

# The environmental situation during armed conflicts

## الوضع البيئي أثناء النزاعات المسلحة

Reggab Mohammed\* , Faculty of Law ,University AFLOU - LAGHOUAT -  
[m.reggab@cu-aflou.edu.dz](mailto:m.reggab@cu-aflou.edu.dz)

Received: 09/11/2022

Accepted: 27/03/2023

Published: 15/05/2023

### Abstract :

Armed conflict is inherently destructive of the environment. It can cause serious and irreversible damage and threaten the health and livelihoods of individuals and the planet as a whole.

International environmental law (IEL) cannot and is not relegated to peacetime, but continues to apply and interact with international humanitarian law (IHL). Therefore, principles of IEL must play a role before, during, and after conflict. This chapter focuses on general principles of IEL, specifically intergenerational equity and the precautionary principle. It demonstrates that these principles can and should be used to interpret and apply existing IHL for civilian and environmental protection. It concludes with a look at peace agreements and truth commissions, arguing that despite limitations of their past use they can provide fertile ground for building sustainable peace.

**.Keywords:** situation; armed ; conflits ; environment ; ecology

### Introduction

Natural resources have played a conspicuous role in the history of armed conflicts. From competition over wild game to merchant capital and imperialist wars over precious minerals, natural resources have motivated or financed the violent activities of many different types of belligerents (Westing, 1986<sup>11</sup>With the sharp drop in foreign assistance to many governments and rebel groups resulting from the end of the Cold War, belligerents have become more dependent upon mobilising private sources of support to sustain their military and political activities; thereby defining a new political economy of war (Berdal & Keen, 1997; Le Billon, 2000a). Similarly, a fall in terms of international trade in primary commodities and structural adjustments have led to a readjustment of the strategies of accumulation of many Southern ruling elites towards 'shadow' state politics controlling informal economies and privatised companies (Reno, 1998). Although domestic and foreign state budgets continue to support armed conflict expenditures, other major sources of funding include criminal proceeds from kidnappings or protection rackets, diversion of relief aid, Diaspora remittances, and revenues from trading in commodities such as drugs, timber or minerals (Jean &

\* Corresponding Author

Rufin, 1996)<sup>2</sup> Arms dumping and the support of corrupt regimes during the Cold War, the liberalisation of international trade, as well as the redeployment of state security personnel and networks into private ventures have frequently participated in the growth of such parallel networks and the 'routinisation' of criminal practices within states institutions, most notably in Africa and the former Soviet Union (Bayart, Ellis, & Hibou, 1999; Duffield, 1998). There is growing concern that whereas resources were once a means of funding and waging armed conflict for states to a political end, armed conflict is increasingly becoming the means to individual commercial ends: gaining access to valuable resources (Keen, 1998; Berdal & Malone, 2000). This demise of ideology and politics informs, for example, the assumption of the UN Security Council that the control and exploitation of natural resources motivates and finances parties responsible for the continuation of conflict in the Democratic Republic of Congo<sup>32</sup>.

Beyond increasing the risk of armed conflict by financing and motivating conflicts, natural resources also increase the vulnerability of countries to armed conflict by weakening the ability of political institutions to peacefully resolve conflicts. Contrary to the widely held belief that abundant resources aid economic growth and are thus positive for political stability, most empirical evidence suggests that countries economically dependent on the export of primary commodities are at a higher risk of political instability and armed conflict (Collier, 2000; Ross, 1999). This notion of a resource curse also underpins much of the resource scarcity-war literature (HomerDixon, 1999). Indeed, both armed conflicts and chronic political instability in many oil producing regions, such as in the Gulf of Guinea, the Middle-East, or the Caspian region, or in scarce cropland regions, such as the African Great Lakes region point to the possible influence of this resource on both vulnerability to and risk of conflict. This paper analyses the role of natural resources in armed conflict, through their materiality, geography and related socio-economic processes. Section 2 examines the debate over the role of scarce and abundant resource in armed conflicts and extends this approach in building a political ecological framework for the analysis of resource-linked armed conflicts. A tentative typology of armed conflicts is presented in Section 3. Section 4 explores the process by which resources become linked to armed conflicts, focusing on processes of inclusion, exclusion and criminalisation. Section 5 explores resource-linked barriers to transition to peace and discusses implications for peace-building initiatives. Section 6 concludes.

### **Scarcity, abundance, and the political ecology of resource-linked armed conflicts :**

Political ecology has rarely examined the relationship between the environment and a core concern of traditional political science, namely regime security and armed conflict, focusing on social conflicts over forest resources, protected areas, agricultural regimes, or productive regions; yet neglecting large-scale violent conflicts<sup>4</sup> Political ecology is devised as a radical critique against the

apolitical perspective and depoliticising effects of mainstream environmental and developmental research and practice. Yet, if it specifically acknowledges the ‘growing human production of nature, and the political forces behind such production’ (Bryant & Bailey, 1997, p. 191), political ecology has nevertheless until recently contained ‘very little politics’; meaning there was no serious treatment of the means of resource control and access, nor of their definition, negotiation and contestation within political arenas (Peet & Watts, 1996). Addressing these two lacunae within a political ecological approach requires approaching resource-linked armed conflicts as historical processes of dialectic transformation of nature and social groups. Contemporary resource-linked conflicts are rooted in the history of ‘resource’ extraction successively translated by mercantilism, colonial capitalism, and state kleptocracy. The availability in nature of any resource is thus not in itself a predictive indicator of conflict. Rather, the desires sparked by this availability as well as people’s needs (or greed), and the practices shaping the political economy of any resource can prove conflictual, with violence becoming the decisive means of arbitration. Such analysis thus requires building on both anthropo-logical and international relations analyses to relate a variety of scales (on the former see, de Boeck, 1998; Richards, 1996; on the latter see, Lipschutz, 1989). A political ecology approach also requires engagement with the two perspectives most commonly adopted: that resource scarcity (mostly of renewable resources) causes conflicts, and that resource abundance (mostly with respect to non-renewable resources) causes conflicts. In both perspectives, societies confronted with specific environmental circumstances — scarcity or abundance — have a higher risk of being affected by violent conflicts. Such quasi-environmental determinism is explained, in the best of cases, through the supposed debilitating effects of ‘too much’ or ‘too little’ resources on economies and governing institutions that result in distributional struggles taking a violent turn. According to advocates of the scarce resource wars hypothesis, people or nations will fight each other to secure access to the resources necessary for their survival: the more scarce the resource, the more bitter the fight (Bennett, 1991; Brown, 1977; Homer-Dixon, 1999; Renner, 1996; Suliman, 1998 — for a critique, see Dalby, 1998; Gleditsch, 1998; Peluso & Watts, 2001). An example is the progressive degradation of Easter Islands’ natural resources by its Polynesian inhabitants, which ended through internecine struggle and cannibalism until the number of inhabitants was reduced from 20,000 at its ‘apogee’ to 2000 when Europeans first arrived in 1722 (Diamond, 1998). While some of the most nuanced examinations offer convincing anecdotal evidence, there are several counter-arguments to the generalisation of the scarce resource war perspective.

