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Governing the Gift of Nature

Resource Conflict Monitor: The Links between Governance, Conflict and Natural Resources

Concept Paper

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Resource Conflict Monitor:

The Links between Resource Governance, Conflict and Natural Resources

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Regierungsführung, bewaffnete Konflikte und natürliche Ressourcen

Deutsche Zusammenfassung

Der Zusammenhang zwischen der Existenz von natürlichen Ressourcen und dem Auftreten von bewaffneten Konflikten ist seit den 1990er Jahren Gegenstand der wissenschaftlichen und politischen Diskussion. Studien der Weltbank, aber auch von unabhängigen Konfliktforschern, deuten darauf hin, dass Entwicklungsländer mit großen Vorkommen an natürlichen Ressourcen (Erdöl, Diamanten, Gold, Tropenhölzer) ein höheres Risiko für den Ausbruch von bewaffneten Konflikten tragen als ressourcenarme Länder. Die Bürgerkriege in Angola, der Demokratischen Republik Kongo, in Sierra Leone oder auch im Sudan werden oftmals als Beispiele für den „Fluch der Ressourcen" herangezogen, wobei bei dieser Analyse die vielschichtigen anderen Konfliktursachen häufig übersehen werden. Natürlich Ressourcen bieten sich für die Plünderung durch bewaffnete Gruppen in Kriegszeiten ebenso an, wie für die Abschöpfung von „Renten" durch die politischen Eliten im Frieden. Daneben führt die Konzentration von Investitionen auf wenige Ressourcen zu einer Vernachlässigung anderer Wirtschaftszweige und verstärkt einen Wirtschaftsabschwung zum Zeitpunkt sinkender Weltmarktpreise. Dieser auch als „Holländische Krankheit" oder „Paradox of Plenty" bekannt gewordene Effekt wird vielfach durch eine Haushaltspolitik des Staates verschärft, die in den Zeiten des Booms Kredite aufnimmt, die in der Rezession dann nicht mehr zurückgezahlt werden können.

Trotz der oben genannten Negativbeispiele besteht empirisch gesehen kein Automatismus zwischen der Präsenz von natürlichen Ressourcen und dem Auftreten von gewaltsamen Konflikten in einem Entwicklungsland. Eine Reihe von Staaten von Botswana bis Malaysia hat es geschafft, ihren natürlichen Reichtum für eine nachhaltige Entwicklung einzusetzen, obwohl diese Länder mit ähnlichen Problemen, angefangen von der Zerstörung natürlicher Lebensräume und der Vertreibung der lokalen Bevölkerung bis hin zu Korruption auf hoher Ebene, zu kämpfen haben. Diese Studie** basiert auf der Hypothese, dass es einen Zusammenhang zwischen einer guten Regierungsführung im Bereich der natürlichen Ressourcen („*resource governance*") und der Fähigkeit einer Regierung gibt, die Eskalation von Verteilungskonflikten zu einer gewaltsamen Auseinandersetzung zu verhindern. Unter „*resource governance*" wird einerseits die Regulierung und das Management des Produktionsprozesses (und der damit verbundenen sozialen und ökologischen Probleme) und andererseits die Verteilung der Einnahmen aus diesen Sektoren verstanden. Es wird angenommen, dass die gerechtere Verteilung von Lasten und Einnahmen aus der Ausbeutung von Bodenschätzen und anderen Ressourcen zu einer Abnahme von Konfliktrisiken führt.

Im Rahmen des „Resource Conflict Monitors" soll diese Hypothese systematisch auf der Basis einer repräsentativen Auswahl von ressourcenreichen Entwicklungsländern für den Zeitraum 1997 – 2007 untersucht werden. Die wichtigsten Variablen in diesem Zusammenhang sind (1) die Qualität der Regierungsführung im Bereich der natürlichen Ressourcen; (2) die Frequenz, Intensität und Dauer von bewaffneten Konflikten und (3) die Präsenz, Verbreitung und Art der natürlichen Rohstoffe. Zur Erstellung der Datenbank soll dabei auf bereits bestehende Datenbestände innerhalb des BICC (z.B. Rüstungsexportdatenbank) und außerhalb des BICC (Heidelberger Konfliktbarometer, Weltentwicklungsbericht) zurückgegriffen werden, die ggf. um Informationen zur Ausbeutung von natürlichen Ressourcen ergänzt werden. Die Daten zu den o.g. Variablen sollen dann mit weiteren makroökonomischen Informationen (BSP,

Bevölkerungszahl, Schuldenstand), Daten zu Informationen in Bildungs- und Gesundheitswesen sowie zur Mitgliedschaft in internationalen Vertragswerken (z.B. EITI) angereichert werden.

Auf der Basis der Datenbank soll einerseits eine leicht (über das Internet) zugängliche Informationsplattform zum Thema „gute Regierungsführung, bewaffnete Konflikte und natürliche Ressourcen" geschaffen werden. Andererseits sollen die Analyse der Daten zu einem verbesserten Verständnis der Zusammenhänge zwischen diesen Faktoren und damit zur Formulierung von (entwicklungs-) politischen Handlungsoptionen beitragen. Während über die Informationsplattform politisch Handelnden, Multiplikatoren und der interessierten Öffentlichkeit ein Überblick über das Thema geboten und im Sinne eines „Frühwarnsystems" auf potentielle Konfliktlinien aufmerksam gemacht werden soll, werden die Ergebnisse der Analyse in eine Handreichung zum Thema „*resource governance*" einfließen.

Contents

List of acronyms and abbreviations

BICC	Bonn international Center for Conversion
BMZ	*Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung* Federal Ministry for Economic Cooperation and Development
DRC	Democratic Republic of Congo
EITI	Extractive Industries Transparency Initiative
FN	*Forces Nouvelles*
GDP	Gross Domestic Product
HDI	Human Development Index
KPCS	Kimberley Process Certification Scheme
NMJD	Network Movement for Justice and Development
ODA	Official Development Assistance
RCM	Resource Conflict Monitor
PAC	Partnership Africa Canada
RUF	Revolutionary United Front
UN	United Nations
UNSC	United Nations Security Council
UNITA	*União Nacional para a Independência Total de Angola*
WTO	World Trade Organization

It needs to be emphasized that it is not the existence of natural wealth as such that seems to be the problem, but rather the failure of public authorities to avert the dangers that accompany the gifts of nature. Good policies can turn abundant natural resource riches into an unmitigated blessing
(Gylfason. 2001. "Natural Resources, Education and Economic Development", p. 3).

Introduction

The cocoa trade from Côte d'Ivoire, the country's main commodity has played a major role in the four-and-a-half-years of armed conflict. Over US $118 million revenues from the cocoa trade flowed into the conflict by funding both the government and the rebel group '*Forces Nouvelles* (FN)' in the North of the country (Global Witness 2007). Last year, the UN expert panel on Côte d'Ivoire reported that diamonds were still being smuggled out of the country via Mali and Ghana in violation of the United Nations embargo. By this diamond trade the rebels would generate estimated revenues of US $9 million to US $23 million to finance their movement (United Nations Security Council 2006).

