

Linking Environment and Conflict

Building Blocks for a Knowledge, Innovation and Research Strategy

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"Close to 50 armed conflicts active in 2001 had a strong link to natural resource exploitation, in which either licit or illicit exploitation helped to trigger, intensify, or sustain a violent conflict. In other countries, with low-intensity conflict or collapsed states, corrupt officials and their opponents, often involved with organized crime and terrorist networks, siphoned off revenues from natural resources. In addition to sustaining conflict and undermining governance, resource exploitation has contributed to famines, the spread of diseases, population displacement, and serious environmental damage. Abundant natural resources, which should be a blessing for a low-income country, in most cases make poor people poorer."

(Source: Bannon and Collier, 2003: 7)

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ABBREVIATIONS

CTR	Commodity Tracking System
DGIS	Directorate-General for International Cooperation (DGIS) of the Ministry of Foreign Affairs of the Netherlands
DMW	Department Environment and Water (Dutch Ministry of Foreign Affairs)
EACV	Economic Agendas in Civil War (Project)
EITI	Extractive Industries Transparency Initiative
FARC	Fuerzas Armadas Revolucionarias de Colombia
FLEG	Forest Law Enforcement and Governance
IISD	International Institute for Sustainable Development
IMF	International Monetary Fund
IUCN	World Conservation Union
KOS	Knowledge, innovation and research strategy
MDG	Millennium Development Goal
MONUC	Mission d'Observation des Nations Unies au Congo
MMSD	Mining, Minerals, and Sustainable Development (Project)
NATO	North Atlantic Treaty Organisation
NWO	Netherlands Organisation for Scientific Research
OECD	Organisation for Economic Cooperation and Development
ROSC	Report on the Observance of Standards and Codes
SC	Security Council
SGACA	Strategic Governance and Corruption Assessment
SSR	Security Sector Reform
UN	United Nations
UNITA	União Nacional para la Independência Total de Angola
UNMIL	United Nations Mission in Liberia
UNOCI	United Nations Operation in Côte d'Ivoire
WOTRO	Science for Global Development (part of NWO)
WUR	Wageningen University and Research Centre

1. INTRODUCTION

Origin of the KOS

The Directorate-General for International Cooperation (DGIS) of the Ministry of Foreign Affairs of the Netherlands has of recent been involved in the directorate-wide formulation of 'knowledge, innovation and research strategies' (KOS) that aim at the (further) integration of knowledge management and research into the Ministry's development policies and programmes. The formulation of the KOS was based on the recognition that poverty reduction and the attainment of the Millennium Development Goals (MDG) require policy innovation and continuous learning.

The KOS for Environment, Water and Poverty Reduction

The Department 'Environment and Water' (DMW) of the Ministry of Foreign Affairs has elaborated this general objective into a specific KOS-document for Environment, Water and Poverty Reduction (Ministry of Foreign Affairs 2006). The underlying objective to this strategy is "to promote innovation in policies and programmes in the field of environment and water that will contribute to poverty reduction and to the achievement of the Millennium Development Goals; and to strengthen institutional capacity to this end in developing countries" (Ministry of Foreign Affairs 2006: 3). The document mentions the organisation of knowledge management and the allocation of resources to key research(able) problems as central issues to be addressed. On the mid-term the ambitions are to strengthen knowledge management within the department and the involved embassies, to invest strategically in relevant research, to utilise and direct the available knowledge and capacities towards innovation in policies and programmes, and to assure a high-quality implementation and impact of the KOS.

The KOS draws its major policy orientation from the MDGs, the three stated Dutch policy objectives and operational principles for poverty reduction in relation to environment and water as discussed in the explanatory notes to the budget 2006, and has further been formulated on the basis of a review of the existing research portfolio and internal and external consultations. So far local stakeholders have reportedly not (sufficiently) been involved in the process, but this will be redressed in the future, as the KOS is considered to be a living document that is annually to be reviewed and adapted to evolving insights and conditions (Ministry of Foreign Affairs 2006: 4-5).

Under the first Dutch policy objective 'Enhanced security and stability by combating environmental degradation and the destruction of ecosystems', the KOS has identified 'Environment and Conflict' as a key area for knowledge management, research and innovation. It further has identified a number of issues and questions that would require priority attention:

- a) Environment and land rights, land management and agriculture in landscape systems under pressure;
- b) Environment (e.g. cross-border parks) and water (e.g. international rivers and lakes in relation to conflict generation and conflict resolution);
- c) Environment, conflict and the role of illegal trade (Ministry of Foreign Affairs 2006: 5-7).

A Workshop on the Nexus Environment - Conflict

On the theme of 'Environment and Conflict' there has been a limited build-up of knowledge so far. The theme has been taken up by the Netherlands Organisation for Scientific Research (NWO). NWO has adopted Conflict & Security as a strategic research theme for the period 2007-2011. In a proposal 'Conflict: Functions, Dynamics, and Cross-level Influences', it has designated one of the six sub-themes to focus on natural resources and conflict (NWO 2007: 24-27). In chapter two this programme is briefly described under the section 'A Dutch Policy Perspective'.

In this connection, the DMW and NWO have taken the initiative to create jointly a new research programme on the theme. This would need to be strongly demand driven and relevant for policy makers and practitioners. The new programme should effectively contribute to linking-up and good

interaction in policy, knowledge, practice and research cycles and be embedded in a larger context of knowledge management.

As a first step, the DMW and NWO prepare a workshop with the purpose of formulating clear recommendations and building blocks for elaborating the new programme they envisage to create.

Discussion Paper

As part of the preparation for this workshop, DMW wished to make available a discussion paper that reviews the major literature sources on the subject, makes an inventory of major initiatives and some lessons drawn so far, and proposes potential issues for a programme.

Prof. Georg Frerks of the Disaster Studies Group of Wageningen University and Research Centre (WUR) has been invited to write this discussion paper. He has talked with a number of informants on ongoing work and their views and priorities with regard to a possible future research programme. He also has asked prof. Han van Dijk (WUR) and Mr. Jeroen Warner (WUR) to provide specific inputs with regard land and water issues respectively.

Limitations

The study obviously faced a number of limitations. First of all, the topic is very broad and there is so much literature written that it is unavoidable to make a rather arbitrary selection from the available material. Such a selection is bound to show some bias despite the consultations that have taken place during the preparation of the discussion paper. The conference is intended to comment on and add to the paper, so that possible omissions can be redressed by a wider, expert audience.

Outline of the Paper

The present report is organised as follows. The second chapter reviews some major recent policy initiatives with regard to the nexus environment and conflict, including relevant Dutch policies. The third chapter reviews the conceptual and theoretical debate in the academic literature on the topic and on KOS priorities, while the fourth chapter tries to turn this into a tentative and succinct agenda for a knowledge, innovation and research strategy.

2. THE NEXUS ENVIRONMENT AND CONFLICT: RECENT POLICY TRENDS

Though the environment has been an important thematic domain within global development cooperation since the 1980s and conflict has become so in the latter part of the 1990s, the nexus between environment and conflict has been relatively underexposed in international policy debates. Though the topic was discussed in the late 1990s in academia quite vehemently mainly with regard to the causation of conflict, this debate did not reverberate in policy circles to such a degree that it impacted policy design and implementation. The debates at that moment were probably still insufficiently couched in operational terms, so that it was difficult for policy makers to think of initiatives that could be translated into 'bankable projects'.

