

2. Resources and armed conflict

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I. Introduction

High food prices in late 2010 and early 2011 was one of the key factors precipitating a wave of demonstrations and uprisings across North Africa and the Middle East that led to the overthrow of decades-old regimes, grave levels of state violence against civilians and intervention by international forces.¹ Interruptions in flows of oil and natural gas exports from Libya as a result of the uprising there that began in February 2011—along with the prospect of similar movements emerging in other major Middle Eastern oil producers—raised new concerns about energy security in Europe and beyond.² While the role played by food prices in the so-called Arab Spring was largely catalytic, releasing deeper and longer-standing grievances in the countries of the region, the issue of food security together with the instability created in global energy markets reinforced growing international awareness about the complex linkages between natural resources and security.

Several governments have already launched initiatives aiming to improve their understanding of the trends and challenges related to resource access, exploitation patterns, scarcity and trade flows. Some have even created specialized agencies for critical resources.³ Among the most important questions at national and international levels is how resource issues are linked to conflicts and to conflict risk.

This chapter examines the major themes informing the debate about—and responses to—linkages between natural resources and conflict. Section II surveys current thinking about these linkages and sections III–V look in more detail at three of the most important strands of this thinking. Section III examines the contribution of economic theories of violence. Environmental perspectives are considered in section IV, with a particular focus on the effects of climate change. Section V examines how resource geopolitics affects conflict risk. Section VI offers conclusions and assesses

¹ See e.g. Eunjung Cha, A., ‘Spike in global food prices contributes to Tunisian violence’, *Washington Post*, 14 Jan. 2011.

² See e.g. Klare, M. T., ‘The collapse of the old oil order’, *European Energy Review*, 7 Mar. 2011, <<http://www.europeanenergyreview.eu/index.php?id=2796>>.

³ Jowitz, J., ‘Government review to examine threat of world resources shortage’, *The Guardian*, 31 May 2010; and Fages, C., ‘La France se dote d’un “Comité pour les métaux stratégiques”’ [France equips itself with a ‘Committee for Strategic Metals’], RFI, 2 Feb. 2011, <<http://www.rfi.fr/emission/20110202-france-dote-comite-metaux-strategiques>>.

the challenges of cooperative resource governance as a means to ensure access to resources while at the same time weakening the links between resources and conflict.

II. Current thinking on resource–conflict links

Competition over natural resources has historically been seen as a legitimate justification for going to war, while the redistribution of resources—notably territory—in favour of the victors was frequently integral to the settlement of conflict. However, with the rise of ‘political wars’—conflicts in which competing political ideologies (such as fascism, communism and liberal democracy) apparently provided the prime motivation for war, most starkly illustrated by World War II and the cold war—resources were relegated to a minor consideration in conflict discourse.

With the end of the cold war, the number of interstate conflicts and with it the overall number of major armed conflicts declined. In the 1990s the dominant form of conflict shifted to complex and fluid internal struggles pitting governments against rebel groups and even bypassing state involvement altogether. Seeking to explain these ‘new wars’, commentators tended to emphasize grievances linked to ethnic or religious hatred or social inequality. Resources continued—at least initially—to be seen as a second-order issue.

However, resources have gradually re-emerged as a broadly held concern in respect to conflict and conflict risk. The recent revival of a materialist conception of the sources of violence has been due to a number of factors. The past 10 years have seen the rise of three interlinked strands of thinking about violence and security that situate resources at the heart of contemporary conflict. These can be broadly characterized as economic, environmental and resource geopolitical approaches.

Theoretical approaches

Economic approaches to understanding conflict have been the main reason for the renewed focus on the role of resources. With a sharp drop in assistance from the Soviet and Western blocs from the end of the 1980s, rebel groups became increasingly dependent on mobilizing alternative sources of income, including revenues from the exploitation and trading of natural resources, to keep fighting. As the importance of financing issues became clear, the economic character of many conflicts came to the fore, for example in the cases of Liberia and Sierra Leone.⁴ This realization also cast

⁴ Collier, D. and Hoeffler, A., ‘On economic causes of civil war’, *Oxford Economic Papers*, vol. 50, no. 4 (Oct. 1998).

new light on some earlier conflicts that had been framed as essentially ideological and linked to the cold war confrontation.

Current research highlights several ways in which resource economics influences conflict. The first of these is armed movements initiating violence in order to gain access to natural resources and the wealth they can bring. A second is resource revenues providing the funding necessary to continue armed struggle—indeed, maintaining control over resource revenues can both become a means and a major reason for conflicts to become protracted. A less direct type of influence is seen in the role of national resource dependence in creating conditions that increase the risk of conflict. This rests on a body of evidence that suggests a tendency for dependence on natural resources to lead to poor government policy choices, notably in terms of investment and of over-reliance on export revenues and on imports of essential commodities (at the expense of development), leaving their economies vulnerable to international market shocks.⁵ Resource dependence can thus be a factor in the emergence of weak and even failed states and the associated heightened risk of violent conflict.

Environmental approaches have identified a number of mechanisms by which environmental factors potentially increase conflict risk.⁶ Among these are increased competition for essential resources such as water due to demographic growth, and famine due to the degradation, loss or poor management of arable and pastoral land. Current thinking about climate change has offered perhaps the most comprehensive way to advance environmental perspectives on conflict. One set of linkages that has found broad support sees resource scarcities engendered by climate change creating competition, instability and social dislocation, which in turn lead to tensions and, in some cases, conflict in vulnerable countries.

The issue of scarcity—or at least potential scarcity—is also at the heart of the third main strand of contemporary thinking about resource–conflict links: resource geopolitics. In this perspective the main driver of increasing conflict risk is seen as a historically unprecedented demand for resources. This is due to the increasing needs of major new consumer and manufacturing countries—notably China and India—while existing industrialized nations in Asia, Europe and North America maintain already high levels of consumption. Together, these demands are seen as promoting intensifying global competition for access to natural resources.

⁵ Basedau, M. and Lay, J., 'Resource curse or rentier peace? The ambiguous effects of oil wealth and oil dependence on violent conflict', *Journal of Peace Research*, vol. 46, no. 6 (Nov. 2009); and Le Billon, P., 'Diamond wars? Conflict diamonds and geographies of resource wars', *Annals of the Association of American Geographers*, vol. 98, no. 2 (June 2008).

⁶ Humphreys, M., 'Natural resources, conflict and conflict resolution: uncovering the mechanisms', *Journal of Conflict Resolution*, vol. 49, no. 4 (Aug. 2005).