Côte d'Ivoire is only one of the countries that unfortunately illustrate the presumed nexus between natural resources and conflict. Numerous other countries (to name a few: Cambodia, Angola, Sierra Leone and Sudan) have been a stage for plunder, fights, corruption and mismanagement related to natural wealth in those countries.[1] The Democratic Republic of Congo is one of the world's richest countries in terms of natural wealth. The country received the ironic description 'geological scandal' because from as early as the time of the Belgian King Leopold II, the country has been plundered by national and international elites, rebel groups and companies. The illegal smuggling of diamonds out of the DRC in 2000 exceeded the total national state budget. Also nowadays, corruption scandals and mismanagement of the country's natural wealth make it less likely that these stocks truly contribute to development and post-conflict reconstruction.

Nevertheless, the negative impact sometimes referred to as 'resource curse' did not hit by far all resource-rich countries: Peru, Malaysia and Thailand are examples of countries that have avoided such a negative impact. Also, there are countries where resources actually did contribute to economic development, such as Chile and Brazil, and countries that became prosperous as a result of resource abundance such as: Australia, Canada, the United States, New Zealand, Iceland and the Scandinavian countries. Botswana and Norway are referred to as 'growth winners' in this respect (Mehlum et al. 2006, p. 1118). The United Nations Security Council underlines in the context of its work on combating illegal resource exploitation that:

> The exploitation of natural resources from diamonds to timber can trigger or fuel conflicts but their effective management can also contribute to post-conflict recovery (Security Council, 25 June 2007).

Sierra Leone may be one of the cases where regulation of resource exploitation contributes to post-conflict reconstruction. Since Sierra Leone began regulating its diamond industry and joined the Kimberley Process Certification Scheme in 2003, illegal mining and smuggling have been reduced, and official exports rose from US $1.2 million in 1999 to over US $140 million in 2005 (PAC & NMJD 2006).

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[1] The link between the trade of natural resources and conflict received a lot of attention in the late 1990s, when different NGOs exposed the phenomenon of 'blood diamonds' being traded for weapons by UNITA (*União Nacional para a Independência Total de Angola)* (Global Witness 1998; Human Rights Watch 1999) and the RUF (Revolutionary United Front) In Sierra Leone (Partnership Africa Canada 2003).

The role resources played in the onset and duration of civil wars received growing attention in the past decade but the different mechanisms underlying this influence have to a large extent been disregarded. This is a serious deficiency when trying to understand the alleged role resources play in intensifying, prolonging or even causing civil wars—since it might essentially be a political problem, deriving from choices made by a government or governing elite. It is likely that not the natural resources as such cause the effects; it is the mismanagement of these resources that creates or enhances negative impacts. Studies and policy recommendations about an 'effective management' of natural resources have put considerable emphasis on economic management. Although this is a relevant element, economic policy alone cannot explain the situation sufficiently. A focus on governance as a whole is needed. We will therefore single out the concept 'resource governance' as a separate variable in this study.

The **aim** of the **'Resource Conflict Monitor'** is to test the idea that the way in which natural resources are governed determines their impact on civil wars. A better understanding about the role of resource governance could lead to new insights about the resource-conflict nexus and provide German development cooperation with new policy instruments to foster and support the development potential of resource-rich countries. Three different variables are central to examining this connection: **resource governance** (V1), **conflict** (V2) and **natural resources** (V3). Based on the results of the 'Resource Conflict Monitor', policy options and instruments can be developed, geared at understanding, perceiving and acting upon the conflict-relevant aspects of natural resource endowment, which improve and support good resource governance in developing countries.

This concept paper will firstly provide a state-of-the-art overview of the role of resources in conflict by outlining the academic debate. While doing this, the focus will be on the possible underlying mechanism and the role of governance. Following this, Chapter 2, 3 and 4 will detail upon the variables 'resource governance', 'conflict' and 'natural resources' in the given order. Chapter 5 will briefly entail some of the 'third variables' or 'context-specific indicators' that are described in the literature as relevant indicators in the study of resources and conflict. An overview of the variables, the list of preliminary indicators and the hypotheses as they will be tested in the Resource Conflict Monitor is outlined in Chapter 6. The conclusion of this concept paper can be found in its last Chapter 7.

1. Resources and conflict: Being cursed or in control?

Many scholars, activists and policymakers have investigated the possible linkages between resource wealth and the onset or duration of conflicts. This chapter gives an overview of this academic debate. We will put forward 'resource governance' as a central element in the analysis of natural resources and civil wars. A proposal for a further operationalization of the three variables: 'resource governance', 'conflict' and 'natural resources' follows in the subsequent chapters.

Before natural resources became a subject of study in the context of civil wars, many scholars dealt with the relationship between the abundance of natural resources and **destructive economic effects**. A study on the petroleum industry by Seers (1964) pointed out that even though growth in terms of GDP can be positive in oil rich countries this could as well go together with growing unemployment, poverty and inequality. The underlying cause for this is that petro-economies tend to ignore underlying social and economic inequalities in boom periods, which then manifest themselves in the bust period (Seers 1964). In a similar line, the popular publication 'The Paradox of Plenty' of Karl (1997)describes that in the midst of the 'plenty', which was provided by two oil booms in 1973 and 1980, those countries with

abundant oil reserves (such as Venezuela, Iran, Nigeria, Algeria and Indonesia) did not succeed in turning this wealth into long-term economic development. Karl (1997) explains that oil booms, which create the illusion of prosperity and development, can destabilize regimes by a disproportionate fiscal reliance on petrodollars and excessive public spending. Mineral rents tend to transform political, social and economical structures—both inside and outside the state—in such a way that shifting to another development path becomes more and more difficult. "These barriers lock countries into the initial choice of a rentier development path" (Karl 1997, p.42).

The theory of **"rentier state"** describes that a country with rich oil reserves tend to become autonomous from their societies, unaccountable to their citizens and autocratic (Mahdavi 1970 In Yates 1996).[2] The presumption for this is that 'rentier states' depend for a substantial part on 'unearned income' provided by nature instead of being based on a productive sector. "Rewards of income and wealth for the rentier do not come as the result of work, but rather are the result of chance or situation" (Yates 1996, p. 21). This creates a 'rentier mentality', "a psychological condition with profound consequences for productivity: contracts are given as an expression of gratitude rather than as a reflection of economic rationale [...]" (Yates 1996, p. 22). Beblawi (1987) describes four characteristics of a rentier economy: First, rent from natural resources is the single most important source of income; Second, the rentier economy is premised on the inflow of massive amounts of external rent in the form of foreign exchange; Third, only a minority of the population is engaged in rent generation, while a majority is involved in the distribution and utilization, and fourth, the government is the prime recipient of the external rent. The latter signifies a massive power for the ruling elite: "Theoretically, there is no incentive for a rentier class to promote truly democratic reforms. Not only is it independent financially from such demands but also it bears a vested interest in the status quo" (Yates 1996, p. 35).