First, resource scarcity and population pressure can result in socio-economic innovation, including a diversification of the economy, which often results in a more equitable distribution of power across society (Boserup, 1965; Tiffen et al., 1994; Leach & Mearns, 1996). Second, international trade and market mechanisms

can to some extent counterbalance localised scarcities or motivate innovations and shifts in resources. Third, in resource poor countries the state is more dependent on the diversified financial inputs from society than in resource-rich countries, and so is more likely to be representative and accountable towards it, hence less violently conflictual. Finally, it is in the interest of the elite of resource-poor countries to develop and harness human capital, rather than protect scarce or non-existent resource rents (Ranis, 1987). In this view, the likelihood of violent conflict decreases as human capital develops (e.g. through education, trading and manufacturing skills), the economy diversifies, and governance becomes more representative and accountable. According to the abundant resource wars argument, primary commodities are easily and heavily taxable, and are therefore attractive to both the ruling elites and their competitors (Collier, 2000; Fairhead, 2000; Le Billon, 1997). The availability of abundant resources would therefore represent the 'prize' of state or territorial control thereby increasing the risk of greed-driven conflicts, while providing armed groups with the 'loot' necessary to purchase military equipment. Such armed conflicts thus tend to be commercialised; that is, characterised by both the integration of trading in natural resources into their economy and a move from political towards private economic agendas (Keen, 1998; Dietrich, 2000). Furthermore, a country's natural resources endowment influences both its political economy and type of governance (Auty, 2001; Karl, 1997; Ross, 1999). Natural resources abundance is linked in many of these analyses to poor economic growth and governance, two factors generally associated with a greater likelihood of conflict (Auty, 2001; de Soysa, 2000; Leite & Weidmann, 1999; Sachs & Warner, 1995). The relationship is empirically demonstrated by the higher risk of armed conflict faced by primary commodity exporters (Collier, 2000)<sup>5</sup> However, there is a possible endogenous relation between the lack of economic diversification and the (re)occurrence of war, which is demonstrated by the higher risk of repeated war for primary commodity exporters. Other quantitative examinations of resources and conflicts links through multivariate models confirm part of the scarce resource war argument and the overall argument of abundant resource war. Low levels of violence (25–1000 battle-related deaths per year) have a positive relation with environmental degradation (Hauge & Ellingsen, 1998), yet low levels of renewable resources endowment are not associated with the risk of armed conflict; while abundant renewable resource in otherwise poor countries and non-renewable resources in all countries increases the likelihood of armed conflict (de Soysa, 2000). Both the resource abundance and resource scarcity perspective fail to take into account the socially constructed nature of resources, and in so doing, fail to explain why an abundance or scarcity of valuable resources is not a necessary or sufficient factor of conflict. Gems or oil can also be mobilised in peaceful development, as is the respective case in Botswana or Norway, for example. Similarly a scarcity of resources did not prevent peaceful development in many countries, Japan being

frequently cited as an example of a highly developed resource-poor country. The creation of resources from the earth's natural endowment is a historical process of social construction; as Zimmerman (1951) noted, 'Resources are not; they become'. Whether or not nature is transformed into a resource is related to human desires, needs, and practices; or, from a political economy perspective, the conditions, means and forces of production (Harvey, 1996). Diamonds provide one of the best examples of a useless material, except for industrial cutting and abrasive properties, constructed (both economically and discursively) as one of our most highly priced resources through the manipulation of markets by a cartel and the manipulation of symbols such as purity, love, and eternity through marketing. Economically, if it is scarcity that creates value, it is abundance that creates wealth. Geographically, the scale of analysis is crucial: there is in Angola, for example, a local abundance of globally scarce diamonds. The scarcity or abundance of resources are thus also relative social constructs. These social constructions can evolve: diamonds are now recognised as not only a 'girl's best friend' — as the marketing slogans of the South African diamond cartel De Beers announce — but also the 'best friends'.

of belligerents bringing ruin to countries such as Angola, D.R. Congo, or Sierra Leone. The need to preserve a glamorous image led the diamond industry to quickly react, at least in terms of public relations. The role played by diamond extraction and revenues in several contemporary African conflicts is neither unique nor a recent phenomena, but is inscribed in the long succession of extraction of 'resources' bringing together networks of local elites, transborder commercial agents, and global markets, to export slaves, rubber, timber, coffee, minerals, petroleum, or diamonds (Hochschild, 1998; Miller, 1988; Misser & Valle'e, 1997). Within the historical processes shaping resource extraction political economies, several factors participate in the reproduction and transformation of resource-linked conflicts. Resources and armed conflicts are related to the distortionary effects of dependence upon valuable resources on societies, the conflictuality of natural resources political economies. Furthermore, the spatial distribution and lootability of resources are crucial with regard to the opportunities of belligerents to seize or retain control over resource revenues. The political economy, materiality and geography of resources can thus significantly influence the likelihood and course of armed conflicts. In turn the needs and practices of war have influenced the pattern of resource exploitation and the state of the environment. It is in this way that we can speak of a political ecology of war.

