing to land degradation include unsuitable agricultural land use, poor soil and water management practices, deforestation, removal of natural vegetation, frequent use of heavy machinery, overgrazing, improper crop rotation and poor irrigation practices. The 1992 Earth Summit took a step forward in focusing attention on problems associated with land resources. This review identifies the threats to future global food security arising from problems of natural resources.

**Key words:** globalization, natural resources, food security, conflict

### Introduction

Degradation of natural resources is a global problem that threatens the livelihoods of millions of poor people. Innovation by research centers, development

<sup>1</sup>Programul Operațional Sectorial Dezvoltarea Resurselor Umane, Management, 0722868522, Bd. Regele Carol I, nr.2, Târgoviște, 130024, robescuo@yahoo.com.

<sup>2</sup>Programul Operațional Sectorial Dezvoltarea Resurselor Umane, Management.

<sup>3</sup>Universitatea Valahia din Târgoviște.

organizations, and farmers themselves has produced many promising technologies and practices for making agriculture and natural resource management more sustainable. Most of these technologies, however, require investment by farmers, both individually on their own farms and collectively by groups or communities. Rich and poor countries are consuming the world's resources at vastly different rates. The current rate of consumption in rich countries is not sustainable, never mind if we imagine that poor countries might eventually get an equal footing. New energy forms and a new path forward are essential to begin to address the imbalance in world consumption and make all of our lifestyles sustainable.

### **Globalization and natural resources management**

Globalization creates opportunities for commercial, economic and financial expansion. However, an improved technological competitiveness and wider economic freedom do not produce automatically more equity.

The contribution of globalization to the betterment of the human condition will remain limited to a small number of individuals, social categories and countries, unless controlled and oriented towards the common good.

This implies that, in the new context of the integration and participation to the globalization processes, good governance should intelligently and predictably combine economic reforms with social responsibility, adjust the system of education and training, initiate institutional reforms able to achieve, on a long term, internal stability and employment, individual security and social justice, the protection of the national economic interests, resources and the environment. The process of globalization creates a new balance of power between states, non-governmental organizations, and transnational corporations. What is at stake is how to properly use their potential in order to influence the course of globalization for a better impact on people's lives.

Globalization is not only spreading ideas and culture, but it is industrializing and modernizing many previously agrarian countries. Countries like India and China are gaining more knowledge and wealth due to globalization. These countries now have the capability to purchase more materials with their newly acquired wealth. This directly translates into more cars, more fuel consumption, more consumer goods, more of everything. Increasing trends of consumption in the world could conceivably cause shortages in natural resources.

According to scholarly models, natural resources have a finite limit which will eventually influence global population, energy output and consumerism. Low availability of raw materials might not be in the near future, but if globalization continues to modernize countries at a steep rate, accessibility to resources may become an issue in ten to twenty years (see figure 1).

The demand for oil will eventually super secede oil supplies. Since the world economy is dependent on oil and globalization is dependent on trade, the depletion of oil could reverse globalization. To a large degree the pace of globalization will directly correspond to the consumption and depletion of natural resources.