In the 1980s the idea that natural resources could be more of a curse than a blessing spread further through studies describing the link between resource abundance and negative economic growth (Sachs & Warner 1995). Since the mid-1980s *per capita* income growth in developing countries has been inversely related to the share of natural resource rents in GDP' (Auty 2003).

> Of 65 countries that can be classified as natural-resource rich, only four managed to attain both (a) long-term investment exceeding 25 percent of GDP on average (from 1970 – 1998),[...] and b) *per capita* GNP growth exceeding 4 percent per year on average over the same period. These four countries are(1) Indonesia, (2) Malaysia and(3) Thailand [...]by diversifying their economies and industrializing; and(4) Botswana [...], without doing so (Gylfason 2001, p.1).

The "**Dutch disease"**[3] is a well-known concept that tries to explain the reverse impact of natural resources and economic growth. The "Dutch disease" refers to the situation in Holland in the 1960s where the booming gas exploration in the North Sea brought all of a sudden high revenues into the country. This export of 'mineral wealth' led to a high exchange rate and caused a negative impact on the competitive position of other (industrial) export sectors in

[2] Mahdavi introduced the 'rentier state' when he described the massive foreign currency inflow in the Middle East's petroleum development in the 1950s and 1960s. (In Yates 1996).

[3] The concept was first called "The Dutch Disease" (26 November 1977) in *The Economist*, pp. 82-83. It was further developed by Corden and Neary in 1982 and by Corden, W.M. (1984). "Boom Sector and Dutch Disease Economics: Survey and Consolidation." Oxford Economic Papers 36: 362.

the country. The concept "Dutch disease" has been used to label countries that are heavily reliant upon agriculture- or resource-based exports and where rapid (possibly temporary) increase in the price can cause a booming growth of this one sector at the cost of all other export sectors. This can impact heavily on the entire economy.

The '**resource curse thesis**' as it was introduced by Richard Auty in1993, offers a further conceptualization of reasons for why many resource-rich countries were not able to use this wealth to boost their economies. The above-mentioned appreciation of the real exchange rate ('Dutch disease'), corruption and/or mismanagement of natural resources ('rent seeking') and high price fluctuations are part of the explanation.[4] Auty and Gelb (2001, In. Auty, 2003) look for further explanations by examining the reverse causation 'the superior performance by resource-poor countries' and construct two main arguments: Firstly, states with no abundant resources would be more successful at developing political states with a real political support that "pursue coherent policies and the aim of raising the welfare of the entire population" (Auty 2003, p. 4, 5). Secondly, resource-poor countries diversify their economies earlier than resource-rich countries do and are therefore more competitive in terms of the manufacturing sector

The link between **resource abundance and the onset or duration of civil wars** gained increased attention at the end of the 1990s. NGOs exposed the phenomenon of 'blood diamonds' that were traded for weapons by UNITA (*União Nacional para a Independência Total de Angola)* in Angola (Global Witness 1998; Human Rights Watch 1999) and the RUF (Revolutionary United Front) in Sierra Leone (Partnership Africa Canada 2003). During the war in the Democratic Republic of Congo, warlords, national elites and numerous 'third parties' businesses and foreign actors, all profited from illegally exploited gold, diamonds, oil, coltan, and timber.

In 2000, the World Bank reported that those countries with a higher percentage of natural income from primary commodity exports were more prone to civil war (based on Collier and Hoeffler 2000). This finding very much shaped the public debate and policy-making on the topic and enticed scholars from different academic disciplines to study the resource–civil war phenomenon in more detail. The latter eventually brought strong queries on the outcomes of the Collier and Hoeffler study[5], when efforts to replicate the primary commodity–civil war correlation showed different conclusions. The arguments for questioning the study had mainly to do with two contentious points:

1) The **quality of data sets** used. The study of Fearon and Laitin (2003), for example, deviates from the Collier and Hoeffler findings but concludes that the primary commodity export–civil war correlation is quite fragile. Minor changes in the sample framing—e.g. using one-year- instead of five-year-intervals—and recovering missing data, undermine its findings (Fearon 2005, p. 485).

2) The lack of specification with regard to the **type of resources** is criticized by many authors who argue that different resources impact differently on civil war (Basedau 2005; Fearon 2005; Ross 2004). Fearon (2005) claims that the resource 'oil' as the major component in the Collier and Hoeffler data is responsible for the correlation with civil war risk (2005, p.487).

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4 Gylfason (2001) discusses four channels from abundant natural resources to stunted economic development: a) Dutch disease, b) rent seeking, c) overconfidence, and d) neglect of education.

5 Several subsequent versions of Collier and Hoeffler's "Greed and Grievance in Civil War" (2000) were posted on the World Bnak's "Economics of Civil War, Crime and Violence" web-site at econ.worldbank.org/programs/conflict. A summarized version of the findings can be found in Collier et al. 2003

Another important influence of the econometric studies by Collier and Hoeffler (2000) was the introduction of the 'greed or grievance' dichotomy. Much of the discourse on the economic dimensions of civil war now started to concentrate on the question: Are civil wars the result of **'greed'** or **'grievances'**? Collier and Hoeffler's work endorses 'greed' as the major cause. The 'greed thesis' holds that (measures of) economic motivations and opportunities show more correlation with the start of civil war than (measures of) ethnic, political or religious grievances. 'Grievance' was referred to as (legitimate or not) justice-seeking behavior by rebels. 'Greed scholars' would stress that grievances were often unrelated to the objective truth and that in a conflict situation one could find just about any explanation of grievances that could form the basis of the causal story. Some scholars (c.f. Ballentine and Sherman 2003; Ballentine and Nitzschke 2005) raise serious concerns regarding the greed thesis because it builds upon presumed statistical correlation and does not take into consideration that "individual motivations" can differ and also change over time. Moreover, the greed thesis holds "(t)he unexplored assumption that rebels, not state actors, cause conflict, leading to a pro-state bias in analysis and policy action" (Ballentine and Nitzschke 2005, p. 4). This labeling of combatant groups as merely criminal organizations instead of possible politically motivated actors also excludes the possibility to look into diplomatic solutions. Furthermore there is not only the side of the rebels who are taking advantage of opportunities. "Rather, critical governance failures are the mediating variables" (Ballentine and Nitzschke 2005, p. 5).

Over the past few years the analyses of the resource – civil war correlation has considerably developed: From treating resource and conflict linkages as a stand-alone issue to a more inclusive approach where "the predatory exploitation of natural resources and the criminal trade in lucrative commodities by armed insurgents and criminal networks" are "visible symptoms of a broader systemic problem" (Ballentineand Nitzschke 2005, p. 447).[6] "Civil war and resource dependence might as well be independently caused by completely different variables, such as the weak 'rule of law' or property rights" (Ross 2004, p. 338). Case studies of a number of African countries conducted by Brzoska and Paes (2007, p. 4) illustrate that factors motivating civil wars can not be simply reduced to resource exploitation. The wars in Sierra Leone, the Democratic Republic of Congo and Angola are too often considered to be primarily a resource conflict while at the same time, in these countries, the link between resources and conflict is far more complex, differs from case to case and is often difficult to filter out from other factors influencing the war. By contrast, in some conflicts, such as in Somalia and Côte d'Ivoire, the role of natural resources was mostly ignored, or poorly understood as is the case of Nigeria where the conflict in the Niger delta was perceived as an ecological conflict and the large-scale oil theft that financed the conflict was mainly ignored. A more differentiated conflict analysis remains a crucial precondition for effective conflict resolution strategies (Brzoska and Paes 2007).