Probably there was also a need to first collect more evidence-based material and carry out case studies to inform policy. Recently one can, however, observe a change and the nexus environment and conflict clearly has entered into the policy debates in a number of prominent institutions, while programmes are being defined or implemented that deal with the issue in practice. For a historical overview of (inter)national initiatives on environment, conflict, peace and security, see Conca et al. (2005: 146-149). Also, there are increasingly case studies and thematic studies done on pertinent aspects of the problem. A recent report by DFID (2007) describes, for example, in detail the "trade flows of natural resources and other commodities out of the DRC through the Great Lakes region and East Africa. The goal of this project was to enhance the sustainable and equitable use of the DRC's natural resources in the interests of poverty reduction in the DRC and stability in the region, through building a robust evidence base for policy. The purpose was to provide a regional dimension to the analysis and understanding of natural resource exploitation in the DRC, with a view to developing and implementing policies and reforms that improve both the governance and functioning of markets in the DRC and the region". Apart from the exploitation and trans-boundary trade in natural resources, the report stresses the importance of local livelihoods and governance. This study is exemplary of many others that are underlying a wide range of policy initiatives undertaken over the last couple of years.

Below we give a selection of some major policy initiatives in this regard. These are presented rather with the purpose of illustrating the present trend by focusing on a limited number of institutions of different types than to suggest any representative or exhaustive overview.

The United Nations and the United Nations Security Council

The United Nations (UN) and the Security Council (SC) have been aware of the link between natural resources and conflict since many years. In response the SC has passed sanctions, set up committees and groups of experts, and has authorised several peacekeeping operations to assist in monitoring and implementing sanction regimes. In 1993 the SC already passed an oil embargo against UNITA in Angola. In 1997 and 2000 it imposed oil and diamond sanctions on Sierra Leone, and in 1998 diamond embargoes against UNITA. Liberia faced diamond and timber embargoes in 2001 and 2003 respectively. Côte d'Ivoire faced diamond sanctions in 2005, when the Pretoria agreement started to disintegrate. In the UNMIL, UNOCI and MONUC peace missions, special cells or units have been established to both study and, where appropriate, deal with the control and management of natural resources or with the embargoes when these were still in place. At the 2005 World Summit the SC adopted resolution 1625 that reaffirmed "its determination to take action against illegal exploitation and trafficking of natural resources and high-value commodities in areas where it contributes to the outbreak, escalation or continuation of armed conflict."

On the initiative of the SC Belgium Presidency in June 2007, an SC Open Debate was organised on 25 June 2007 about natural resources and conflict on the basis of a concept paper prepared by the Belgium Presidency. The debate aimed at reflecting on how natural resources could both trigger conflict and contribute to post-conflict recovery, what this meant for the maintenance of peace and

security, and how the effectiveness of the SC in this area could be strengthened (Belgium Presidency 2007: 1). The paper further described the role of natural resources as a direct and indirect cause of conflict as well as a means for conflict. It argued that the challenges, instruments and responsibilities involved are different in pre-conflict, conflict and post-conflict phases. The paper referred also to some major other international initiatives and finally outlined a number of questions for discussion.

Over thirty country representatives and others took part in this debate and the main conclusions were presented in the presidential statement on the debate (Security Council SC/9060). In this statement the Security Council reaffirms that every State has the full and inherent sovereign right to control and exploit its own natural resources in accordance with the Charter and the principles of international law and further stresses that natural resources are a crucial factor in contributing to long-term economic growth and sustainable development. After recalling Resolution 1625, the Security Council notes that the exploitation, trafficking and illicit trade of natural resources have contributed to the outbreak, escalation or continuation of armed conflict, but that the Council has taken measures to prevent illegal exploitation of natural resources, especially diamonds and timber, from fuelling armed conflicts. Also the transparent and lawful management of natural resources has been emphasised, while sanctions committees and groups and panels of experts have been established to oversee the implementation of those measures. The Council, however, underlines the need to strengthen those committees, groups and panels in order to improve their work. United Nations missions and peacekeeping operations deployed in resource-endowed countries experiencing armed conflict could play a role in helping the governments concerned. The Security Council underlines the importance of taking this dimension of conflict into account in the mandates of United Nations and regional peacekeeping operations (Security Council SC/9060).

The Security Council also highlights the importance of cooperation among source, transit and destination countries in preventing and combating trafficking, illicit trade and illegal exploitation of natural resources and refers to the important contribution of commodity monitoring and certification schemes such as the *Kimberley Process*. It also recognises the role of voluntary initiatives aiming at improving revenue transparency, such as the Extractive Industries Transparency Initiative. The Council also notes the important contribution voluntary principles and standards play in encouraging the private sector and multinational enterprises to adopt a responsible business conduct such as provided for by the Organisation for Economic Cooperation and Development (OECD) *Guidelines for Multinational Enterprises*, the *OECD Risk Awareness Tool for Multinational Enterprises in Weak Governance Zones* and the United Nations *Global Compact*. Security sector reform, finally, can promote transparent and effective national security and customs structures for the effective control of illegal trade in natural resources. More generally, the Council emphasises that the lawful, transparent and sustainable management of natural resources is a critical factor in maintaining stability and in preventing a relapse into conflict (Security Council SC/9060). In respect to all those topics, important developments have occurred over the last years. Yet, the question hovers about all those debates to what degree the SC should further deal with those issues itself, rely on the initiative of other UN mechanisms (such as the General Assembly or the new Peace-building Commission) or encourage initiatives outside the UN framework and regional approaches? In this connection, a regional perspective seems to be logical, as the issue of natural resources has an important cross-border dimension.

World Bank

The World Bank has provided an important impetus to the formulation of insights and policies on the nexus natural resources and conflict by the work of the then director of the World Bank's Development Research Group, Paul Collier and his research associates, among which Anke Hoeffler. They carried out a research project on the economics of civil war, crime and violence focusing on the causes and consequences of conflict in developing countries. They produced a series of well-distributed publications on the topic that succeeded in raising an intensive academic

debate as well as criticism on their findings and conclusions. This debate that came to be known as the 'greed and grievance debate' is discussed in chapter 3 of this paper. In an attempt to forge practical approaches and policies for the international community, the World Bank's Conflict Prevention and Reconstruction Unit and the Development Research Group further set up the Governance of Natural Resources Project in 2002. The edited volume by Bannon and Collier (2003) outlines some of the insights and policy recommendations that have emerged from this project. These authors distinguish measures of global development and of governance of natural resources. Regarding development they basically argue for raising economic growth as this would reduce conflict. A second policy is the diversification of the economy to reduce primary commodity dependence and a third one the reduction of the exposure to price shocks that tend to promote economic decline and political instability. With regard to the governance of natural resources they discuss a whole series of measures: increased transparency of natural resource revenues; certification of origin; checking of finance of illicit commodities; scrutiny on illicit payments and attracting reputable companies to risky environments. On some of those measures further action has been taken by a variety of actors as shown below.