### **Future global food security**

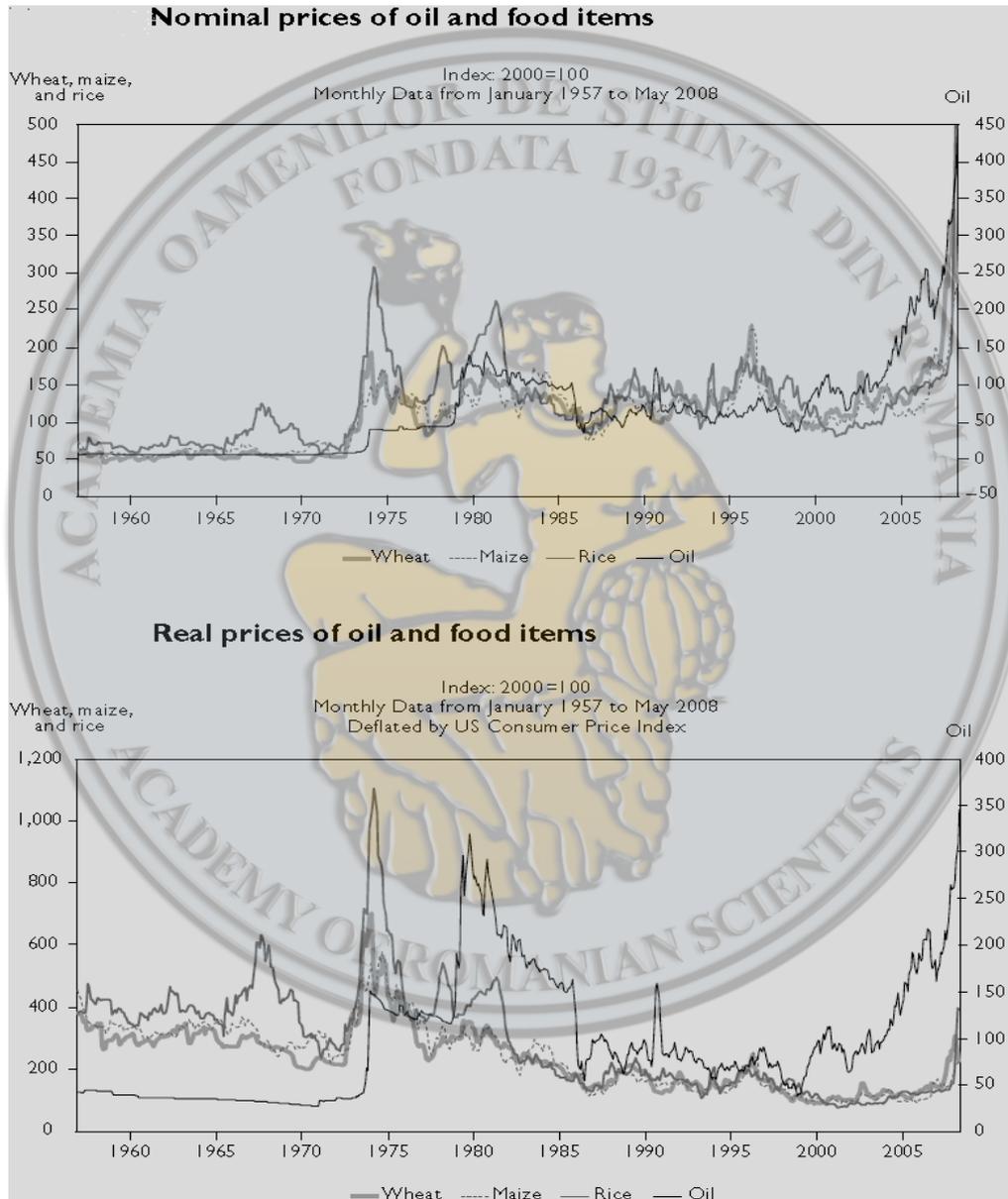
Predictions by scientists, including members of the Intergovernmental Panel on Climate Change and Australia's CSIRO, can paint a bleak picture of the future of food: more droughts, extreme temperatures, hail storms, more intense cyclones and hurricanes, as well as the spread of pests and diseases.

Some places will be winners; northern Europe, Canada and parts of the former Soviet Union may have longer growing seasons and fewer frosts and there is conjecture that Britain could well become the breadbasket of Europe. But there will be many more losers: not only countries that will no longer have the necessary rainfall to successfully grow crops but also some that may have to take in immigrants fleeing non-productive land. The potential for conflict is high. According to one view, the first climate war is already occurring. Journalist Stephan Faris, who has spent the past nine years investigating how meteorological changes may affect the developing world, says the conflict in Darfur began when severe drought in the Sudan reduced the amount of arable land. The reduction of this land has led to tensions between the settled farmers and the nomadic herders, two groups which had co-existed for many years – the farmers tending their fertile land and herders grazing their camels on rocky outcrops in between. Failing rains, however, have put the friendly co-operation under threat. As Faris writes in his coming book, *Forecast*:

*The Consequences of Climate Change, From The Amazon To The Arctic*: “But with the drought, the nomads ranged farther for their food and the farmers began to fence off their land (...) for fear it would be ruined.” Of course, there are many other far more complex factors involved in the challenges Darfur faces but drought and desertification lie firmly at its roots. Elsewhere, the effects of extreme climate on agriculture have been well documented. The 2003 heatwave in Europe cut wheat production by 10 per cent and maize by 19 per cent. French table-grape production was down 30 per cent and Italian stonefruit production was down by the same amount. It is estimated the heatwave and associated forest fires have cost the European community EUR13 billion (\$25.5 billion).