The notice of 'unmeasured *third variables'* described above brings new hypotheses and subjects that need to be studied in the context of natural resources and civil war.

Important preliminary work that goes beyond the 'rebel-greed-hypothesis' has been carried out by Humphreys (2005) who catalogues six possible mechanisms that link natural resources to conflict (See Table 1):

[6] This "broader systemic problem" was, for example, subject of Mary Kaldor's much-debated "New and Old Wars", in which she describes how decentralized global markets made a variety of non-state actors more crucial players than ever, by making decentralized global financial and commodity markets more easily accessible to them (Kaldor 1999).

1 The '**greedy rebels'** mechanism describes the phenomenon as it was outlined by Collier and Hoeffler, that domestic groups independent of the state illegally benefit from resource exploitation or taxation. Another possibility is that the control over resources by the states makes it attractive to capture the state, or secede in case of a resource-rich region (Fearon and Laitin 2003 in Humphreys 2005).

2 Alternative to the greed of rebels, there can be '**greedy outsiders'**, third party states and corporations that have an interest in the exploitation of natural resources and therefore directly or indirectly contribute to the conflict.

3 The '**grievance mechanism'** has different variants of explanations that put 'grievances' at the center of analysis. For example, economies that depend highly on natural resources may be more vulnerable to price shocks that cause dissatisfaction with the groups that suffer from these shocks. Also groups may react because they are affected by negative environmental impacts from the extraction process. Two more variants are the unequal distribution of wealth, leading to (perceived) injustice between different parts of the country or groups within that country and temporary inequality that can be part of the development process in countries with a medium dependence on natural resources.

4 In the '**feasibility mechanism'** resources provide 'an opportunity' rather than 'a cause' for the conflict. By the control over the exploitation of resources or the sales of 'booty futures', conflicting parties can benefit from resources by pursuing other goals.

5 In countries dependent on natural resources, state structures might be weaker ('**weak states** mechanism'). This is because governments that depend little on tax income from their citizens may be less responsive to their electorate and its needs. Accordingly, citizens that are largely untaxed by their governments may have weaker control over the latter, due to less information, monitoring and sanctions. This leads to weaker government responsiveness and to a lower level of citizen participation. At the same time, governments relying more on natural resource income than on taxation are less likely to create strong bureaucratic institutions to raise revenues. This has been observed for oil states, such as Mobutu's Zaire (Fearon and Laitin 2003).

6 The '**sparse networks mechanism'** focuses less on rent-seeking incentives of governments or rebels but instead on the impact of natural resource dependence on the structure of a country's economy. High resource dependency may lead to low levels of internal trade. Insofar as internal trade is associated with greater levels of social cohesion and interregional interdependence, the risk of conflict will rise.

Table 1: Mechanisms that link natural resources to conflict

Mechanism	Characteristics/ Effects linked to natural resources
Greedy rebels	- Non-state taxation - State capture - Secession
Greedy outsiders	- External influence
Grievance	- Transitory inequality - Terms of trade shocks - Extraction-induced grievances - Unjust distribution
Feasibility	- Natural resources as a permissive cause
Weak state	- Powerless citizens, because untaxed - Lack of incentive to create viable institutions
Sparse networks	- Weak trade, weak cohesion & interdependence/ structure of the economy

Source: Humphreys 2005.

The six overall mechanisms imply that there are a number of possible underlying factors in the relationship between natural resources and conflict (outside the greed thesis). Better knowledge of the working of these mechanisms will assist us in untangling the underlying factors and possible policy responses.

Humphrey applied econometric models with data on oil, diamond production and oil stocks to test the different mechanisms. One assumption is that the links of natural resources and conflict implied by the 'weak states' and the 'grievance' mechanisms indicates a relationship between past resource production and conflict, whereas 'greedy rebels' mechanisms would instead link more to potential future production. By following this logic and applying the data, Humphreys finds that conflict onset is more responsive to the impacts of past natural resources production than to the potential for future production, and that it is thus not the 'booty futures' or state 'capture hypotheses' (that are both part of 'greedy rebels') which impact most on conflict onset but rather a 'weak states' mechanism and 'grievance hypotheses' (Humphreys 2005:, p. 525, 519). Moreover, it seems that natural resources have especially adverse effects in countries with already weak states (ibid). Following this conclusion, Humphreys proposes that policy priorities should shift from their focus of cutting of rebel finances to the role of the state.

Concluding this chapter we can see that the role of the state and governance was, to a large extend, interwoven in the studies on 'natural resources and economic effects'. Rent-seeking, for example, is much related to the quality of the state and its institutions. When institutions are conducive to the production sector it will be more difficult to be an 'effective rent seeker' (Mehlum et al. 2006). The role of the state and institutions is also a returning subject throughout the analyses of the resource curse.

In the study of the resource–conflict nexus, the greed vs. grievance dichotomy as it came under great attention after the Collier and Hoeffler studies seemed to put 'governance factors' temporarily out of sight by its predominant focus on dealing with cutting off the finances/ illegal resource exploitation of rebel groups. However, over the past few years, different studies on the possible resource–conflict links started to focus (again) more on the underlying mechanisms and specifically hinted towards more consideration on the role of

governance (cf. Dunning 2005; Snyder and Bhavnani 2005). "[The] [m]ain assumption [is] that natural resources in Africa are more than just a "curse". There are complex and dynamic interplays that include numerous non-resource variables, and fairly different outcomes [... A] more cautious label of "resource politics" seemed more appropriate to us" (Basedau 2005, p. 325). Stevens (2003) calls for an analysis of also those countries that benefit from resource abundance. The occurrence of natural resources does not necessarily lead to armed conflict: "Even in Africa, the region with perhaps the highest incidence of armed conflict since the end of the cold war, half of the continent's ten significant producers of alluvial diamonds did not have civil wars during this period" (Snyder and Bhavani 2005, p. 564). The focus should be on the mechanism behind the 'curse' (Stevens 2003, p. 10). [...] [T]here is a growing consensus that essentially it is something to do with governance" (Stevens 2003, p. 24).

This all shows a growing support to put governance of resources more central to our analysis. The next chapter will outline some elements of resource governance that would be important to include in the further operationalization of 'resource governance'.

2. Resource governance

The resources–conflict nexus cannot be simply attributed to the occurrence of natural resources or the dependency of a state upon the revenues from these resources. More efforts are needed to look into how governments try to address (or ignore) the problems related to natural resource abundance. "Resource governance is one of the aspects that needs urgent attention in understanding the dynamics of (un)sustainable resource management" (Basedau et al. 2005). The shift from the 'greed vs. grievance-debate' to more extensive analysis brought renewed attention to the role of the state and institutions and emphasized the role of governance in resource–conflict dynamics[7].