### **Resource dependence and vulnerability to armed conflict**

Resource dependence is generally a historical product associated with a pattern of relation with the global economy, through colonial powers, private transborder commercial interests, and domestic elites. To some degree, international aid can also be considered a resource, insofar as it creates dependence and can form an essential part of local strategies of accumulation (e.g. Rwanda, see

Uvin, 1998). At a country level, resource dependence is associated poor economic performance and greater socio-economic inequalities. Resource-poor economies often grow faster than resource-rich economies (Sachs & Warner, 1995). The economies of resource-rich countries can be affected by ‘Dutch disease’, whereby greater export revenues lead to an appreciation of the national currency affecting negatively non-resource sectors already shrinking because talent and investment are allocated to the resource sector and rent seeking activities (most non-tradable) rather than into less rewarding productive activities (Ross, 1999). State attempts to support the non-resource sector through subsidies often prove unsustainable when they fail to address long-term competitiveness and are captured by the managing institutions (Karl, 1997). Other perverse economic and institutional effects of resource dependence include a high exposure to external shock, especially fluctuations in resource prices and poor economic growth due to a neglect of non-resource sectors and low level of economic linkages — itself leading to high levels of income inequality in the absence of effective fiscal policy of redistribution (Auty, 2001). The availability of the resource rent often results in corruption of state institutions, high economic inefficiency and subsidisation of politicised schemes, as well as budgetary mismanagement<sup>63</sup> Over-optimistic resource revenue forecast and the use of future revenues as collateral for loans often leads to high level of debts difficult to reimburse not only in case of resource price fall, but also due to corruption and the allocation of public revenues to unproductive activities. Disproportionate and inefficient allocations to the security sector result both from the opportunities for corruption provided by large arms contracts, and the ‘resource defense dilemma’ (i.e. resource wealth in unstable domestic or regional environments motivates the increase of a defensive capacity perceived as a threat by, as much as a deterrent against potential opponents). Politically, resource rents provide political leaders with a classic means for staying in power by establishing a regime organised through a system of patronage rewarding followers and punishing opponents (Bates, 1981; Bryant & Parnwell, 1996). Institutional arrangements and clientelist networks linked to the resource sector thus shape power politics. Such regimes can divest themselves of the need for popular legitimacy by eliminating the need for broad-based taxation of a diversified formal economy, financing a repressive security apparatus, rewarding a close circle of supporters. Windfall rents can even allow rulers to extend this clientelist circle to the general population — as in many oil-rich micro-states such as Brunei or Gulf emirates. Windfall rents also provide little incentive for rulers to develop a diversified economy that could give rise to alternative sources of economic power strengthening political competitors. The risk of domestic political competition can be further curtailed by devolving the exploitation of the resource sector to foreign firms (e.g. through privatisation schemes); a measure that also offers the advantage of satisfying international financial institutions and consolidating external political support, including through business interests driven ‘private’ diplomacy (Reno,

2000). More tenuously, populations or interest groups, who are lightly taxed, or not taxed, may be less concerned by governmental unaccountability and illegitimacy than heavily taxed ones. A tight economic and political control of a dominant resource sector by the ruling elite leaves little scope for accumulating wealth and status outside state patronage, especially in the case of mineral exporters. As the wealth and power gap between the ruling and the ruled increases, so does the frustration of marginalised groups seeing political change as the only avenue for satisfying their greed and aspirations, or expressing their grievances. In the absence of widespread political consensus — which cannot be maintained solely through a distribution of rents and repression — violence becomes for these groups the main, if not only route to wealth and power. Resource dependent countries thus tend to have predatory governments serving sectional interests and to face a greater risk of violent conflict. Even benevolent governments are under pressure from contests for resource rents and have to trade-off coherent economic policies maximising long term welfare against the management of social tension (Auty, 2001). This trade-off results in inefficient investment and low growth, which — if the resource rent proves insufficient to dampen conflictual demands for reform — increase both the vulnerability of the state and social tensions while lowering the opportunity cost of joining criminal gangs or rebel groups.

### **Resource conflictuality and risk of armed conflict**

The transformation of nature into tradable commodities is a deeply political process; involving the definition of property rights, the organisation of labour, and the allocation of profits. The pattern of social relations as well as the quality and democracy or legitimacy of institutions determine the risk of conflict and deployment of violence. Although this process of transformation can be peaceful and cooperative, it is often conflictual and violence may be deployed, either in the form of physical force or through coercion and domination. Access to the commodity value chain is often closely linked to social identities, articulating in particular entitlements and horizontal inequalities along ethnicity, class, or religion with the political economy of a resource. In the former Zaire, the Kivutien discourse of (armed) resistance against the ‘international bandits from Rwanda, Uganda and some sons of the D.R. Congo to rape the country’ radically transforms the view of the informal economy by exacerbating ethnic divisions and the risk of physical violence against Tutsi-run businesses (Jackson, 2001). This articulation of identity and resources (including territorial) is especially important when fighting itself forms part of both the identity and political economy of social groups. Building on Turton (1992), cattle raiding provides the Mursi pastoralists in Ethiopia the economically rewarding purpose of affirming their identity through violence. The nature of violence may change whether resources involve production or extraction. With extracted resources (e.g. minerals), violence is most likely to take a physical form to achieve territorial or state control, as was the case of Congo Brazzaville over oil rents in 1997. With produced resources (e.g. crops), violence

usually takes a more structural form, such as coercive forms of labour or controls over trade. This structural violence may have secondary effects involving physical violence as an alternative to other expressions of grievances and everyday forms of low-key resistance such as pilfering or foot dragging (Scott, 1985). In Chiapas, the rebellion by self-defense groups and the Zapatista movement mostly served to respond to the violence of a local political economy of neglect and marginalisation, to challenge the neo-liberal political economic order which supported it, and to attract the attention of the government and media to improve their negotiating position (Harvey, 1998). In Rwanda, while the role of scarce environmental resources has been minimised as a direct cause of the armed conflict and genocide that took place in the early 1990s, the dependence of the state and many farmers on coffee exports was the foremost structural factor in the weakening of the state and the radicalisation of exclusionary politics into mass murder (Uvin, 1996). The violent conflictuality of resource exploitation is closely linked to the failure and degeneration of political systems — most generally patrimonialism or clientelism — into ‘spoils politics’, whereby ‘the primary goal of those competing for political office or power is self-enrichment’ (Allen, 1999, p. 377). Left unchecked by non-existent, circumvented, or biased institutional structures — such as anti-corruption mechanisms or politically sensible redistribution schemes — the most predatory practices of ‘spoils politics’ risk turning into ‘terminal spoils politics’ along what Bayart (1990, p. 106) termed, the ‘Somali road to development’. The combination and exacerbation of competitive corruption, withdrawal of the (formal) state, counterproductivity of state violence, and sectarianism may ultimately result in the outbreak of armed conflict and the collapse of the state. In short, violence becomes the prime means of political action, economic accumulation, or simply survival. This exacerbation can be explained by economic erosion or crisis resulting from corruption and mismanagement, overburdening rents, exclusion from formal international trade, structural adjustments, the rise of competitive sources of patronage, and the increased ‘connectability’ with internationalised criminal activities. Political exacerbation includes a greater use of illegitimate and privatised violence and the rise of ethnically or religiously based sectarian and exclusionary politics as reliance and confidence in the state decreases. The economic exacerbation of ‘spoils politics’ includes a shift towards increasingly illicit but profitable activities (e.g. drug trafficking, moneylaundering) and the unaccountable plunder of available, mostly natural resources. To some extent the viability of, and continuity between ‘spoils’ and ‘terminal’ politics lies in the lootable character — or lootability — of natural resources