The intergovernmental panel has predicted another 49 million people in Asia and 5 million people in Latin America may be at risk of hunger by 2020. Dr Mark Howden, with the CSIRO's Climate Adaptation Flagship, believes even these dire reports are “overly optimistic in terms of the capacity to feed the world”. He says

there needs to be a doubling of crop production by 2050 to ensure the world is fed; on current trends, the increase will be only about 15 per cent. Howden also raises other issues: whether to expand agriculture into forests, which would involve chopping down trees and releasing more carbon dioxide into the atmosphere; and the cost to biodiversity of destroying the habitats of animals to grow food [1].



**Fig. 1.**

Source: IMF, International Financial Statistics

### **Rising Food Prices**

Though past trends provide significant insight into the future of agricultural globalization, the sharp increase in food prices in 2007 and 2008 (figure 1) has introduced a new element into the equation – one not fully captured in the book, *Globalization of Food and Agriculture and the Poor*, which examines earlier trends.\* In some ways, the current increase resembles the price spikes that occurred in the mid-to-late 1970s and early 1980s, although in real terms the prices of agricultural commodities (apart from oil) are generally lower than those of the 1970s (figure 1). Today, however, the world food system is more globalized, income distribution is more unequal, and many more poor households in rural areas are net buyers of food, all of which makes food-price changes more relevant for billions of people.

National governments and international actors are currently taking various steps to try to minimize the effects of higher international prices on domestic prices and to mitigate impacts on particular groups. Some of these actions are likely to help stabilize and reduce food prices, whereas others may help certain groups at the expense of others or actually make food prices more volatile in the long run and seriously distort trade.

Today's high prices for energy and minerals, posing costs to some, offer great opportunities to others in the developing world. Some countries have used their natural resources as a springboard to development, but for others this treasure can become a curse. Both developed and developing countries have experienced the risks of these sectors: “dual” economies that leave most citizens excluded; corruption from licensing and sweetheart deals; volatile returns that tempt officials and weaken sustainable budgets and growth; the “Dutch disease” of exchange rates driven by resource exports, harming broader-based trade and employment; resource “rents” that fuel conflict among fortune-hunting factions; huge environmental costs; and even a sense of loss of sovereignty as a privileged few seem to benefit from the sale of “national patrimonies.”

#### **Who benefits and who loses from high prices?**

An increase in cereal prices will have uneven impacts across countries and population groups. Net cereal exporters will experience improved terms of trade, while net cereal importers will face increased costs in meeting domestic cereal demand. There are about four times more net cereal-importing countries in the world than net exporters. Even though China is the largest producer of cereals, it is a net importer of cereals due to strong domestic consumption (Table 1). In contrast, India – also a major cereal producer – is a net exporter. Almost all countries in Africa are net importers of cereals. Price increases also affect the availability of food aid. Global food aid represents less than 7 percent of global

official development assistance and less than 0.4 percent of total world food production [2]. Food aid flows, however, have been declining and have reached their lowest level since 1973. In 2006, food aid was 40 percent lower than in 2000 (WFP 2007). Emergency aid continues to constitute the largest portion of food aid. Faced with shrinking resources, food aid is increasingly targeted to fewer countries – mainly in Sub-Saharan Africa – and to specific beneficiary groups.

At the microeconomic level, whether a household will benefit or lose from high food prices depends on whether the household is a net seller or buyer of food. Since food accounts for a large share of the poor's total expenditures, a staple-crop price increase would translate into lower quantity and quality of food consumption. Household surveys provide insights into the potential impact of higher food prices on the poor. Surveys show that poor net buyers in Bolivia, Ethiopia, Bangladesh, and Zambia purchase more staple foods than net sellers sell (Table 2). The impact of a price increase is country and crop specific. For instance, two-thirds of rural households in Java own between 0 and 0.25 hectares of land, and only 10 percent of households would benefit from an increase in rice prices (IFPP 2002).