EITI¹

Conflict is often funded by incomes derived from the exploitation of natural resources. The lack of transparency and accountability around the payments that companies are making to governments and the revenues that governments are receiving from those companies compounds effective ameliorative international action. The *Extractive Industries Transparency Initiative* (EITI) seeks to create that missing transparency and accountability. The EITI launched was by British Prime Minister Tony Blair on the World Summit for Sustainable Development in September 2002. It is a voluntary initiative, supported by a coalition of companies, governments, investors and civil society organisations. Stakeholders are drawn from within state institutions, the private sector and civil society. Through the EITI citizens can hold their governments to account for the use of those revenues.

The focus of the EITI is foremost national with an emphasis on country ownership and company participation. Improved governance of resource revenues will allow better management of those resources and promote greater economic and political stability. This, in turn, can help to prevent conflict based around the oil, mining and gas sectors. Benefits to companies and investors centre on mitigating political and reputational risks. Political instability caused by opaque governance is a clear threat to investments. A diverse group of countries, companies and civil society organisations attended the Lancaster House Conference in London (2003) hosted by the UK Government, where they agreed on a Statement of Principles that became known as the EITI Principles and are the cornerstone of the initiative. In 2005 a set of criteria for the implementation of the EITI was formulated. A number of countries went through a pilot phase and an approach has been taking shape on the basis of four steps: endorse, initiate, implement and review. For those steps, a total of 24 suggested and additional actions to guide country-level implementation have been elaborated and are compiled in a source book. In addition, the source book identifies illustrative guidance for extractive companies by elaborating suggested and additional actions focused on their situation.

International and Governmental Transparency Initiatives

EITI is closely linked to a number of similar initiatives. The G8 countries, for example, issued a *Declaration on Fighting Corruption and Improving Transparency* at Evian in 2003. At Sea Island in 2004, *Transparency Compacts* were agreed with four countries. The IMF has promoted fiscal transparency in member countries via the voluntary *Code of Good Practices on Fiscal Transparency* and the associated manual, while implementation of the code is monitored through the production of *Reports on the Observance of Standards and Codes* (ROSCs). Swanson et al (2003: 60) describe the ROSC as follows: "The ROSC is a joint effort by the IMF and World Bank to summarize the

¹ This section mainly draws from: Extractive Industries Transparency Initiative (2005) Extractive Industries Transparency Initiative Sourcebook. London: EITI Secretariat DFID.

extent to which a country observes certain internationally recognized standards and codes. The IMF has identified 11 areas and associated standards, based in large part on the fiscal transparency code and on the Code of Good Practices on Transparency in Monetary and Financial Policies." The weakness of the ROSC is that both its completion and its publication are voluntary. Both the IMF and the World Bank promote more effective resource revenue management through policy advice, policy-based and project lending, and technical assistance. The OECD has developed *Best Practices for Budget Transparency*. The *Forest Law Enforcement and Governance (FLEG) Ministerial Process* finally aims to "to increase the amount of forest-related rent that accrues to the government and to prevent the illegal appropriation of such rent, including via illegal logging" (Swanson et al.: 62). It focuses on East Asia. Many of the initiatives mentioned here are relatively new and implementation is in its infancy or not yet properly reviewed.

Swanson et al. argue in this connection that reporting by host governments in the developing world is rudimentary and often consciously evaded as they themselves are often involved in commodity rackets and hence have no incentive whatsoever to divulge reality. Countries have also created 'off-budget funds', 'trust funds' or 'stabilisation', 'savings' or other 'special funds' outside the normal budget systems and oversight procedures. Ascher (1999; 259) observes that the "apparently weak enforcement 'capacity' is as much a choice as a 'given,' and lack of enforcement capacity is often part of the strategy of resource maneuvers." In some countries, Indonesia and Chile being notorious examples, the military was highly involved in natural resource exploitation through off-budget accounts that were secret. In such situations, transparency initiatives are highly problematic and often actively undermined.

Non-governmental Transparency Initiatives

There are various NGO-led campaigns such as *Publish What You Pay* spearheaded by *Global Witness* and George Soros. This type of initiatives raises the issue of corporate social responsibility and the respective companies' reputations. The *European Coalition on Oil in Sudan* ECOS coordinated by IKV Pax Christi Netherlands, focuses on oil companies involved in that country arguing that the income from oil is fuelling the war. The *Caspian Revenue Watch* was started by the Open Society Institute (part of the Soros Foundation) and focuses on the investment of revenues from natural resources. These three examples are only a selection of a wide variety of non-governmental actions. It would be worthwhile to make a further inventory of such initiatives, not only in the Netherlands, but also in the European or global arena.

Transparency Initiatives at Company Level

The OECD *Guidelines for Multinational Enterprises* are non-binding recommendations that governments address to all companies based or operating in their jurisdictions. The guidelines form part of the OECD Declaration on International Investment and Multinational Enterprises, which has been agreed to by 33 OECD governments and several non-OECD governments.

The *Global Reporting Initiative* provides guidelines for companies (and other entities) to report their economic, environmental, and social performance. The initiative was launched in 1997 by the Coalition for Environmentally Responsible Economies, responding to growing demands by stakeholders for "sustainability" information and to the ad hoc response of companies to such demands, making information difficult to compare across companies or over time. The Global Reporting Initiative "seeks to make sustainability reporting as routine and credible as financial reporting in terms of comparability, rigour, and verifiability. Observers value the indicators set by the Global Reporting Initiative.

Swanson et al. (2003: 49, 72) report that the mining groups under the *Mining, Minerals, and Sustainable Development* (MMSD) Project have worked with Transparency International to increase the transparency of agreements between mining companies and governments. Nine of the world's largest mining companies initiated the project through the World Business Council for Sustainable

Development. The MMSD Project focused on research, a process of stakeholder engagement, and a program of information exchange.

The *UN Global Compact* is a voluntary code of conduct first proposed by UN Secretary General Kofi Annan in a speech to the Davos Economic Forum in 1999. The nine principles of the Global Compact cover the areas of human rights, labour, and the environment based on values and international agreements, notably the United Nations Universal Declaration of Human Rights, the International Labour Organisation Fundamental Principles on Rights at Work, and the (UN) Rio Principles on Environment and Development. The main requirement for participation is that companies provide a brief report once a year on concrete actions they have taken that have been inspired by one or more of the nine principles as well as any lessons they have learned from doing so. The main purpose of this reporting is to share lessons with other participants, including measures that work and those that do not. Though it has particular weaknesses, Swanson et al. (2003: 69) believe that the Global Compact and its Transparency Working Group within the Zones of Conflict Dialogue appear to be ongoing processes that have the potential to further promote revenue transparency issues in the future.

However, reporting by companies remains a difficult area, often due to contractual confidentiality clauses and pressure by host governments. Swanson et al. (2003: 78-82) provide a list of recommendations to improve performance, including technical assistance to host governments, conditioning the provision of benefits on transparency, setting rules for reporting, publication of home country revenues etc.

Commodity Tracking Systems

For a whole range of commodities specific control or tracking systems have been developed. These have been designed for a variety of goals including the protection of endangered species, environmental concerns, ethical concerns (child labour) or security-related issues. Crossin et al. (2003: 97-159) provide an extensive discussion and overview of commodity tracking systems (CTRs). These authors distinguish five essential elements of CTRs: common definitions and reporting requirements, effective reporting structure and information exchange, commodity labelling and audited chain-of-custody arrangements, compliance and enforcement measures, and capacity building. In a table they describe eleven major tracking regimes and their governing institutions. Some more well-known examples of CTRs include the Kimberley certification process scheme for diamonds, the Convention on International Trade in Endangered Species of Flora and Fauna CITES, the Cartagena Protocol on Biosafety, The Basel and Rotterdam Conventions of hazardous waste and chemicals and the Forest Stewardship Council for timber. It goes beyond the scope of this paper to review all details of such systems, but generally there is some optimism with regard to their potential impact. However, the possible weaknesses and measures to be taken that were mentioned with regard to transparency initiatives generally apply to CTRs as well.