The interstate tensions explored in the resource geopolitics literature have not, at least to date, involved armed conflict. Instead, political and commercial disputes are seen as worsening relations between states, with potential security ramifications. However, competition between powerful geopolitical actors around resource issues can spill over into third countries, thereby contributing to instability and the emergence of weak states, making them more vulnerable to the rise of armed groups.

These different approaches illustrate the broad spectrum of linkages that have been identified between resources and conflict. However, few experts would assert that resource issues are often, if ever, a direct cause of contemporary conflict. Rather, conflict risks and the dynamics of existing conflicts are influenced by interactions between multiple factors, only some of them related to resources. Competition over resource access, spiking prices, the availability of resource rents and similar are thus best seen as contributing factors, often as risk multipliers, within a larger matrix of factors promoting, prolonging or, conversely, helping to end conflict.

Responses

Growing awareness of the importance of resources for conflict and security agendas has prompted a reaction from governments, civil society and international organizations. A central issue has been the place and form of market mechanisms to improve resource governance and to prevent and manage conflict. According to many observers, globalization and new levels of resource demand have increased opportunities for illicit sales of resources by warlords, armed groups and even state actors that have fuelled conflict. The initial responses therefore have sought to tighten trade regulation and to suppress illicit trade in particularly sensitive commodities.

With the rise of global competition over resources, many countries are starting to see ensuring access as a matter of national security and the competition for resources as a potential source of conflict. National security strategies have, as a result, increasingly contained reference to natural resource issues, and security forces have begun to include resource questions in their scenarios for future conflicts.⁷

Furthermore, there have been accusations that fluctuations in global markets for resources, especially sudden drastic price increases, have been exacerbated by speculators, jeopardizing social stability and increasing

⁷ The Russian national security strategy adopted in 2009 sees competition over energy resources on Russia's borders, in the Arctic and in the Middle East as a potential source of military conflict and identifies energy as being central to Russia's national security. Government of the Russian Federation, [National Security Strategy of the Russian Federation to 2020], Presidential decree no. 537, 12 May 2009, <<http://www.scrf.gov.ru/documents/1/99.html>>.

conflict risk. Concern about resources has also been seen in accusations about protectionism in terms of preferential access to resources, for example over China's alleged embargo on the export of rare earth metals at the end of 2010.⁸ Such actions have raised questions about whether issues of resource scarcity can be managed effectively within existing international free trade institutions, such as the World Trade Organization, or whether new approaches are required. This has fed into a debate about the role of cooperative resource governance at the regional or international level.

III. Economic approaches to conflict

During the late 1990s research into the structural causes of ongoing intra-state conflicts and the motivations of combatants increasingly explored the role of economics. A seminal 1998 book provided an alternative to the prevailing representation of civil wars as simple confrontations between two sides or explosions of mindless violence motivated by ethnic or religious differences or other grievances. Instead, it maintained that armed conflict can also create a 'new system of profits and power'.⁹ These observations were based mainly on case studies of the roles played by diamonds in conflicts in Angola, Liberia and Sierra Leone; by narcotics in conflicts in Afghanistan and Colombia; and by various minerals in the Democratic Republic of the Congo (DRC).

An attempt to subject the assumed prevalence of economic agendas in civil war to statistical analysis indicated that 'greed' correlated far more clearly with conflict risk than did 'grievance'.¹⁰ Furthermore, conflict risk increased steadily as the state's dependence on primary commodities grew from 0 to 25 per cent of gross domestic product (GDP)—beyond this point it dropped, which the authors presumed was due to the strengthening of government finances and, hence, deterrence capability.¹¹ The channels by which primary commodities are believed to increase conflict risk have been summarized thus:

One is that primary commodity exports provide opportunities for rebel predation during conflict and so can finance the escalation and sustainability of rebellion. . . . A second channel is that rebellions may actually be motivated, as opposed to merely being made feasible, by the desire to capture the rents, either during or after con-

⁸ Bradsher, K., 'After China's rare earth embargo, a new calculus', *New York Times*, 29 Oct. 2010.

⁹ Keen, D., *The Economic Functions of Violence in Civil Wars* (Oxford University Press: Oxford, 1998), p. 14. See also Reno, W., 'Clandestine economies, violence and states in Africa', *Journal of International Affairs*, vol. 53, no. 2 (Mar. 2000); and reports by Global Witness on illegal logging in Cambodia since 1995, accessible at <<http://www.globalwitness.org/news-and-reports>>.

¹⁰ Collier, P. and Hoeffler, A., 'Greed and grievance in civil war', *Oxford Economic Papers*, vol. 56, no. 4 (Oct. 2004).

¹¹ Collier and Hoeffler (note 10), p. 34.

flict. A third channel is that the governments of resource-rich countries tend to be more remote from their populations since they do not need to tax them, creating grievances about the gap between the rulers and ruled.¹²

Primary resources financing conflict

In 2010 the eastern provinces of the DRC provided probably the best illustration of primary resource incomes being used to finance conflict. The Forces démocratiques de libération du Rwanda (FDLR, Democratic Forces for the Liberation of Rwanda)—the core of which is comprised of former Rwandan army personnel and members of the Interahamwe militia that was involved in the 1994 Rwandan genocide—engaged in resource trade and preyed on mining communities and mineral traders around its bases in the area. Although the FDLR forces were fragmented and dispersed by a series of government-led military campaigns in 2009 and 2010, numerous lucrative fallback positions in remote forest areas remained in their hands in 2010. From these positions they conducted looting attacks on villages, towns and mining centres that were nominally under the control and protection of government troops.

The situation in eastern DRC demonstrates the complexity of the role that primary resources can play in financing and perpetuating conflict. Many government troops have, like the FDLR, been preoccupied with profiting from mining communities and the mineral trading chain through illicit taxation, protection rackets and investment schemes—distracting them from the tasks of protecting civilians and neutralizing the FDLR and other violent non-state actors. Some government forces have even defected or colluded with the FDLR for the sake of economic gain. In July 2010 mass rape and looting attacks committed by the FDLR and Congolese militia in Walikale territory, Nord-Kivu province, made international headlines. Many of the raided villages had been left unprotected because the commanders of government units deployed to the area had instead sent their troops to nearby cassiterite (tin ore) and gold mines to levy illicit taxes and oversee their investments.¹³

Conflict over primary resources

While readily lootable resources provide opportunities for predation by armed forces, resources that are more difficult to extract are more likely to increase conflict risk through the second and third channels mentioned

¹² Collier, P., Hoeffler, A. and Rohner, D., 'Beyond greed and grievance: feasibility and civil war', *Oxford Economic Papers*, vol. 61, no. 1 (Jan. 2009), p. 13.