In sum, in view of the changed farm-production and market situation that the poor face today, there is not much supporting evidence for the idea that higher farm prices would generally cause poor households to gain more on the income side than they would lose on the consumption-expenditure side. Adjustments in the farm and rural economy that might indirectly create new income opportunities due to the changed incentives will take time to reach the poor.

Country	1000 tons		Bolivia 2002	Ethiopia 2000	Bangladesh 2001	Zambia 1998
Japan	-24,986	Staple foods				
Mexico	-12,576					
Egypt	-10,767					
Nigeria	-2,927	Purchases by all poor net buyers	11.3	10.2	22.0	10.3
Brazil	-2,670					
China	-1,331	Sales by all poor net sellers	1.4	2.8	4.0	2.3
Ethiopia	-789					
Burkina Faso	29					
India	3,637					
Argentina	20,431					
United States	76,653					

SOURCE: Data from FAO 2007a.

SOURCE: Adapted from World Bank 2007a.

**Table 1.** Net cereal exports & imports for selected countries (three-year averages 2003–2005)      **Table 2.** Purchases and sales of staple foods by the poor (% of total expenditure of all poor)

Could technology and globalization help solve resource problems caused by globalization? Globalization could be helpful when a serious shortage in raw

materials arises. Since globalization connects the world and allows the exchange of ideas, more people should be able to help solve problems associated with natural resources. For example, more scientists from around the world would be able to work on a common goal. Communication caused by globalization would theoretically decrease the time required to solve dilemmas. Therefore, given enough time globalization could help solve the world's problem.

The subtle monopolizations of the global commons began in the middle ages when the rights to land were claimed by the aristocracy and feudalism was common place. The common people and their resources were thus exploited by those who owned the land. Over time, this accumulation of power through resource acquisition allowed cities to plunder the country, taking control of yet more land and resources and thereby establishing ever larger empires. This plunder was enforced through an ever expanding military force. The same principle of monopolizations currently threatens countless resources, common to the global public, which we hold in trust for future generations. Apart from our global ecological system, our shared resources include all creations of nature and society, including our genes, our shared knowledge, our airspace and indeed outer space.

In their "race to the bottom" for economic dominance, our governments have neglected their responsibility to protect their citizen's right to their commons, and given free reign instead to private corporations who continue to seize our common wealth by means of enclosure (the ongoing silent theft of public resources for private financial gain). In fact governments frequently give away valuable common assets at no cost to corporations, such as oil and mineral rights.

In addition to the poverty, wars and suffering this usurpation creates around the world, our biosphere has been severely damaged through the lack of its sustainable and responsible stewardship by profit hungry industries. It must be born in mind that multinational corporations, unlike the global public, operate on a hierarchy of values geared solely towards increasing profits. Without a sustainable model for resources management, corporations exploit and consume resources faster than they can be regenerated or renewed, and levels of waste and pollution from production exceed the planets ability to harmlessly absorb them.

Environmental and social effects of corporate operations are not accounted for in their balance sheets, they are simply considered "externalities" and consequences of production, thus perverting the true cost of produce which is paid not by the corporation or the consumer, but initially the local people who depend upon the area and ultimately the global biosphere and the global public. A pertinent example of tremendous devastation exacerbated by careless corporate interest was revealed by the South Asian tsunami disaster in December 2005. Commercial shrimp farming and a massive increase in the tourism industry since the 1960s systematically destroyed the mangrove forests of South East Asia, contributing

significantly to the catastrophic loss of human lives and settlements during the tsunamis.

The ongoing plundering of our shared resources by those who wish to control and profit from them include such measures as the privatisation of public utilities in some of the least developed countries, often as part of a program of structural adjustments; the corporate race to own the rights to seeds, plants, land, water, oil, medicines, genetic material, air space and e-space; and the list goes on. Economically dominant countries, influenced by business interests and focused through the agency of International Financial Institutions continue to pursue neo-liberal policies internationally, managing to circumvent sovereign, democratic rights of developing nations and benefiting minority, corporate interests.