We define 'resource governance' as the way in which government regulates and manages the use of natural resources and the redistribution of costs and revenues deriving from those resources.

Below we will further outline two main parts of resource governance:

- The management and regulation of the extraction process of natural resources. This includes the way resources may be processed and traded.
- The management and regulation dealing with the resource revenues.

2.1 Management and regulation of the extraction process of natural resources

A key variable is the ruler's ability to control the extraction process. "Resource sector management [...] embraces all activities in the upstream and downstream sector, and how it is done and who makes a difference" (Snyder 2005, p. 331). "Greater gains could be achieved by focusing more on better management of the extraction process [...] (Humphreys 2005, p. 534). The quality of resource sector management depends on the administrative capacity and the actors directly and indirectly involved through economic (and political) relations (such as MNCs, IFIs, small companies, high risk investors, artisanal miners, Western governments).

One suggestion is to better **regulate** actions of the extractive industries (Humphreys 2005). This puts the eye on factors that determine the modes of extraction such as mining and investment laws, fiscal regimes, energy and transportation infrastructure, property rights, the effectiveness

[7] See eg. "Resource Politics in Africa" as an example of case studies on all three variables (non quantitative).

of the legal system, including membership of international regimes (such as the Kimberley Process Certification Scheme (KPCS) and the Extractive Industries Transparency Initiative (EITI), and the ability of the government to provide security (Snyder and Bhavnani 2005, p. 590).[8] Ross (2004) adds that the local politics around mining sites should also be taken into account. Governments need to set standards for correct behavior and effectively controlled compliance by other actors.

Another element of resource sector management may be linked to the political and economic incentives of elites to **diversify** away from resource dependence (Dunning 2005). The reason for this is that resource dependence is the outcome of strategic decisions by incumbent elites to limit the extent to which political opponents can challenge their power. Explaining how and why resource reliance emerges among resource-rich states, and how some resource-rich states diversify away from this dependence should be a priority for research. Humphreys (2005) also accentuates diversification of a country's economy as one of the priority areas for policy measures.

Lastly, Snyder and Bhavnani (2005, p. 373) suggest that a focus on regime type may prove fruitful for theorizing about revenue and political order. Differences in regime type may effect the relationship between revenue and political stability by partly determining the amount of income rulers require to govern.[9] Regime type may also influence the relationship between revenue and political order by determining the amount of discretion rulers enjoy with regard to spending.

2.2 The management and regulation dealing with the resource revenues.

The management of resource revenues consists of two elements: Who receives the money, and how is the money actually spent (cf. Basedau 2005).

In general, revenue volatility hampers planning boosts deficits and tends to raise debts (Shaxson 2005, p. 312). This could be mitigated by building stabilization funds that specifically deal with irregular revenues from natural resources trade (Humphreys 2005). Another risk factor is that countries with large resource exports tent to tax their population less heavily. Fearon and Laitin (2003) argue that low taxes lead to state weakness, which in turn increases the likelihood of conflict, and Ross (2004) adds that low taxes tend to impede democracy. Focus on these fiscal instruments, together with better transparency and information about the state income, are subject to possible policy interventions. Moreover, there is a knowledge gap on the role of oil contracts. "[…] Oil contracts between oil companies and producer countries in Africa and elsewhere generally magnify revenue volatility for the countries in the sense that a shift in the oil price typically results in a proportionally larger change in the host country's revenues and a proportionally smaller change in those of the company" (Shaxson 2005, p. 313). More attention should be given to which extend fiscal instruments in the petroleum industry are designed in a transparent/ democratic way.

State spending is the focus of the revenue centered framework constructed by Snyder and Bhavnani (2005). This links to what Humphreys (2005) named the 'grievance mechanism': "We assume that spending on social welfare reduces the risk of civil war by attenuating citizen grievances, thus making them less available for recruitment by rebels" (Snyder and Bhavani 2005, p. 571). Patterns of state spending are thus an important factor, "in particular whether

[8] Analyses of data on government observance of **contracts** and investor-perceived expropriation risk. In JF05p502

[9] Snyder & Bhavnani (2005, p. 373) come to this conclusion despite reference to Cheibub (1998) who found no significant relationship between regime type and the ability of governments to extract revenue through taxation.

they consume it frivolously or invest it prudently in strengthening the military, providing social welfare, and improving their capacity to earn revenue in the future" In conclusion, Snyder and Bhavani (2005, p. 571) summarize three investment areas that are relevant when studying the link with civil war. These are: (1) tax capacity, (2) coercive capacity, and (3) social welfare. Concerning the latter, education or 'accumulation of human capital' is especially highlighted "as both Gylfason (2001) and Ross (2001a) find that states with large resource sectors tend to have lower education rates, and Collier and Hoeffler (2002a) contend that low education levels boost the risk of civil war" (Ross 2004, p. 351). The neglect of education is one of the factors that may interfere with slow economic growth in natural resource countries.

Indications on possible solutions might be in the direction of fostering democratic governance and transparency in the utilization of resource revenues. Specific policy options include building consensus within society on how resources should be managed, addressing institutional and judicial constraints to effective revenue management, transparency and accountability, and creating a visible link between revenues from natural resources and improvements in national economic performance and poverty reduction (Warner/ODI 2005). Others put emphasis on an independent position of NGOs and actors in civil society that could monitor and lobby governments and oil companies about oil contracts and re-investments (Shaxson 2005, p. 313, 314).

Concluding this identification of relevant aspects of 'resource governance' it must be said that there also remain serious challenges in studying the complexity of the 'resource governance' aspects in the analyses of resource–conflict relations. A lot of this has to do with including the right indicators and obtaining accurate data. Good direct measures of a state's administrative capacity and integrity are, for example, lacking (Fearon 2005, p. 504). There is a need for better indicators of the composition of government revenues, their sources and uses, reliable measures of state strength, better indicators of the role of foreign interest in domestic oil production, and measures of the relative strength of rival forces in a conflict (Humphreys 2005, p. 534).

3. Conflicting interpretations of "conflict"

Conflict is defined as the clashing of interests (positional differences) over national values of some duration and magnitude between at least two parties that are determined to pursue their interests and win their cases.

A comparison of various studies examining the link of natural resources and civil war shows how the use of different databases of 'civil war' may lead to contrasting results. For example, where Collier and Hoeffler find a strong correlation of natural resource dependency and war, Fearon and Laitin's model does not show any statistical significance. This might be due to the fact that the variables used do not distinguish between subsets of civil war. Furthermore, datasets differ in how they determine when a war has ended (Ross 2004). In line with this, Basedau (2005, p. 326) outlines that the data groupings used may not capture the intensity and dynamics of peace and violence.