### **Resource lootability and opportunities in armed conflicts**

The motivation and funding of conflict is facilitated because primary commodities are often highly amenable to taxing and looting. This lootability arises in part from the fact that resources, and in particular extracted ones, are often easily accessible to governments and rebels alike with minimal bureaucratic



infrastructure. Furthermore, resource extraction activities are, to a greater degree than other economic activities, spatially fixed. The business of resource extraction has thus one specific characteristic: it cannot choose where the resources are. Unlike manufacturing and to some extent agriculture, primary resource exploitation activities cannot be relocated. Although resource businesses may decide not to invest or to disengage from their current operations, they generally sustain their access to resources and protect their investments by paying ‘whoever is in power’ — ranging from a few dollars to let a truck pass a check-point, to multi-million dollars concession signature bonuses paid to belligerents. This situation provides ample opportunities for internal contenders to challenge rulers through a direct control over resource-rich areas, transport routes or export points, leading to a splintering of political movements along lines of economic interest. As natural resources gain in importance for belligerents, so the focus of military activities becomes centred on areas of economic significance. This has a critical effect on the location of conflicts, prompting rebel groups in particular to establish permanent strongholds wherever resources and transport routes are located, thereby complementing their traditional strategy of high mobility and location along international borders. Armed conflict economies, including commercial activities, tend to shift from an economy of proximity, to an economy of networks. These diffuse and extensive networks involve mostly private groups, including international organised crime groups, transnational corporations, and diaspora; but also the leadership of foreign countries, especially regional or former colonial powers; and (mostly unintendedly) consumers in importing countries. The nature and geography of resources play a crucial role in shaping these networks and therefore conflicts. They do so firstly through the production of territories articulating the geographical location of resources with the practices of their exploitation in a condition of armed conflict. In short, the greater the distance or difficulty of access from the centre of control, the greater the cost of control and the higher the risk of losing the resource to the adversary. In other words, a resource close to the capital is less likely to be captured by rebels than a resource close to a border. Resources can thus be classified as proximate or distant. To take only a few examples, grazing lands in the immediate suburbs of administrative capitals and army barracks are favored by pastoralists eager to avoid confrontation with cattle raiders (e.g. Uganda); gem mines and forests in remote or border areas tend to be overrun by rebel groups and integrated into their armed conflict economy (e.g. Cambodia, Sierra Leone); and offshore oil, while being apparently distant from the centre of control, can be monopolised through international contracts and naval enforcement (e.g. Gulf of Guinea). The higher the availability of valuable resources at the periphery of control, the greater the likelihood of prolonged conflict<sup>7</sup>.

The second geographical dimension is that of concentration. Two categories have been identified: point resources (or ‘point source’ resources) and diffuse

resources (Auty, 2001). The former is concentrated in an area and mostly includes resources exploited by extractive industries (i.e. mining). The latter is more widely spread and mostly includes resources exploited by productive industries over large areas (i.e. agriculture, forestry, and fisheries). Aside from the purely physical aspect of this spatial concentration, the mode of exploitation can determine the social aspect of this concentration. For example, plantations are often to be considered point resources as a small number of agribusinesses use mechanisation and enclosures to concentrate profits, while subsistence agriculture remains a diffuse resource. The two other geographical dimensions relevant to the incorporation of natural resources in conflicts is that of fragmentation and peripheralisation. During conflicts, society and economic activities are affected by a fragmentation — or contraction and circumscription — in the distribution of populations and economic activities. Populations tend to regroup in the safest areas, leaving vast regions depopulated. This leads to a reconfiguration of economic activities and socio-political structures. Peacetime economic activities contract and are circumscribed both geographically and structurally, with a shift from production to services, resulting in the growth of informal activities. This fragmentation has an important impact on armed conflict economies based on resources as leaders may face difficulties in keeping their allies and controlling their subordinates. Unless the leadership is able to monopolise the means of exchange (e.g. vehicles, airports, roads, bank accounts, export authorisations, middlemen, importers) between a resource and the open economy, an economic space is available for their allies and subordinates to become autonomous through commercial or criminal activities based on local resources. The inherent risk of private appropriation can undermine trust, and result in fighting, between members of an armed group. More generally, this pattern of resource flow is likely to weaken discipline and chains of command. In contrast, when resources are fed into the conflict from outside — the case with Cold War — leaders can maintain the coherence of their armed movements through the tight control of the flow of foreign resources to their allies and subordinates. As a Khmer Rouge commander noted: The big problem with getting our funding from business [rather than China] was to prevent an explosion of the movement because everybody likes to do business and soldiers risked doing more business than fighting<sup>8</sup>.

In order to prevent such explosion, or fragmentation, armed movements fully support soldiers and their families so that business does not prevail upon fighting. The leadership may also retain authority through coercion, charisma, and strong ideologies, or adopt radical measures, such as strict discipline, harsh sanctions, forced recruitment (especially of children), indoctrination inside the movement, and violent repression of the population. These measures are also used by the leadership to counter other effects such as corruption and greed developing within the movement. The fragmentation of a conflict is associated with the peripheralisation of economic networks as internal trade becomes increasingly

risky and is replaced by transborder trade. This in turn aggravates capital flight and import dependence, characteristic of resource rich-economies. Border towns and internal trading gateways take on a new importance, leading to a peripheralisation and fragmentation of political power. This peripheralisation also affects populations. Diaspora and refugees can be considered as ‘satellite populations’ resulting from this peripheralisation. A ‘central periphery’ can then emerge when large populations of refugees under the control of political factions become new centers of power (e.g. Khmer Rouge in Thailand, the Rwandan Hutu militias in Zaire/D.R. Congo, or the Afghan Mujihadeen in Pakistan). Fragmentation and peripheralisation together shape new territories extended across scales through network economies linking, for example, RUF rebels in Sierra Leone to diamond buyers in New York. Such network includes private companies and middlemen involved in resource exploitation and trade, but also extend to domestic and foreign authorities. In Angola, UNITA’s diamonds did not only allow the rebel movement to buy arms, but also to gain diplomatic and logistical support from regional political leaders whose ‘friendship’ for Savimbi partly rested on business interests, such as the Head of State in Burkina Faso or Togo (UNSC, 2000). In Cambodia, the network of support of the Khmer Rouge rebels included the leadership of the Cambodian government; its adversary in the armed conflict but the authorising agent for its timber exports to Thailand (Le Billon, 2000c). Similarly in Burma, the SPDC/SLORC regime established a taxation system on timber exports to Thailand by insurgents. More informally, lax controls on diamond export licencing by the Angolan government allowed UNITA to sell diamonds through governmental channels, with handsome profits for officials and middlemen facilitating this laundering (Global Witness, 1999a). In this type of ‘aggressive-symbiotic’ relationship, opposing parties may have an interest in prolonging a profitable military stalemate in order to preserve economic interests that could be threatened by a total victory and subsequent peace<sup>9</sup>.