### **Exploitation of natural resources and conflict**

Environmental factors are rarely, if ever, the sole cause of violent conflict. Ethnicity, adverse economic conditions, low levels of international trade and conflict in neighbouring countries are all significantly correlated as well. However, it is clear that the exploitation of natural resources and related environmental stresses can become significant drivers of violence. Since 1990, at least eighteen violent conflicts have been fuelled by the exploitation of natural resources [3].

Looking back over the past sixty years, at least forty percent of all intrastate conflicts can be associated with natural resources [4]. Civil wars such as those in Liberia, Angola and the Democratic Republic of Congo have centred on “highvalue” resources like timber, diamonds, gold, minerals and oil. Other conflicts, including those in Darfur and the Middle East, have involved control of scarce resources such as fertile land and water [5].

As the global population continues to rise, and the demand for resources continues to grow, there is significant potential for conflicts over natural resources to intensify. Demographic pressure and urbanization, inequitable access to and shortage of land, and resource depletion are widely predicted to worsen, with profound effects on the stability of both rural and urban settings. In addition, the potential consequences of climate change for water availability, food security, the prevalence of disease, coastal boundaries, and population distribution are also increasingly seen as threats to international security, aggravating existing tensions and potentially generating new conflicts [6].

The relationship between natural resources, the environment and conflict is thus multi-dimensional and complex, but three principal pathways can be drawn:

a) Contributing to the outbreak of conflict: Attempts to control natural resources or grievances caused by inequitable wealth sharing or environmental degradation

can contribute to the outbreak of violence. Countries that depend on the export of a narrow set of primary commodities may also be more vulnerable to conflict.

b) **Financing and sustaining conflict:** Once conflict has broken out, extractive “high-value” resources may be exploited to finance armed forces, or become strategic considerations in gaining territory. In such cases, the duration of conflict is extended by the availability of new sources of financing, or complicated by efforts to gain control over resource-rich areas.

c) **Undermining peacemaking:** The prospect of a peace agreement may be undermined by individuals or splinter groups that could lose access to the revenues generated by resource exploitation if peace were to prevail. Once a peace agreement is in place, the exploitation of natural resources can also threaten political reintegration and reconciliation by providing economic incentives that reinforce political and social divisions.

To ensure that environmental and natural resource issues are successfully integrated across the range of peacebuilding activities (see figure 2), it is critical that they are not treated in isolation, but instead form an integral part of the analyses and assessments that guide peacebuilding interventions. Indeed, it is only through a cross-cutting approach that these issues can be tackled effectively as part of peacebuilding measures to address the factors that may trigger a relapse of violence or impede the peace consolidation process. The following section provides three compelling reasons and supporting case studies to demonstrate how environment and natural resources can concretely contribute to peacebuilding:

a) **Supporting economic recovery:** With the crucial provision that they are properly governed and carefully managed – “high-value” resources (such as hydrocarbons, minerals, metals, stones and export timber) hold out the prospect of positive economic development, employment and budget revenue. The risk, however, is that the pressure to kick-start development and earn foreign exchange can lead to rapid uncontrolled exploitation of such resources at sub-optimal prices, without due attention to environmental sustainability and the equitable distribution of revenues. When the benefits are not shared, or when environmental degradation occurs as a consequence of exploitation, there is serious potential for conflict to resume.

b) **Developing sustainable livelihoods:** Durable peace fundamentally hinges on the development of sustainable livelihoods, the provision of basic services, and on the recovery and sound management of the natural resource base. Environmental damage caused by conflicts, coping strategies, and chronic environmental problems that undermine livelihoods must therefore be addressed from the outset. Minimizing vulnerability to natural hazards and climate change through the management of key natural resources and the introduction of appropriate technologies should also be addressed.

c) **Contributing to dialogue, cooperation and confidencebuilding:** The environment can be an effective platform or catalyst for enhancing dialogue, building confidence, exploiting shared interests and broadening cooperation between divided groups as well as within and between states.