¹³ United Nations, Security Council, Final report of the Group of Experts on the Democratic Republic of the Congo, S/2010/596, 29 Nov. 2010, p. 54.

above. For example, when Chad and Equatorial Guinea started exporting petroleum, they appeared to be particularly vulnerable to attempts by insurgents to capture state power by violent means in order to access oil rents. However, over time, consolidated oil revenues seem to have bolstered the military security of these regimes. Besides oil, competition over access to the illicit drug trade appears to be closely connected to conflicts over governmental power. A string of recent military coups in West Africa—Guinea and Mauritania in 2008 and Guinea-Bissau and Niger in 2010—has been alleged to be the result of competition between different criminal networks for control over the booming narcotics trade between Latin America, West Africa and Europe.¹⁴

Primary resources and government

The influence of the third channel—usually manifested as a lack of accountability on the part of governments with direct access to resource wealth, which can promote weak and even failed states—is more difficult to trace, but Nigeria could serve as an example. During the 1990s there were mass protests in the Niger Delta over corruption, inequitable revenue distribution and pollution associated with oil extraction in the area. The failure of the state and oil companies to respond to these grievances led to the emergence of armed insurgent groups, most importantly the Movement for the Emancipation of the Niger Delta (MEND). Over time, significant elements in these groups started to engage in criminal activities such as tapping pipelines to steal oil, kidnapping oil workers for ransom and drug dealing. Senior government officials and politicians, law enforcement officers and even oil industry staff were paid to turn a blind eye.¹⁵

Oil smugglers have also paid local communities to allow free passage. Despite the criminal nature of these activities and the payment received, such support has been seen as an expression of discontent with the persistently dire economic situation of communities in this area of great oil wealth, even though MEND's self-portrayal as a modern day Robin Hood has never been taken very seriously.¹⁶ Complicity in crime as a form of protest in Nigeria demonstrates the difficulty of separating greed and grievance as the drivers of armed conflict.

In recent years there have been important initiatives to address the grievances and micro-level conflicts that develop around resource sectors and can play a key role in promoting broader destabilization and violence.

¹⁴ Cockayne, J. and Williams, P., *The Invisible Tide: Towards an International Strategy to Deal with Drug Trafficking through West Africa* (International Peace Institute: New York, Oct. 2009).

¹⁵ Asuni, J. B., *Blood Oil in the Niger Delta*, United States Institute of Peace (USIP) Special Report no. 229 (USIP: Washington, DC, Aug. 2009).

¹⁶ Connors, W., 'The Nigerian rebel who taxes your gasoline', *Time*, 28 May 2008.

Notable in this regard are the Voluntary Principles on Security and Human Rights developed in 2000.¹⁷ The United Nations Environment Programme (UNEP) has also cooperated with US-based Environmental Law Institute and the University of Tokyo to develop approaches that can strengthen post-conflict peacebuilding through resource management.¹⁸

Conflict and crime; rebel and state

The above cases demonstrate how, when resource revenues are readily available, armed groups easily mutate into criminal organizations. These criminal organizations can become embedded in political structures, with ruling elites and security forces acquiescent in criminal activities in return for a share of the rents.¹⁹ Political embeddedness can ultimately lead to a situation in which the state itself becomes the arena in which rival organized criminal groups compete, as was illustrated by the recent drug trade-related coups in West Africa.²⁰ In a different model, criminal elements in the regular army in the DRC have on many occasions established parallel structures to control local mineral resource sectors.

In effect, the boundary between conflict and crime, as well as that between resource predation by rebels and states, appears to be progressively dissolving in a number of conflict-affected resource-rich states. The criminalization of the state—that is, a situation in which state functions and institutions are principally used for private, criminal ends—has become a persistent feature in the politics and, by extension, the economies of several African countries.²¹ Some Asian countries—notably Afghanistan, Kyrgyzstan and Myanmar—risk going down the same road.

Responses to primary resource-related conflict risks

Trade and transparency initiatives

Widespread recognition of conflict risks associated with trade in primary resources has in the past decade given rise to a sharp increase in UN commodity sanctions—that is, sanctions prohibiting the import by third countries of resources that are under the control of a particular conflict party—

¹⁷ The Voluntary Principles on Security and Human Rights were developed by the US State Department, the British Foreign and Commonwealth Office, civil society organizations (CSOs) and industry. They are aimed at ensuring respect for human rights and fundamental freedoms in company security arrangements in the extractive sectors. See <<http://www.voluntaryprinciples.org/>>.

¹⁸ See the website of the Strengthening Post-conflict Peacebuilding through Natural Resource Management project, <http://www.eli.org/Program_Areas/PCNRM/>.

¹⁹ Cockayne, J., 'Crime, corruption and violent economies', eds M. Berdal and A. Wennmann, *Ending Wars, Consolidating Peace: Economic Perspectives* (Routledge: New York, 2010), p. 190.

²⁰ Cockayne (note 19), p. 190.

²¹ Bayart, J.-F., Ellis, S. and Hibou, B., *The Criminalization of the State in Africa* (James Currey: Oxford, 1998).

as well as a number of resource trade and transparency initiatives. Most important among the latter have been the Kimberley Process Certification Scheme to combat the trade in so-called conflict diamonds and the Extractive Industries Transparency Initiative (EITI) in the oil, gas and mining sectors.²²

Trade and transparency initiatives take a variety of forms, all aiming to sever links between resource trading on the one hand and conflict, human rights abuses or other aspects of poor state governance on the other. Trade initiatives aim to privilege legitimate, 'conflict-free' production and trade through, for example, schemes for certifying the origin of valuable minerals and voluntary embargoes on non-certified minerals. In initiatives such as the EITI, governments and industries agree to publicize all payments to governments and resource revenues in order to improve accountability.

Such initiatives face numerous challenges. In producer countries, the lack of institutional capacity often makes establishing supply chain assurance and transparent revenue mechanisms difficult. A number of countries, including some of the least stable, are simply unable to reach the minimum level of good resource governance that would allow them to participate. Furthermore, in the DRC and elsewhere, senior state actors complicit in violent resource appropriation and illicit rent seeking will naturally oppose moves that could reduce their profits or expose their activities.

Producer states may also be unenthusiastic about schemes that potentially limit their ability to export resources, particularly when international prices are high. In consumer countries there is a danger that governments and industries will be tempted to let the security of their own supply chains override ethical considerations regarding the origin of the minerals and quality of governance in producer countries, making it increasingly difficult to obtain support for robust systems.