Further attention to the intensity of conflict and subsets of civil war seems especially relevant when looking into the several studies that suggest that primary commodities may only be correlated with a **subset of conflicts**. Reynal-Querol (2002), for example, proposes to specify civil wars into 'ethnic' and 'non-ethnic' (using coding of the State Failure Task Force). Collier and Hoeffler (2002b in Ross 2004, p. 341) distinguish between 'separatist conflicts' and 'non separatist conflict', or secessionist vs. non-secessionist, as Ross (2004, p. 342) calls it. "Resources are more likely to provoke separatist rebellions if they are extracted through a

capital-intensive process. Resources extracted through labor-intensive methods- such as alluvial diamonds, timber and agricultural goods – produce greater benefits to the local economy in poor regions and are therefore less likely to induce secession" (Ross 2004).

4. Not all natural resources are alike

There are several characteristics that define whether a resource is a potential factor for conflict; with the type of resource being in the first place. Various authors criticized studies in which resources were not further specified arguing that differing characteristics of different resources need to be taken into account to understand a potential conflict–governance link. "The association between primary commodities—a broad category that includes both oil and agricultural goods—and the onset of civil war is not robust" (Ross 2004, p. 337). One reason for this may be that this variable of primary commodities is overly broad, "as it includes a wide range of raw materials, some of which may be uncorrelated with conflict" (Ross 2004, p. 340). The author finds little evidence "so far that agricultural commodities, other than opium and coca, are significantly associated with either the onset or duration of civil war' (Ross 2004, p. 347). As concerns 'lootable' commodities, such as gemstones and drugs, Ross put forward that these are not related to the onset but more likely affect the **duration** of the conflict. However, with respect to the duration of conflict the role of lootable resources is not yet settled, due to, *inter alia* the difficulty of assembling accurate data (Ross 2004, p. 346). Humphreys (2005) finds more generally that natural resources are associated with shorter wars, and natural resource wars are more likely to end with military victory for one side than other wars.

Fearon (2005, p. 487) argues that oil is the major component in the Collier and Hoeffler data responsible for the relation with civil war risk. "Oil predicts civil war risk because oil producers have relatively low state capabilities given their level of *per capita* income and because oil makes state or regional control a tempting "prize"" (Fearon 2005, p. 487). To sum up, the **typology of resources** has often not been taken into account while it is a relevant factor for explaining the resource–conflict link. Non-fuel minerals have so far received less attention than fuels (except maybe diamonds) and the role of timber, for example, has not yet been explored statistically (Ross 2003). To distinguish between differing types of resources, this study will identify separate categories and test them accordingly. The following **characteristics of resources** need specific consideration.

Mode of extraction—lootability

A categorization of resources should take into account both the mode of extraction and the assumed 'lootability' of a particular resource (high with artisanally-mined resources, low with oil and gas) (Ross 2004; Snyder and Bhavani 2005; Fearon 2005). The technology needed to extract a resource is of importance for rent-seeking actors. Diamonds, for example, are easy to loot when occurring in alluvial sediment but would need large investment before exploitable when occurring as deep-shaft kimberlite mines. Some authors reason that resources that are extracted through a capital-intensive process would be more likely to provoke separatist rebellions, while resources that demand a more labor-intensive process would be less likely to induce secession because of greater benefits to the local economy in poor regions. Ross (2003a: In Ross 2004, p. 350) develops an alternative model based on whether or not resources are 'lootable' and 'obstructable'.

Markets, Macro economic vulnerability and rents

Basedau (2005) explains that the aspect of 'macro economic vulnerability' affects different resources in different ways or at different times.

> The macroeconomic vulnerability and the likelihood of boom and bust cycles and decline in terms of trade depend on the type of resource. Traditionally the oil price is very volatile, whereas copper, for example, was subject to a constant decrease in commodity prices over a long period of time [...] gold and diamonds tend to be relatively stable (Basedau 2005, p. 330).

In addition to these price fluctuations, resources have also different rents because of different production costs, market accesses and qualities. The 'value-to-weight ratio' might be an appropriate measure to understand the dangerousness of a resource (Auty, in Ross 2004, p 350). Moreover it would be worthwhile to test the impact of rents separately from resource production or exports to analyze many untested hypotheses about rent-seeking (Ross 2004, p. 349). Finally, markets should be taken into account. Where artisanally-mined diamonds can still easily find their way into the global diamond market, and a small number can potentially reap large benefits, the structure of, say, the cocoa market makes it likely that revenues from cocoa and other agricultural raw materials have a different impact on conflict.

Locality and concentration

The specific location and concentration of resources play a role since they define who has better or most effective access to potential revenues. Le Billon (2001, in Ross 2004, p. 350) developed a fourfold typology of "diffuse/point", "proximate/distant" and "lootable–obstructable/legal" resources to illuminate this aspect.

Resource abundance and resource dependence

The distinction between abundance and dependence of natural resources are two distinct phenomena, and methods in which the latter has been used as indicator for the former are highly questionable (Basedau 2005, p. 331). For instance, the use of natural resource exports to measure resource dependency is questionable, yet common practice in almost all analyses so far (notable exceptions are Humphreys (2005) and Fearon (2005). Hitherto, it is not at all clear if a commodity needs to be exported or not to have an impact on conflict (intensity). It is important to include a measure of dependency (for instance resource revenues as a measure of GDP, as is often done, or *per capita* (see Humphreys 2005).

The above points give an overview of elements of 'natural resources' that could be important indicators to further operationalize the concept. Yet some challenges remain. This has for a large part to do with the fact that there is a general lack of reliable data on the 'natural resources wealth'. War-prone countries generally do not have fully functioning infrastructures that make these data accessible, and some hard to track or 'lootable' resources remain out of our scope; "Illegal commodities are certainly excluded and diamond flows are also likely not to figure in official data, at least when states are weak" (Humphreys 2005, p. 522).

Humphreys (2005) recently succeeded to apply data on oil and diamonds that consisted also of "information gathered from actors in the industry and information provided by mining corporations. In particular the sources attempt to provide estimates of total diamond production, including diamonds that are exported clandestinely" (Humphreys 2005, p. 523). "For oil data it is important to include data that does 'not include oil re-exports (...) and so allows us to distinguish between extraction, which involved large rents, and the more industrial oil processing sector" (Humphreys 2005, p. 523).

Besides, to better capture the character of resource–conflict dynamics and resource governance, there are many related factors that may intertwine with the presumed natural resources–civil war correlation. The following part will look into some of these 'third variables'.

5. 'Third variables' context and more

The above outline on 'resource governance', 'conflict' and 'natural resources' illustrates that these causal mechanisms that link resources to conflict include a great number of possible 'third variables'. Previous studies outline some of the important factors that would need to be included. Snyder and Bhavnani (2005) (following a comparison of numerous studies) summarize seven key variables as significant correlates of civil war. These are (1) *per capita* income, (2) population, (3) rough terrain, (4) petroleum, (5) new state, (6) political instability and (7) semi democracy (Snyder and Bhavnani 2005, p. 575).

Basedau (2005) argues in his description of general and resource-specific context conditions that "a country's general socio-economic and political context must be assessed before resource exploitation becomes a relevant political and socio-economic issue." Variables such as relations between identity groups, the level and dynamic of socio-economic development, the design and functioning of public and state institutions, behavioral patterns of elites, political parties, the military and civil society, not to forget the regional and global setting,- have to be scrutinized carefully when studying resource-related problems in any country (Basedau 2005, p. 329). Basedau (ibid) provides helpful tentative hypotheses for context-dependent effects of natural resources (see Table 2).