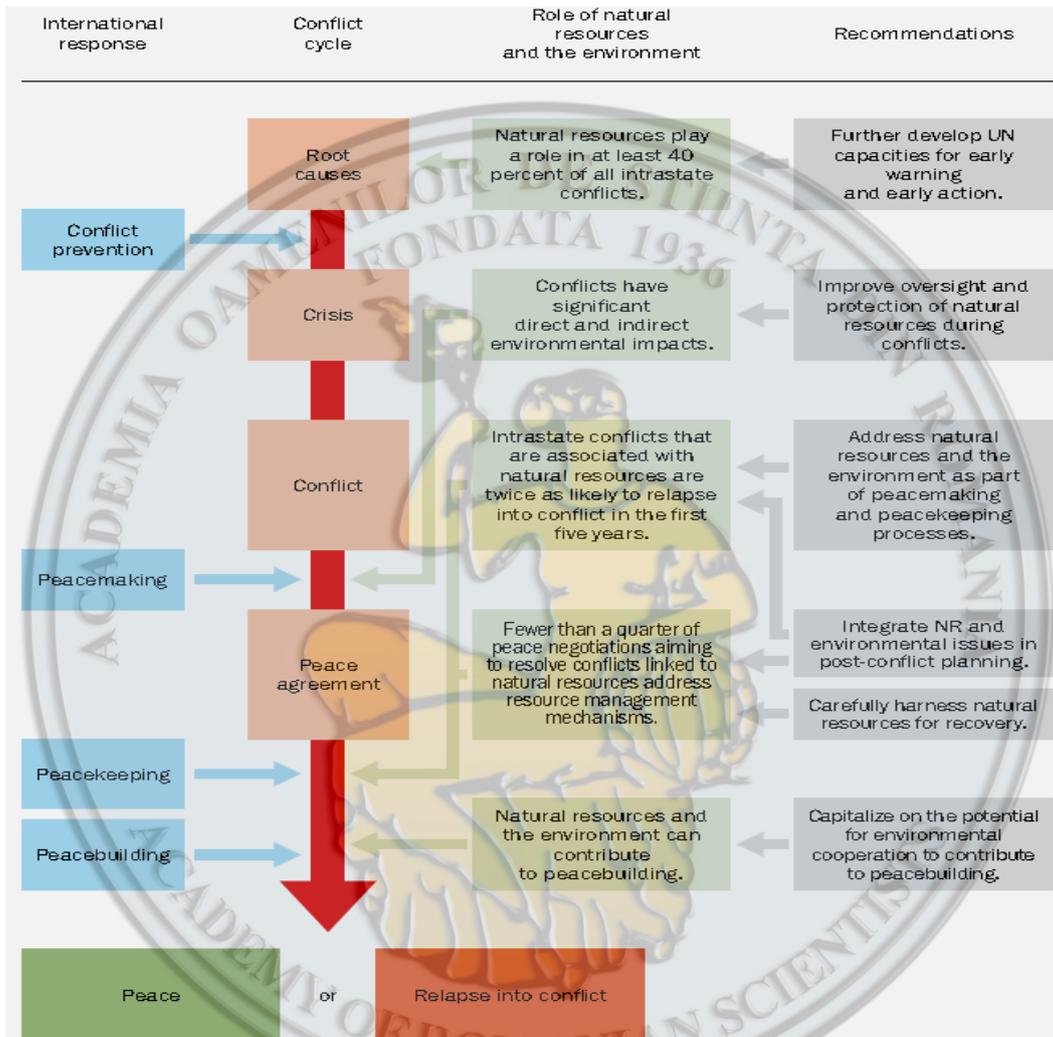


Fig. 2.

It is crucial however, that absolute ownership of a given resource is not simply transferred from ‘the corporation’ to ‘the nation’ where it may naturally occur. For there to be a workable, efficient economic system based on sharing that can redistribute essential resources globally according to need, it must be understood that all common resources, where ever they occur on the planet, must be cooperatively owned, managed and utilised equitably by the global public. Without this affirmation of international solidarity, a crucial step toward

worldwide cooperation will be missed and confrontation between nations over resources reinforced. Furthermore, given the uneven availability of certain resources around the world (such as oil), without an international shared ownership agreement it would be difficult to ensure needs are secured globally.