Some ethical trade initiatives in consumer countries also risk worsening the situation in producer countries. Notably, the United States passed legislation in July 2010 aimed at stemming trade in conflict minerals from the DRC by imposing strict rules for the certification of imported minerals as conflict-free.²³ This model, which may well be followed by the European Union (EU), could become a de facto embargo on minerals produced in eastern DRC; US companies are unlikely to be able to provide the necessary

²² The Kimberley Process is a joint initiative of governments, industry and CSOs intended to stem the trade in 'rough diamonds used by rebel movements to finance wars against legitimate governments'. It includes a strict scheme for the certification of 'conflict-free' diamonds. See <<http://www.kimberleyprocess.com/>>. The EITI is also a joint government-industry-CSO initiative that aims to strengthen resource governance by improving transparency and accountability in the oil, gas and mining sectors. See <<http://eiti.org/>>.

²³ Dodd-Frank Wall Street Reform and Consumer Protection Act (also referred to as the Congo Conflict Minerals Act), US Public Law 111-203, assented to 21 July 2010, <<http://www.gpo.gov/fdsys/pkg/PLAW-111publ203/content-detail.html>>, Section 1502.

documentary proof of the conflict-free origin of imported minerals, chiefly due to the low administrative capacity of Congolese resource-management institutions.²⁴ This would deprive the Congolese Government of revenues and aggravate already dire economic conditions in the artisanal mining communities.

At the same time, international and local concern over corruption has provided a strong basis for efforts to strengthen accountability for resource revenues, which may in the medium to long term put significant financial constraints on the autonomy of ruling elites in resource-rich states. In the meantime, other measures may be taken. In December 2010, in the absence of commodity sanctions on the DRC, the UN Security Council passed a resolution endorsing a set of due diligence guidelines for processing industries and consumers of Congolese mineral products. Failure to follow these guidelines is to be taken into account when the UN Sanctions Committee for the DRC determines whether to designate individuals or business entities for targeted sanctions (asset freezes and travel bans) that can be imposed for supporting illegal armed groups in eastern DRC.²⁵

Combating criminal networks

On the issue of international organized crime in fragile states, the EU, the UN and Interpol have all shown vigilance in the past few years—much facilitated by the UN Convention against Transnational Organized Crime (UNTOC), adopted in 2000.²⁶ In July 2009 the UN launched the West Africa Coast Initiative, which brings together key UN and regional institutions, as well as Interpol, to coordinate efforts to combat organized crime and drug trafficking in West Africa.²⁷ Interpol's Asian Organized Crime Project, launched in 2006, is further testimony to increasing regional coordination in the fight against organized crime revolving around drug trafficking.²⁸

A key question is how to treat criminal networks that are affiliated to conflict parties in the post-conflict period. Granting a place to such networks and their political representatives in post-conflict state building can be disastrous as it rewards violence and thereby incites new rounds of violence by those that do not feel accommodated in the new political and mili-

²⁴ See de Koning, R., *Conflict Minerals in the Democratic Republic of the Congo: Aligning Trade and Security Interventions*, SIPRI Policy Paper no. 27 (SIPRI: Stockholm, June 2011).

²⁵ UN Security Council Resolution 1952, 29 Nov. 2010.

²⁶ United Nations Convention against Transnational Organized Crime, opened for signature 12 Dec. 2000, entered into force 29 Sep. 2003, *United Nations Treaty Series*, vol. 2225, p. 209.

²⁷ See United Nations Office for West Africa, 'West Africa Coast Initiative', <<http://unowa.unmissions.org/Default.aspx?tabid=841>>.

²⁸ Interpol, 'New INTERPOL platform to fight organized crime in Asia is focus of conference in Singapore', Media release, 23 Jan. 2008, <<http://www.interpol.int/Public/ICPO/PressReleases/PR2008/PR200802.asp>>.

tary set-up.²⁹ Nevertheless, some argue that the measure of popular legitimacy that criminal–political networks can enjoy may present opportunities for post-conflict state building.³⁰ While case evidence may confirm one or the other, it can safely be said that the accommodation and integration of economically motivated violent actors without substantive reduction in their capabilities and incentives to deploy violence is unlikely to contribute to durable peace.

International trade interventions and policing mechanisms are confronted by an ever-globalizing licit and illicit trade in primary resources. Criminal and insurgent networks that control transnational trade frequently emerge from and find root in poor conflict-afflicted or fragile post-conflict states.³¹ Thus, combating them effectively requires balanced and integrated approaches. While the trade in certain resources can fuel conflict and attract criminality, it provides livelihoods for local communities and can allow economic development. Formalizing informal resource trade and diversifying economic activities can improve economic conditions at the local and national levels and can also reduce illicit rent seeking, trafficking, crime and corruption.³²

IV. Environmental approaches to conflict

Growing sensitivity in the 1970s to the influence of environmental factors on social stability and economic development—notably as a result of the work of the international think tank the Club of Rome³³—provided the basis for subsequent research on possible links between environmental factors and conflict risk. In the 1980s and 1990s the initial focus of a second generation of research on the topic was on the impact of population growth, pandemic disease, famine and environmental changes on armed conflict.³⁴ A

²⁹ Tull, D. M. and Mehler, A., ‘The hidden costs of power-sharing: reproducing insurgent violence in Africa’, *African Affairs*, vol. 104, no. 416 (July 2005).

³⁰ Reno, W., ‘Understanding criminality in West African contexts’, *International Peacekeeping*, vol. 16, no. 1 (2009).

³¹ UN Office on Drugs and Crime (UNODC), *The Globalization of Crime: A Transnational Organized Crime Threat Assessment* (UNODC: Vienna, 2010), pp. ii–iii.

³² Cockayne (note 19).

³³ *The Limits to Growth*, a seminal book commissioned by the Club of Rome, provided a direct challenge to key assumptions that underpin liberal theories of economics, notably by suggesting that the finite nature of resources would curtail the possibility of future growth and by questioning the sustainability of existing socioeconomic models of development. Meadows, D. H. et al., *The Limits to Growth: A Report for the Club of Rome’s Project on the Predicament of Mankind*, 2nd edn (Universe Books: New York, 1972).

³⁴ See the series of occasional papers prepared by the Environment and Conflicts Project of the Center for Security Studies (CSS) at ETH Zurich between 1992 and 1995, <<http://www.isn.ethz.ch/isn/Digital-Library/Publications/Detail/?id=235&lng=en>>; Homer-Dixon, T. F., ‘On the threshold: environmental changes as causes of acute conflict’, *International Security*, vol. 16, no. 2 (fall 1991); and Myers, N., ‘Linking environment and security’, *Bulletin of the Atomic Scientists*, vol. 43, no. 5 (June 1987).

third generation of work seeks to identify more precisely the linkages between environmental factors and increasing conflict risk, but this work has largely been overwhelmed by the focus on climate change as a factor in human security and conflict.