A Dutch Policy Perspective

The Dutch position on the link between conflict and environment is still in the process of articulation. This particular KOS initiative itself is illustrative of that fact. Yet, it can be argued that the Dutch government has been one of the first international donors that have put the issue of intrastate conflict in all its different dimensions on the policy agenda. This was already done in the early 1990s by the then development minister Jan Pronk, who published a number of salient white papers and policy memoranda on the subject. It was also reflected in policy practice by resolving or mitigating the effects of conflict through diplomatic, humanitarian and development initiatives in a variety of conflict and post-conflict situations. Pronk's so called 'Princeton Speech' (Pronk 1996) was considered path-breaking in that it linked the domains of development and conflict and of development cooperation and defence that hitherto had been largely separated. All those developments were supported by a conscientious policy research effort, mainly through work by the Conflict Research Unit of the Netherlands Institute of International Relations 'Clingendael', but

also by engaging internationally operating agencies like Saferworld, International Alert, the Overseas Development Institute and the International Peace Academy.

Simultaneously, work on environmental issues continued separately. Many of these environmental initiatives took place in conflict-prone areas, but the links between conflict and the environment were established only more recently in the policy paper 'Strong people, weak states, Dutch policy on Sub-Saharan Africa for the long term' (Ministry of Foreign Affairs, 2003). In this paper the Dutch government promotes the idea of an integrated approach combining instruments of diplomacy, defence and development (3-D approach or Whole-of-Government Approach) to deal with a series of interlinked problems in weak states and conflict areas. Conflict prevention and conflict management as well as stabilisation and reconstruction are mentioned as important policy goals in these areas. The policy note emphasises the importance of good governance and the proper management of natural resources. It asserts that resource scarcity and mal-distribution compounded by patterns of patronage is one of the causes of Africa's multiple conflicts. "The unbridled exploitation of forests, water sources, fertile land and mineral resources has led to a sharp increase in erosion and soil depletion and is reducing the socio-economic security of the population. The resulting scarcity is partly responsible for the proliferation of conflicts in Africa, while natural resources such as timber and minerals are being plundered to provide capital to perpetuate these conflicts. Within Dutch policy on Africa and specifically regions in conflict (such as the Horn of Africa and the Great Lakes region), the sustainable management and equitable distribution of natural resources will be an integral part of measures to strengthen good governance and civil society. This theme will also be incorporated in policy on conflict prevention" (Ministry of Foreign Affairs, 2003: 10-11). The policy paper also stresses the importance of regional cooperation in this regard, as well as the issue of transparency and accountability in the realm of good governance,

In the area of natural resources the policy note introduces the idea of 'ecological governance' that aims at including the environment at all levels of decision-making. This also comprises the identification of government income derived from natural resources. With regard to natural resource management the policy note aims to promote international agreements and regional cooperation, for example in tropical forestry and shared river basins. The formalisation and protection of traditional and communal property and users' rights are considered of the essence from a livelihood perspective. The policy note further supports the certification of potential conflict commodities and wants to reach an equitable distribution of the monetary profits from resources for pro-poor growth and poverty reduction, including compensation of those who have been losing by the process of resource exploitation. Finally, the note asks attention for the reception and settlement of refugees in ways that reduce harm to the environment.

Looking at the overall Dutch policies in the field of conflict and environment, one can conclude that there is a solid basis to ground further work on. Also the policy formulated in the Memorandum on post conflict reconstruction (Ministries of Foreign Affairs, Defence and Economic Affairs 2005), transpires the ambition of an integrated approach. Though the latter policy note does pay attention to governance and cooperation between relevant partners, there is little substance in this policy note with regard to resource exploitation, the environment or livelihood at large. Similarly, associated instruments such as the Stability Fund have hardly touched on environmental issues, apart perhaps from de-mining. Work has now also started on the so called SGACAs (Strategic Governance and Corruption Assessment), carried out in over thirty partner countries. Doubts remain, however, whether the issue of natural resource transparency will be a systematic part of this new instrument, though there is reportedly room to add particular issues of interest on the basis of each country's specific situation. As no concrete SGACAs were finalised when writing this paper, future scrutiny is certainly recommended.

A final important development concerns the policy on fragile states being formulated at the moment by Dutch development minister Koenders. The minister has indicated the importance he attaches to the subject on several occasions, but the details of his new policy are not known yet. It is, however, expected, that vibrant policies and new thinking will be emerging around this theme. A so called 'Schokland agreement' has been concluded in which the Dutch government, civil society organisations and universities collaborate in a fragile states knowledge network.

The debates and developments in broad Dutch conflict policy can be seen as illustrative for the broader global trends. To a certain degree Dutch policies can even be called bold and innovative, in that they are moving ahead of international trends in adopting integrated policies and instruments, together with some other countries, such as the UK and Canada. The operationalisation of policy in concrete terms is ongoing, while the formulation of the associated research and knowledge requirements still needs some further impetus. There is, for example, no IS-Academy on conflict issues (IS Academies are International Cooperation Academies supported by the Ministry of Foreign Affairs focusing on a pertinent development-related issue).

There is, however, an encouraging development in that NWO has adopted conflict and security as a strategic research theme for the period 2007-2011 and has designated 'natural resources and conflict' as one of the six programmes to be elaborated. NWO stresses the mutuality and complexity of the nexus conflict and natural resources, with identity issues, power, governance and discourse ('framing') as important intervening variables. NWO also stresses the multi-level nature of the subject and the need to connect global and local analysis. Resource governance and resource management ('resource regimes') are of the essence to prevent, contain or manage resource-related conflicts. NWO proposes to explore the following issues (NWO, 2007: 27): (1) the relation between conflict over (use of) natural resources and (more) equitable use of natural resources; (2) the conditions of resource regimes that enhance or minimize the likelihood of violent conflict; (3) establishing how increasing scarcity of resources affects the governability of societies and where conflict leads to unexpected and unwanted degradation and exploitation of natural resources that in many cases can be used to fuel violent conflict; and (4) understanding the dynamics of resource conflict in terms of linkages between different governance regimes and their relation with other types of conflict.

Overlooking all evidence, the nexus between conflict and environment has so far been relatively underexposed, both in theory and practice of Dutch policy, though there are at the moment a number of interesting developments and entry points. It could also be observed that in the equation of the 3-D's, in the Dutch situation diplomacy is trailing behind defence and development. Hence, the notion of 'resource diplomacy' could gain more solid attention and also could conveniently be singled out for a policy research effort in an attempt to raise it to a more noticeable level.