### **Conclusion**

Three main conclusions can be drawn from the arguments and cases presented are:

- a) Natural resources and the environment can be implicated in all phases of the conflict cycle, contributing to the outbreak and perpetuation of violence and undermining prospects for peace. In post-conflict countries, they can also contribute to conflict relapse if they are not properly managed from the outset. The way that natural resources and the environment are managed has a determining influence on peace and security.
- b) The environment can itself fall victim to conflict, as direct and indirect environmental damage, coupled with the collapse of institutions, can lead to environmental risks that threaten health, livelihoods and security. These risks should be addressed as a part of the recovery process.
- c) Natural resources and the environment can contribute to peacebuilding through economic development, employment generation and sustainable livelihoods. Cooperation over the management of natural resources and the environment provides new opportunities for peacebuilding that should also be pursued.

At the same time, the effective governance of natural resources and the environment should be viewed as an investment in conflict prevention within the development process itself:

- Prioritize capacity-building for dispute resolution, environmental governance and land administration in states that are vulnerable to conflicts over natural resources and the environment.
- Include environmental and natural resource issues in international and regional conflict early warning systems and develop expertise for preventive action.
- Build international capacity to conduct mediation between conflicting parties where tensions over resources are rising.
- Support research on how the impacts of climate change could increase vulnerability to conflict and how early warning and adaptation projects could address this issue.
- Ensure that all development planning processes are conflict-sensitive and consider potential risks from the mismanagement of natural resources and the environment.

Only through global participation and cooperation can our common assets be reclaimed and their governance shared by society, represented through democratic

governments. Critically, we must share the responsibility to protect and sustainably manage the global commons for the benefit of future generations, or face environmental devastation at levels far greater than almost any known threat to our long term survival, apart from nuclear war.

The construction of a better world calls for a value-based approach. Economic analyses of the realities of poverty and food insecurity must be coupled with ethical reflections on current social and economic structures. Globalization has generated levels of wealth never seen before, making possible – and therefore, morally inescapable – the previously utopian task of eliminating poverty and hunger on the planet. This is now more urgent than ever: while rising food prices are threatening the already precarious livelihoods of many of the world's most vulnerable people in the short term and this requires concerted action; proper global governance structures and institutions related to the four interrelated issues of food, energy, climate change, and natural resource management will be crucial for the poor and the hungry – and, indeed, for all humanity – in the medium and long terms.

*This article is realized in the Sectorial Operational Program Development of Human Resources 2007-2013, Invest in people, co-financed by European Social Fund*

## REFERENCES

- [1] This brief is based on *Globalization of Food and Agriculture and the Poor*, edited by Joachim von Braun and Eugenio Díaz-Bonilla and published by Oxford University Press for IFPRI. The book examines the specific factors that are driving change, with a focus on the globalization of agrifood systems, the actual and potential impacts on the poor, and the implications for food and nutrition security in developing countries. Selected quotes from some of the contributors are featured throughout this brief. More information on the book can be found at [www.ifpri.org/pubs/otherpubs/globalpoor.asp](http://www.ifpri.org/pubs/otherpubs/globalpoor.asp).
- [2] Cline, W. R. (2007). *Global warming and agriculture: Impact estimates by country*. Washington, D.C.: Center for Global Development and Peterson Institute for International Economics.
- [3] Ross, M. (2004). *The natural resource curse: How wealth can make you poor*. In I. Bannon & P. Collier (Eds.) *Natural resources and violent conflict*. World Bank. Washington, D.C.
- [4] *Uppsala Conflict Data Program & Centre for the Study of Civil War*. (2008). UCDP/PRIO Armed Conflict Dataset version 4.0. In Binningsbø, H. & Rustad, S. A. (2008). *PRIO working paper: Resource conflicts, resource management and post-conflict peace*. Uppsala University & International Peace Research Institute, Oslo.
- [5] Ross, M. (2004). *What do we know about natural resources and civil war?* *Journal of Peace Research*. 41(3), pp. 337-356.
- [6] Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH. (2008). *Climate change and security: Challenges for German development cooperation*. Federal Ministry for Economic Cooperation and Development, Germany.