Climate change and conflict risk

In the early 2000s research on the role of climate change in conflict risk grew in prominence—particularly due to international attention on climate issues resulting from the work of the Intergovernmental Panel on Climate Change (IPCC). Although the IPCC has never itself focused on links between climate change and conflict, its conclusions on the probable impacts of climate change have become a basis for research linking these with security and conflict issues.³⁵ Particular attention has been paid to those regions seen as especially vulnerable to the impacts of climate change: the Arctic, Africa, small islands and densely populated coastal megadeltas in Africa and Asia.

Climate change and related resource issues have been identified as potential security risk factors at national and international levels.³⁶ In 2003 a report for the US Department of Defense presented a future scenario of warring states and massive social disturbance as a result of dramatic climate change.³⁷ In 2007 the United Kingdom convened a day-long UN Security Council debate on the impact of climate change on security, which in turn was the basis for a prolonged high-level discussion of this issue.³⁸ Also in 2007, the UN Secretary General, Ban Ki-moon, noted that ‘changes in our environment and the resulting upheavals—from droughts to inundated coastal areas to loss of arable lands—are likely to become a major driver of war and conflict’.³⁹

In September 2009 the UN released a report that identified five ways in which climate change could affect international security: by creating vulnerabilities, for example threatening food security; by slowing or reversing the process of development; by increasing the risk of domestic

³⁵ See e.g. Nordås, R. and Gleditsch, P. (eds), *Political Geography*, Special issue on Climate Change and Conflict, vol. 26, no. 6 (Aug. 2007).

³⁶ See e.g. Busby, J. W., *Climate Change and National Security: An Agenda for Action*, Council Special Report 32 (Council on Foreign Relations: New York, Nov. 2007).

³⁷ Schwartz, P. and Randall, D., ‘An abrupt climate change scenario and its implications for United States national security’, Oct. 2003, <http://www.gbn.com/consulting/article_details.php?id=53>.

³⁸ United Nations, ‘General Assembly, expressing deep concern, invites major United Nations organs to intensify efforts in addressing security implications of climate change’, Press Release GA/10830, 3 June 2009, <<http://www.un.org/News/Press/docs/2009/ga10830.doc.htm>>.

³⁹ Ban, K., UN Secretary-General, Address to the United Nations International School–UN Conference on ‘Global Warming: Confronting the Crisis’, 1 Mar. 2007, <http://www.un.org/apps/news/infocus/sgspeeches/search_full.asp?statID=70>.

conflict over resources and migration; through increasing statelessness as a result of loss of territory; and by negatively affecting international cooperation over shared or undemarcated natural resources.⁴⁰

In 2008 the EU made its own assessment of the security risks emanating from climate change.⁴¹ The report noted both the likelihood of conflict over resources and the conflict risks associated with climate change.

UNEP has also sought to deepen understanding of the relationship between conflict risk and climate change.⁴² In 2007 it produced one of the first comprehensive analyses of the potential links, focusing on Sudan. According to this report:

The linkages between conflict and environment in Sudan are twofold. On one hand, the country's long history of conflict has had a significant impact on its environment. . . . On the other hand, environmental issues have been and continue to be contributing causes of conflict. Competition over oil and gas reserves, Nile waters and timber, as well as land use issues related to agricultural land, are important causative factors in the instigation and perpetuation of conflict in Sudan.⁴³

The key issue to emerge from research to date on links between climate change and conflict risk is resource scarcity, which is seen as having several distinct elements. In the long term, environmental deterioration due largely to climate change could promote competition over fresh water or fertile land, potentially leading to violence. Floods, landslides, droughts, famines and other disasters resulting from or exacerbated by climate change could create immediate economic shocks, such as sudden drops in employment opportunities, that would weaken states and promote the emergence of armed groups.⁴⁴ Alternatively, climate change-linked scarcity, instability and violence could promote mass unmanaged population movements with potential security implications for the receiving countries.

However, environmental forecasting is a developing field and projections about the impacts of climate change are tentative. Some authors are concerned that the social and political implications of climate change and other environmental phenomena are frequently approached in overly sim-

⁴⁰ United Nations, General Assembly, 'Climate change and its possible security implications', Report of the Secretary-General, A/64/350, 11 Sep. 2009.

⁴¹ High Representative and European Commission, 'Climate change and international security', Paper to the European Council, S113/08, 14 Mar. 2008, <http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/reports/99387.pdf>.

⁴² See e.g. UN Environment Programme (UNEP), *Understanding Environment, Conflict, and Cooperation* (UNEP, Division of Early Warning and Assessment: Nairobi, 2004).

⁴³ UN Environmental Programme (UNEP), *Sudan: Post-conflict Environmental Assessment*, Synthesis Report (UNEP: Nairobi, 2007), p. 8. See also University for Peace, *Environmental Degradation as a Cause of Conflict in Darfur, Khartoum, 2004*, Conference report (University for Peace: Addis Ababa, 2006).

⁴⁴ International Crisis Group, 'Climate change and conflict', [n.d.], <<http://www.crisisgroup.org/en/key-issues/climate-change-and-conflict.aspx>>.

plistic ways, leading to 'drastic neomalthusian scenarios'.⁴⁵ Indeed, most scenarios for climate change do not point to a direct causal link to increased incidence or intensity of conflict.⁴⁶ A good illustration of widely differing perspectives on how climate change could exacerbate conflict risk is provided by the issue of so-called climate refugees.

Climate refugees

Since the 1990s much attention has been paid to the security implications of massive forced migrations due to climate change-related phenomena that deprive populations of resources essential to their livelihoods, particularly arable land, forest and fresh water. One widely cited expert has predicted that 'there could be as many as 200 million people overtaken by disruptions of monsoon systems and other rainfall regimes, by droughts of unprecedented severity and duration, and by sea-level rise and coastal flooding'.⁴⁷ There has been periodic alarm in wealthy, primarily Western, countries that they will have to deal with waves of climate refugees from poor countries.

Implicit in the term 'climate refugee' is the idea that climate change-linked migrations will be sudden and unplanned, and that the affected populations will need urgent assistance, like those displaced by political violence (climate migrants cannot yet be legally recognized as refugees). Flows of refugees and internally displaced persons (IDPs) have been identified as creating strains and tensions in the areas to which they move that can help the spread of conflict. Furthermore, armed groups have used refugee and IDP camps as bases for strikes into neighbouring countries.⁴⁸ Some therefore anticipate that substantial population movements caused by climate change would have a major negative impact on several existing and emerging conflicts.