Table 2: Tentative hypotheses for context-dependent effects of natural resources

Resource-specific condition	Direct effect on…	Most favorable	Least favorable
Type	peace & security	Obstructable non-lootable	Non-obstructable lootable
	socio-economic development	Stable/constantly growing commodity prices	Volatile/declining commodity prices
	democracy (likelihood of political conditionality)	Externally non-sensitive	Externally sensitive
Geographic location	peace and security (secessionism)	Regions not in conflict with central government	Regions in conflict with central government
Technical mode of exploitation	peace and security (resource looting)	High technical level (e.g. deep shaft gems)	Low technical level (e.g. alluvial gems)
Degree of dependence	socio-economic development	Low different commodities	High one single commodity
Degree of abundance	socio-economic development	High	Low

Resource-specific condition	Direct effect on…	Most favorable	Least favorable
Revenue management	socio-economic development	Transparent High capacity Development-oriented	Non-transparent Low capacity Corrupt
Involved companies and operators	quality of institutions/transparency	Big 'reputable' and responsive MNCs involvement of IFI	Small "high-risk" companies or small operators and artisans

***Source**:* Basedau 2005, p. 336

6. The Resource Conflict Monitor: Variables and hypotheses

The main variables of the Resource Conflict Monitor are: V1 'resource governance', V2 'conflict' and V3 'natural resources'. The following section will present the most important variables and hypotheses that the project will test, building upon the background information as it was outlined in the previous sections. Moreover, it will give preliminary overviews of indicators and datasets that will be further examined in the forthcoming study.

Resource governance (V1):

*Resource governance is the way in which a government **regulates** and **manages** the use of natural resources and the **redistribution** of **costs and revenues** deriving from those resources."*

Building upon the exploration of the concept 'resource governance' in Chapter 2, the following indicators will be included in the operationalization of 'resource governance:

- **Regulation**, further specified in 'Rule of Law', 'government effectiveness', 'regulatory quality', 'voice and accountability', 'political stability and absence of violence', 'control of corruption'.
- **Management, redistribution of costs**, further specified: 'Control of corruption', 'Corruption perception index', 'Participation of a country in transparency initiatives and/or certification schemes'
- **Redistribution of revenues**
- **Redistribution of costs**. To assess the way in which costs emanating from the exploitation of resources are redistributed, it would be useful to consider the following dimensions: environmental degradation, loss of local livelihoods, restriction of access/use of resources, change in social status/order/values, influx of populations. Unfortunately, no database currently provides information on these points on a global scale. The assessment of the cost dimension of resource governance will therefore be treated in country case studies.

Since there is no specific database on resource governance, we have to rely on existing databases covering governance of other sectors as well as resource governance. The choice of variables follows a pragmatic approach, relying on existing, widely used and accepted databases. A preliminary overview of these possible indicators together with reference to databases is included in Annex 1.

Table 3: V1: Resource governance

Variable	Definition	Indicator by category	Indicator by type
Resource Governance	Resource governance is the way in which a government **regulates** and **manages** the use of natural resources and the **redistribution** of **costs and revenues** deriving from those resources.	**Regulations**	Rule of Law
			Government Effectiveness
			Regulatory Quality
			Voice and Accountability
			Political Stability and Absence of Violence
			Control of Corruption
		Management, redistribution of costs	Control of corruption
			Corruption perception index
			Participation of a country in transparency initiatives and/or certification schemes
		Redistribution of revenues	HDI
		Redistribution of costs	To assess the way in which costs emanating from the exploitation of resources are redistributed, it would be useful to consider, the following dimensions: environmental degradation, loss of local livelihoods, restriction of access/use of resources, change in social status/order/values, influx of populations. Unfortunately, no database currently provides information on these points on a global scale. The assessment of the cost-dimension of resource governance will therefore be treated in country case studies.

Conflict (V2):

Conflict is the clashing of interests (positional differences) over national values of some duration and magnitude between at least two parties that are determined to pursue their interests and win their cases.

There is criticism on some of the current quantitative studies that they have not captured the dynamics and intensity of conflicts. We try to mitigate this by including different variables about overall stability as well as type and intensity of conflict.

Building upon the exploration of the concept 'conflict', notably in Chapter 3, the following indicators will be included in the operationalization of 'conflict':

- **Type of conflict**, further specified into 'conflict parties', 'conflict items', 'conflict intensity', 'type of conflict',
- **Conflict intensity**,
- **Political stability and absence of violence,**
- **Rule of law.**

A preliminary overview of these possible indicators together with reference to databases is included in Annex 2

Table 4: V2: Conflict

Variable	Definition	Indicator by category	Indicator by type
Conflict	Conflict is the clashing of interests (positional differences) over national values of some duration and magnitude between at least two parties that are determined to pursue their interests and win their cases. As quantitative studies have not captured the dynamics and intensity of conflicts though, different variables about overall stability as well as type and intensity of conflict are used here.	**Type of conflict**	Conflict parties
			Conflict items
			Conflict intensity
			Type of conflict
		Conflict intensity	Conflict barometer
			War/ armed conflict
		Political stability and absence of violence	
		Rule of Law	Functioning of judicial and security institutions
			Political terror

Natural resources (V3):

The RCM focuses on marketable natural resources.

Several characteristics define whether a resource would be a potential factor for conflict. To distinguish between different types of resources, this study will identify separate categories and test them accordingly. Building upon the outline given in Chapter 4 the following indicators are being used to operationalize natural resources:

- **Type of resource**: The following resources will be detailed: 'oil and gas', 'agricultural eaw materials', 'timber', 'industrially-mined resources', 'artisanally-mined resources'.
- **Location and spread**[10]
- **Technical modes of exploitation/ lootable**[11]
- **Degree of abundance**[12]
- **Degree of dependence**[13]

10 For example Le Billon (2002) and Ross (2003b) for typologies of 'diffuse/point", "proximate/distant"
11 For example Basedau 2005, p. 330 for lootable/obstructable/legal resources"
12 See for example Basedau 2005
13 Dependence on resource in percent of exports, total export earnings, potential income *per capita* (Basedau 2005, p.331).

A preliminary overview of natural resources together with reference to databases is included in Annex 3.