Finally, networks of commercialisation involve consumers in importing countries. In this regard, given their obscure and/or highly diversified character as in the case of diamonds produced in Angola or Sierra Leone, a responsible management of the supply-chain by the industry is necessary to ensure that no commodity ending up on the international market has participated in funding these conflicts.

### **A typology of resource-linked armed conflicts**

Resources are likely to influence the type of violent conflict required and feasible to achieve political and economic aims. Although such bi-dimensional lecture of armed conflicts has obvious limits and caveats given their multi-dimensionality, Table 1 presents a tentative typology associating the geography and political economy of resources with specific conflicts and provides examples. The relationship between the nature of a resource, its location and concentration or mode of production, and conflicts is complex and these hypotheses need further

investigation. However, this basic assessment indicates that a point resource may be more easily monopolised than a diffuse resource, but that its desirability usually makes it vulnerable to contestation and often depends on international recognition for mobilising investors, hence the likelihood of coup d'état or secession as a function of relative proximity. Rewards from resource control are maximised by insurgents when resources are easily accessible and marketable and sufficiently valuable, such as distant diffuse resources, hence the association with warlordism. Finally, proximate diffuse resources involving large number of producers would be more likely to lead to rebellion or rioting in nearby centres of power (provincial or national capital). Much of the political ecology literature on resources and conflict has dealt with diffuse, proximate resources (the upper right-hand quadrant of the table) and has thus focused on conflicts characterised by rebellion and rioting. The remaining three types of conflict (violent state control, secession, and warlordism) have received less attention, and are considered in turn below.

### **Resources and violent state control**

In resource dependent countries, resource rents constitute 'the prize' for controlling the state and can lead to violent bids for the government, such as coup attempts by populist movements wanting political redress. In Venezuela, the presidential election of an unsuccessful coup leader demonstrated the level of grievances felt by the majority of the population against the corruption and mismanagement of the considerable oil revenue of that country. Alternatively, bids for state control can be motivated by the greed of competing elites. In Liberia, Charles Taylor's bid for power in 1989 first targeted the seat of power in the capital Monrovia. Failing to do so because of the intervention of international troops, he nevertheless succeeded in establishing his rule over most of the country by taking control of lucrative sectors, not only in his country (rubber, timber and iron ore), but as well in neighbouring Sierra Leone (diamonds) by supporting the Revolutionary United Front (Alao, 1999; Reno, 1998; Atkinson, 1997; Zack-Williams, 1999). In Congo Brazzaville, the coup of former president Denis Sassou Nguesso against elected president Pascal Lissouba which degenerated into civil armed conflict in 1997 was closely related to the control of the oil rent (Verschave, 2000). In Algeria, although political agendas were predominant, the conflict over state control between the politico-military regime and the democratically elected Muslim 'fundamentalists' was also linked to oil and gas revenues (Muller-Mahn, 1995). On one hand, popular grievances against the regime were largely associated with its mismanagement of the falling oil and gas export revenue. On the other hand, the Algerian oligarchy was reluctant to devolve power to the election-winning Muslim party as the main source of wealth was the statecontrolled petroleum rent<sup>10</sup>.

### **Resources and violent secession**

Resources can also motivate secessions in resource-rich regions. In this case, the capture of the prize does not require the control of the country but only the de

facto sovereignty of the areas necessary for resource control and trade. Resources can thus greatly influence the control, transformation and production of territories. Similar to conflicts over state control, popular political agendas or more personal greed-driven initiatives can motivate secessions. The likelihood of political secession increases when 'outsiders' are perceived to extract 'local' resources without sharing the wealth, and when local populations are displaced by the extractive industry or suffer from its environmental costs. The distribution of benefits and externalities has fuelled the Biafra secession and rebellions in the Delta region of Nigeria, Aceh in Indonesia, and the Cabinda enclave in Angola, to name but a few examples of conflicts in oil-rich regions. While many of these secessions have an indigenous political base, domestic or external actors manipulating local political identities for commercial interests also motivate some. The most glaring example is that of the secession of Katanga in former Zaire. This region was first politically invented by Belgian and Anglo-Saxon interests to secure a hold on its copper mines. In the wake of independence it was used by indigenous political leaders eager to distance themselves from Kinshasa (Balancie and de La Grange, 1999; Fairhead, 2000). The fear of secession can also lead to severe repression by the central government. Southern Sudan, with its conflict over oil, grazing land, and cattle is an example of how resource control can play into secessionist agendas (Nyot Kok, 1992; Keen, 1994). The attempt of insurgents on the island of Bougainville to secede from Papua New Guinea, was in part related to the control of copper revenues (Boge, 1998).

### **Resources and warlordism**

A number of contemporary armed conflicts are now characterised by a high degree of fragmentation or deconstruction. These are not so much secession conflicts in a political sense, but rather the expression of a phenomenon of armed warlordism in which areas of de facto sovereignty are often defined by commercial interests, such as the control of a mine, forest, or drug production valley, in association with geographical/military factors (see below). The term 'warlord' defines strongmen controlling an area through their ability to wage war and who do not obey higher (central) authorities. A warlord's power and ability to keep weak central authorities and competing groups at bay largely depends on a war economy, which often includes its integration into international commercial networks. Competing groups may include competing elites (e.g. marginalised politicians or military officers), disenfranchised groups (e.g. unemployed youths), or generally a combination of both. In Liberia and Sierra Leone, armed warlordism and predatory behaviour by 'sobels' (i.e. soldier by day, rebel by night) was partly the result of the appropriation of street violence by political elites recruiting and deploying chronically destitute thugs and criminals who, in turn, adopted and diffused the predatory economic ethos of the political class (Kandeh, 1999). External intervention, in the form of foreign governmental or private armies is in such situations quite frequent, either to enforce peace or more generally to secure

resource enclaves (Cilliers & Mason, 1999; Musah & Fayemi, 2000). In the former Yugoslavia, the self-proclaimed ‘republics’ in Croatia and Bosnia were highly fragmented and frequently controlled by republican elites associated with criminal groups (Bojicic & Kaldor, 1997). On the Serb side, the personal economic agendas of these local strongmen prevented the centralisation of an armed conflict economy. This fragmentation in turn reduced the efficiency of the ‘Serb republics’ (but probably not the scale of war crimes) and corrupted local politics; thereby preventing the consolidation of a ‘Greater Serbia’. Similarly, on the Muslim side, a faction based in western Bosnia financed — and partly motivated — by its commercial activities with Croats and Serbs opposed militarily the Sarajevo based government of Izetbegovic<sup>11</sup>.