This idea has, however, been challenged. While few experts deny that a certain amount of climate change-linked forced migration is inevitable, it is hard to predict how much will be sudden and unplanned. Much climate-related degradation of land is likely to be gradual and may only add somewhat to existing migration flows from rural areas. Furthermore, vulnerability, resilience and poverty will all influence whether and how the

⁴⁵ Nordås, R. and Gleditsch, N. P., 'Climate change and conflict', *Political Geography*, vol. 26, no. 6 (Aug. 2007).

⁴⁶ CNA Corporation, *National Security and the Threat of Climate Change* (CNA Corporation: Alexandria, VA, 2007).

⁴⁷ Myers, N., 'Environmental refugees: an emergent security issue', Paper presented at the 13th Organization for Security and Co-operation in Europe (OSCE) Economic Forum, Prague, EF.NGO/4/05, 22 May 2005, <<http://www.osce.org/eea/14851>>, p. 1.

⁴⁸ Salehyan, I. and Gleditsch, K. S., 'Refugees and the spread of civil war', *International Organization*, vol. 60, no. 2 (Apr. 2006).

affected populations migrate.⁴⁹ Similarly, the relationship between migration and conflict is unclear, and climate change-related migration may even lead to increased cooperation. In the absence of effective climate-change mitigation measures, building resilience through national planning and adaptation strategies could do much to reduce migration flows and related conflict risk.

Adaptation to environmental change

Poor societies and fragile states are more susceptible to the negative impacts of climate change than developed countries, primarily as a result of weak institutions. This has led to calls to include measures to promote adaptation, particularly livelihood adaptation, as a conflict prevention and management strategy for populations most vulnerable to the impacts of climate change.⁵⁰ Livelihood adaptation involves technical development interventions to, among other things, improve farm practices and water management and diversify livelihoods in order to reduce the vulnerability and build the resilience of communities at risk.

In many countries adaptation is also emerging as a highly political process as poorer segments of society demand formal recognition and clarification of access rights to land, water and forest resources.⁵¹ The ability of governments to meet these demands and to mediate competing claims peacefully are crucial in delivering secure access to scarce renewable resources to enable populations to cope with environmental change without mass migration.

International mechanisms for adaptation such as the Global Environmental Facility (GEF) and the UN Framework Convention on Climate Change (UNFCCC) are likely to face increasing challenges to ensure that funding for mitigation projects and countries' national adaptation efforts do not contribute to the appropriation of resources at the expense of prior users. In this regard, it has been argued that access to international adaptation funds may need to be made conditional on reforms in resource management policies to enhance livelihood resilience and prevent conflict and the marginalization of vulnerable groups.⁵²

⁴⁹ See e.g. Kolmannskog, V. O., *Future Floods of Refugees: A Comment on Climate Change, Conflict and Forced Migration* (Norwegian Refugee Council: Oslo, 2008); and Brown, O., *Migration and Climate Change*, International Organization for Migration (IOM) Research Study 31 (IOM: Geneva, 2008).

⁵⁰ Smith, D. and Vivekananda, J., *Climate Change, Conflict and Fragility: Understanding the Linkages, Shaping Effective Responses* (International Alert: London, Nov. 2009), pp. 15–21.

⁵¹ Rights and Resources Institute, *Seeing People Through the Trees: Scaling Up Efforts to Advance Rights and Address Poverty, Conflict and Climate Change* (Rights and Resources Institute: Washington, DC, 2008).

⁵² Spencer, T. et al., *Climate Change & the Military: The State of the Debate*, draft 2nd edn (Institute for Environmental Security: Brussels, Dec. 2009), p. 7.

Resources and diplomacy

It is often argued that international cooperation on environmental issues can be a tool for improving diplomatic relations between countries. In this context, frequent reference is made to transboundary water management and nature conservation. However, cases where such initiatives have clearly helped to improve diplomatic relations are scarce and the potential for deterioration is equally great, particularly as climate change is likely to intensify competition for water resources. Most noteworthy in 2010 was the looming break-up of the Nile Basin Initiative between the countries of the Nile Basin following the failure to come to a new agreement to replace the current ones, which date back to 1929 and 1959.⁵³ In fact, transboundary environmental cooperation has so far usually been a consequence rather than a driver of peace. Nevertheless, it can help to solidify good neighbourly relations.

V. The resource geopolitics approach

The rise of major new consumer and manufacturing countries has aggravated concerns about how competition for access to limited natural resources will affect international relations.⁵⁴ Some authors believe a fundamental reordering of the world is under way due to globalization and intensified competition over oil, natural gas, other minerals and water that could lead to 'resource wars'.⁵⁵ Those who argue for the existence of a new geopolitics of resources foresee a world in which securing access to essential resources becomes a primary objective of national militaries, and competition over access leads to widespread instability, especially in areas where it overlaps with long-standing territorial and religious disputes.

The resource geopolitics approach differs from traditional leftist perspectives that have sought to account for Western, notably US, policy in respect to key resource-rich regions, notably the Middle East, in terms of neo-imperialism and capitalist interests driving military action. The resource geopolitics approach, in contrast, sees conflict emerging from competition between rising global powers and the established industrialized powers for access to increasingly scarce resources.⁵⁶ Conflict is thus

⁵³ Ali Abdalla, A., 'The fate of the Nile Basin Initiative after May 14th 2010', *Sudan Tribune*, 15 May 2010. The Nile Basin Initiative (NBI) is a partnership initiated and led by the riparian states of the Nile that aims to promote sustainable socioeconomic development through coordinating the use of, and equitable distribution of benefits from, the Nile Basin's water resources. See <<http://www.nilebasin.org/>>.

⁵⁴ See e.g. Blas, J., 'Global resources spending soars', *Financial Times*, 14 Dec. 2010.

⁵⁵ Klare, M. T., *Resource Wars: The New Landscape of Global Conflict* (Metropolitan Books: New York, 2001).

⁵⁶ Chomsky, N., *Interventions* (City Lights: San Francisco, 2007).

generated by the emergence of a multipolar world rather than from efforts by the West to subjugate the Global South.

The resource geopolitics approach overlaps with environmental perspectives on resource–conflict links, notably with regard to the idea that the melting of the Arctic ice cap due to global warming is likely to spark conflict over access to the region’s predicted significant hydrocarbon reserves.⁵⁷ Africa is seen as another key region where resource geopolitics could lead to violence; growing competition for the continent’s resources could provoke an increased incidence of conflict between global powers seeking access to them.