Tentative Policy Conclusions

Looking at the whole gamut of transparency and commodity tracking initiatives, one is struck by the proliferation of effort. There has been considerable input in developing approaches, setting guidelines and criteria, and outlining reporting instruments. The sector shows both strong and weak points. Yet, there is considerable room for improvement, especially with regard to systematic reporting, the development of compliance regimes and the promotion of the necessary collaboration of stakeholders, voluntarily or through enforcement. Looking at the contents of the broader debates at the UN and the World Bank and reviewing the conflict and environment initiatives in international governmental and non-governmental arenas, including Dutch policies, at least nine items can be highlighted for the purpose of our discussion:

- The continuing debate on the effectiveness of sanctions and/or peace conditionality in the case of illegal exploitation, trafficking and trade in natural resources;

- The need to strengthen (Dutch) 'resource diplomacy'
- The need to strengthen existing institutional (UN and other) initiatives, groups and panels;
- The need to adopt a regional, trans-boundary or even global approach and promote joint management initiatives in cross-border forestry areas and river basins;
- The protection of traditional and communal property and users' rights to safeguard livelihood opportunities;
- The need for transparent and lawful management of natural resources in conflict areas, and more generally the proper governance of natural resources;
- Processes of certification of natural resources (commodity focused initiatives and CTRs);
- Responsible business conduct and revenue transparency in both the public and private sector;
- Support to governments through institutional and capacity building support;
- Inclusion of the natural resource problematique in UN peacekeeping operations and Security Sector Reform (SSR) processes;

It was underlined that in all those areas progress has been made with different degrees of success, but that a number of weaknesses persist. Further comparative study into the 'transparency sector' may be advisable in view of the sheer number of initiatives of which the above only could be a cursory exploration. Lessons learned and best practice exercises can yield valuable information and require to be given follow-up. With regard to CTRs cross-commodity comparison and bridge building can help strengthen operational efficiency and effectiveness on many details.

3. THE NEXUS ENVIRONMENT AND CONFLICT: AN OVERVIEW OF THE ACADEMIC DEBATE

A Contested Relationship

In conflict studies, development studies, political science and policy circles there has been, over the last decade, a vivid and sometimes fierce debate on the nexus environment and conflict. These discussions have sometimes taken different points of departure and also have revolved around partly diverging issues. This had to do with different underlying (conflict) theories and associated paradigms, and the centrality of different key concepts. For some analysts, the *degradation* of the environment was a key explanatory factor of conflict at macro or micro-levels. Others took a different perspective by focusing on *resource scarcity or distribution* as the key issue, often focusing on one particular resource or mineral. A third group elaborated the problem by adopting a broader *livelihood* approach, while a fourth group introduced the so-called *economies-of-violence* or '*greed*' oriented approaches. In this framework also the idea of resource *abundance* as a conflict factor (Billon, 2000) emerged: the so-called 'resource curse'. More recently, debates have focused on the possible role of climate and *climate change* in promoting conflict in the future. Further, there has been a whole range of publications and viewpoints where environment is not seen so much as a conflict factor, but rather as a shared interest between conflict protagonists and, hence, as a window for *peace building*. This view builds on the idea of environmental security as part of a broader notion of human security, as promoted in the framework of the United Nations (UNDP 1994) and more recently scrutinised by Michael Sheehan in his review of scholarly positions on international security (2006). Finally, there are observers who feel that the 'securitisation' of the environment is a bad idea, as it runs counter to the need for a broader, global environmental approach in dealing with the problems, something that a realist and nationalist approach is unable to deliver.

To understand these different debates properly, it is necessary to review their arguments and empirical basis, but also to position them into a wider discourse that has been evolving in the academic and policy field of conflict studies, development and environment (Frerks 2007). It is hardly possible to aptly summarise the rich, diverse and sometimes intense debate on the nexus environment and conflict in a few lines. Such a summary has unavoidably to be incomplete, selective and hence subjective to a certain degree (for more details on the debate see Klem (2003), who gives a good overview of the different 'schools' and trends in the 1990s, and Gleditsch (1998 and 2001) and Sheehan (2006: 99-114) for a critical analysis).

Below, I give a brief historical sketch of the major trends in contemporary discourse and outline some of the emerging issues. I shall highlight the major themes and challenges requiring further analysis that subsequently may be incorporated in a prospective knowledge, innovation and research agenda on the major KOS themes. I shall indicate here what type of questions should be researched more deeply. This part draws on the academic literature.

From Old to New Wars

In conflict studies at large we have seen a shift from what has been called classical or 'modern' conflict to contemporary conflict, or as coined by Mary Kaldor a shift from 'old' to 'new wars' (Kaldor 1999). Though the latter distinction is not absolute and in fact ideal-typical in nature, there are certainly salient differences in both the discourse and reality of those new wars as compared to the earlier ones (see Richards 2005 for a critical review of the explanations of new wars). One difference is the focus on state versus human security respectively (see Commission on Human Security 2003; Frerks and Klein Goldewijk 2007a and 2007b) and the attention paid to military-strategic versus broader political, socio-economic and environmental factors (see Renner 2005; Worldwatch Institute 2005). This also implied a revision of the earlier realist and state-centred understanding of conflict and security.

Economies of Violence and Greed versus Grievance

Hence, the whole issue of conflict causation became reconsidered and shifted to a more comprehensive understanding of conflict in which theorisation became focused on non-traditional conflict factors. These included not only, among others, poverty, resource scarcity, identity, religion and the role of the environment, but also questioned how those wars were funded and managed to perpetuate by looking into resource exploitation and control. This brought into focus the role of non-state actors and the functioning of economies of violence, where wars were fought for the enrichment of state and non-state elites. An early study on the 'benefits of war' was done by David Keen (1994) who argued that wars were not 'irrational' as was often assumed, but pursued in an attempt to benefit economically from them. Wars were not to be seen as politics by other means, as once observed by Clausewitz, but as 'economics by other means'. Those discussions and insights in turn gave rise to the greed-versus-grievance debate, where analysts disagreed on the relative importance of politico-ideological factors (grievance) as compared to economic factors (greed). The name of Paul Collier (2000), at the time Director of the Development Research Group at the World Bank, is closely related to the greed argument. Collier and his team argued that, apart from income and growth levels per se, conflicts were related to proxies for greed (economies based on primary commodities and large numbers of poorly educated young men) rather than to proxies for grievance (inequality, lack of political rights etc.). He submitted that rebel groups only adopted grievance discourses in an attempt to raise their legitimacy, but that grievances per se were not driving the conflict. The possibilities for predation and for 'doing well out of war' (2000) were the real drivers of conflict, according to Collier. Also in political and ethnographic work it became acknowledged that in so called patrimonial states such as in large parts of Africa and Asia, many wars were fought by elites in order to enrich themselves and their immediate followings (Allen 1999; Chabal and Daloz 1999). It has, however, been suggested that greed often motivated elites rather than followers (who would tend to be motivated by ideology or grievance). Or else greed may have become dominant in a later stage of the war when a focus on resources for the continuation of the war or for private enrichment replaced original ideological motives, as sometimes has been argued for the Colombian guerrilla FARC. Whatever the reason to start a rebellion, Bannon and Collier maintain, however, that rebel movements anyhow need to raise income to fund their wars, otherwise they would "wither away": "Where rural areas produce primary commodities with high economic rents, generally for export, it is a relatively simple matter for rebel groups to run an extortion racket, levying protection charges on producers or carrying out some of the trade themselves" (2003: 4). There seems to be a fundamental logic in their argument and many of the practices they describe are everyday reality in many parts of the world. Recent fieldwork in the Ituri District showed that both remnant rebel movements as well as the Congolese army FARDC resorted to such practices on a wide scale (Frerks and Douma 2007).