### **Inclusion, exclusion and criminalisation**

The typology presented above allows for the insertion of a geographical perspective into the debate on the resource wars causing so much concern in the post-Cold War period. In particular, the consideration of the spatial distribution of resources (point or diffuse, proximate or distant, at a variety of scales) enables an analysis of conflicts that have historically lain beyond the purview of political ecologists. An expanded political ecology approach also allows for a reformulation of the dominant arguments on contemporary resource wars. Rather than simply being driven by need (resource scarcity) or greed (resource abundance), conflicts may be viewed as a historical product inseparable from the social construction and political economy of resources. The unfolding of conflict as a process entails the restructuring of polities and commercial networks as countries become (selectively) incorporated into the global economy, often in the form of resource enclaves, in a mutually dependent relationship which encourages and sustains armed conflicts, as the source of power becomes not political legitimacy but violent control over key nodes of the commodity chain. From this perspective, resource dependence is understood to be a historical product. Dependence is not only determined by geographical circumstances — the ‘gift’ of nature — which figures so prominently in the scarce or abundant resource armed conflict arguments, but also by the creation of markets and associated commodity chains, predicated upon the social construction of desirable resources. Although a certain degree of environmental determinism exists with regard to the opportunities provided to social actors by specific environmental conditions, dependence is largely embedded in and thus shaped by glocal political economies articulating ‘local’ patterns of resource exploitation to ‘global’ markets (Swyngedouw, 1997). Many countries have moved beyond dependence on primary commodity exports. Similarly, many primary commodity export dependent countries solve potential conflicts through non-violent means. The persistent character of dependence and violence of those who have failed to do so, demonstrates essentially the outcome of power relations between and within countries (Migdal, 1988) as well as the

distinctive social processes resulting from the development of specific extractive or productive resources (Bunker, 1985)<sup>12</sup>.

The significance of natural resources and violent character of their incorporation into the global economy are symptomatic of a historical process of globalisation responding to a neo-liberal logic of consolidation and exclusion, rather than expansion and incorporation (Castells, 1996; Hirst & Thompson, 1996). This 'liberal exclusion' affecting many regions in the South is not, however, synonymous with a void. The South has effectively reintegrated itself into the liberal world-system through a 'non-liberal' inclusion consisting in the spread and deepening of all types of parallel and shadow transborder activities many of which requiring in turn specific forms of governance (Duffield, 1998). Much of these activities revolve around parallel markets, tax evasion, and smuggling schemes, some involving drug trafficking, money laundering, and illegal migration. The illicit character of products or services involved, as well as the illegitimate violence deployed in the informal economy has been interpreted as a 'criminalisation' of the South (Bayart et al., 1999). While this paradigm holds some truth, it is worth noting that many of these informal economies are morally benign and socio-economically profitable. In fact millions of people in the South depend on these. Furthermore, the possible criminal character of some activities needs to be judged according to local legitimacy criteria. Finally, far from being anarchic, the political economy of these activities responds to (dis)organised forms of authority and legitimacy, with local actors instrumentalising 'disorder' to their advantage (Chabal & Daloz, 1999)<sup>13</sup>. The process of 'criminalisation' has to be understood as new forms of glocal networking and innovative patterns of extra-legal and non-formal North–South integration bringing about new systems of legitimacies in the South, involving both violent and non-violent modes of arbitration, and responding in part to an adaptation to the impact of structural adjustments, declining terms of trade, and disinterest of former patron states (Clapham, 1996). As many of these activities involve both government and armed opposition officials, governance and insurgency are described as 'criminalised', with the risk of depoliticising them. This criminalisation occurs especially when the control and marketing of illicit commodities requires belligerents to develop partnerships with criminal networks to facilitate international trade or retail sales<sup>14</sup>. The criminalisation of political processes rests on the willingness to gain or retain power by all means as not only wealth accumulation but sheer survival is in the balance, as the recent murder of President Kabila demonstrated. As public and private armed forces multiply and develop commercial interests, violence is not only used in high level relations of power, but becomes a 'dirty trick' or a form of 'de'brouillardise' (smartness/resourcefulness) as any other in everyday relations (Bayart et al., 1999). Spoils politics can be most easily sustained economically by the availability of lootable resources, mostly valuable natural resources attracting commercial partners, and without systematic recourse to political violence as long as violence

is itself criminalised and loses its political meaning. Criminalisation and spoils politics are therefore not unidirectional processes with armed conflicts as their inescapable dead-end. Depending to a large extent upon the international economic context in which they are set, social groups can move in and out of criminalisation; an argument that is supported by a loose coalition of proponents of economic (re)integration, debt forgiving, and conditionality lifting. The above interpretation builds on the concept of 'bad governance' characterising 'weak' or 'failed' states. While developing countries enjoying 'good governance' may be considered for inclusion, countries affected by 'bad governance' are deemed prone to 'chaotic' conflicts and considered a new plague requiring their exclusion<sup>15</sup>. This understanding has fed into the paradigm of a 'coming [dangerous] anarchy' resulting from the corruption of governance and the scarcity of revenues (Kaplan, 1994). These views respond to and simultaneously reinforce the dual process of exclusion and criminalisation, resulting in criminal inclusion in global markets, creating an even greater dependence on lootable resources, whether licit or illicit. The toll exacted on populations through violence and poverty is not, however, always related to the 'criminal' or 'illegal' character of this inclusion. People can, for example, be better off when protected by local warlords dealing in narcotics — not to mention their own economic gains from drug production or trafficking — than when subject to a corrupt and oppressive regime dealing 'legally' in petroleum. For populations, the problem is rooted less in 'criminality' but in its consequences in terms of economic and institutional vulnerability, for example, the vulnerability of criminal or 'rogue' states to international sanctions regimes — which ironically often extend criminalisation by making normal economic activities illicit and pushing the state to engage with criminal gangs to run smuggling operations (Kopp, 1996).