Nevertheless, the resource geopolitics approach has focused primarily on the issue of energy, specifically hydrocarbon reserves. Developments since the early 1970s have redefined the relationship between hydrocarbon consumer countries and the producer countries. The growing market power of oil producers was manifested in 1973 when their actions to embargo oil shipments, coordinated through the Organization of the Petroleum Exporting Countries (OPEC), precipitated an oil crisis.

Since the 1970s, policies of nationalization in many producer countries have led to the world’s principal hydrocarbon reserves, for example in Libya, Saudi Arabia and Venezuela, being placed under the control of state-owned energy companies rather than Western-backed multinationals. This has raised concerns in consumer countries that access to hydrocarbon supplies and pricing could be determined more by political than market considerations. The rise of vast new consumer countries—China and India—has put further pressure on hydrocarbon resources, helping to drive oil prices to record highs above \$147 a barrel in July 2008. These developments, along with concerns that the world is at or approaching peak oil production and that hydrocarbon reserves could be exhausted perhaps as early as 2050, have raised questions about the ability of industrialized countries to ensure access to energy supplies.⁵⁸ Faced with these challenges many states and international security organizations have sought to develop policies to ensure energy security.

Strained relations between some energy consumer and producer countries have led some to forecast energy-related conflicts and even the possibility of energy wars.⁵⁹ The question of access to Eurasia’s hydrocarbon resources has been central to this discussion, notably with respect to

⁵⁷ Sale, R. and Potapov, E., *The Scramble for the Arctic: Ownership, Exploitation and Conflict in the Far North* (Frances Lincoln: London, 2010); and Bennett, J. R., ‘Climate of conflict in Arctic’, ISN Security Watch, 29 Mar. 2010, <<http://www.isn.ethz.ch/isn/Current-Affairs/Security-Watch/Detail/?lng=en&id=114256>>.

⁵⁸ On the debate about future oil production see <<http://www.oilscenarios.info/>>.

⁵⁹ Klare, M. T., *Rising Powers, Shrinking Planet: The New Geopolitics of Energy* (Metropolitan Books: New York, 2008), pp. 210–37; Kaldor, M., Karl, T. L. and Said, Y. (eds), *Oil Wars* (Pluto Press: London, 2007); and Foroohar, R., ‘The coming energy wars’, *Newsweek*, 31 May 2008.

natural gas.⁶⁰ For example, in recent years a series of bilateral disputes has broken out leading to supply cut-offs for natural gas consumers in Central and South Eastern Europe in January 2006 and January 2008. For many analysts, these developments suggested that European security was threatened by its existing energy relationships in Eurasia, particularly with Russia.⁶¹

Claiming a need to promote alternative routes to markets, Russia announced plans to construct two substantial gas pipelines—Nord Stream through the Baltic Sea and South Stream through the Black Sea—that would bypass transit countries in central Europe, particularly Ukraine. At the same time, the EU sought to diversify its supplies of natural gas away from the current heavy reliance on Russia, notably with the construction of the Southern Corridor for energy and transport.⁶² A ‘pipeline geopolitics’ has thus developed that could have security implications for areas already subject to armed conflict, principally the southern Caucasus.⁶³

A complex Eurasian resource geopolitics is thus arguably emerging that includes competition for access to the natural gas reserves of the Caspian region—between China, the EU, Iran, Russia, Turkey and the United States. There are also concerns that countries are manipulating energy access and supply for political and security ends. Many believe that Russia, in particular, is using its energy wealth to further its political and diplomatic aims, including the domination of its neighbours.⁶⁴

Energy is now a clear element in many countries’ security policy and external relations. Nevertheless, resource geopolitics has yet to be the sole or even the primary cause of an armed conflict, even if some conflicts have been linked to energy, for example the US invasion of Iraq in 2003 and Russia’s military intervention in Chechnya beginning in 1994.⁶⁵ In fact, some observers have suggested that major consumer states have an interest in avoiding instability and price shocks in markets for hydrocarbons and

⁶⁰ Correljé, A. and van der Linde, C., ‘Energy supply security and geopolitics: a European perspective’, *Energy Policy*, vol. 34, no. 5 (Mar. 2006).

⁶¹ Baran, Z., ‘EU energy security: time to end Russian leverage’, *Washington Quarterly*, vol. 30, no. 4 (autumn 2007); and Bilgin, M., ‘Geopolitics of European natural gas demand: supplies from Russia, Caspian and the Middle East’, *Energy Policy*, vol. 37, no. 11 (Nov. 2009).

⁶² The Southern Corridor is an EU initiative focusing on creating energy connections—primarily gas pipelines—between the production centres of the Caspian region, Central Asia and the Middle East and markets in the EU.

⁶³ Some political observers and experts have seen the geopolitical competition between the EU and Russia over energy as a factor in Russia’s military intervention in the 2008 conflict in Georgia’s South Ossetia region. Reuters, ‘Poland links Georgia war to energy’, *Moscow Times*, 15 Sep. 2008; and ‘Conflict in Georgia seen as threatening EU’s energy supplies’, *Oil and Energy Trends*, vol. 33, no. 9 (Sep. 2008).

⁶⁴ Baran (note 61).

⁶⁵ See Said, Y., ‘Greed and grievance in Chechnya’, eds Kaldor, Karl and Said (note 59).

other commodities.⁶⁶ Regarding access to the Arctic's natural resources, beyond the initial bellicose statements and some provocative actions—such as the planting by a Russian scientific expedition of the national flag on the Arctic seabed in 2007—there are clear signs of international readiness to develop peaceful forms of competition and even cooperation based on international law, including the UN Convention on the Law of the Sea (UNCLOS).⁶⁷ There is also considerable scope to develop new forms of cooperative regional governance.⁶⁸ The intergovernmental Arctic Council could become a model for managing complex resource issues.⁶⁹

Equally, rising international demand for African resources need not increase conflict risk. China's growing interest in African resources has been accompanied by investment in the continent, which has promoted development and helped to overcome some of the socioeconomic preconditions for conflict. Some claim that China is increasingly interested in supporting conflict prevention and management mechanisms in Africa and has sought, through diplomatic means, to promote resolution of some of Africa's longest running and most bitter conflicts.⁷⁰

Nevertheless, China's commitment to cooperative resource management was called into question in 2010. In October it was reported that China had deliberately suspended the export to Japan—and later to the EU and the USA—of rare earth metals vital in the manufacturing of a range of advanced products. Analysts speculated that the suspension was a response to various unrelated disputes with the importing countries.⁷¹ While China denied the reports, the incident promoted a worldwide debate about the emergence of resource nationalism and the employment of non-market approaches to ensure privileged access to resources.