Due to the linkages of these economies of violence with the larger world markets, the role of international trade and business came under closer scrutiny as being complicit in some of the wars of the 1990s and the 21st century (Brown et al 2007). Suggestions have been made in this connection to promote markets for conflict-free goods, to promote conflict-sensitive business as part of a larger emphasis on social corporate responsibility, and to scrutinise the revenues of natural resources. Major policy initiatives in this domain have already been reviewed in the second chapter of this paper.

In addition to conceptual and theoretical work, there have been different *comparative case studies* that highlighted the role of economies of violence in particular war-torn countries (Douma 2005, Cilliers and Dietrich 2000). Specific domestic factors tend to perpetuate those conflicts on the one hand, while wider mechanisms are linking those violent economies to the larger world on the other. Another strand of critical analysts has suggested that the western world has been complicit in creating or allowing the existence of chaotic 'borderlands', so that conditions justified political

attempts to create a neo-liberal world order (Duffield 2005). Also the role of globalisation is subject to critical analysis in this body of literature.

From Mono to Multi-causality

In all those attempts to rethink warfare in the post-Cold War era, environmental issues took on a new relevance. Apart from playing their usual role in the classical, but waning debates on sustainable development, they now acquired a new significance as factors causing or explaining contemporary conflict. Some analysts even suggested that this was nothing more than a cynical attempt by environmentalists to grab the government's attention and spending related to security (see Sheehan 2006: 99). Whatsoever the case, there was a plethora of studies, documents, seminars and policy statements that promoted the idea of environmental conflict and even put them centre stage (Homer-Dixon 1999, Klare 2001), including some more alarmist publications and scenarios on full-blown oil, water and resource wars. Though these early studies had an important impact in putting the idea of environmental conflict on the international academic and policy agenda, they tended to somewhat overstate the issue. Several leading scholars have questioned the definitional clarity, theoretical foundation, (causal) analysis and empirical basis of these earlier studies (Gleditsch 1998 and 2001). The work by Collier and his colleagues at the World Bank was, for example, heavily criticised on substantive as well as methodological grounds.

The Present Position

Insights are currently evolving into a more nuanced and qualified direction. At present scholarship tends to promote a multi-causal, multi-level and multi-actor perspective in which the role of environmental factors is mediated through or combined with other factors, often of a socio-political nature (Gleditsch 2001). Mono-causal approaches highlighting the environment as *the* reason for war in the 21st century have given way to a more modest approach in which environmental factors are certainly not discarded as a conflict factor, but positioned into a broader and more complex framework (see Goodhand and Hulme (1999) and Allen 1999). The Economic Agendas in Civil Wars (EACW) Project of the International Peace Academy (Ballentine 2004: 4) concluded: "None of the conflicts studied can be accurately characterized as pure "resource-driven" wars. Neither rebel loot-seeking nor the opportunity for insurgency made available by access to natural and financial resources figured as a sole or even primary cause of conflict. In each case, the outbreak of conflict was triggered by the interaction of economic motives and opportunities with long-standing grievances over the mismanagement or inequitable distribution of resource wealth, exclusionary and repressive political systems, inter-group disputes and security dilemmas further exacerbated by unaccountable and ineffective states."

The present position is characterised by the recognition that the environment and associated factors like environmental degradation, resource scarcity and more recently climate change, do or may play a role in the rise and continuation of conflict, but are seldom the only or most important factor. Environmental issues have to become politicised before they will lead to violent mobilisation. As observed by Karen Ballentine of the EACW project: "The correlation between natural resource dependency and conflict risk is not direct: variations in the state's governance are critical intervening factors" (2004: 4). Here, we see the interplay of political and socio-economic factors, often mobilised by conflict entrepreneurs through identity-politics that serve to arouse feelings of mutual distrust and hate. This qualified position amounts to a debunking of simple (neo-)malthusian approaches that emphasise mono-causal or reductionist environmentalist explanations, where scarcity directly leads to conflict. As properly observed by Paul Richards (2005: 6-8), there is no "Malthus with guns". Environmental degradation too, as argued by Gleditsch (2001: 64): "may more appropriately be seen as an intervening variable between poverty and poor governance on the one hand and conflict on the other. In this sense, environmental degradation may be seen more as a symptom that something has gone wrong than a cause of the world's ills."

We may conclude at this stage that alarmist lines of thought on resource wars that received a level of prominence in the 1990s were not proven substantiated, though they admittedly got a new impetus through the War on Terror, that many observers saw as an attempt by the United States to gain control and access to Iraq's oil reserves.

An Emerging Consensus?

Scholarship at present stresses the complex interplay between environmental and other factors. Direct and immediate linkages between environment and conflict have found to be absent or weak. It seems safe to conclude that the prospect of environmental wars as such is pretty remote. By consequence, there is little need to go again into the overall question of whether environmental problems drive contemporary conflicts. Also the question of greed versus grievance does not require new analysis. What is needed now by way of research, calls for a more fine-grained analysis, often at sub-national levels.

Analysis has, moreover, moved from absolute to relative scarcity and to a focus on distributional issues often among different identity groups. At sub-national or local levels conflicts may indeed occur due to resource scarcity or mal-distribution. Though occasionally there are instances of violence and incidental casualties, these fights so far are still somewhat sporadic, often not systematically organised or enduring to such a degree that they would fall under the usual definitions of violent conflict or low-intensity warfare. Yet, there is a clear possibility that these *local 'green-wars'* will escalate into more prominent national violence or even spill over to neighbouring countries. These 'green-wars' need, therefore, to be positioned and monitored in terms of declining rural livelihoods and related patterns of resource plunder, predation, overexploitation and depletion. At present it seems that rural livelihoods are allowed to deteriorate further and chances on this type of conflict increase. The role of *government (development) policy* in forging or exacerbating socio-economic differentiation among different identity groups warrants further study. It seems that many of such processes are in fact based on ill-informed or misdirected government processes, involving patrimonialism and corruption.

In this broader framework of analysis, the work of Leiff Ohlsson of the Department of Peace and Development Research of Göteborg University on *livelihood conflicts* is relevant. His basic premise is that a common denominator of many conflicts, if not most conflicts in Africa, South Asia and Latin America is poverty resulting from loss of livelihood that in turn is caused or exacerbated by environmental degradation. While poverty and environmental factors per se have only weak links with the occurrence of conflict, (agricultural) livelihoods constitute the missing link in the explanations, especially when a rapid process of change results in a sudden fall of poverty as against an endemic condition of poverty. He argues (2000: 4) that the "great and growing scarcity of healthy, productive eco-systems in the world today seems to co-exist with an equally great and unused asset made up of all those women and men who lost their livelihood due to environmental destruction or unsustainable agriculture. A combination of these two aspects offers the potential for conflict prevention, poverty elimination *and* environmental reconstruction". This may require a focus on such issues as *resource governance and management* (from failing states to the required earth system governance as for example proposed by Biermann 2007)

The State of Affairs with regard to KOS Priority Issues

Below the academic debates in the four KOS key areas are reviewed succinctly.

Water Conflict²

A Malthusian 'water wars' thesis held sway in the 1990s (e.g. Starr 1991, Bulloch and Darwish 1993), while more recently some politicians (e.g. UK Foreign Secretary Beckett quoted in The Guardian, 11 May 2007) have revived the water wars thesis invoking climate change-induced

² This section has been contributed by Mr. Jeroen Warner from Wageningen University.

hydrological extremes leading to increased competition and environmental migration.