### **Impeding peace**

The economic agendas associated with the exploitation of resources can also influence the course of conflicts through their 'criminalisation', as financial motivations may come to override political ones. Financial self-interest may motivate individual soldiers, local commanders, and their political backers to sustain profitable conflicts thereby securing their stake in the resource wealth. Such 'free-lancing' and the attendant anarchy usually results in violent competition. Yet, it can also involve accommodation between opposing factions who find a mutual benefit in a 'comfortable military stalemate', leaving the territory and its population under a no-armed conflict-nor-peace situation; that is a 'stable' conflict situation (Zartman, 1993)<sup>16</sup>. While this situation may reduce the intensity of warfare, the stake that belligerents have in maintaining a status quo of entitlement based on violence often prevents successful political and economic reforms and a rapid transition to sustainable peace. A state of armed conflict provides belligerents with economic and political entitlements and opportunities that cannot be achieved by peace or even victory (Kaldor, 1999)<sup>17</sup>. Indeed, peace is



likely to erode the sources of sustenance of warring parties: fear and hatred as well as ‘legitimated’ repression on the political side; as well as outside assistance and violent asset transfers on the economic one. Furthermore, entrenched interests associated with the capture of rents, together with the difficulty of reversing perverse economic effects can result in a lack of political consensus for reform. At the extreme, even a leader committed to a peace agreement may not be able to ensure its enforcement by followers and subordinates more influenced by their personal economic gains than the structure of authority in the armed group (Keen, 1998). Furthermore, resource wealth may weaken the leverage of external peace initiatives. The international community often lacks cohesion, willingness, or leverage to forge a consensus. Access to resources acts as a divisive factor among international players. Bilateral actors are inclined to accommodate domestic anti-reform interests in order to secure commercial benefits, particularly for their corporations. In addition, the ability of the belligerents to draw on private financial flow decreases the potential leverage of multilateral agencies (e.g. IMF, UN) exercised through grants and loans. In many contemporary armed conflicts, private capital inflows assume a greater importance than foreign assistance, especially in comparison to conflicts in the Cold War era. Such private capital is largely unaccountable in the current international political system since it gives more weight to the commercial interests of transnational corporations than to the victims of conflict (Le Billon, 2001a).<sup>18</sup>

The lack of influence of multilateral institutions plays to the advantage of international business corporations, private security firms, and bilateral actors with stakes in resource exploitation (e.g. Pakistan in Afghanistan, Liberia in Sierra Leone, Russia in Chechnya, Zimbabwe in D.R. Congo). The cynical or permissive attitude of external actors is increasingly being challenged by civil society, advocacy NGOs and governmental and inter-governmental bodies. Greater corporate and governmental accountability in preventing and resolving conflicts has much to do with their complicity in sustaining armed conflict economies, especially in the extractive sector. In the oil sector, for example, the trial of Unocal for complicity in human rights abuses in Burma, the criticisms against French companies Elf and Total in Africa or Burma, and the controversy over the role of Canadian company Talisman points to the possible indictment of businesses motivating or supporting coercive and illegitimate regimes (Harker, 2000; Nelson, 2000; Verschave, 2000). Local and international NGOs play an important role in asking for greater transparency and accountability on the part of international businesses and actions can be taken concerning specific commodities financing conflicts. For example, investigations into marketing networks can reveal the actors and mechanisms linking natural resources exploitation in countries at war and consumption in rich countries (Hartwick, 1998; Le Billon, 1999).

A responsible management of the supply-chain by the industry should ensure that no commodity ending up on the international market has participated in

funding these conflicts. The diamond cartel De Beers, has pledged to take such steps and there is increasing pressure within the diamond industry to reform its practices. 2 At a governmental and inter-governmental level, the United Nations Security Council is also taking steps to see member states enforce 'smart sanctions', notably by establishing investigative expert panels and monitoring mechanisms having for prime responsibility the 'naming and shaming' of sanction busters.<sup>19</sup>

As example of relative successes, Global Witness, a British NGO, participated in reducing the timber and diamond trade, sustaining the Khmer Rouge in Cambodia and UNITA in Angola, respectively (Global Witness, 1999a,b). Both NGO campaigns and UN Security Council reports on 'conflict' or 'blood' diamonds have raised the profile of this issue while been careful not to undermine the legitimate part of a business that employs close to 800,000 people in India alone.

So far, sales of diamonds have not declined, but risen, and the diamonds industry can congratulate itself for avoiding the type of public outcry that brought the 'blooded' fur industry to its knees in the 1980s. Victims of armed conflicts in several African countries have less to rejoice<sup>20</sup>. If ethical buyers are to be reassured by certificates asserting that diamonds offered as a sign of pure and eternal love will be 'blood' free, many dealers and customers will continue participating in the murky business of gems fuelling several conflicts in Africa, but also in Burma, Cambodia, or Colombia.

While, it is rarely in the short-term interest of private corporations and governments to blow the whistle on such practices, it is in their longer-term interest to address the problem as 'dirty' industries and commodities may suffer from pressure groups and consumers' boycotts. Private corporations, either domestic or international, need to assume their political role and to take a moral stand by demonstrating their 'citizenship'. Such positions should, however, not be cynically used by first world companies to exclude competitors in the third world; for example by characterising African diamonds in general as 'blood' diamonds, and those of developed countries (e.g. Australia and Canada) as 'clean' ones. Nor should resources produced by multinationals be systematically considered 'peace-prone' and artisanal ones 'conflictprone'; with the risk of undermining local small-scale producers as happened in Cambodia as a result of a crackdown on small-scale logging mostly conducted by self-demobilised soldiers and seasonal migrants (Le Billon, 2000c).