Table 5: V3: Natural resources

Variable	Definition	Indicator by category	Indicator by type
Natural resources	The RCM focuses on marketable natural resources. Several characteristics define whether a resource would be a potential factor for conflict. In order to distinguish between different types of resources, this study will identify separate categories and test them accordingly.	**Type of resource**	Oil and gas
			Agricultural raw materials
			Timber
			Industrially-mined resources
			Artisanally-mined resources
		Location and spread[14]	
		Technical modes of exploitation/ lootable[15]	
		Degree of abundance[16]	sxp = % from GDP
		Degree of dependence[17]	

Additional data

The countries selected for the RCM are around 80 least and middle income countries that have a dependence of over 10 percent on natural resources. A number of additional data will be included in the Resource Conflict Monitor to give a more complete picture of the socio-economic situation in the different countries. Among these are the following:

- **Context:** GDP, population, debts, foreign direct investment, official development aid, membership of WTO, economic structures, etc.
- **Social expenditure**, notably on healthcare and education,

14 For example Le Billon (2002) and Ross (2003b) for typologies of 'Diffuse/point", "proximate/distant")

15 (For example Basedau 2005, p. 330 for lootable/obstructable/legal" resources"

16 For example Basedau 2005

17 Dependence on resource in percent of exports, total export earnings, potential income *per capita* (Basedau 2005, p. 331).

- **Membership of international agreements/treaties.** e.g. with regard to human rights, labor standards, arms control, environmental protection.

A preliminary overview of additional data together with reference to databases is included in Annex 1.

Table 6: 'Third variables, context and more'

Variable	Indicators by category	Indicators by type
Third variables, context and more'	**Context**	Existence of sanctions
		GDP/capita
		Population size WDI
		External debt
		Foreign Direct Investment
		Official development aid
		Membership of WTO
		As rough measure of economic structures Humphreys uses the recorded share of agricultural value added in national income, drawn from the World Bank's World Development indicators.
		Expenditure for Health Care in % of GDP
	Social expenditure	Expenditure of Education in 5 of des GDP
	Membership in international conventions with regard to human rights, labor standards, arms control, environmental protection	See Annex 1

7. The Resource Conflict Monitor: Hypotheses

The main premise of this study is that the issue of resources and conflict has to be seen in a wider context of resource governance. The Resource Conflict Monitor will test the idea that the way in which natural resources are governed determines their impact on the intensity of civil wars. The three variables 'Resource governance (V1)', 'conflict (V2)' and 'natural resources' (V3) as operationalized in the above section, together with data on contextual factors, will be subject of analysis to test the following hypotheses:

Hypothesis 1: Natural resources—Conflict (V3–V2)

1.1 The availability of natural resources in a country increases the conflict.

One of the policy options open to a government is to pursue a diversification of the economy. The idea is that when a country's economy is dependent on the export of natural resources, it is more vulnerable to price shocks. This is even more the case when the export is, to a large extent, based on one or few commodities. Also one should note that a country's dependence on natural resources has an impact on the structure of a country's economy, so-called

'sparse networks' (Humphrey 2005, p. 513). This means that a high resource dependency leads to low levels of internal trade and hence to lower levels of social cohesion and interdependence, possibly leaving a country more prone to civil war. This has thus less to do with natural resource dependence but rather with a dependence on primary commodity exports. It will be necessary to include different measures of 'dependence' (both on natural resources as well as on primary commodities) to test the following hypothesis:

1.2 A higher dependence on few resources increases the conflict.

1.3 Different types of resources have different impact on the conflict.

Recently, Basedau (2005, p. 336) brought up the question again if natural resource endowment automatically entails negative consequences. We are following up on that by posing that the negative or positive effects eventually all depend on the governance of resource revenues and on the basic question of what resource revenues are used for. Basedau suggests that there might be several kinds of 'resource curses', for instance one that prevents the development of democratic institutions and another one that heightens the chance of civil war. It is therefore necessary to include both countries that have experienced or are experiencing resource wars as well as countries that do not and have not done so.

Resource governance will be defined as the way in which political, economic, and social processes and institutions are regulating and managing the use of natural resources and the redistribution of costs and revenues deriving from those resources.

Hypothesis 2: Resource governance—Conflict (V1–V2)

2.1 A high level of resource governance diminishes the conflict.

Testing the above hypothesis would provide valuable insights on what would involve effective 'resource governance'. Democratization could be one of the themes, and the relationship between the measure of democracy and resource governance could look as follows:

2.2. More democracy leads to a higher level of resource governance.

As mentioned above, policy answers and international efforts so far have all stressed the importance of transparency and accountability in (mostly) the management of revenues from natural resources. This has a distinct advantage, since it increased the amount of attention for transparency and accountability, and led to an increase in the amount of data available. This data, in turn, can be related to the occurrence of conflict.

2.3 Transparency and accountability in resource governance reduce the likelihood of conflict.

Several of the hypotheses hint at the larger theme of resource distribution. Data on resource distribution will be widely available. Government budgets are largely available to the public and if transparency measures have taken effect, it should not be hard to obtain data on how resource revenues are being used. This enables us to have a control hypothesis on the question how 'good resource governance', defined as high social spending and a strong development agenda pursued by the relevant actors, impacts on conflict.

2.4 Using resources for development purposes (education, healthcare, and infrastructure) reduces the chance of conflict.

If the previous hypothesis turns out to be valid, this has implications for future policy recommendations. If resource governance can have benign effects on conflict intensity, the existence of a learning process within the institutions responsible will be of crucial importance. This learning process can also be external, by means of interventions by third parties, or improvements in terms of international regimes' efforts. To investigate the existence of 'learning curves' the following hypothesis will be tested:

2.5 Past conflicts lead to a higher level of resource governance.

A large part of the linkages between natural resources and conflict might depend on the type of resource that occurs in a specific country. Diamonds, cocoa and timber cannot be treated the same under the header 'natural resources'. The mode of extraction, the commodity markets, macro economic vulnerability, prices per unit and international demand varies between differing natural resources. It is therefore likely that resource governance must be modified depending on the type of resource. Decision-making with regard to the management of diamonds will involve a smaller group of stakeholders than is the case with agricultural production.

Hypothesis 3: Natural resource—Resource governance (V3–V1)

3.1 The type of natural resource affects the level of resource governance.

To gain more insight on the phenomenon of resource governance and its possible contributions to the development agenda, it would be helpful to look at possible effects. Ideally a high level of resource governance would include the distribution of resource wealth in a way that fosters development (investments in education, healthcare, infrastructure). This would in turn contribute to a higher welfare level within a country.

Hypothesis (extra/conclusive):

H0: A higher level of resource governance leads to a higher welfare level within a country.

8 Conclusion and follow up

This concept paper is the first product of the Resource Conflict Monitor project of the Bonn international Center for Conversion (BICC) in corporation with the Federal Ministry for Economic Cooperation and Development (BMZ). The literature study outlined the academic debate on resources and conflict with a special emphasis on the role of resource governance. Based on this review the three key variables (resource governance, conflict and natural resources) have been operationalized, and indicators have been defined. Moreover a preliminary overview of possible databases to further test the hypotheses is included in the annexes.

The next step of the project involves the construction of the database that will contain data on the three variables for a large number (an estimated 80) countries worldwide. Comparing and analyzing the data and testing the hypotheses in the Resource Conflict Monitor will increase our understanding about the role of resource governance and could lead to new insights about the resource–conflict nexus. This insight will be translated into country studies, workshops and a policy paper that aims to provide German and European development cooperation with new avenues to mitigate negative effects of natural resource endowment. Hopefully, it will assist all parties involved in identifying and supporting viable ways of resource governance that contribute to post-conflict reconstruction and development.

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