However, this view seems overly simplistic. Wolf has convincingly shown that there have been very few 'water wars', while an impressive database of treaties and agreements shows a tendency to cooperation (Wolf et al. 2005: 83-87) and what has been called 'institutional resilience', the capacity of institutions to cope with tensions about water and water scarcity. Ohlsson (1999) has, for example, argued that resource scarcity is offset by adaptive capacity (Homer-Dixon's 'social ingenuity'). States that have a high Human Development Index seem more adaptive in coping with environmental stress. Such adaptive capacity again is of the essence in dealing with climate change.

The analysis backgrounds that resource conflicts are rarely really about resources - it appears that water conflict is usually not so much about the allocation of the resource but about rules and procedures of its allocation, or become flashpoints of very different struggles, with deep historic roots (Warner 2004a, b). The Cochabamba and El Alto, Bolivia 'water riots' of 2000 and 2005 were not about scarcity, but about the privatisation of customary water rights (Boesen and Ravnborg 2004). This gave rise to another kind of water wars thesis, predicting violent protest against injustice due to unreflective privatisation and globalisation (Shiva 2002). This prediction has not been borne out in actual practice, either.

Currently the liberal idea has taken hold in the water world that water interdependence necessarily leads to cooperation and benefit sharing. UNESCO's ongoing PC / CP project (From Conflict Potential to Potential Cooperation, (www.unesco.org/water/wwap/pccp/)) reflects the current focus on co-operation, while Allan (2001) has argued that international food trade eases the stress on water-scarce regions such as the Middle East, as cheap food imports save the water stressed countries the depletion of water embedded in food production (virtual water). Still, while the pessimists have so far been proved wrong, the London Water Research Group that has emerged around Allan warns that there is also scant reason for optimism about international cooperation. The expectation of 'water peace' is undermined by many examples of non-implementation of international water treaties, hegemonic power play and unresolved structural conflict (Zeitoun and Warner 2006). It appears that conflict and cooperation go in tandem and should be analysed simultaneously. Naho Mirumachi is currently developing an analytical tool for this at King's College, London.

So far the above has focussed on interstate water relations, but the multi-level nature of water security is extremely important here. Sub-state actors see their insecurity increased as a result of violent acts, interstate collusion in hydraulic development (Furlong 2006) and war, sometimes deliberately targeting both large and small water infrastructure, most recently in Somalia and Gaza (Phillips, pers. comm 2007). Whether elephants fight or make love, it seems the grassroots continue to suffer. It is therefore important to focus one's analysis on how both violence (war), development (peace) and 'virtual water' flows between states impact on the security of affected groups, which again impacts on relations within and between communities. The development and application of a Water Security Impact Analysis (Warner 2008) would be very useful in this context.

Environmental Change, Property Rights, Scarcity and Conflict³

The idea that environmental change resulting in increasing resource scarcity has been a major cause for conflict has been very appealing over the past decade. Even today, the Secretary-General of the UN cites this as the root cause of the Darfur conflict. The debate glosses over the fact that ecological pressure and scarcity are often recurrent phenomena and have occurred throughout human history. Though it is commonly argued that for example farmer-herder conflicts are on the

³ This section has been contributed by prof. Han van Dijk from Wageningen University.

increase, the empirical evidence for this conclusion is lacking (Hussein *et al.* 1999). Instead the incidence of conflict varies from one location to another (De Bruijn & Van Dijk 2005)

Research on ecological change and dynamics in more densely populated zones and semi-arid areas in East and West Africa has seriously challenged the idea of increasing scarcity (Tiffen *et al.* 1994, Scoones 1995, Mazzucato & Niemeijer 2005). African environments display much more variability than commonly assumed and likewise processes of environmental change are much more complex and varied than usually portrayed (Fairhead and Leach 1996). This variability has resulted in an enormous complexity of property and access rights to natural resources. Over the past decade, it has become clear that specifically in situations of ecological pressure, scarcity is not an unequivocal phenomenon, but varies considerably in time and space. This requires considerable flexibility from the side of local actors in the determination of property and access rights, and negotiation skills of stakeholders in natural resource management. Historically, various layers of customary, religious and state law have been operational and continue to interact in natural resource management leading to considerable ambiguity. On the one hand, this ambiguity creates space for compromise and negotiation. On the other hand, this can be a source of conflicts and violence as clarity about the rules of the game is lacking.

At the scientific level, the whole concept of scarcity needs to be redefined. Neo-Malthusian and neo-liberal theory defines scarcity as an absolute given or as mediated by prices on a market. However, natural resources are not marketable commodities in many instances. Property and access rights are embedded in a myriad of social and political relations. In this complex, issues of identification and ethnic and religious identities need to be included, as they are not only vehicles for the mobilisation of people in case of violent conflict, but also are constitutive for the determination of membership of groups that are included or excluded from access to resources.

Scarcity is therefore relative. First, it must be perceived as such by actors involved. Next the question, must be answered how perceived scarcity leads people to engage in violent conflict, and why they do not resort to non-violent means to solve their problems. The latter question cannot be answered at the level of the resources and natural resource management itself, but must be sought in the social and political relations between the parties involved. Based on status, specific groups of people may be denied access to resources or can be increasingly marginalised (De Bruijn & Van Dijk 2003). Answer to these questions must be sought in local ethnic and political relations, institutional strength, governance structures, and patterns and processes of identification with specific identities (Schlee 2004).

An emerging issue is the impact of climate change on natural resource management. This will not only have effects on agricultural systems, but will also produce major movements of population. Large population shifts are already occurring in Africa and will produce conflict situations in the reception areas. In some areas in South West Burkina Faso immigrants outnumber the number of autochthonous people due to immigration from the north (Howorth & O'Keefe 1999). Immigration was indeed one of the root causes behind the outbreak of violence in Côte d'Ivoire. However this took place within a particular political context in which ethnic identities and religious affiliation were politicised.

Major research themes in this field are therefore, first the relation between environmental variability and the complex legal and socio-political systems mediating access to resources and conflict (resolution). This leads into a second major theme: i.e. in what kind of situations of scarcity people resort to violence and what kind of factors are involved? Thirdly, the relation between local level conflicts and higher order institutions and governance processes needs more attention. What kind of governance processes and institutions promote violent conflict or are instrumental in containing problematic situations or the resolution of conflicts? Fourthly, there is more insight

needed in the interaction between violent conflict and the transformation of natural resource management systems.

Illegal Trade

With regard to conflict dynamics, some have stressed the issue of resource abundance as a conflict factor rather than scarcity. This notion conveys that, in effect, concentrations of easily loot-able resources tend to attract violence rather than resources that are scarce. Examples mentioned include the resource wealth of countries like DRC, Sierra Leone, Liberia and Angola, though it remains a fact that these locally abundantly available resources are indeed scarce at a global scale. Here, it is that access to world markets and the role of international (illegal) trade and business need further scrutiny. The EACV project and the IISD-IUCN Trade, Aid and Security Initiative have highlighted the need and possibility of regulatory mechanisms to curb illegal trade and to promote conflict-sensitive business and development. This is a new area of international endeavour requiring further study and monitoring. As shown in chapter two overview articles and comparative work is appearing in this domain, but it could use further strengthening. The major policy trends with regard to illegal trade have been documented in chapter two when discussing governance of natural resources, transparency initiatives and commodity tracking systems.