As access to or control over resource rest on violence and a state of armed conflict, short-term conflict resolution often requires a preliminary agreement on resource sharing, including for local commanders and foot-soldiers who may otherwise resist it to preserve their entitlements. Long-term solutions pass through constitutional reforms and corporate practices ensuring that the populations' share of resources renders obsolete the control of state rents for personal enrichment and

(violent) political survival; a diversification of the economy, which largely depends on a reform of international trade; as well as forms of local governance less reliant on corruption and criminal activities (Le Billon, 2001b). Initiatives to prevent and resolve armed conflicts thus need to better understand and address the role of resources in the political economy of conflicts and to challenge the self-interests of concerned actors, whether they are foot-soldiers, warlords, politicians, or multinationals. Yet, while economic diversification and greater access to international markets, fair and transparent resource revenue allocation schemes, sustained assistance during periods of crisis, and targeted sanctions against profitable armed conflict economies have long been on the development and peace building agendas, these remain largely to be put into practice.<sup>21</sup>

### **Conclusions**

Armed conflicts and natural resources can be directly related in two main ways: armed conflicts motivated by the control of resources, and resources integrated into the financing of armed conflicts. Although few wars are initially motivated by conflict over the control of resources, many integrate resources into their political economy. While it would be an error to reduce armed conflicts to greed-driven resource wars, as political and identity factors remain key, the control of local resources influence the agendas and strategies of belligerents. This influence is played out through local resource exploitation schemes, involving the production of territories based on resource location, control and access to labour and capital, institutional structures and practices of resource management, as well as incorporations into global trading networks. To some extent, many contemporary wars are inscribed in the legacy of earlier mercantile wars privately financed to serve economic objectives and similarly focusing on resource rich areas and trading posts. The significance of resources also influences the course of conflict as the localisation of authority and motives for violence can be deeply influenced by economic considerations to the point of impeding a transition to peace. Beyond motivating or financing conflicts, the level of dependence, conflictuality, and lootability of a resource can also increase the vulnerability of societies to, and the risk of armed conflict. Yet, there is no environmentally deterministic relation at hand. Not all countries dependent upon conflictual and lootable resources face armed conflict. If this relation requires the existence of a resource in nature, it is the result of specific social processes. Desires, needs and practices weaving nature into the fabric of societies in the form of resources implies the potentially conflictual restructuring of economic networks and politics. The deployment of violence to arbitrate resource-linked conflicts is itself largely embedded in the historical pattern of social relations within and between countries; requiring both anthropological analyses and international relations ones. Yet, the specific geography and political economy of these resources lent themselves to the exacerbation of conflicts, often as a result of the level of resource dependence

created in societies. Accordingly, a framework of engagement with armed conflicts requires that attention be given to the political ecology of war.

### Reference :

<sup>-1</sup> Armed conflicts refer to the deployment of organised physical violence and include coup

<sup>3-</sup> Presidential statement dated 2 June 2000 (S/PRST/2000/20).

<sup>4-</sup> For a review of the literature, see Bryant and Bailey (1997)

<sup>5</sup>The risk of conflict increases with the proportion of primary commodity exports until it reaches 28% of GDP (the risk of conflict is then 4.2 times greater than for a country with no primary exports). The risk then drops, as states with a very high proportion of primary exports would be rich enough to defend themselves or deter armed opposition. Another possible explanation is that very large resource revenues and export concentration offer the possibility of 'buying out' social peace through populist agendas and the co-option, or corruption, of political opponents.

<sup>6</sup> Corruption is understood as a violation of public duties by private interests when rules or norms objectively define these two realms. The violation, however, often has an endogenous character that serves functions other than simple financial self-interest, such as political ordering. For an examination of corruption as an extra-legal yet institutionalised form of natural resource management, see Robin (2000)

<sup>7</sup>To take the example of Angola, if the rebel group UNITA wanted to control offshore oil, it had to control the state and gain the recognition of petroleum companies. UNITA could not even inflict major damages to the oil revenue of the government, as the overwhelming majority of the oil fields were offshore. Similarly, if the government wanted to control diamonds, it had to secure a monopoly of access over a vast territory. Even though the major mines are concentrated in the northeast, alluvial diamonds can be found in many riverbeds over a huge territory covered by bush and facilitating guerrilla activities and are accessible to a large number of firms and even small groups of *garimpeiros* — free lance diggers (de Boeck, 1998). Although diffuse by geography and mode of production, the tight control exercised by UNITA over *garimpeiros* and mines in some regions is such that diamonds can also be considered as a point resource with regard to the concentration of profits. If diamonds had been found only in Kimberlite pipes, as in Botswana, or on the seabed along the coast, as in Namibia, access to diamonds by UNITA would have been complicated, not to say impossible.

<sup>8</sup> Interview with the author, Cambodia, January 2001

<sup>9</sup> A discussion of the political economic concept of 'dependency' is beyond the scope of this paper (for a discussion, see Hout, 1993; Altvater, 1998).

<sup>10</sup> The term criminalisation should be understood as implying a shift from armed conflict economies protecting the basic interests of populations (e.g. through food rationing) to armed conflict economies predating or neglecting populations. Furthermore, resource armed conflicts may appear more criminal than proxy armed conflicts because they are not politically motivated or legitimated by one part of the 'international community'; yet, in a legal and moral sense, it is the use of violence as an instrument of power against civilians which is criminal (e.g. Geneva Conventions). In this respect both resource and proxy armed conflicts share a common criminal character.

<sup>11</sup> See for example, the website of the UN Security Council <http://www.globalpolicy.org/security/issues/diamond>

<sup>12</sup> UN Department of Political Affairs official, interview with the author, March 2001

<sup>13</sup> Allen, C. (1999). Warfare, endemic violence and state collapse. *Review of African Political Economy*, 81, 367–384.

---

<sup>14</sup>Atkinson, P. (1997). The war economy in Liberia: a political analysis, relief and rehabilitation network. London: Overseas Development Institute.

<sup>15</sup>Duffield, M. (1998). Post-modern conflict: warlords, post-adjustment states and private protection. *Civil Wars*, 1 (1), 66–102.

<sup>16</sup>Gleditsch, N. P. (1998). Armed conflict and the environment: a critique of the literature. *Journal of Peace Research*, 35 (3), 381–400.

<sup>17</sup>Le Billon, P. (2000c). The political economy of transition in Cambodia 1989–1999: war, peace and forest exploitation. *Development and Change*, 31 (4), 785–805.

<sup>18</sup>Dalby, S. (1998). Ecological metaphors of security: world politics in the biosphere. *Alternatives*, 23, 291–319.

Duffield, M. (1998). Post-modern conflict: warlords, post-adjustment states and private protection. *Civil Wars*, 1 (1), 66–102.

<sup>19</sup>Boserup, E. (1965). The conditions of agricultural growth: the economics of agrarian change under population pressure. London: Allen and Unwin.

<sup>20</sup>Chabal, P., & Daloz, J.-P. (1999). *Africa works: disorder as political instrument*. Oxford: James Currey. Cilliers, J., & Mason, P., (1999). *Profits or plunder? The privatisation of security in war-torn African societies*. Pretoria: Institute for Strategic Studies.

<sup>21</sup>Homer-Dixon, T. (1999). *Environment, scarcity and violence*. Princeton, NJ: Princeton University Press. Hout, W. (1993). *Capitalism and the Third World: development, dependence and world system*. Aldershot: Elgar.