⁶⁶ De Soysa, I., Gartzke, E. and Lie, T. G., 'Blood, oil, and strategy: on the relationship between petroleum and interstate disputes', 20 Feb. 2009, <http://www.svt.ntnu.no/iss/Indra.de.Soyasa/POL2003H05/oilandwar_02232009.pdf>.

⁶⁷ See Young, O. R., 'The future of the Arctic: cauldron of conflict or zone of peace?', *International Affairs*, vol. 87, no. 1 (Jan. 2011). UN Convention on the Law of the Sea, opened for signature on 10 Dec. 1982, entered into force 16 Nov. 1994, *United Nations Treaty Series*, vol. 1833.

⁶⁸ Arctic Governance Project, 'Arctic governance in an era of transformative change: critical questions, governance principles, ways forward', 14 Apr. 2010, <<http://www.arcticgovernance.org/agp-report-and-action-agenda.156784.en.html>>.

⁶⁹ The Arctic Council was created by the Declaration on the Establishment of the Arctic Council, signed in Ottawa, Canada, on 19 Sep. 1996. The membership of the Arctic Council comprises Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the USA along with 6 organizations of indigenous peoples. Its main function is to promote cooperation, coordination and interaction between the members on common Arctic issues.

⁷⁰ Saferworld, *China's Growing Role in African Peace and Security* (Saferworld: London, Jan. 2011).

⁷¹ Bradsher, K., 'China said to widen its embargo of minerals', *New York Times*, 19 Oct. 2010.

VI. Conclusions: the challenges of cooperative resource governance

By early 2011 global commodity prices had reached historic new highs, resuming the upward trajectory seen prior to the global recession of 2009–10 and highlighting the volatility of global resource markets, including the risk of price spikes. While the security implications were clearest in the Middle East and North Africa, where rioting linked to food prices set in motion a wave of uprisings against long-standing authoritarian regimes, resource price volatility increased tensions in many countries, giving cause for widespread concern. Against the background of a rising awareness of the close interrelationship between resources, instability and conflict, the new global uncertainty over resource pricing, scarcity and access has prompted a rethinking of concepts of security.

The international community has started to respond to many resource-related challenges through its global and regional security institutions. The UN Security Council takes a leading role in addressing destabilizing resource flows; since 1990 it has imposed partial or total commodity sanctions on more than a dozen countries, something it did only twice during the cold war.

The security implications of climate change and food insecurity are extensively discussed in international forums and have been progressively integrated into strategies of the EU, the North Atlantic Treaty Organization (NATO) and the UN. For example, the new NATO Strategic Concept adopted on 19 November 2010 states: ‘Key environmental and resource constraints, including health risks, climate change, water scarcity and increasing energy needs will further shape the future security environment in areas of concern to NATO and have the potential to significantly affect NATO planning and operations.’⁷²

In the EU, there have been calls for policy responses to manage the growing demand pressures on natural resources.⁷³ During 2010 the EU undertook a study of the raw materials and commodity markets to better understand the challenges it faces in this area and to help it to develop policies that would ensure access to ‘critical minerals’ without promoting conflict. The EU’s promise to tackle the relationship between resources and conflict, for example ‘blood minerals’, in its new raw materials strategy shows it is seeking a comprehensive approach on the issue, but it remains to be seen how trade and development policy priorities will be reconciled in the

⁷² North Atlantic Treaty Organization (NATO), ‘Active engagement, modern defence: strategic concept for the defence and security of the members of the North Atlantic Treaty Organisation’, Lisbon, 19 Nov. 2010, <<http://www.nato.int/lisbon2010/strategic-concept-2010-eng.pdf>>, para. 15.

⁷³ See e.g. European Parliament, Resolution on rising food prices, 17 Feb. 2011, P7_TA-PROV (2011)0071.

EU's relations with producer countries, particularly in a context of growing competition to secure access to valuable and scarce resources.⁷⁴

Experience in efforts to respond to the many and diverse security challenges associated with resources suggests that practical responses are likely to be most effective if they are based on cooperation that brings together, for example, consumers and producers, rich and poor countries, industry, governments, the development sector, law enforcement and civil society. Nevertheless, such cooperation will always have to overcome important challenges, not least self-seeking behaviour by some parties—including criminal networks—and limited institutional capacities. These can manifest themselves at community, national and international levels.

One approach that has already yielded some success is based on developing more comprehensive frameworks for resource governance, offering means to manage more effectively issues of scarcity and competition and to balance the demands for access, social justice and environmental protection with the aim of addressing conflict issues. Examples include local and intermediate-level resource governance approaches that generally focus on particular sectors—such as the Extractive Industries Transparency Initiative—or on a geographic area—such as some of the initiatives related to the DRC.

The rise of powerful new economic actors and the dynamic global natural resource markets that have emerged to feed rising demand mean, however, that such approaches will increasingly struggle to address the full range of factors now affecting natural resources. This logically points to a need to establish resource governance frameworks with broad memberships and to ensure that conflict issues are addressed within them.

The track record of such forums in addressing such questions is, however, so far modest. Since the early 1960s many of the leading energy producer nations have operated through OPEC while consumer countries have been organized in the International Energy Agency (IEA) from 1974. In an effort to find cooperative ways to reduce oil price volatility and to include non-OPEC producers such as Russia and the large new consumer countries that were not members of the IEA, such as China and India, a producer–consumer dialogue, the International Energy Forum (IEF), was launched in 1991. Although the dialogue conducted through the IEF has intensified in recent years, its success in tackling the challenges in the energy sector have been slight to date.

The experience of the energy sector suggests that building global resource governance institutions will be a slow and difficult process. However, the recent emergence of new institutions expressly designed to

⁷⁴ 'EU vows to tackle "blood minerals" in raw materials plan', EurActiv, 25 Jan. 2011, <<http://www.euractiv.com/en/sustainability/eu-vows-tackle-blood-minerals-raw-materials-plan-news-501117>>.

manage the changing political and economic balance in the global order may help. France has indicated that a priority of its 2011 presidency of one such institution—the Group of 20 (G20) major economies—would be to promote stability in world commodity markets, notably in response to the threat of food riots.⁷⁵ Such initiatives could pave the way for the sort of global discussions and frameworks for action that can address the diverse challenges linked to resources and, in this way, begin to weaken the links between natural resources and conflict risk.

⁷⁵ Willis, A., 'French G20 leadership to focus on commodity prices', EUobserver, 24 Jan. 2011, <<http://euobserver.com/9/31693>>.