Research themes identified comprised first of all the effectiveness of sanctions and/or peace conditionality in the case of illegal exploitation, trafficking and trade in natural resources. Further work on the use of sanctions and peace conditionalities is warranted (Boyce 2005, Goodhand 2006, Frerks 2006) to establish the role and viability of different forms of positive and negative inducement. It was further stressed that an inventory be made of existing initiatives, groups and panels and that these be strengthened where needed. Lessons learned and best practice exercises required to be given follow-up and cross-commodity comparison of different CTR regimes could lead to improvements and inform practice. Transparent and lawful management of natural resources in conflict areas, and more generally the proper governance of natural resources was an area much discussed, but not yet achieved in practice. Gaps need to be identified and measures proposed to deal with them. The role of non-governmental action in this field is not always very well understood as is the way stakeholders could best be included. Here innovative action research could be helpful. There is also fairly little insight into how host governments could be supported through regular development packages into achieving transparent systems of (revenue) reporting. The inclusion of the natural resource problematique in UN peacekeeping operations and SSR processes will have nearly to be developed from scratch. This not so much applies to measures to curb illegal practices inside the peace keeping operations themselves (that are needed as well), but how in a post-conflict trajectory security actors will be able to contribute to a proper management of the country's riches in stead of illegally exploiting them.

Environmental Peace-building

A final topic for further research is the emerging notion of the environment as a conflict resolution and peace-building mechanism. After listing a number of changes in the nature of current water disputes, Wolf et al argue that: "On the other hand, water is a productive pathway for confidence building, cooperation and arguably conflict prevention, even in particularly contentious basins. In some cases, water offers one of the few paths for dialogue to navigate an otherwise heated bilateral conflict. In politically unsettled regions, water is often essential to regional development negotiations that serve as de facto conflict prevention strategies. Environmental cooperation – especially cooperation in water resources management– has been identified as a potential catalyst for peace making" (2005: 94-95).

Conca et al elaborate on this notion of environmental cooperation. They assert that: "As a peace-building tool, the environment offers some useful, perhaps even unique qualities that lend themselves to building peace and transforming conflict: environmental challenges ignore political boundaries, require a long-term perspective, encourage local and non-governmental participation,

and extend community building beyond polarizing economic linkages" (2005: 149). Ecological and other types of interdependency strengthen this potential for collaboration. Carius (2007: 61) distinguishes three partly overlapping categories of ecological peace initiatives: initiatives to prevent conflicts directly related to the environment; attempts to initiate and sustain a dialogue on trans-boundary environmental cooperation between parties to a conflict; and initiatives that seek a lasting peace by promoting conditions for sustainable development. The first category is usually dealt with by reducing the pressure on the resources and institutional mechanisms, the second by starting dialogues and establishing cooperation on shared environmental challenges and the third one by reaching long-term sustainable solutions and management regimes (Carius 2007: 61-63). Carius elaborates on the complexities of such initiatives and the need to embed them into larger economic, political and institutional frameworks. He also states that we lack sufficient knowledge and appropriate conditions to discuss their impact and recommends a systematic and comparative analysis of previous case studies in order to engage in a constructive dialogue with policymakers in order to make environmental peacemaking more effective (2007: 72).

Several observers opine that Carius' second category represents environmental peace-building proper. Examples include trans-boundary reserves or trans-frontier parks, shared river basin initiatives. Van de Giessen (2005) describes the experiences in the tri-national Virunga Volcanoes region where the last about 380 mountain gorillas survive. Apart from international or trans-boundary work, environmental peace-building also includes cross-ethnic or cross-identity-group initiatives at sub-national level. Frerks and Klem discuss, for example, how in the conflict-ridden context of Sri Lanka, ethnic identity groups collaborate in a Dutch funded peace and development programme that was organised around shared interests, both environmental and cultural. Gaasbeek is conducting a research project on collaborative interaction of Tamil, Muslim and Sinhalese communities in the midst of war in the Sri Lankan Allai extension scheme, where the interest in joint water management and the shared feeling of all being farmers by the different groups for a long time were able to resist divisive ethnic sentiments stirred up by outside forces.

The idea of trans-boundary peace parks was originally promoted by the UN Peace University and is probably documented well enough by now. Hence, a lessons-learned study on peace parks could be carried out to draw lessons learned. An idea gaining currency at present are intra-state attempts at environmental peace-building among protagonist communities, such as the one promoted by the Royal Netherlands Embassy in Sri Lanka and referred to above. In contrast to peace parks, this field is still at its infancy and calls for innovative action research projects. One of the themes to be looked into is the overall conditions under which such activities could work and under which forms of management these could be implemented. It is proposed to identify a number of locations where such studies can be carried out.

4. A TENTATIVE KNOWLEDGE, INNOVATION AND RESEARCH STRATEGY

In the above sections a number of issues have been declared sufficiently studied from an academic or policy point of view. These included the more general question about the relation between conflict and environment, the role of the environment in the causation of conflict, the neo-Malthusian questions of scarcity of natural resources and the much-debated danger of water wars. A more fine-grained analysis was called for at the interface between conflict and resources, where identity, politics, governance and discourse were seen as relevant intermediary variables. From those more theoretical viewpoints as well as a number of recent policy developments themes for research were derived. Below I summarise the research topics and questions emerging from the above review of policy and scholarly literature on the nexus between conflict and natural resources:

General

- What are the relative advantages and risks of securitising the environment? (This refers to a debate on the desirability or danger of putting environmental issues under a security umbrella)

Livelihood

- How can a livelihood approach to environmental conflict be further theorised and put into practice?

Land issues

- What is the relation between environmental variability and the complex legal and socio-political systems mediating access to resources and conflict (resolution).
- In what kind of situations of scarcity people resort to violence and what kind of factors are involved?
- What is the relation between local green-wars and higher order institutions and governance processes?
- What is the role of government policy and (patrimonial) patterns of resource allocation in fuelling resource tensions?
- How can local green-wars be resolved or contained?
- How does the transformation of natural resource management systems lead to violent conflict?

Water

- How can violent, peaceful and virtual water issues be combined into a single policy approach?
- How could a Water Security Impact Analysis be developed or merged with existing conflict or stability assessment models?
- Which water regulatory mechanisms can be mobilised for peace building?

Illegal trade

- What regulatory mechanisms exist to curb illegal trade and to promote conflict sensitive business.
- Which are the existing transparency initiatives and how can these become mutually supportive and be strengthened?
- What are the major CTRs and which weaknesses and strengths of those mechanisms can be discerned? What lessons can be derived from cross-commodity comparison?
- What role can be played by non-governmental action and how can stakeholders be induced to collaborate?

- How can host government and company compliance be promoted by international (aid) agencies and donors?
- Is there a role to play for peace conditionalities in enforcement regimes and donor-recipient peace dialogues?

Environmental peace building

- What are strengths and weaknesses of trans-boundary peace parks and how and under which conditions can the approach be further strengthened and promoted?
- What is the relevance of the idea of peace parks in an intra-state setting?
- How can environmental peace-building be designed and implemented?
- How can case studies of environmental peace building be carried out on the basis of action research?

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